

Module 11 B. Aero plane Aerodynamics, Structures & Systems

11.01. Theory of Flight - Aero plane Aerodynamics and Flight Controls.

**Question Number.** 1. as a subsonic aircraft speeds-up, its Center of Pressure.

**Option A.** moves forward.

**Option B.** moves aft.

**Option C.** is unaffected.

**Correct Answer is.** Moves aft.

**Explanation.** Assuming that the aircraft is to remain at constant altitude, it must reduce its angle of attack as it speeds-up. This alone will move the CofP rearwards, in accordance with the sub-sonic angle of attack change theory.

**Question Number.** 2. Wing spoilers, when used asymmetrically, are associated with.

**Option A.** ailerons.

**Option B.** rudder.

**Option C.** elevators.

**Correct Answer is.** Ailerons.

**Explanation.** Pallet Automatic Flight Control 4th Edition Page 51. Jeppesen A&P Technician Airframe Textbook Page 1-12.

**Question Number.** 3. If an aircraft is yawing to the left, where would you position the trim tab on the rudder?

**Option A.** To the center.

**Option B.** To the right.

**Option C.** To the left.

**Correct Answer is.** To the left.

**Explanation.** Automatic flight control, Pallet, 4th Edition Page 43.

**Question Number.** 4. If an aircraft is flying with a left wing low, where would you move the left aileron trim tab?

**Option A.** Down.

**Option B.** Up.

**Option C.** Moving the aileron trim tab will not correct the situation.

**Correct Answer is.** Up.

**Explanation.** Automatic flight control, Pallet, 4th Edition Page 43.

**Question Number. 5.** When a leading edge flap is fully extended, what is the slot in the wing for?

**Option A.** To allow the flap to retract into it when it retracts.

**Option B.** To re-energies the boundary layer.

**Option C.** To increase the lift.

**Correct Answer is.** To re-energies the boundary layer.

**Explanation.** Pallet Automatic Flight Control 2nd Edition Page 50. Jeppesen A&P Technician Airframe Textbook Page 1-32.

**Question Number. 6.** With respect to differential aileron control, which of the following is true?

**Option A.** The up going Aileron moves through a smaller angle than the down going aileron.

**Option B.** The up going and down going ailerons both deflect to the same angle.

**Option C.** The down going aileron moves through a smaller angle than the up going aileron.

**Correct Answer is.** The down going aileron moves through a smaller angle than the up going aileron.

**Explanation.** Mechanics of Flight, Kermode, Page 301. The down going aileron moves less, to reduce the induced drag which causes adverse aileron yaw.

**Question Number. 7.** The aero plane fin is of symmetrical aero foil section and will therefore provide a side-load.

**Option A.** if a suitable angle of attack develops due either yaw or rudder movement.

**Option B.** only if a suitable angle of attack develops due to yaw.

**Option C.** only when the rudder is moved.

**Correct Answer is.** if a suitable angle of attack develops due either yaw or rudder movement.

**Explanation.** Rudder deflection or yaw.

**Question Number. 8.** An aircraft left wing is flying low. The aileron trimmer control to the left aileron trim tab in the cockpit would be.

**Option A.** moved up causing the left aileron to move up.

**Option B.** moved up causing the left aileron to move down.

**Option C.** moved down causing the left aileron to move down.

**Correct Answer is.** moved up causing the left aileron to move down.

**Explanation.** Down aileron required - which requires up trim.

**Question Number. 9.** The purpose of a slot in a wing is to.

**Option A.** speed up the airflow and increase lift.

**Option B.** act as venturi, accelerate the air and re-energies boundary layer.

**Option C.** provide housing for the slat.

**Correct Answer is.** act as venturi, accelerate the air and re-energies boundary layer.

**Explanation.** A slot is to act as venturi, accelerate the air and re-energies boundary layer.

**Question Number. 10.** Large flap deployment.

**Option A.** has no effect on span wise flow.

**Option B.** causes increased span wise flow towards tips on wing upper surface.

**Option C.** causes increased span wise flow towards tips on wing lower surface.

**Correct Answer is.** causes increased span wise flow towards tips on wing lower surface.

**Explanation.** Flaps increase the pressure differential between top and bottom surfaces, increase tip vortices and span wise flow.

**Question Number. 11.** Which part of the wing of a swept-wing aircraft stalls first?

**Option A.** Tip stalls first.

**Option B.** Root stalls first.

**Option C.** Both stall together.

**Correct Answer is.** Tip stalls first.

**Explanation.** The tip of a swept wing stalls first.

**Question Number. 12.** During flight, an aircraft is yawing to the right. The aircraft would have a tendency to fly.

**Option A.** right wing low.

**Option B.** nose up.

**Option C.** left wing low.

**Correct Answer is.** right wing low.

**Explanation.** The leading wing (left wing) has increased lift, causing it to rise.

**Question Number. 13.** With a drop in ambient temperature, an aircraft service ceiling will.

**Option A.** not be affected.

**Option B.** lower.

**Option C.** rise.

**Correct Answer is.** rise.

**Explanation.** As ambient temperature drops, density increases and aircraft performance increases.

**Question Number.** 14. Extending a leading edge slat will have what effect on the angle of attack of a wing?

**Option A.** Increase the angle of attack.

**Option B.** Decrease the angle of attack.

**Option C.** No effect on angle of attack.

**Correct Answer is.** Decrease the angle of attack.

**Explanation.** NIL.

**Question Number.** 15. To ensure that a wing stalls at the root first, stall wedges are.

**Option A.** installed at the wing trailing edge at the wing root.

**Option B.** installed at the wing trailing edge at the wing root.

**Option C.** installed on the wing leading edge at the wing root.

**Correct Answer is.** installed on the wing leading edge at the wing root.

**Explanation.** NIL.

**Question Number.** 16. With reference to differential aileron control.

**Option A.** drag increases on the inner wing.

**Option B.** drag decreases on the outer wing.

**Option C.** drag increases on the outer wing.

**Correct Answer is.** drag increases on the inner wing.

**Explanation.** Automatic Flight Control, Pallet 4th Edition Page 41. A+P Technician Airframe Textbook Page 1-11.

**Question Number.** 17. Dutch roll is movement in.

**Option A.** yaw and roll.

**Option B.** yaw and pitch.

**Option C.** pitch and roll.

**Correct Answer is.** yaw and roll.

**Explanation.** Avionic Fundamentals Jeppesen page 291.

**Question Number.** 18. If an aircraft is aerodynamically stable.

**Option A.** aircraft becomes too sensitive.

**Option B.** aircraft returns to trimmed attitude.

**Option C.** C of P moves back.

**Correct Answer is.** aircraft returns to trimmed attitude.

**Explanation.** NIL.

**Question Number.** 19. Ailerons control the aircraft in the.

**Option A.** longitudinal plane.

**Option B.** directional plane.

**Option C.** lateral plane.

**Correct Answer is.** lateral plane.

**Explanation.** Ailerons control the aircraft 'IN' the lateral axis, which is 'ABOUT' the longitudinal axis.

**Question Number.** 20. An anti-balance tab is used.

**Option A.** for trimming the aircraft.

**Option B.** to give more feel to the controls.

**Option C.** to relieve stick loads.

**Correct Answer is.** to give more feel to the controls.

**Explanation.** Jeppesen A&P Technician Airframe Textbook 1-29.

**Question Number.** 21. Slats.

**Option A.** act as an air brake.

**Option B.** keep the boundary layer from separating for longer.

**Option C.** increase the overall surface area and lift effect of wing.

**Correct Answer is.** keep the boundary layer from separating for longer.

**Explanation.** Jeppesen A & P technician airframe textbook page 1-32.

**Question Number.** 22. Due to the change of lift forces resulting from the extension of flaps in flight.

**Option A.** nose should be lowered, reducing AoA.

**Option B.** nose should remain in the same position, maintaining same AoA.

**Option C.** nose should be raised, increasing AoA.

**Correct Answer is.** nose should be lowered, reducing AoA.

**Explanation.** The main purpose of flaps is to increase lift so that the pilot can lower the nose, increase decent angle and get a better view of the runway.

**Question Number.** 23. Flight spoilers.

**Option A.** can be used to decrease lift to allow controlled decent without reduction of airspeed.

**Option B.** can be deployed on the down going wing in a turn to increase lift on that wing.

**Option C.** can be used with differential ailerons to reduce adverse yaw in a turn.

**Correct Answer is.** can be used to decrease lift to allow controlled decent without reduction of airspeed.

**Explanation.** NIL.

**Question Number.** 24. If the aircraft is flying nose heavy, which direction would you move the elevator trim tab?

**Option A.** Up to move elevator up.

**Option B.** Down to move elevator up.

**Option C.** Up to move elevator down.

**Correct Answer is.** Down to move elevator up.

**Explanation.** NIL.

**Question Number.** 25. Wing tip vortices are strongest when.

**Option A.** flying high speed straight and level flight.

**Option B.** flying slowly at high angles of attack.

**Option C.** flying into a headwind.

**Correct Answer is.** flying slowly at high angles of attack.

**Explanation.** NIL.

**Question Number.** 26. An example of a secondary flight control is a.

**Option A.** elevator.

**Option B.** flap.

**Option C.** spoiler.

**Correct Answer is.** spoiler.

**Explanation.** Some would consider a Flap to be a secondary flight control. It is discounted in this question as it is technically a Lift Augmentation Device, rather than a 'control'.

**Question Number.** 27. A balance tab.

**Option A.** assists the pilot to move the controls.

**Option B.** is used to trim the appropriate axis of the aircraft.

**Option C.** effectively increases the area of the control surface.

**Correct Answer is.** assists the pilot to move the controls.

**Explanation.** Jeppesen A & P Technician Textbook pg 1-29.

**Question Number.** 28. Which wing increases drag when the ailerons are moved?

**Option A.** Both wings have an equal increase in drag.

**Option B.** Both wings increase drag but the wing with the down-going aileron increases more.

**Option C.** Both wings increase drag but the wing with the up-going aileron increases more.

**Correct Answer is.** Both wings increase drag but the wing with the down-going aileron increases more.

**Explanation.** Jeppesen A & P Technician Airframe Textbook page 1-26.

**Question Number.** 29. Which flap will increase wing area and camber?

**Option A.** Split.

**Option B.** Slot.

**Option C.** Fowler.

**Correct Answer is.** Fowler.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 20.

**Question Number.** 30. An automatic slat will lift by itself when the angle of attack is.

**Option A.** low.

**Option B.** high or low.

**Option C.** high.

**Correct Answer is.** high.

**Explanation.** NIL.

**Question Number.** 31. On aircraft fitted with spoilers for lateral control, roll to the right is caused by.

**Option A.** left and right spoilers extending.

**Option B.** right spoilers extending, left spoilers remaining retracted.

**Option C.** left spoilers extending, right spoilers remaining retracted.

**Correct Answer is.** right spoilers extending, left spoilers remaining retracted.

**Explanation.** NIL.

**Question Number.** 32. A split flap increases lift by increasing.

**Option A.** the surface area.

**Option B.** the camber of the top surface.

**Option C.** the angle of attachment of the lower hinged portion.

**Correct Answer is.** the angle of attachment of the lower hinged portion.

**Explanation.** Jeppesen A & P Technician Airframe Textbook page 1-30.

**Question Number.** 33. When the trailing edge flaps are lowered, the aircraft will.

**Option A.** sink.

**Option B.** pitch nose down.

**Option C.** pitch nose up.

**Correct Answer is.** pitch nose down.

**Explanation.** Due to the center of pressure moving aft.

**Question Number.** 34. Dutch roll is.

**Option A.** a type of slow roll.

**Option B.** primarily a pitching instability.

**Option C.** a combined yawing and rolling motion.

**Correct Answer is.** a combined yawing and rolling motion.

**Explanation.** NIL.

**Question Number.** 35. On an aircraft with an all-moving tail plane, pitch up is caused by.

**Option A.** increasing tail plane incidence.

**Option B.** decreasing tail plane incidence.

**Option C.** up movement of the elevator trim tab.

**Correct Answer is.** decreasing tail plane incidence.

**Explanation.** NIL.

**Question Number.** 36. A leading edge slat is a device for.

**Option A.** increasing the stalling angle of the wing.

**Option B.** decreasing wing drag.

**Option C.** decreasing the stalling angle of the wing.

**Correct Answer is.** increasing the stalling angle of the wing.

**Explanation.** NIL.

**Question Number.** 37. A Krueger flap is.

**Option A.** a leading edge slat which extends forward.

**Option B.** a flap which extends rearwards but does not lower.

**Option C.** a leading edge flap which hinges forward.

**Correct Answer is.** a leading edge flap which hinges forward.

**Explanation.** Jeppesen A & P Airframe Technician Textbook page 1-37 figure 1-64.

**Question Number.** 38. The layer of air over the surface of an aero foil which is slower moving, in relation to the rest of the airflow, is known as.

**Option A.** camber layer.

**Option B.** none of the above are correct.

**Option C.** boundary layer.

**Correct Answer is.** boundary layer.

**Explanation.** NIL.

**Question Number.** 39. When airflow velocity over an upper cambered surface of an aero foil decreases, what takes place?

**Option A.** Pressure increases, lift decreases.

**Option B.** Pressure decreases, lift increases.

**Option C.** Pressure increases, lift increases.

**Correct Answer is.** Pressure increases, lift decreases.

**Explanation.** NIL.

**Question Number.** 40. What is a controlling factor of turbulence and skin friction?

**Option A.** Countersunk rivets used on skin exterior.

**Option B.** Aspect ratio.

**Option C.** Fineness ratio.

**Correct Answer is.** Countersunk rivets used on skin exterior.

**Explanation.** NIL.

**Question Number.** 41. Changes in aircraft weight.

**Option A.** will only affect total drag if the lift is kept constant.

**Option B.** will not affect total drag since it is dependent only upon speed.

**Option C.** cause corresponding changes in total drag due to the associated lift change.

**Correct Answer is.** cause corresponding changes in total drag due to the associated lift change.

**Explanation.** NIL.

**Question Number.** 42. When an aircraft stalls.

**Option A.** lift decreases and drag increases.

**Option B.** lift and drag increase.

**Option C.** lift and drag increase.

**Correct Answer is.** lift decreases and drag increases.

**Explanation.** NIL.

**Question Number.** 43. The aircraft stalling speed will.

**Option A.** increase with an increase in weight.

**Option B.** increase with an increase in weight.

**Option C.** be unaffected by aircraft weight changes since it is dependent upon the angle of attack.

**Correct Answer is.** increase with an increase in weight.

**Explanation.** NIL.

**Question Number.** 44. In a bank and turn.

**Option A.** extra lift is not required.

**Option B.** extra lift is required.

**Option C.** extra lift is not required if thrust is increased.

**Correct Answer is.** extra lift is required.

**Explanation.** NIL.

**Question Number.** 45. The angle of attack at which stall occurs.

**Option A.** depends on the weight of the aircraft.

**Option B.** cannot be varied, it is always constant.

**Option C.** can be varied by using flaps and slats.

**Correct Answer is.** can be varied by using flaps and slats.

**Explanation.** NIL. corrected

**Question Number.** 46. The primary function of a flap is.

**Option A.** to alter the position of the center of gravity.

**Option B.** to trim the aircraft longitudinally.

**Option C.** to alter the lift of an aero foil .

**Correct Answer is.** to alter the lift of an aero foil .

**Explanation.** Jeppesen A & P Technician Airframe Textbook page 1-30.

**Question Number.** 47. The stalling speed of an aircraft.

**Option A.** is increased when it is lighter.

**Option B.** does not change.

**Option C.** is increased when it is heavier.

**Correct Answer is.** is increased when it is heavier.

**Explanation.** NIL.

**Question Number.** 48. A wing flap which has dropped or partially extended on one wing in flight will lead to.

**Option A.** a steady rolling tendency which would be corrected by use of the ailerons.

**Option B.** a fixed banked attitude which would be corrected by use of the rudder.

**Option C.** a pitching moment which would be corrected by use of the elevators.

**Correct Answer is.** a steady rolling tendency which would be corrected by use of the ailerons.

**Explanation.** NIL.

**Question Number.** 49. With an increase in the amount of flap deployment, the stalling angle of a wing.

**Option A.** increases.

**Option B.** remains the same.

**Option C.** decreases.

**Correct Answer is.** decreases.

**Explanation.** NIL.

**Question Number.** 50. Downward displacement of an aileron.

**Option A.** decreases the angle at which its wing will stall.

**Option B.** increases the angle at which its wing stalls.

**Option C.** has no effect on its wing stalling angle, it only affects the stalling speed on that wing.

**Correct Answer is.** decreases the angle at which its wing will stall.

**Explanation.** NIL.

**Question Number.** 51. Due to the tail plane angle of attack change, the flap induced downwash on the tail plane.

**Option A.** may cause a nose-down or nose-up pitch depending upon the initial tail plane load.

**Option B.** will tend to cause an aircraft nose down pitch.

**Option C.** will tend to cause an aircraft nose-up pitch.

**Correct Answer is.** will tend to cause an aircraft nose-up pitch.

**Explanation.** NIL.

**Question Number.** 52. Due to the change in lift coefficient accompanying extension of the flaps, to maintain the lift constant it would be necessary to.

**Option A.** lower the nose.

**Option B.** keep the pitch attitude constant.

**Option C.** raise the nose.

**Correct Answer is.** lower the nose.

**Explanation.** NIL.

**Question Number.** 53. Which leading edge device improves the laminar flow over the wing?

**Option A.** Flap and slat.

**Option B.** Flap.

**Option C.** Slat.

**Correct Answer is.** Slat.

**Explanation.** NIL.

**Question Number.** 54. The tropopause exists at about.

**Option A.** 18,000 ft.

**Option B.** 36,000 ft.

**Option C.** 30,000 ft.

**Correct Answer is.** 36,000 ft.

**Explanation.** NIL.

**Question Number.** 55. Induced drag curve characteristics of a slender delta wing are such that there is.

**Option A.** an increase in gradient with wing speed.

**Option B.** decrease in gradient with wing speed.

**Option C.** no change in gradient with wing speed.

**Correct Answer is.** decrease in gradient with wing speed.

**Explanation.** NIL.

**Question Number.** 56. If an aircraft is yawing left, the trim tab on the rudder would be positioned.

**Option A.** to the left, moving the rudder right.

**Option B.** to the center.

**Option C.** to the right, moving the rudder left.

**Correct Answer is.** to the left, moving the rudder right.

**Explanation.** NIL.

**Question Number. 57.** Instability giving roll and yaw.

**Option A.** is longitudinal stability.

**Option B.** is lateral stability.

**Option C.** is dutch roll.

**Correct Answer is.** is dutch roll.

**Explanation.** NIL.

**Question Number. 58.** Vortex generators are fitted to.

**Option A.** move transition point forwards.

**Option B.** move transition point rearwards.

**Option C.** advance the onset of flow separation.

**Correct Answer is.** move transition point forwards.

**Explanation.** NIL.

**Question Number. 59.** Leading edge flaps.

**Option A.** decrease stalling angle of the wing.

**Option B.** do not change the stalling angle.

**Option C.** increase stalling angle of the wing.

**Correct Answer is.** increase stalling angle of the wing.

**Explanation.** NIL.

**Question Number. 60.** Krueger flaps are on.

**Option A.** the leading edge.

**Option B.** the trailing edge.

**Option C.** either the leading or training edge.

**Correct Answer is.** the leading edge.

**Explanation.** NIL.

**Question Number. 61.** Sweepback will.

**Option A.** increase lateral stability.

**Option B.** not affect lateral stability.

**Option C.** decrease lateral stability.

**Correct Answer is.** increase lateral stability.

**Explanation.** NIL.

**Question Number. 62.** A plain flap.

**Option A.** is attached to the leading edge of the wing.

**Option B.** forms part of lower trailing edge.

**Option C.** does not increase the wing area on deployment.

**Correct Answer is.** does not increase the wing area on deployment.

**Explanation.** NIL.

**Question Number.** 63. A split flap, when deployed.

**Option A.** increases drag with little lift coefficient increase, from intermediate to fully down.

**Option B.** is used only on high speed aircraft.

**Option C.** increases lift without a corresponding increase in drag.

**Correct Answer is.** increases drag with little lift coefficient increase, from intermediate to fully down.

**Explanation.** NIL.

11.02.1. Airframe Structures - General Concepts.

**Question Number.** 1. Zone 320 under the ATA system is.

**Option A.** central fuselage.

**Option B.** vertical stabilizer.

**Option C.** horizontal stabilizer.

**Correct Answer is.** vertical stabilizer.

**Explanation.** Maintenance and Repair Kores/Watkins/Delp Page 22.

**Question Number.** 2. When doing a bonding check the maximum resistance between component and earth is.

**Option A.** 0.005ohms.

**Option B.** 1/50 ohms.

**Option C.** 50 milliohms.

**Correct Answer is.** 50 milliohms.

**Explanation.** CAIPs EEL/1-6 3.8.

**Question Number.** 3. How is damage to the nose cone of an aircraft prevented during a lightning strike?

**Option A.** Earthling Strap.

**Option B.** Bonding Strip.

**Option C.** Bonding Strip.

**Correct Answer is.** Bonding Strip.

**Explanation.** Aircraft Electricity and Avionics (5th Edition) Eismin Page 343.

**Question Number.** 4. Tension is the stress of.

**Option A.** crush or compression.

**Option B.** elongating or stretch.

**Option C.** twisting.

**Correct Answer is.** elongating or stretch.

**Explanation.** Tension is the stress of elongation or stretch.

**Question Number.** 5. A Fuselage Station is a.

**Option A.** lateral point on aircraft wing.

**Option B.** lateral point on aircraft fuse.

**Option C.** longitudinal point on the aircraft fuselage.

**Correct Answer is.** longitudinal point on the aircraft fuselage.

**Explanation.** Fuselage Stations are longitudinal measurements on the fuselage.

**Question Number.** 6. Composite materials are bonded by.

**Option A.** aluminum wire.

**Option B.** special paint.

**Option C.** copper wire.

**Correct Answer is.** special paint.

**Explanation.** CAAIPs Leaflet 9-1 3.4.4.

**Question Number.** 7. ATA Zone 100 is.

**Option A.** upper fuselage.

**Option B.** lower fuselage.

**Option C.** Wing.

**Correct Answer is.** lower fuselage.

**Explanation.** ATA Zone 100 is lower fuselage (below floor).

**Question Number.** 8. The bonding lead to a remote aircraft component must be.

**Option A.** 0.5 in wide.

**Option B.** 22 AWG.

**Option C.** 0.25 in wide and 22 AWG.

**Correct Answer is.** 0.5 in wide.

**Explanation.** CAAIPs Leaflet 9-1 Para. 3.3.1 (a).

**Question Number.** 9. at force is an I-Beam subjected to?

**Option A.** Tension.

**Option B.** Bending.

**Option C.** Shear.

**Correct Answer is.** Bending.

**Explanation.** An I beam is subject to Bending, although different parts of it are subject to tension (upper boom) and shear (the web).

**Question Number.** 10. A Radom is protected from static electricity build-up by.

**Option A.** bonding strips.

**Option B.** special conductive grease.

**Option C.** conductive paint.

**Correct Answer is.** conductive paint.

**Explanation.** CAIPs RL/2-5 Para 3.5.

**Question Number.** 11. Precise points are located on an aircraft by a system of.

**Option A.** frame stations, vertical lines and lateral lines.

**Option B.** longitudinal, vertical and lateral lines.

**Option C.** frame stations, water lines and buttock lines.

**Correct Answer is.** frame stations, water lines and buttock lines.

**Explanation.** CAIPs AL/7-2 para 6.

**Question Number.** 12. Which of the following is an example of a failsafe structure?

**Option A.** Spar.

**Option B.** Longer on.

**Option C.** Stringer.

**Correct Answer is.** Stringer.

**Explanation.** Answer chosen due to a stringer's duplicity.

**Question Number.** 13. Damage tolerant design.

**Option A.** is applied only to secondary structure.

**Option B.** allows for certain damage to the structure to go un-repaired between scheduled maintenance.

**Option C.** allows for damage to structure by distributing loads to other structure.

**Correct Answer is.** allows for certain damage to the structure to go un-repaired between scheduled maintenance.

**Explanation.** NIL.

**Question Number.** 14. In the ATA 100 zonal system the passenger entry door will have a designation of.

**Option A.** 800.

**Option B.** 600.

**Option C.** 400.

**Correct Answer is.** 800.

**Explanation.** Checkout most modern aircraft Maintenance Manuals for zonal locations.

**Question Number.** 15. Which area of the aircraft is subject to hoop stress?

**Option A.** Control surfaces.

**Option B.** Pressure cabin.

**Option C.** Wings.

**Correct Answer is.** Pressure cabin.

**Explanation.** CAIPs AL/7-2 2.7.

**Question Number.** 16. Shear stress is described as.

**Option A.** pulling forces.

**Option B.** compressing forces.

**Option C.** slip away under the action of forces.

**Correct Answer is.** slip away under the action of forces.

**Explanation.** The keyword is 'slip', but it is a terrible definition of shear stress.

**Question Number.** 17. The ground cable must be.

**Option A.** single strand copper wire 0.5 in. cross sectional area.

**Option B.** copper stranded 0.5 in. cross sectional area.

**Option C.** single strand 18 AWG.

**Correct Answer is.** single strand copper wire 0.5 in. cross sectional area.

**Explanation.** CAIPs EEL/1-6 3.3.1 a (i).

**Question Number.** 18. Where on the aircraft is FS245, RWS45?

**Option A.** 245 inches from the nose of the aircraft and 45 inches from the tip of the right wing.

**Option B.** 245 inches from the datum line of the aircraft and 45 inches from the centerline of the right wing.

**Option C.** 245 inches from the nose of the aircraft and 45 inches from the center line of the right wing.

**Correct Answer is.** 245 inches from the datum line of the aircraft and 45 inches from the centerline of the right wing.

**Explanation.** CAIPs AL/7-2 fig 15.

**Question Number.** 19. How is the radome protected from lightning strike?

**Option A.** Special grease on the hinges.

**Option B.** Diverter strips.

**Option C.** Special paint.

**Correct Answer is.** Diverter strips.

**Explanation.** CAIPs RL/2-5 3.4.2.

**Question Number.** 20. If you short the two prongs with the single prong of a bonding tester together, what would the gauge read?

**Option A.** Full scale deflection.

**Option B.** Center scale.

**Option C.** Zero.

**Correct Answer is.** Zero.

**Explanation.** CAIPs EEL/1-6 3.10.2 B.

**Question Number.** 21. A condition after which a permanent deformation of a material is caused, is known as.

**Option A.** strain.

**Option B.** shear.

**Option C.** shear.

**Correct Answer is.** strain.

**Explanation.** Strain is 'best' of the answers. Strain is 'deformation' but does not necessarily cause a permanent deformation.

**Question Number.** 22. Semi-monocoque construction.

**Option A.** utilizes the safe-life design concept.

**Option B.** is used only for the fuselage.

**Option C.** offers good damage resistance.

**Correct Answer is.** offers good damage resistance.

**Explanation.** Jeppesen A & P Technician Airframe textbook page 1-3.

**Question Number.** 23. Most radio aerials are.

**Option A.** not bonded.

**Option B.** bonded.

**Option C.** insulated from the fuselage.

**Correct Answer is.** bonded.

**Explanation.** Jeppesen A&P Technician Airframe Textbook 12-56.

**Question Number.** 24. Secondary bonding is usually provided with.

**Option A.** stranded copper 0.25 inch.

**Option B.** single strand 0.25 inch.

**Option C.** 18 AWG.

**Correct Answer is.** 18 AWG.

**Explanation.** CAAIPs Leaflet 9-1 3.3.1 (a) (ii).

**Question Number.** 25. Water Lines (WLs) are measured points on a.

**Option A.** vertical line.

**Option B.** wing line.

**Option C.** horizontal line.

**Correct Answer is.** vertical line.

**Explanation.** AL/7.2 Page 6.2 Fig 15.

**Question Number.** 26. The various parts of the aircraft airframe are maintained at the same potential by.

**Option A.** bonding.

**Option B.** ear thing.

**Option C.** static wicks.

**Correct Answer is.** bonding.

**Explanation.** NIL.

**Question Number.** 27. The cross sectional area of a secondary conductor must be not less than.

**Option A.** 18 SWG for a single wire.

**Option B.** 22 SWG x 0.25.

**Option C.** 22 SWG x 0.5.

**Correct Answer is.** 18 SWG for a single wire.

**Explanation.** CAAIPs Leaflet 9-1 3.3.1 (ii).

**Question Number.** 28. What governs the ultimate fatigue life of an aircraft?

**Option A.** Pressure Cycles.

**Option B.** Flying Hours.

**Option C.** Landings.

**Correct Answer is.** Flying Hours.

**Explanation.** NIL.

**Question Number.** 29. The main forces on an aircraft structure are.

**Option A.** tension, compression, torsion and shear.

**Option B.** tension, compression, torsion and strain.

**Option C.** tension, compression, twisting and shear.

**Correct Answer is.** tension, compression, torsion and shear.

**Explanation.** NIL.

**Question Number.** 30. The life of the structure is counted by.

**Option A.** landings.

**Option B.** pressurization cycle.

**Option C.** flying hours.

**Correct Answer is.** pressurization cycle.

**Explanation.** NIL.

**Question Number.** 31. What are buttock lines?

**Option A.** Measurements from the center line.

**Option B.** Horizontal measurement lines.

**Option C.** Vertical measurement lines.

**Correct Answer is.** Measurements from the center line.

**Explanation.** CAIPs AL/7.2 Page 17 Para 6.2.

**Question Number.** 32. Aircraft fiberglass panels are protected against lightning strikes, partially by.

**Option A.** non-conductive paint.

**Option B.** bonding.

**Option C.** conductive paint.

**Correct Answer is.** conductive paint.

**Explanation.** NIL.

**Question Number.** 33. A member taking a compression load is called a.

**Option A.** beam.

**Option B.** cable.

**Option C.** strut.

**Correct Answer is.** strut.

**Explanation.** NIL.

**Question Number.** 34. Stringers are used in which of the following types of aircraft fuselage construction?

**Option A.** Semi-monocoque.

**Option B.** Truss type.

**Option C.** Monocoque.

**Correct Answer is.** Semi-monocoque.

**Explanation.** NIL.

**Question Number.** 35. Wing stations are measured.

**Option A.** outboard from the wing root.

**Option B.** outboard from the fuselage center line.

**Option C.** inboard from the wing upper surface.

**Correct Answer is.** outboard from the fuselage center line.

**Explanation.** NIL.

**Question Number.** 36. What load is a tie rod designed to accept?

**Option A.** Bending.

**Option B.** Tensile.

**Option C.** Torsion.

**Correct Answer is.** Tensile.

**Explanation.** NIL.

**Question Number.** 37. If a color is used to identify primary structure, it will be.

**Option A.** red.

**Option B.** green.

**Option C.** yellow.

**Correct Answer is.** red.

**Explanation.** NIL.

**Question Number.** 38. Which of the following is primary structure?

**Option A.** Frame.

**Option B.** Skin.

**Option C.** Stringer.

**Correct Answer is.** Skin.

**Explanation.** NIL.

**Question Number.** 39. Fuselage station numbers are measured from the front of the aircraft in.

**Option A.** feet.

**Option B.** inches.

**Option C.** feet and inches.

**Correct Answer is.** inches.

**Explanation.** NIL.

**Question Number.** 40. Which parts of the aircraft are classified secondary structures?

**Option A.** These parts of the airframe are highly stressed but if damaged will not cause failure of the aircraft.

**Option B.** These parts of the airframe are highly stressed and if damaged may cause failure of the aircraft and loss of life.

**Option C.** These are lightly stressed parts such as fairings, wheel shields and minor component brackets etc.

**Correct Answer is.** These parts of the airframe are highly stressed but if damaged will not cause failure of the aircraft.

**Explanation.** NIL.

**Question Number.** 41. Structure with built in redundancy is called.

**Option A.** double safe.

**Option B.** failsafe.

**Option C.** safe life.

**Correct Answer is.** failsafe.

**Explanation.** NIL.

**Question Number.** 42. Stress.

**Option A.** is the property of a material to resist fracture.

**Option B.** is the load per unit area acting on a material.

**Option C.** is the deformation of a material caused by applied load.

**Correct Answer is.** is the load per unit area acting on a material.

**Explanation.** AL/7-2 2.2.

**Question Number.** 43. A piece of structure which must be replaced at a specified number of cycles, flying hours or years, regardless of its physical condition is what type of item?

**Option A.** Safe-life.

**Option B.** Fail-safe.

**Option C.** Condition monitored.

**Correct Answer is.** Safe-life.

**Explanation.** NIL.

**Question Number.** 44. If you are unable to identify a structure classification as either Primary or Secondary, what action should you adopt?

**Option A.** Upgrade it to primary.

**Option B.** Grade it as secondary.

**Option C.** Paint it red and stamp it as tertiary.

**Correct Answer is.** Upgrade it to primary.

**Explanation.** NIL.

**Question Number.** 45. Safe-life is.

**Option A.** the sharing of loads between adjacent members.

**Option B.** the minimum number of flying hours that should elapse before a major structural failure occurs.

**Option C.** the maximum number of flying hours that should elapse before a major structural failure occurs.

**Correct Answer is.** the maximum number of flying hours that should elapse before a major structural failure occurs.

**Explanation.** NIL.

**Question Number.** 46. Bending stresses are a combination of.

**Option A.** torsional and compression stresses.

**Option B.** tension and shear stresses.

**Option C.** tension and compression stresses.

**Correct Answer is.** tension and compression stresses.

**Explanation.** NIL.

**Question Number.** 47. The Airworthiness Notice that refers to structural surveys is.

**Option A.** Notice 65.

**Option B.** Notice 79.

**Option C.** Notice 89.

**Correct Answer is.** Notice 89.

**Explanation.** These AWNs are now transferred to CAP747.

**Question Number.** 48. Structural survey inspections are normally called up by the.

**Option A.** operator.

**Option B.** maintenance engineer.

**Option C.** manufacturer.

**Correct Answer is.** manufacturer.

**Explanation.** AWN 89.

**Question Number.** 49. Where are wing stations measured from?

**Option A.** Water Line (WL).

**Option B.** Zone Line (ZL).

**Option C.** Butt Line (BL).

**Correct Answer is.** Butt Line (BL).

**Explanation.** Obscure question, but the fuselage center line is 'technically' a buttock line of sorts.

**Question Number.** 50. Where is Zone 323?

**Option A.** Between rear spar and trailing edge.

**Option B.** Between front and rear spar.

**Option C.** Tip of vertical stabilizer.

**Correct Answer is.** Tip of vertical stabilizer.

**Explanation.** See zonal locations in any Maintenance Manual.

**Question Number.** 51. To prevent a system being affected by high current flows after a lightning strike to a composite aircraft, electricity is discharged through.

**Option A.** a sprayed coat of conductive paint.

**Option B.** a sprayed coat of non-conductive paint.

**Option C.** electrically connected primary conductors.

**Correct Answer is.**

electrically connected primary conductors.

**Explanation.** NIL.

**Question Number.** 52. A structural member intended to resist compression is a.

**Option A.** web.

**Option B.** tie.

**Option C.** strut.

**Correct Answer is.** strut.

**Explanation.** NIL.

**Question Number.** 53. An aircraft structure, having multiple load paths, is known as a.

**Option A.** monocoque design.

**Option B.** fail-safe design.

**Option C.** safe-life design.

**Correct Answer is.** fail-safe design.

**Explanation.** NIL.

**Question Number.** 54. Wrinkling of the skin on the upper surface of the fuselage indicates.

**Option A.** hogging.

**Option B.** shedding.

**Option C.** sagging.

**Correct Answer is.** sagging.

**Explanation.** NIL.

**Question Number.** 55. If a redundant structure fails it becomes.

**Option A.** safe-life.

**Option B.** fatigued.

**Option C.** failsafe.

**Correct Answer is.** failsafe.

**Explanation.** NIL.

**Question Number.** 56. A redundant structure is.

**Option A.** on-condition structure.

**Option B.** a safe-life structure.

**Option C.** a failsafe structure.

**Correct Answer is.** a failsafe structure.

**Explanation.** NIL.

**Question Number. 57.** The measurement of the fuselage perpendicular to horizontal plane measured in inches from bottom of the fuselage is.

**Option A.** butt line.

**Option B.** water line.

**Option C.** fuselage station.

**Correct Answer is.** water line.

**Explanation.** NIL.

**Question Number. 58.** What are the four stresses to be considered when building an aircraft?

**Option A.** Compression, Tension, Torsion, Stress.

**Option B.** Compression, Torsion, Stress, Strain.

**Option C.** Compression, Torsion, Tension, Shear.

**Correct Answer is.** Compression, Torsion, Tension, Shear.

**Explanation.** NIL.

**Question Number. 59.** A structure that has a high designed reserve strength would be classified as.

**Option A.** secondary.

**Option B.** tertiary.

**Option C.** primary.

**Correct Answer is.** primary.

**Explanation.** NIL.

**Question Number. 60.** An example of primary stress is.

**Option A.** tension.

**Option B.** bending.

**Option C.** shear.

**Correct Answer is.** tension.

**Explanation.** NIL.

**Question Number. 61.** What is the water line?

**Option A.** The zero datum from which all lateral locations are measured.

**Option B.** The datum from which vertical locations refer.

**Option C.** A line below which redux bonding cannot be used.

**Correct Answer is.** The datum from which vertical locations refer.

**Explanation.** NIL.

**Question Number.** 62. Lateral stations have station zero at the.

**Option A.** Nose.

**Option B.** left wing tip.

**Option C.** center line.

**Correct Answer is.** Center line.

**Explanation.** NIL.

**Question Number.** 63. Airworthiness requirements for large aircraft are found in.

**Option A.** JAR 25.

**Option B.** ANO 25.

**Option C.** CS 25.

**Correct Answer is.** CS 25.

**Explanation.** JAR 25 is replaced by EASA Certification Specification CS 25.

**Question Number.** 64. An Anthropomorphic Test Dummy (ATD) is strapped into a large aircraft forward facing seat. It is put through a series of crash tests. This is to.

**Option A.** to measure the amount of force applied to the abdomen of the ATD to ensure it is not above 236 kg.

**Option B.** test the aircraft structure and seating mount points for structural integrity.

**Option C.** to determine whether or not the ATD's head comes into contact with any structure or seat, and if so to measure the force applied to the head in line with a specific Head Injury Criterion (HIC).

**Correct Answer is.** to determine whether or not the ATD's head comes into contact with any structure or seat, and if so to.

**Explanation.** JAR 25.562 (b) para 5.

11.02.2. Airframe Structures - General Concepts.

**Question Number.** 1. What kind of seal is used on firewall bulkheads?

**Option A.** None is required.

**Option B.** Fire-proof grommets.

**Option C.** Soft rubber.

**Correct Answer is.** Fire-proof grommets.

**Explanation.** NIL.

**Question Number.** 2. The two stages in a good adhesive bond are.

**Option A.** wetting and gripping.

**Option B.** wetting and Setting.

**Option C.** spreading and setting.

**Correct Answer is.** wetting and Setting.

**Explanation.** A module 7 questions. The two processes in adhesive bonding is 'wetting and setting'.

**Question Number.** 3. Prior to aluminum alloy bonding, we use.

**Option A.** acid etch.

**Option B.** alkaline etch.

**Option C.** solvent etch.

**Correct Answer is.** acid etch.

**Explanation.** Phosphoric acid and chromic acid wash.

**Question Number.** 4. The purpose of a primer is to.

**Option A.** provide flexible surface for the top coat.

**Option B.** help bonding of the topcoat.

**Option C.** provide shiny surface for the topcoat.

**Correct Answer is.** help bonding of the topcoat.

**Explanation.** CAIPs BL/6-20 PAra.2.1.

**Question Number.** 5. In semi-monocoque construction, compression loads are taken by.

**Option A.** stringers.

**Option B.** bulkheads.

**Option C.** frames.

**Correct Answer is.** stringers.

**Explanation.** CAIP AL/7-2 para 2.6 (last sentence).

**Question Number.** 6. Most large transport aircraft skins are.

**Option A.** 7075.

**Option B.** 5056.

**Option C.** 2024.

**Correct Answer is.** 2024.

**Explanation.** Jeppesen A&P Technician Airframe Textbook 2-8.

**Question Number.** 7. Which of the following statements is correct, in relation to PLI washers used in critical bolted joints?

**Option A.** PLI washers can only be used with self-locking nuts and the washers should be used once.

**Option B.** PLI washers can be affected by thread or nut friction or by lubrication.

**Option C.** PLI washers can be used more than once, providing they are used in critical bolted joints.

**Correct Answer is.** PLI washers can only be used with self-locking nuts and the washers should be used once.

**Explanation.** CAIPs AL/7-8 Para 4.5.4.

**Question Number.** 8. What opposes buckling in a semi-monocoque structure?

**Option A.** Bulkheads.

**Option B.** Frames.

**Option C.** Stringers.

**Correct Answer is.** Stringers.

**Explanation.** CAIPs AL/7.2 para 3.3.

**Question Number.** 9. In a monocoque structure, which component carries the majority of the loads?

**Option A.** Lingering.

**Option B.** Stringers.

**Option C.** Skin.

**Correct Answer is.** Skin.

**Explanation.** A&P Mechanic Handbook Page 25-28.

**Question Number.** 10. Which anti-corrosive treatment is found on alloy steels?

**Option A.** Nickel plating.

**Option B.** Zinc plating.

**Option C.** Cadmium plating.

**Correct Answer is.** Cadmium plating.

**Explanation.** CAIPs BL/7-2.

**Question Number.** 11. What material can be chromated as a protection against corrosion?

**Option A.** Aluminum alloys.

**Option B.** Ferrous alloys.

**Option C.** Magnesium alloys.

**Correct Answer is.** Magnesium alloys.

**Explanation.** CAIPs BL/7-3.

**Question Number.** 12. When carrying out a symmetry check on a large aircraft, what method of measurement is normally used?

**Option A.** Lateral alignment method.

**Option B.** Longitudinal alignment method.

**Option C.** Steel tape and spring balance.

**Correct Answer is.** Steel tape and spring balance.

**Explanation.** CAIPs AL/7-12 3.3.5 i.

**Question Number.** 13. Paint remover substances.

**Option A.** are not damaging to any aircraft parts.

**Option B.** are damaging to some aircraft parts.

**Option C.** should only be used once.

**Correct Answer is.** are damaging to some aircraft parts.

**Explanation.** CAIPs BL/6-20 11.1.

**Question Number.** 14. To remove a rivet.

**Option A.** chisel off the rivet head, and remove the shank with a metal punch.

**Option B.** drill the head with a drill bit the same size as the rivet shank, chisel off the rivet head, and remove the shank with a metal punch.

**Option C.** drill the head with a drill bit slightly smaller than the rivet shank, chisel off the rivet head, and remove the shank with a metal punch.

**Correct Answer is.** drill the head with a drill bit the same size as the rivet shank, chisel off the rivet head, and remove the.

**Explanation.** CAIPs Leaflet 6-4 3.7.1 says 'drill equal in diameter than that of the rivet', but CAIPs BL/6-29 para 10.1 says 'slightly smaller'. We chose the former, because it is current.

**Question Number.** 15. Battery trays are.

**Option A.** absorbent to soak up electrolyte.

**Option B.** metal for earthing purposes.

**Option C.** metal with PVC coating and anti-corrosive paint.

**Correct Answer is.** metal with PVC coating and anti-corrosive paint.

**Explanation.** Aircraft Electrical Systems. Pallet Page 24.

**Question Number.** 16. The primary purpose of sealant in use in pressurized aircraft is.

- Option A.** to seal the cabin.  
**Option B.** to prevent corrosion.  
**Option C.** to provide external streamlining.

**Correct Answer is.** to seal the cabin.

**Explanation.** CAIP AL/7-2 para. 3.7.

[http://www.tpub.com/content/aviation/14022/css/14022\\_156.htm](http://www.tpub.com/content/aviation/14022/css/14022_156.htm)

**Question Number.** 17. When installing a 'Hi-lock' bolt, it is necessary to.

- Option A.** lubricate the collar.  
**Option B.** lubricate the shank and threads.  
**Option C.** simply fit the bolt as they are prelubricated.

**Correct Answer is.** simply fit the bolt as they are prelubricated.

**Explanation.** NIL. <http://www.hi-shear.com/fasteners>

**Question Number.** 18. Sealant or levelling compound is installed during structure repair.

- Option A.** according to separate manufacturer's documentations such as BAC.  
**Option B.** according to SB instructions.  
**Option C.** according to AMM and SRM chapter 51.

**Correct Answer is.** according to AMM and SRM chapter 51.

**Explanation.** Chapter 51 is General Practices.

**Question Number.** 19. A bonded waffle doubler, as well as acting as a skin strengthener, also acts as a.

- Option A.** tear stopper.  
**Option B.** jury strut.  
**Option C.** shear tie.

**Correct Answer is.** tear stopper.

**Explanation.** CAIPs AL/7-2 (crack stopper band fig.4).

**Question Number.** 20. What are the faying surfaces of a repair?

- Option A.** Middle of repair.  
**Option B.** Material under repair.  
**Option C.** Edges of repair metal.

**Correct Answer is.** Material under repair.

**Explanation.** Open to interpretation. We have gone for 'material under repair' as the surfaces joined together.

**Question Number. 21.** Why is a joggle joint used?

**Option A.** Smooth contour of surface.

**Option B.** Added strength.

**Option C.** So countersunk rivets do not need to be used.

**Correct Answer is.** Smooth contour of surface.

**Explanation.** NIL.

**Question Number. 22.** Dissimilar metal fusion bonding is best for.

**Option A.** low strength high toughness.

**Option B.** high strength high ductility.

**Option C.** high strength high toughness.

**Correct Answer is.** high strength high ductility.

**Explanation.** NIL.

<http://www.user.lasercom.net/normajean/normajean/newpage1.htm>

**Question Number. 23.** The ideal conditions for paint spraying an aircraft are.

**Option A.** 15°C to 25°C and humidity below 75%.

**Option B.** 20°C to 30°C and humidity below 70%.

**Option C.** 15°C to 25°C and humidity above 60%.

**Correct Answer is.** 15°C to 25°C and humidity below 75%.

**Explanation.** BL/6-20 5.

**Question Number. 24.** What are the types of true bonded joints?

**Option A.** Cemented and specific.

**Option B.** Mechanical and specific.

**Option C.** Mechanical and cemented.

**Correct Answer is.** Mechanical and specific.

**Explanation.** Nil.

**Question Number. 25.** Why is a joggle joint used?

**Option A.** To provide a flush fit.

**Option B.** To provide a smooth contour to surface.

**Option C.** To add strength.

**Correct Answer is.** To provide a flush fit.

**Explanation.** Arguably c also, but the joggle does not provide the 'contour'.

**Question Number. 26.** When both sides of a structural repair are not easily reached, which type of fastener would you use?

**Option A.** Blind rivet.

**Option B.** Hi lock bolt.

**Option C.** Pop rivet.

**Correct Answer is.** Blind rivet.

**Explanation.** Pop rivet is not a blind fastener because the broken stem must be retrieved.

**Question Number.** 27. With regard to extraneous spilt fluids.

**Option A.** they may be harmful to the aircraft structure.

**Option B.** they can be ignored, they provide extra protection.

**Option C.** they should only be cleaned up if they are on the external surface of the aircraft.

**Correct Answer is.** they may be harmful to the aircraft structure.

**Explanation.** NIL.

**Question Number.** 28. Skin panels may be strengthened by.

**Option A.** stringers.

**Option B.** struts.

**Option C.** cleats.

**Correct Answer is.** stringers.

**Explanation.** NIL.

**Question Number.** 29. What is the normal form of construction of a spar?

**Option A.** One boom mounted under a web.

**Option B.** Two webs separated by a boom.

**Option C.** Two booms separated by a web.

**Correct Answer is.** Two booms separated by a web.

**Explanation.** NIL.

**Question Number.** 30. A crack stopper is fitted.

**Option A.** after a crack starts, to slow its rate of propagation.

**Option B.** before a crack starts, to prevent its initiation.

**Option C.** before a crack starts, to slow its rate of propagation.

**Correct Answer is.** before a crack starts, to slow its rate of propagation.

**Explanation.** NIL.

**Question Number.** 31. Which of the following should be accomplished before jacking an aircraft?

**Option A.** Install critical stress panels or plates.

**Option B.** Remove all optional equipment.

**Option C.** Determine the fuel tanks are empty.

**Correct Answer is.** Install critical stress panels or plates.

**Explanation.** NIL.

**Question Number.** 32. Synthetic resins are made from nylon, vinyl and.

**Option A.** asphalt.

**Option B.** cellulose.

**Option C.** acrylics.

**Correct Answer is.** acrylics.

**Explanation.** NIL.

**Question Number.** 33. One of the advantages of the semi-monocoque construction is that it.

**Option A.** is easier to manufacture.

**Option B.** shares the loads.

**Option C.** takes all the loads in the skin.

**Correct Answer is.** shares the loads.

**Explanation.** NIL.

**Question Number.** 34. The In a fully monocoque fuselage, all the loads are carried by.

**Option A.** frames.

**Option B.** skin.

**Option C.** longerons.

**Correct Answer is.** skin.

**Explanation.** NIL.

**Question Number.** 35. Intercostal are.

**Option A.** vertical struts joining the upper and lower wings of a biplane.

**Option B.** longitudinal fuselage members attached at each end to adjacent frames.

**Option C.** compression ribs in cantilever wings.

**Correct Answer is.** longitudinal fuselage members attached at each end to adjacent frames.

**Explanation.** NIL.

**Question Number.** 36. Joints that are designed to stop the propagation of cracks are known as.

**Option A.** crack limiting joints.

**Option B.** secondary joints.

**Option C.** failsafe joints.

**Correct Answer is.** failsafe joints.

**Explanation.** NIL.

**Question Number.** 37. If an aircraft has alkaline batteries, the battery compartment drain pipes will be.

**Option A.** aluminum alloy.

**Option B.** stainless steel.

**Option C.** plastic.

**Correct Answer is.** stainless steel.

**Explanation.** NIL.

**Question Number.** 38. An overweight landing is one in which the aircraft has.

**Option A.** a missed placed center of gravity on landing.

**Option B.** too much kinetic energy on landing.

**Option C.** an excessive fuel load on take-off.

**Correct Answer is.** too much kinetic energy on landing.

**Explanation.** NIL.

**Question Number.** 39. Symmetry checks should be carried out.

**Option A.** in the hangar with the aircraft on its wheels.

**Option B.** on the ramp with the aircraft on its wheels.

**Option C.** in the hangar with the aircraft on jacks.

**Correct Answer is.** in the hangar with the aircraft on jacks.

**Explanation.** CAAIPs Leaflet 6-5 para 2.

**Question Number.** 40. The purpose of a wash primer and primer is to.

**Option A.** help bonding for top-coat.

**Option B.** provide more aerodynamic finish for top-coat.

**Option C.** provide a flexible surface for top-coat.

**Correct Answer is.** help bonding for top-coat.

**Explanation.** Jeppesen A&P Airframe Textbook. page 6-8.

**Question Number.** 41. Dents are generally not permitted in a tubular member.

**Option A.** if the major axis of the dent is parallel to the tube axis irrespective of the location.

**Option B.** if they are located in the middle third of the length of the member.

**Option C.** if they are located in the end thirds of the length of the member.

**Correct Answer is.** if they are located in the end thirds of the length of the member.

**Explanation.** NIL.

**Question Number.** 42. When an item is cocooned, the visual indicator will indicate.

**Option A.** humidity.

**Option B.** toxic gases.

**Option C.** temperature.

**Correct Answer is.** humidity.

**Explanation.** NIL.

**Question Number.** 43. The maximum permissible bow in a steel tube is.

**Option A.** 1 in 400.

**Option B.** 1 in 600.

**Option C.** 1 in 200.

**Correct Answer is.** 1 in 600.

**Explanation.** CAAIPs Leaflet 6-4 p13.

**Question Number.** 44. Buckling in a semi-monocoque structure is prevented by.

**Option A.** longerons.

**Option B.** bulkheads.

**Option C.** stringers.

**Correct Answer is.** stringers.

**Explanation.** NIL.

**Question Number.** 45. Which loads do longerons resist?

**Option A.** Bending, compression and tensile.

**Option B.** Torsional only.

**Option C.** Bending, compression, tensile and torsion.

**Correct Answer is.** Bending, compression and tensile.

**Explanation.** NIL.

11.03.1. Airframe Structures - Aero planes - Fuselage (ATA 52/53/56).

**Question Number.** 1. What kind of seal is used on firewall bulkheads?

**Option A.** Soft rubber.

**Option B.** Fire-proof grommets.

**Option C.** None is required.

**Correct Answer is.** Fire-proof grommets.

**Explanation.** NIL.

**Question Number.** 2. The two stages in a good adhesive bond are.

**Option A.** wetting and Setting.

**Option B.** wetting and gripping.

**Option C.** spreading and setting.

**Correct Answer is.** wetting and Setting.

**Explanation.** A module 7 questions. The two processes in adhesive bonding is 'wetting and setting'.

**Question Number.** 3. Prior to aluminum alloy bonding, we use.

**Option A.** acid etch.

**Option B.** alkaline etch.

**Option C.** solvent etch.

**Correct Answer is.** acid etch.

**Explanation.** Phosphoric acid and chromic acid wash.

**Question Number.** 4. The purpose of a primer is to.

**Option A.** provide shiny surface for the topcoat.

**Option B.** provide flexible surface for the top coat.

**Option C.** help bonding of the topcoat.

**Correct Answer is.** help bonding of the topcoat.

**Explanation.** CAIPs BL/6-20 PAra.2.1.

**Question Number.** 5. In semi-monocoque construction, compression loads are taken by.

**Option A.** stringers.

**Option B.** bulkheads.

**Option C.** frames.

**Correct Answer is.** stringers.

**Explanation.** CAIP AL/7-2 para 2.6 (last sentence).

**Question Number.** 6. Most large transport aircraft skins are.

**Option A.** 2024.

**Option B.** 7075.

**Option C.** 5056.

**Correct Answer is.** 2024.

**Explanation.** Jeppesen A&P Technician Airframe Textbook 2-8.

**Question Number.** 7. Which of the following statements is correct, in relation to PLI washers used in critical bolted joints?

**Option A.** PLI washers can be affected by thread or nut friction or by lubrication.

**Option B.** PLI washers can only be used with self-locking nuts and the washers should be used once.

**Option C.** PLI washers can be used more than once, providing they are used in critical bolted joints.

**Correct Answer is.** PLI washers can only be used with self-locking nuts and the washers should be used once.

**Explanation.** CAIPs AL/7-8 Para 4.5.4.

**Question Number.** 8. What opposes buckling in a semi-monocoque structure?

**Option A.** Stringers.

**Option B.** Bulkheads.

**Option C.** Frames.

**Correct Answer is.** Stringers.

**Explanation.** CAIPs AL/7.2 para 3.3.

**Question Number.** 9. In a monocoque structure, which component carries the majority of the loads?

**Option A.** Lining.

**Option B.** Stringers.

**Option C.** Skin.

**Correct Answer is.** Skin.

**Explanation.** A&P Mechanic Handbook Page 25-28.

**Question Number.** 10. Which anti-corrosive treatment is found on alloy steels?

**Option A.** Zinc plating.

**Option B.** Cadmium plating.

**Option C.** Nickel plating.

**Correct Answer is.** Cadmium plating.

**Explanation.** CAIPs BL/7-2.

**Question Number.** 11. What material can be chromated as a protection against corrosion?

**Option A.** Aluminum alloys.

**Option B.** Magnesium alloys.

**Option C.** Ferrous alloys.

**Correct Answer is.** Magnesium alloys.

**Explanation.** CAIPs BL/7-3.

**Question Number.** 12. When carrying out a symmetry check on a large aircraft, what method of measurement is normally used?

**Option A.** Lateral alignment method.

**Option B.** Longitudinal alignment method.

**Option C.** Steel tape and spring balance.

**Correct Answer is.** Steel tape and spring balance.

**Explanation.** CAIPs AL/7-12 3.3.5 i.

**Question Number.** 13. Paint remover substances.

**Option A.** are damaging to some aircraft parts.

**Option B.** should only be used once.

**Option C.** should only be used once.

**Correct Answer is.** are damaging to some aircraft parts.

**Explanation.** should only be used once.

**Question Number.** 14. To remove a rivet.

**Option A.** drill the head with a drill bit slightly smaller than the rivet shank, chisel off the rivet head, and remove the shank with a metal punch.

**Option B.** chisel off the rivet head, and remove the shank with a metal punch.

**Option C.** drill the head with a drill bit the same size as the rivet shank, chisel off the rivet head, and remove the shank with a metal punch.

**Correct Answer is.** drill the head with a drill bit the same size as the rivet shank, chisel off the rivet head, and remove the shank with a metal punch.

**Explanation.** CAAIPs Leaflet 6-4 3.7.1 says 'drill equal in diameter than that of the rivet', but CAIPs BL/6-29 para 10.1 says 'slightly smaller'. We chose the former, because it is current.

**Question Number.** 15. Battery trays are.

**Option A.** absorbent to soak up electrolyte.

**Option B.** metal for earthing purposes.

**Option C.** metal with PVC coating and anti-corrosive paint.

**Correct Answer is.** metal with PVC coating and anti-corrosive paint.

**Explanation.** Aircraft Electrical Systems. Pallet Page 24.

**Question Number.** 16. The primary purpose of sealant in use in pressurized aircraft is.

**Option A.** to seal the cabin.

**Option B.** to prevent corrosion.

**Option C.** to provide external streamlining.

**Correct Answer is.** to seal the cabin.

**Explanation.** CAIP AL/7-2 para. 3.7 and

[http://www.tpub.com/content/aviation/14022/css/14022\\_156.htm](http://www.tpub.com/content/aviation/14022/css/14022_156.htm).

**Question Number.** 17. When installing a 'Hi-lock' bolt, it is necessary to.

**Option A.** simply fit the bolt as they are prelubricated.

**Option B.** lubricate the collar.

**Option C.** lubricate the shank and threads.

**Correct Answer is.** simply fit the bolt as they are prelubricated.

**Explanation.** NIL. <http://www.hi-shear.com/fasteners>

**Question Number.** 18. Sealant or levelling compound is installed during structure repair:.

**Option A.** according to AMM and SRM chapter 51.

**Option B.** according to SB instructions.

**Option C.** according to separate manufacturer's documentations such as BAC.

**Correct Answer is.** according to AMM and SRM chapter 51.

**Explanation.** Chapter 51 is General Practices.

**Question Number.** 19. A bonded waffle doubler, as well as acting as a skin strengthener, also acts as a.

**Option A.** jury strut.

**Option B.** tear stopper.

**Option C.** shear tie.

**Correct Answer is.** tear stopper.

**Explanation.** CAIPs AL/7-2 (crack stopper band fig.4).

**Question Number.** 20. What are the faying surfaces of a repair?

**Option A.** Middle of repair.

**Option B.** Edges of repair metal.

**Option C.** Material under repair.

**Correct Answer is.** Material under repair.

**Explanation.** Open to interpretation. We have gone for 'material under repair' as the surfaces joined together.

**Question Number.** 21. Why is a joggle joint used?

**Option A.** So countersunk rivets do not need to be used.

**Option B.** Smooth contour of surface.

**Option C.** Added strength.

**Correct Answer is.** Smooth contour of surface.

**Explanation.** NIL.

**Question Number.** 22. Dissimilar metal fusion bonding is best for.

**Option A.** high strength high toughness.

**Option B.** high strength high stiffness.

**Option C.** low strength high toughness.

**Correct Answer is.** high strength high stiffness.

**Explanation.** NIL.

**Question Number.** 23. The ideal conditions for paint spraying an aircraft are.

**Option A.** 20°C to 30°C and humidity below 70%.

**Option B.** 15°C to 25°C and humidity below 75%.

**Option C.** 15°C to 25°C and humidity above 60%.

**Correct Answer is.** 15°C to 25°C and humidity below 75%.

**Explanation.** BL/6-20 5.

**Question Number.** 24. What are the types of true bonded joints?

**Option A.** Mechanical and specific.

**Option B.** Mechanical and cemented.

**Option C.** Mechanical and cemented.

**Correct Answer is.** Mechanical and specific.

**Explanation.** NIL.

**Question Number.** 25. Why is a joggle joint used?

**Option A.** To provide a smooth contour to surface.

**Option B.** To add strength.

**Option C.** To provide a flush fit.

**Correct Answer is.** To provide a flush fit.

**Explanation.** Arguably c also, but the joggle does not provide the 'contour'.

**Question Number.** 26. When both sides of a structural repair are not easily reached, which type of fastener would you use?

**Option A.** Pop rivet.

**Option B.** Hi lock bolt.

**Option C.** Blind rivet.

**Correct Answer is.** Blind rivet.

**Explanation.** Pop rivet is not a blind fastener because the broken stem must be retrieved.

**Question Number.** 27. With regard to extraneous spilt fluids.

**Option A.** they may be harmful to the aircraft structure.

**Option B.** they should only be cleaned up if they are on the external surface of the aircraft.

**Option C.** they can be ignored, they provide extra protection.

**Correct Answer is.** they may be harmful to the aircraft structure.

**Explanation.** NIL.

**Question Number.** 28. Skin panels may be strengthened by.

**Option A.** cleats.

**Option B.** struts.

**Option C.** stringers.

**Correct Answer is.** stringers.

**Explanation.** NIL.

**Question Number.** 29. What is the normal form of construction of a spar?

**Option A.** Two webs separated by a boom.

**Option B.** One boom mounted under a web.

**Option C.** Two booms separated by a web.

**Correct Answer is.** Two booms separated by a web.

**Explanation.** NIL.

**Question Number.** 30. A crack stopper is fitted.

**Option A.** before a crack starts, to prevent its initiation.

**Option B.** before a crack starts, to slow its rate of propagation.

**Option C.** after a crack starts, to slow its rate of propagation.

**Correct Answer is.** before a crack starts, to slow its rate of propagation.

**Explanation.** NIL.

**Question Number.** 31. Which of the following should be accomplished before jacking an aircraft?

**Option A.** Install critical stress panels or plates.

**Option B.** Determine the fuel tanks are empty.

**Option C.** Remove all optional equipment.

**Correct Answer is.** Install critical stress panels or plates.

**Explanation.** NIL.

**Question Number.** 32. Synthetic resins are made from nylon, vinyl and.

**Option A.** asphalt.

**Option B.** cellulose.

**Option C.** acrylics.

**Correct Answer is.** acrylics.

**Explanation.** NIL.

**Question Number.** 33. One of the advantages of the semi-monocoque construction is that it.

**Option A.** is easier to manufacture.

**Option B.** shares the loads.

**Option C.** takes all the loads in the skin.

**Correct Answer is.** shares the loads.

**Explanation.** NIL.

**Question Number.** 34. In a fully monocoque fuselage, all the loads are carried by the.

**Option A.** longerons.

**Option B.** frames.

**Option C.** skin.

**Correct Answer is.** skin.

**Explanation.** NIL.

**Question Number.** 35. Intercostals are.

**Option A.** vertical struts joining the upper and lower wings of a biplane.

**Option B.** compression ribs in cantilever wings.

**Option C.** longitudinal fuselage members attached at each end to adjacent frames.

**Correct Answer is.** longitudinal fuselage members attached at each end to adjacent frames.

**Explanation.** NIL.

**Question Number.** 36. Joints that are designed to stop the propagation of cracks are known as.

**Option A.** failsafe joints.

**Option B.** secondary joints.

**Option C.** crack limiting joints.

**Correct Answer is.** failsafe joints.

**Explanation.** NIL.

**Question Number.** 37. If an aircraft has alkaline batteries, the battery compartment drain pipes will be.

**Option A.** plastic.

**Option B.** aluminum alloy.

**Option C.** stainless steel.

**Correct Answer is.** stainless steel.

**Explanation.** NIL.

**Question Number.** 38. An overweight landing is one in which the aircraft has.

**Option A.** too much kinetic energy on landing.

**Option B.** a missed placed center of gravity on landing.

**Option C.** an excessive fuel load on take-off.

**Correct Answer is.** too much kinetic energy on landing.

**Explanation.** NIL.

**Question Number.** 39. Symmetry checks should be carried out.

**Option A.** in the hangar with the aircraft on its wheels.

**Option B.** on the ramp with the aircraft on its wheels.

**Option C.** in the hanger with the aircraft on jacks.

**Correct Answer is.** in the hanger with the aircraft on jacks.

**Explanation.** NIL.

**Question Number.** 40. The purpose of a wash primer and primer is to.

**Option A.** help bonding for top-coat.

**Option B.** provide a flexible surface for top-coat.

**Option C.** provide more aerodynamic finish for top-coat.

**Correct Answer is.** help bonding for top-coat.

**Explanation.** Jeppesen A&P Airframe Textbook. page 6-8.

**Question Number.** 41. Dents are generally not permitted in a tubular member.

**Option A.** if they are located in the end thirds of the length of the member.

**Option B.** if the major axis of the dent is parallel to the tube axis irrespective of the location.

**Option C.** if they are located in the middle third of the length of the member.

**Correct Answer is.** if they are located in the end thirds of the length of the member.

**Explanation.** NIL.

**Question Number.** 42. When an item is cocooned, the visual indicator will indicate.

**Option A.** humidity.

**Option B.** temperature.

**Option C.** toxic gases.

**Correct Answer is.** humidity.

**Explanation.** NIL.

**Question Number.** 43. The maximum permissible bow in a steel tube is.

**Option A.** 1 in 600.

**Option B.** 1 in 200.

**Option C.** 1 in 400.

**Correct Answer is.** 1 in 600.

**Explanation.** CAAIPs Leaflet 6-4 p13.

**Question Number.** 44. Buckling in a semi-monocoque structure is prevented by.

**Option A.** stringers.

**Option B.** longerons.

**Option C.** bulkheads.

**Correct Answer is.** stringers.

**Explanation.** NIL.

**Question Number.** 45. Which loads do longerons resist?

**Option A.** Torsional only.

**Option B.** Bending, compression, tensile and torsion.

**Option C.** Bending, compression and tensile.

**Correct Answer is.** Bending, compression and tensile.

**Explanation.** NIL.

11.03.2. Airframe Structures - Aero planes - Wings (ATA 57).

**Question Number.** 1. A spar web will take loads in.

**Option A.** bending.

**Option B.** tension.

**Option C.** shear.

**Correct Answer is.** shear.

**Explanation.** The spar as a whole, takes bending and shear. The bending is taken by the booms (as compression-top and tension - bottom) and the web takes the shear. (Sometimes called a 'shear' web).

**Question Number.** 2. Wing bending and shear loads are taken by.

**Option A.** spar cap.

**Option B.** skin.

**Option C.** main spar.

**Correct Answer is.** main spar.

**Explanation.** The main spar takes the wing bending and shear loads.

**Question Number.** 3. An aspect ratio of 8 could mean.

**Option A.** span 64 ft., mean chord 8 ft.

**Option B.** span squared 64 ft., chord 8 ft.

**Option C.** mean chord 64 ft., span 8 ft.

**Correct Answer is.** span 64 ft., mean chord 8 ft.

**Explanation.** Aspect Ratio = span/mean chord.

**Question Number.** 4. A cantilever wing is a.

**Option A.** usual airliner wing.

**Option B.** top wing of a biplane.

**Option C.** swept-back wing.

**Correct Answer is.** usual airliner wing.

**Explanation.** CAIPs AL/7-2 fig 2.

**Question Number.** 5. On a mono-spar wing, what gives the wing its profile contour?

**Option A.** Milled stringers.

**Option B.** The position of the spars.

**Option C.** Ribs.

**Correct Answer is.** Ribs.

**Explanation.** AL/7-2 para 4.2.

**Question Number.** 6. A wing's leading edge would have provisions and linkages for slats and.

**Option A.** leading edge flaps.

**Option B.** trailing edge flaps.

**Option C.** slots.

**Correct Answer is.** leading edge flaps.

**Explanation.** Slots are fixed features - no linkages, or are produced when the slats open.

**Question Number.** 7. The mid-spar is fitted in large aircraft to.

**Option A.** support fitting the engine mount & landing gear mount.

**Option B.** assist the main spar with operational loads.

**Option C.** provide redundant design.

**Correct Answer is.** assist the main spar with operational loads.

**Explanation.** NIL.

**Question Number.** 8. The main undercarriage is attached to the.

**Option A.** aircraft structure.

**Option B.** rear main spar.

**Option C.** front main spar.

**Correct Answer is.** aircraft structure.

**Explanation.** The only wholly correct answer.

**Question Number.** 9. The final coat of sealing in a integral fuel tank is called.

**Option A.** fillet.

**Option B.** interfay.

**Option C.** brush coat.

**Correct Answer is.** brush coat.

**Explanation.** B737 ANN 28-11-00 page 811, the 3 coats of sealant for repair fuel tanks leak are termed as fillet, injection and prepack. Fillet seal is the first coat.

**Question Number.** 10. The principle load bearing members of the wing are.

**Option A.** spars.

**Option B.** struts.

**Option C.** ribs.

**Correct Answer is.** spars.

**Explanation.** NIL.

**Question Number.** 11. One purpose of a rib is to.

**Option A.** support the bending loads on a fuselage.

**Option B.** form the main lateral member in an aero foil .

**Option C.** maintain the correct contour of an aero foil s covering.

**Correct Answer is.** maintain the correct contour of an aero foil s covering.

**Explanation.** NIL.

**Question Number.** 12. What is a cantilever wing?

**Option A.** One that folds for access to limited space.

**Option B.** One that has external supporting struts.

**Option C.** One that has no external supporting struts.

**Correct Answer is.** One that has no external supporting struts.

**Explanation.** NIL.

**Question Number.** 13. A spar is tapered from root to tip because.

**Option A.** shear forces are greatest at the root.

**Option B.** bending moment is greatest at the root.

**Option C.** center of lift occurs close to the root.

**Correct Answer is.** bending moment is greatest at the root.

**Explanation.** AL/7-2 para 4.1.

**Question Number.** 14. A spar web is.

**Option A.** a member between the spar and wing/fuselage connection.

**Option B.** an area between two spar caps.

**Option C.** a rib/spar joint.

**Correct Answer is.** a member between the spar and wing/fuselage connection.

**Explanation.** NIL.

**Question Number.** 15. A leading edge slat is attached to the.

**Option A.** slat track.

**Option B.** wing upper skin.

**Option C.** front spar.

**Correct Answer is.** slat track.

**Explanation.** NIL. <http://www.b737.org.uk/flightcontrols.htm>

11.03.3. Airframe Structures - Aero planes - Stabilizers (ATA 55).

**Question Number.** 1. The web of an 'T' beam takes mainly which type of load?

**Option A.** Shear.

**Option B.** Tension.

**Option C.** Bending.

**Correct Answer is.** Shear.

**Explanation.** A 'web' always takes shear loads.

**Question Number.** 2. The term 'empennage' incorporates.

**Option A.** rudder, ailerons, spoilers.

**Option B.** elevators, stabilizer, ailerons.

**Option C.** elevators, stabilizer, rudder.

**Correct Answer is.** elevators, stabilizer, rudder.

**Explanation.** NIL.

**Question Number.** 3. The four main structural items making up a horizontal stabilizer are.

**Option A.** spar, rib, bulkheads, skin panels.

**Option B.** spar, rib, stringers, skin panels.

**Option C.** spar, rib, longerons, skin panels.

**Correct Answer is.** spar, rib, stringers, skin panels.

**Explanation.** NIL.

**Question Number. 4.** To correct for nose heaviness on an aircraft fitted with a variable incidence tail plane, the incidence of the tail plane would be.

**Option A.** decreased, which is done by lowering the leading edge.

**Option B.** decreased, which is done by lowering the trailing edge.

**Option C.** increased, which is done by lowering the leading edge.

**Correct Answer is.** decreased, which is done by lowering the leading edge.

**Explanation.** NIL.

**Question Number. 5.** An upward elevator deflection on the reverse camber tail plane.

**Option A.** may increase or decrease download depending upon the aircraft C of G position.

**Option B.** will decrease tail plane download.

**Option C.** will increase tail plane download.

**Correct Answer is.** will increase tail plane download.

**Explanation.** NIL.

**Question Number. 6.** Variable incidence tail planes.

**Option A.** move rapidly when trimming the aircraft during climb.

**Option B.** out and landing approach and slowly during cruise always move slowly.

**Option C.** move rapidly when trimming the aircraft during the landing approach and slowly at all other times.

**Correct Answer is.** move rapidly when trimming the aircraft during climb out and landing approach and slowly during cruise.

**Explanation.** B737-400, AMM 27-41-00 PAGE 5 para 1.c, trim speed is depend on the flap position. Trim rate with flaps retracted is 1/3 the trim rate with flaps extended.

**Question Number. 7.** The direction of travel of an electrically operated variable incidence tail plane is determined by.

**Option A.** a gearbox.

**Option B.** solenoid operated clutches.

**Option C.** direction of rotation of the electric motor.

**Correct Answer is.** solenoid operated clutches.

**Explanation.** NIL.

**Question Number. 8.** On an aircraft with a variable incidence trimming tail plane, the tail plane incidence changes.

**Option A.** if the control column is moved back or forward.

**Option B.** automatically if the elevator moves.

**Option C.** if the trim wheel is turned back or forward.

**Correct Answer is.** if the trim wheel is turned back or forward.

**Explanation.** NIL.

11.03.4. Airframe Structures - Aero planes - Flight Control Surfaces (ATA 55/57).

**Question Number.** 1. Construction such as horn balance and inset hinge balance installed on control surface assembly.

**Option A.** serves as a 'servo' system of balance.

**Option B.** has same effect of the balance tab.

**Option C.** is meant to trim CG of control surfaces.

**Correct Answer is.** has same effect of the balance tab.

**Explanation.** A&P Technician Airframe Textbook. Jeppesen 1-24 fig 1-59, balance tab 1-23 -para 3.

**Question Number.** 2. The fin helps to give.

**Option A.** directional stability about the normal axis.

**Option B.** longitudinal stability about the normal axis.

**Option C.** directional stability about the longitudinal axis.

**Correct Answer is.** directional stability about the normal axis.

**Explanation.** Jeppesen A&P Technician Airframe Textbook 1-22.

**Question Number.** 3. Which of the following are primary control surfaces?

**Option A.** Roll spoilers, elevators, tabs.

**Option B.** Elevators, roll spoilers, tabs.

**Option C.** Elevators, ailerons, rudder.

**Correct Answer is.** Elevators, ailerons, rudder.

**Explanation.** NIL.

**Question Number.** 4. Aerodynamic balance.

**Option A.** will reduce aerodynamic loading.

**Option B.** will cause CP to move towards the trailing edge and cause instability.

**Option C.** will cause CP to move towards the trailing edge and cause instability.

**Correct Answer is.** will reduce aerodynamic loading.

**Explanation.** NIL.

**Question Number.** 5. Flutter can be reduced by using.

**Option A.** servo tabs.

**Option B.** mass balancing.

**Option C.** a horn balance.

**Correct Answer is.** mass balancing.

**Explanation.** NIL.

**Question Number.** 6. An elevator provides control about the.

**Option A.** horizontal stabilizer.

**Option B.** longitudinal axis.

**Option C.** lateral axis.

**Correct Answer is.** lateral axis.

**Explanation.** NIL.

**Question Number.** 7. The outboard ailerons on some large aircraft.

**Option A.** are isolated at low speeds.

**Option B.** are isolated to improve sensitivity.

**Option C.** are isolated at high speeds.

**Correct Answer is.** are isolated at high speeds.

**Explanation.** NIL.

**Question Number.** 8. An excess of aerodynamic balance would move the control surface center of pressure.

**Option A.** rearwards, resulting in too much assistance.

**Option B.** rearwards, resulting in loss of assistance.

**Option C.** forwards, resulting in an unstable overbalance.

**Correct Answer is.** forwards, resulting in an unstable overbalance.

**Explanation.** NIL.

**Question Number.** 9. A flying control mass balance weight.

**Option A.** keeps the control surface C of G as close to the trailing edge as possible.

**Option B.** tends to move the control surface C of G close to the hinge line.

**Option C.** ensures that the C of G always acts to aid the pilot thus relieving control column load.

**Correct Answer is.** tends to move the control surface C of G. close to the hinge line.

**Explanation.** NIL.

**Question Number.** 10. What is attached to the rear of the vertical stabilizer?

**Option A.** Elevator.

**Option B.** Aileron.

**Option C.** Rudder.

**Correct Answer is.** Rudder.

**Explanation.** NIL.

**Question Number.** 11. The method employed to mass balance control surfaces is to.

**Option A.** attach weights forward of the hinge line.

**Option B.** allow the leading edge of the surface to project into the airflow.

**Option C.** fit bias strips to the trailing edge of the surfaces.

**Correct Answer is.** attach weights forward of the hinge line.

**Explanation.** NIL.

**Question Number.** 12. Control surface flutter may be caused by.

**Option A.** excessive play in trim tab attachments.

**Option B.** high static friction in trim tab control tabs.

**Option C.** incorrect angular movement of trim tabs.

**Correct Answer is.** excessive play in trim tab attachments.

**Explanation.** NIL.

**Question Number.** 13. A 'frise' aileron is incorporated to.

**Option A.** provide aerodynamic balancing so assisting the pilot to move the control.

**Option B.** ensure aileron control is retained at high angles of attack.

**Option C.** equalize aileron drag in a turn.

**Correct Answer is.** equalize aileron drag in a turn.

**Explanation.** NIL.

**Question Number.** 14. Aerodynamic balance of a control surface may be achieved.

**Option A.** by a horn at the extremity of the surface forward of the hinge line.

**Option B.** by a trimming strip at the trailing edge of the surface.

**Option C.** by weights added to the control surface aft of the hinge line.

**Correct Answer is.** by a horn at the extremity of the surface forward of the hinge line. **Explanation.** Jeppesen A&P Technician Airframe Textbook Page 24 Para 7.

**Question Number.** 15. A control surface is provided with aerodynamic balancing to.

**Option A.** decrease the drag when the control is deflected.

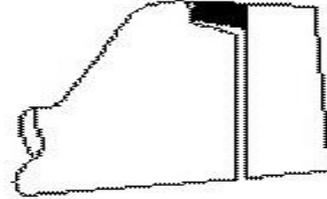
**Option B.** assist the pilot in moving the control.

**Option C.** increase stability.

**Correct Answer is.** assist the pilot in moving the control.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 24 Para 7.

**Question Number.** 16. The extension to the rudder (shaded portion shown on the diagram), is provided to.



**Option A.** prevent control surface flutter.

**Option B.** provide aerodynamic assistance for the pilot when moving the rudder.

**Option C.** make the pilot aware of the aerodynamic forces encountered when moving the control.

**Correct Answer is.** Provide aerodynamic assistance for the pilot when moving the rudder.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 25 Para 7.

**Question Number.** 17. The balance tab is an auxiliary surface fitted to a main control surface.

**Option A.** operating automatically to provide feel to the controls.

**Option B.** operated independently at which point in the length of cable the tensiometer is applied.

**Option C.** operating automatically to assist the pilot in moving the controls.

**Correct Answer is.** operating automatically to assist the pilot in moving the controls.

**Explanation.** NIL.

**Question Number.** 18. Aerodynamic balancing of flight controls is achieved by.

**Option A.** placing a weight ahead of the hinge point.

**Option B.** providing a portion of the control surface ahead of the hinge point.

**Option C.** placing a weight in the leading edge of the control surface.

**Correct Answer is.** providing a portion of the control surface ahead of the hinge point.

**Explanation.** AL/3-24 para 4.2

**Question Number.** 19. Aerodynamic balance is used to.

**Option A.** make the flying controls easier to move.

**Option B.** prevent flutter of the flying controls.

**Option C.** reduce the control load to zero.

**Correct Answer is.** make the flying controls easier to move.

**Explanation.** NIL.

**Question Number.** 20. A horn balance is.

**Option A.** a rod projecting forward from the control surface with a weight on the end.

**Option B.** a rod projecting upward from the main control surface to which the control cables are attached.

**Option C.** a projection of the outer edge of the control surface forward of the hinge line.

**Correct Answer is.** a projection of the outer edge of the control surface forward of the hinge line.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 16

**Question Number.** 21. A control surface is mass balanced by.

**Option A.** the attachment of weights acting forward of the hinge line.

**Option B.** the attachment of weights acting on the hinge line.

**Option C.** fitting a balance tab.

**Correct Answer is.** the attachment of weights acting forward of the hinge line.

**Explanation.** NIL.

**Question Number.** 22. The purpose of anti-balance tabs is to.

**Option A.** relieve stick loads.

**Option B.** trim the aircraft.

**Option C.** give more feel to the control column.

**Correct Answer is.** give more feel to the control column.

**Explanation.** NIL.

**Question Number.** 23. A flying control mass balance weight.

**Option A.** tends to move the control surface C of G forward of the hinge line.

**Option B.** tends to move the control surface C of G close to the hinge line.

**Option C.** keeps the control surface C of G as close to the trailing edge as possible.

**Correct Answer is.** tends to move the control surface C of G close to the hinge line.

**Explanation.** NIL.

**Question Number.** 24. An elevator controls the aircraft motion in.

**Option A.** yaw.

**Option B.** pitch.

**Option C.** roll.

**Correct Answer is.** pitch.

**Explanation.** NIL.

11.03.5. Airframe Structures - Aero planes - Nacelles/Pylons (ATA 54).

**Question Number.** 1. Jet engines are usually mounted by.

**Option A.** aluminum castings.

**Option B.** forged mounts and bolted to aircraft forged structure.

**Option C.** welded steel tubing.

**Correct Answer is.** forged mounts and bolted to aircraft forged structure.

**Explanation.** NIL.

**Question Number.** 2. A pylon structural member supports the.

**Option A.** center section.

**Option B.** engine.

**Option C.** empennage.

**Correct Answer is.** engine.

**Explanation.** NIL.

**Question Number.** 3. Wing mounted podded engines and integral fuel tanks.

**Option A.** provide wing bending relief.

**Option B.** provide increased safety if the undercarriage collapses on landing.

**Option C.** reduce tail plane download.

**Correct Answer is.** provide wing bending relief.

**Explanation.** NIL.

11.04. Air Conditioning and Cabin Pressurization (ATA 21).

**Question Number. 1.** As an aircraft descends from cruising altitude (34,000ft), the cabin altitude must.

**Option A.** stay the same.

**Option B.** increase.

**Option C.** decrease.

**Correct Answer is.** decrease.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 14-22. CAIPs AL/323.

**Question Number. 2.** A refrigerant is used in which of the following?

**Option A.** Vapour cycle.

**Option B.** Air cycle machine.

**Option C.** Pneumatic pump.

**Correct Answer is.** Vapour cycle.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 14-34.

**Question Number. 3.** The signal line between the controller and discharge valve is leaking. This will cause.

**Option A.** the cabin pressure to increase.

**Option B.** the cabin pressure to decrease.

**Option C.** it will not effect on cabin pressure.

**Correct Answer is.** the cabin pressure to increase.

**Explanation.** The discharge valve is opened by vacuum in the signal line. If line leaks , valve will close, and cabin pressure will increase. Jeppesen A&P Airframe Technician Textbook Page 14-22.

**Question Number. 4.** A spill valve opens.

**Option A.** to control the flow to the cabin.

**Option B.** to control the air from the cabin to outside.

**Option C.** to prevent an excessive pressure difference.

**Correct Answer is.** to control the flow to the cabin.

**Explanation.** CAIPs AL/3-23.

**Question Number. 5.** A cabin altitude is protected against reaching an altitude of 13,000 ft. by.

**Option A.** altitude sensor.

**Option B.** cabin over pressure relief valve.

**Option C.** bellows in the outflow valve.

**Correct Answer is.** altitude sensor.

**Explanation.** CAIP AL/3-23 para 7.

**Question Number.** 6. The basic system of cabin pressurization is to arrange a constant.

**Option A.** inlet and vary the outlet.

**Option B.** outlet and vary the inlet.

**Option C.** inlet and outlet.

**Correct Answer is.** inlet and vary the outlet.

**Explanation.** Jeppesen A&P technician Airframe Textbook Page 14-20.

**Question Number.** 7. The purpose of the differential capsule in a pressure controller is to control.

**Option A.** cabin differential pressure.

**Option B.** the rate of pressurization.

**Option C.** cabin air flow.

**Correct Answer is.** cabin differential pressure.

**Explanation.** Jeppesen A&P technician Airframe Textbook Page 14-22. CAIPs AL/323.

**Question Number.** 8. Control of rate of change of cabin pressure is.

**Option A.** more important in ascent.

**Option B.** equally important in ascent and descent.

**Option C.** more important in descent.

**Correct Answer is.** more important in descent.

**Explanation.** Jeppesen A&P technician Airframe Textbook Page 14-20 onwards. CAIPs AL/3-23.

**Question Number.** 9. With a pressurized aircraft at maximum differential pressure and a cabin pressure increase occurs, the differential capsule in the pressure controller will.

**Option A.** let pressurization to be switched off until leaks cause a drop in pressure.

**Option B.** let all pressurizing air to be spilled overboard.

**Option C.** have a constant mass flow.

**Correct Answer is.** let all pressurizing air to be spilled overboard.

**Explanation.** CAIPs AL/3-23 para 4.3.13.

**Question Number.** 10. If the cabin altitude increases above the normal maximum.

**Option A.** a warning light comes on in the cockpit.

**Option B.** compressor delivery is automatically boosted.

**Option C.** an inward relief valve opens.

**Correct Answer is.** a warning light comes on in the cockpit.

**Explanation.** CAIPs AL/3-23 para 4.4.4.

**Question Number.** 11. A water separator is located.

**Option A.** downstream of heat exchanger.

**Option B.** downstream of turbine.

**Option C.** upstream of the turbine.

**Correct Answer is.** downstream of turbine.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 16-30 or CAIPs AL/3-24 4.2.3 fig 3.

**Question Number.** 12. A comfortable rate of cabin altitude climb for passengers is.

**Option A.** 500 ft. per min.

**Option B.** 300 ft. per min.

**Option C.** 100 ft. per min.

**Correct Answer is.** 500 ft. per min.

**Explanation.** CAIPs AL/3-23.

**Question Number.** 13. Before carrying out a ground pressure check,.

**Option A.** set altimeter to QNH.

**Option B.** check all pitot and static lines are fitted.

**Option C.** turn on all instruments.

**Correct Answer is.** check all pitot and static lines are fitted.

**Explanation.** CAIPs AL/3-23 Para 12.2.5.

**Question Number.** 14. On touch-down of aircraft.

**Option A.** the outflow valve will be shut.

**Option B.** the cabin pressure will be zero.

**Option C.** the outflow valve will be fully open.

**Correct Answer is.** the outflow valve will be fully open.

**Explanation.** NIL.

**Question Number.** 15. The velocity of air from the cabin ventilation system should not exceed.

**Option A.** 40 feet per second.

**Option B.** 120 feet per second.

**Option C.** 20 feet per second.

**Correct Answer is.** 120 feet per second.

**Explanation.** BCAR Section D6.

**Question Number.** 16. On an aircraft employing a heater system on the air conditioning system, after an overheat, how is the heater reset?

**Option A.** After it cools the pilot resets.

**Option B.** On ground only by engineer.

**Option C.** After cooling below 300°C it auto resets.

**Correct Answer is.** On ground only by engineer.

**Explanation.** A&P Technician Airframe pg. 14-30 under Safety Features.

**Question Number.** 17. Ditching control is used to.

**Option A.** achieve rapid depressurization.

**Option B.** close the outflow valves.

**Option C.** maintain cabin pressure at sea level.

**Correct Answer is.** close the outflow valves.

**Explanation.** CAIPs AL/3-2 fig 5 item Y, CAAIPs Leaflet 5-2.

**Question Number.** 18. When pressurizing the aircraft on the ground for test purposes, internal doors, cupboards etc. must be.

**Option A.** all closed.

**Option B.** all open.

**Option C.** removed.

**Correct Answer is.** all open.

**Explanation.** AL/3-23 12.3.4.

**Question Number.** 19. Prior to conducting a ground pressurization test, it is necessary to.

**Option A.** set QFE.

**Option B.** disconnect the emergency pressure relief valve.

**Option C.** reset/disable the pressure controller.

**Correct Answer is.** reset/disable the pressure controller.

**Explanation.** The pressurization system must be controlled manually. Setting QFE is for the automatic control of the valves.

**Question Number.** 20. In typical vapour cycle system, the sub-cooler.

**Option A.** is a heat exchanger to superheat the vapour.

**Option B.** delivers extra cooling effect when the aircraft is on ground.

**Option C.** cools the vapour further to prevent slugging.

**Correct Answer is.** is a heat exchanger to superheat the vapour.

**Explanation.** NIL.

[http://www.tpub.com/content/aviation/14020/css/14020\\_106.htm](http://www.tpub.com/content/aviation/14020/css/14020_106.htm)

**Question Number.** 21. In an air conditioning system, heat is added to air by.

**Option A.** restricting compressor outlet.

**Option B.** restricting compressor inlet.

**Option C.** restricting duct outlets.

**Correct Answer is.** restricting compressor outlet.

**Explanation.** Best answer we can get to a bad question. Heat is added by varying the amount of compressor outlet air that bypasses the heat exchanger.

**Question Number.** 22. Which of the following can be used on the ground?

**Option A.** Turbo fan.

**Option B.** Turbo compressor.

**Option C.** Turbo brake.

**Correct Answer is.** Turbo fan.

**Explanation.** Used on air conditioning systems to supply air on ground.

**Question Number.** 23. Air conditioning systems.

**Option A.** increase and decrease the temperature of air.

**Option B.** increase the temperature of air.

**Option C.** decrease the temperature of air.

**Correct Answer is.** decrease the temperature of air.

**Explanation.** CAIPs AL/3-24 Para 2.2.

**Question Number.** 24. An air cycle machine turbine.

**Option A.** drives compressor to increase temperature.

**Option B.** drives compressor to decrease temperature.

**Option C.** drives compressor to pressurize aircraft.

**Correct Answer is.** drives compressor to increase temperature.

**Explanation.** The compressor is to INCREASE the temperature to increase the rate at which heat energy can be extracted.

**Question Number.** 25. In the flight deck of a pressurized aircraft, there is a gauge that shows.

**Option A.** cabin differential pressure.

**Option B.** cabin pressure altitude.

**Option C.** aircraft altitude.

**Correct Answer is.** cabin differential pressure.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 14-23.

**Question Number.** 26. Air exiting the compressor side of an ACM.

**Option A.** will have decreased pressure and temperature.

**Option B.** no change in temperature or pressure as it is a centrifugal compressor.

**Option C.** will have increased pressure and temperature.

**Correct Answer is.** will have increased pressure and temperature.

**Explanation.** NIL.

**Question Number.** 27. Cabin differential pressure is the pressure difference between.

**Option A.** 8,000ft and standard barometric pressure.

**Option B.** sea level air pressure and indicated dynamic pressure in the cabin.

**Option C.** the pressure inside the aircraft and the ambient air pressure.

**Correct Answer is.** the pressure inside the aircraft and the ambient air pressure.

**Explanation.** NIL.

**Question Number.** 28. If the pressure controller is set to 0 ft.

**Option A.** maximum differential is reached immediately after take-off.

**Option B.** cabin will not pressurize.

**Option C.** cabin remains at sea level until maximum differential.

**Correct Answer is.** cabin will not pressurize.

**Explanation.** NIL.

**Question Number.** 29. During a pressurization check at maximum differential, if the engines are shut-down.

**Option A.** cabin ROC indicator gives indication of cabin seal efficiency.

**Option B.** aircraft remains pressurized until the dump valve opens.

**Option C.** outflow valve opens immediately.

**Correct Answer is.** cabin ROC indicator gives indication of cabin seal efficiency.

**Explanation.** NIL.

**Question Number.** 30. Where is the water trap located in a bootstrap compressor?

**Option A.** At the outlet of the compressor.

**Option B.** At the inlet of the turbine.

**Option C.** At the inlet of the compressor.

**Correct Answer is.** At the inlet of the turbine.

**Explanation.** CAIPs shows it at the outlet of the turbine (not one of the answers).

B757 has an additional water trap at the inlet of the turbine.

**Question Number.** 31. Where is the silencer located in a 'blower' air conditioning system?

**Option A.** At the inlet to the cabin.

**Option B.** At the outlet of the blower.

**Option C.** At the inlet of the blower.

**Correct Answer is.** At the outlet of the blower.

**Explanation.** AL/3-24 Figure 3.

**Question Number.** 32. When does a 'blower' air conditioning system produce the most air?

**Option A.** At high altitudes.

**Option B.** At low altitudes.

**Option C.** It is not affected by altitude.

**Correct Answer is.** It is not affected by altitude.

**Explanation.** AL/3-24 Figure 3 (effect of the Spill Valve).

**Question Number.** 33. In an air conditioning system, before distribution, the air goes through the.

**Option A.** flow control valve.

**Option B.** TCV.

**Option C.** TCV and mixer valve.

**Correct Answer is.** TCV.

**Explanation.** NIL.

**Question Number.** 34. What is the minimum cabin air mass flow?

**Option A.** 0.5 lbs per minute per person.

**Option B.** 10 lbs per minute per person.

**Option C.** 1 lbs per minute per person.

**Correct Answer is.** 0.5 lbs per minute per person.

**Explanation.** BCAR Section D.

**Question Number.** 35. The function of an air mass flow control valve is to.

**Option A.** ensure that system differential pressure is not exceeded.

**Option B.** maintain a reasonably constant air mass flow into the cabin at all altitudes.

**Option C.** control the airflow out of the cabin.

**Correct Answer is.** maintain a reasonably constant air mass flow into the cabin at all altitudes.

**Explanation.** NIL.

**Question Number.** 36. In a cabin air recirculation system, recirculated air and fresh air are supplied in the proportions.

**Option A.** 50% of fresh air, 50% of recirculated air.

**Option B.** 60% of fresh air, 40% of recirculated air.

**Option C.** 40% of fresh air, 60% of recirculated air.

**Correct Answer is.** 60% of fresh air, 40% of recirculated air.

**Explanation.** NIL.

**Question Number.** 37. Cabin pressure is maintained by.

**Option A.** controlling the output of the compressor.

**Option B.** controlling the amount of air discharged from the cabin.

**Option C.** controlling the supply of air to the cabin.

**Correct Answer is.** controlling the amount of air discharged from the cabin.

**Explanation.** NIL.

**Question Number.** 38. Control of rate of change of cabin pressure is.

**Option A.** most important in ascent.

**Option B.** most important in descent.

**Option C.** equally important in descent and ascent.

**Correct Answer is.** most important in descent.

**Explanation.** CAIPs AL/3-23.

**Question Number.** 39. Air supplied for pressurization and conditioning is.

**Option A.** hottest from an engine compressor bleed.

**Option B.** hottest from a compressor driven by an engine gear box.

**Option C.** the same for both the above sources.

**Correct Answer is.** hottest from an engine compressor bleed.

**Explanation.** AL/3-24 2.3/2.5.

**Question Number.** 40. The mass flow delivery from engine driven blowers is controlled by.

**Option A.** automatic control devices.

**Option B.** engine speed variations.

**Option C.** spill valves.

**Correct Answer is.** spill valves.

**Explanation.** AL/3-24 Fig. 3.

**Question Number.** 41. An air-to-air heat exchanger is provided to.

**Option A.** reduce the air supply temperature.

**Option B.** increase the air supply temperature.

**Option C.** provide an emergency ram air supply.

**Correct Answer is.** reduce the air supply temperature.

**Explanation.** AL/3-24 4.2.

**Question Number.** 42. Temperature control of cabin air is achieved by.

**Option A.** controlling the water vapour in the supply.

**Option B.** regulating the amount of air by-passing the cooling system.

**Option C.** varying the ambient airflow to the heat exchanger.

**Correct Answer is.** regulating the amount of air by-passing the cooling system.

**Explanation.** CAIPs AL/3-24 Fig 3.

**Question Number.** 43. Inward vent valves are fitted to.

**Option A.** limit negative differentials.

**Option B.** increase ventilation.

**Option C.** limit positive differentials.

**Correct Answer is.** limit negative differentials.

**Explanation.** CAIPs AL/3-23 6.2.

**Question Number.** 44. Cabin rate of climb is shown by.

**Option A.** warning lights.

**Option B.** a special instrument.

**Option C.** a double scale on the aircraft.

**Correct Answer is.** a double scale on the aircraft.

**Explanation.** CAIPs AL/3-23 Fig 3.

**Question Number.** 45. During normal pressurized climb following take-off.

**Option A.** the cabin R.O.C. is less than ambient R.O.C.

**Option B.** the cabin R.O.C. is more than ambient R.O.C.

**Option C.** the differential pressure is constant.

**Correct Answer is.** the cabin R.O.C. is less than ambient R.O.C.

**Explanation.** CAIPs AL/3-23 fig 2.

**Question Number.** 46. Inward vent valves will operate when.

**Option A.** depressurizing after descent.

**Option B.** cabin altitude exceeds aircraft altitude.

**Option C.** aircraft altitude exceeds cabin altitude.

**Correct Answer is.** cabin altitude exceeds aircraft altitude.

**Explanation.** CAIPs AL/3-23 6.2.

**Question Number.** 47. Cabin differential pressure is the difference between.

**Option A.** cabin pressure and ambient pressure.

**Option B.** 8,000 ft and sea level.

**Option C.** I.S.A. conditions and aircraft altitude.

**Correct Answer is.** cabin pressure and ambient pressure.

**Explanation.** CAIPs AL/3-23 fig 2.

**Question Number.** 48. Cabin altitude in pressurized flight is the.

**Option A.** altitude at which cabin altitude equals outside air pressure.

**Option B.** pressure altitude of the cabin as corrected to mean sea level I.S.A. conditions.

**Option C.** altitude corresponding to cabin pressure irrespective of the altitude for the aircraft.

**Correct Answer is.** altitude corresponding to cabin pressure irrespective of the altitude for the aircraft.

**Explanation.** CAIPs AL/3-23 fig 2.

**Question Number.** 49. In pressurized aircraft, temperature conditioning is mainly achieved by.

**Option A.** adding heat to the pressurizing air.

**Option B.** varying cabin pressure.

**Option C.** extracting heat from the pressurizing air.

**Correct Answer is.** extracting heat from the pressurizing air.

**Explanation.** CAIPS AL/3-24 4.

**Question Number.** 50. If pressurization air supplies come from an engine compressor, an internal oil leak will.

**Option A.** contaminate the air.

**Option B.** not affect the issue as it is automatically detected and vented overboard.

**Option C.** not contaminate the air.

**Correct Answer is.** contaminate the air.

**Explanation.** NIL.

**Question Number.** 51. A cold air unit produces a drop in temperature by.

**Option A.** reducing pressure and driving the units compressor.

**Option B.** driving the units compressor.

**Option C.** reducing pressure.

**Correct Answer is.** reducing pressure and driving the units compressor.

**Explanation.** AL/3-24 4.2.2.

**Question Number.** 52. Heating for pressure cabins is obtained from.

**Option A.** air supply heated by the pressurizing process.

**Option B.** only by adding heat electrically to the air supplies.

**Option C.** driving the units compressor.

**Correct Answer is.** air supply heated by the pressurizing process.

**Explanation.** CAIPs AL/3-24 4.

**Question Number.** 53. A cold air unit allows for cabin temperatures to be.

**Option A.** same as ambient temperature, despite compression heating.

**Option B.** lower than ambient air temperature despite compression heating.

**Option C.** a little more than ambient air temperature.

**Correct Answer is.** a little more than ambient air temperature.

**Explanation.** NIL.

**Question Number.** 54. When an aircraft has reached max. diff. and is at constant level (altitude) the system allows for.

**Option A.** pressurization to be switched off until leaks cause a drop in pressure.

**Option B.** constant mass flow.

**Option C.** all pressurizing air to be spilled overboard.

**Correct Answer is.** constant mass flow.

**Explanation.** NIL.

**Question Number.** 55. The control of ventilating and pressurizing air released to atmosphere is achieved by a.

**Option A.** discharge valve/inwards relief valve combination.

**Option B.** pressure controller/dump valve combination.

**Option C.** pressure controller/discharge valve combination.

**Correct Answer is.** pressure controller/discharge valve combination.

**Explanation.** CAIPs AL/3-23 9.

**Question Number.** 56. Rate of change of cabin pressure is most noticeably shown on a.

**Option A.** cabin V.S.I.

**Option B.** cabin altimeter.

**Option C.** cabin pressure gauge.

**Correct Answer is.** cabin V.S.I.

**Explanation.** CAIPs AL/3-23 fig 3.

**Question Number.** 57. Inwards relief valves usually open at a negative differential pressure not exceeding.

**Option A.** 0.5 p.s.i.

**Option B.** 1.2 p.s.i.

**Option C.** 0.16 p.s.i.

**Correct Answer is.** 0.5 p.s.i.

**Explanation.** NIL.

**Question Number.** 58. Failure of the normal maximum pressure differential control is allowed for by fitting.

**Option A.** airport altitude selectors.

**Option B.** inwards relief valves.

**Option C.** safety relief valve.

**Correct Answer is.** safety relief valve.

**Explanation.** CAIPs AL/3-23 6.1.

**Question Number.** 59. A cold air unit produces a drop in temperature by.

**Option A.** expanding hot air across a turbine which is driving a compressor.

**Option B.** directing compressed air into a heat exchanger.

**Option C.** air supply to the cabin.

**Correct Answer is.** expanding hot air across a turbine which is driving a compressor.

**Explanation.** CAIPs AL/3-24 4.2.

**Question Number.** 60. The function of spill valves is to control.

**Option A.** air supply to the cabin.

**Option B.** cabin pressure differential.

**Option C.** the rate of pressurization.

**Correct Answer is.** air supply to the cabin.

**Explanation.** CAIPs AL/3-24 fig 3.

**Question Number.** 61. Pressurization control ensures that.

**Option A.** at operational altitude the cabin altitude is below 10,000 ft.

**Option B.** pressurization does not start before aircraft is above 8,000 ft.

**Option C.** the cabin is always maintained at sea level.

**Correct Answer is.** at operational altitude the cabin altitude is below 10,000 ft.

**Explanation.** CAIPs AL/3-23.

**Question Number.** 62. Pitot' and 'Static' lines during a cabin pressure test should be.

**Option A.** cross connected.

**Option B.** disconnected.

**Option C.** connected.

**Correct Answer is.** connected.

**Explanation.** CAIPs AL/3-23 12.2.5.

**Question Number.** 63. If the cabin pressure fails to reach its maximum cabin pressure differential the.

**Option A.** discharge valve should be adjusted.

**Option B.** pressure controller should be adjusted.

**Option C.** outward relief valve is inoperative.

**Correct Answer is.** pressure controller should be adjusted.

**Explanation.** CAIPs AL/3-23 Para 10.2.2 iv.

**Question Number.** 64. When the aircraft has reached its maximum cabin pressure differential the.

**Option A.** discharge valve closes.

**Option B.** discharge valve opens.

**Option C.** mass flow ceases through the cabin.

**Correct Answer is.** discharge valve opens.

**Explanation.** NIL.

**Question Number.** 65. The purpose of a 'Spill' valve in a cabin air supply system is.

**Option A.** to spill overboard excess air delivered at S.L. and lower altitudes.

**Option B.** to relieve the pressure in the air supply ducting to atmosphere.

**Option C.** to give a heating effect.

**Correct Answer is.** to spill overboard excess air delivered at S.L. and lower altitudes.

**Explanation.** CAIPs AL/3-24 fig 3.

**Question Number.** 66. Would you operate the flying controls during a cabin pressure ground test?

**Option A.** Yes.

**Option B.** No.

**Option C.** Occasionally.

**Correct Answer is.** Yes.

**Explanation.** AL/3-23 12.3.9.

**Question Number.** 67. Which component must be isolated when carrying out a ground cabin pressure test?

**Option A.** Pressure relief valve.

**Option B.** Pressure discharge valve.

**Option C.** Pressure regulator controller.

**Correct Answer is.** Pressure discharge valve.

**Explanation.** AL/3-23 12.3.10.

**Question Number.** 68. To what position is the inward relief valve spring loaded?

**Option A.** Closed.

**Option B.** Both position.

**Option C.** Open.

**Correct Answer is.** Closed.

**Explanation.** NIL.

**Question Number.** 69. A cabin pressure air leak from the front of the fuselage is.

**Option A.** most desirable because it increases the air-flow.

**Option B.** most undesirable because of the drag created.

**Option C.** not effective in any way.

**Correct Answer is.** most undesirable because of the drag created.

**Explanation.** AL/7-11 3.2.2.

**Question Number.** 70. When a 'muff' or air ducting is built around the engine exhaust system and air is directed around inside the muffler, this is an.

**Option A.** thermal heater.

**Option B.** exhaust heater.

**Option C.** combustion heater.

**Correct Answer is.** exhaust heater.

**Explanation.** AL/3-24 3.3.

**Question Number.** 71. Inward relief valves are interconnected in pressurized aircraft.

**Option A.** to achieve maximum pressure differential.

**Option B.** to allow controlled pressure during descent.

**Option C.** to relieve cabin pressure and allow outside pressure to be greater.

**Correct Answer is.** to allow controlled pressure during descent.

**Explanation.** CAIPs AL/3-23 Para 5.

**Question Number.** 72. In a turbo fan cold air system, the heat exchanger cooling air is.

**Option A.** air bled directly from engine or through blower.

**Option B.** ram air from ambient conditions.

**Option C.** bled from cabin air supply duct.

**Correct Answer is.** ram air from ambient conditions.

**Explanation.** NIL.

**Question Number.** 73. A safety valve will normally relieve at.

**Option A.** negative differential pressure.

**Option B.** higher differential pressure than the discharge valve.

**Option C.** lower differential pressure than the discharge valve. higher differential pressure than the discharge valve.

**Question Number.** 74. Conditioned air is.

**Option A.** oxygen added.

**Option B.** moisture removed.

**Option C.** temperature and pressure adjusted.

**Correct Answer is.** temperature and pressure adjusted.

**Explanation.** NIL.

**Question Number.** 75. The principle of cabin pressurization is.

**Option A.** whilst the aircraft climbs to altitude, the cabin climbs to a lower altitude.

**Option B.** cabin altitude will always maintain a constant differential to that of aircraft altitude.

**Option C.** cabin altitude climbs eventually to that of the aircraft.

**Correct Answer is.** whilst the aircraft climbs to altitude, the cabin climbs to a lower altitude.

**Explanation.** NIL.

**Question Number.** 76. When the cabin differential pressure has reached the required value and the height is maintained.

**Option A.** constant mass airflow is permitted through the cabin.

**Option B.** the pressure system ceases to function until the cabin pressure is reduced.

**Option C.** all pressurized air is spilled to atmosphere.

**Correct Answer is.** constant mass airflow is permitted through the cabin.

**Explanation.** NIL.

**Question Number.** 77. The function of the mass airflow control valve is to.

**Option A.** ensure that constant airflow out of the cabin is dictated by cabin altitude.

**Option B.** maintain a reasonable mass flow of air into the cabin irrespective of aircraft altitude.

**Option C.** ensure system operating pressure is not exceeded.

**Correct Answer is.** maintain a reasonable mass flow of air into the cabin irrespective of aircraft altitude.

**Explanation.** NIL.

**Question Number.** 78. Cabin pressure controller maintains a pre-set cabin altitude by.

**Option A.** regulating the mass flow into the cabin.

**Option B.** regulating the position of the inward relief valve.

**Option C.** regulating the position of the outflow valve.

**Correct Answer is.** regulating the position of the outflow valve.

**Explanation.** NIL.

**Question Number.** 79. If cabin height is set lower than airfield height when the aircraft is on the ground with squat switches overridden, then the outflow valve will normally.

**Option A.** remain closed.

**Option B.** open.

**Option C.** not operate.

**Correct Answer is.** remain closed.

**Explanation.** NIL.

**Question Number.** 80. Which of the following sometimes inhibits an air conditioning pack?

**Option A.** Flap position switches.

**Option B.** Throttle switches.

**Option C.** Undercarriage switches.

**Correct Answer is.** Throttle switches.

**Explanation.** NIL.

**Question Number.** 81. When carrying out a ground pressure test, you should use.

**Option A.** a G.P.U. and A.P.U. combination.

**Option B.** the aircraft engines because you can test the whole system.

**Option C.** ground trolley and clean air.

**Correct Answer is.** the aircraft engines because you can test the whole system.

**Explanation.** NIL.

**Question Number.** 82. The ventilation air in the aircraft cabin must have a minimum humidity of.

**Option A.** 20 percent.

**Option B.** 60 percent.

**Option C.** 30 percent.

**Correct Answer is.** 30 percent.

**Explanation.** NIL.

**Question Number.** 83. In a Boot-Strap Air Conditioning supply system the source of compressed air is from.

**Option A.** ram air at the wing leading edge.

**Option B.** gas turbine intake ram air.

**Option C.** gas turbine compressor bleed air.

**Correct Answer is.** gas turbine compressor bleed air.

**Explanation.** NIL.

**Question Number.** 84. The temperature within the cabin of the aircraft is normally maintained at.

**Option A.** 20°C to 24°C.

**Option B.** 12°C to 18°C.

**Option C.** 18°C to 24°C.

**Correct Answer is.** 18°C to 24°C.

**Explanation.** NIL.

**Question Number.** 85. In a Bleed Air air-conditioning system, the warm air supply is provided by.

**Option A.** the gas turbine exhaust.

**Option B.** the compressor of the gas turbine engine.

**Option C.** the engine exhaust heat.

**Correct Answer is.** the compressor of the gas turbine engine.

**Explanation.** NIL.

**Question Number.** 86. The cabin altitude is.

**Option A.** the actual height of the aircraft above sea level.

**Option B.** the equivalent height of the aircraft above sea level.

**Option C.** the difference between cabin pressure and atmospheric pressure.

**Correct Answer is.** the equivalent height of the aircraft above sea level.

**Explanation.** NIL.

**Question Number.** 87. The cabin differential pressure is.

**Option A.** the difference between cabin pressure and atmospheric pressure.

**Option B.** the equivalent height of the aircraft above sea level.

**Option C.** the actual height of the aircraft above sea level.

**Correct Answer is.** the difference between cabin pressure and atmospheric pressure. **Explanation.** NIL.

**Question Number.** 88. The outflow of air from the cabin is regulated by.

**Option A.** the outflow valves.

**Option B.** the vent valves.

**Option C.** the dump control valves.

**Correct Answer is.** the outflow valves.

**Explanation.** NIL.

**Question Number.** 89. When air is pressurized, the oxygen content.

**Option A.** decreases.

**Option B.** remains constant.

**Option C.** increases.

**Correct Answer is.** increases.

**Explanation.** Oxygen content increases as mass per unit volume, but NOT as a percentage of the other gases in air. Your interpretation of the question may differ.

**Question Number.** 90. Cabin pressure differential is the difference between.

**Option A.** ISA conditions and aircraft altitude.

**Option B.** 8000 ft. and sea level.

**Option C.** cabin pressure and ambient pressure.

**Correct Answer is.** cabin pressure and ambient pressure.

**Explanation.** NIL.

**Question Number.** 91. In a 'bootstrap' cooling system the supply of air is first.

**Option A.** passed across an expansion turbine, then compressed and passed through a heat exchanger.

**Option B.** compressed then passed through a heat exchanger and across an expansion turbine.

**Option C.** passes across an expansion turbine, then directly to the heat exchanger.

**Correct Answer is.** compressed then passed through a heat exchanger and across an expansion turbine.

**Explanation.** NIL.

**Question Number.** 92. If an altitude of 8000 feet is selected on the cabin pressure controller and provided maximum cabin pressure differential is not exceeded.

**Option A.** sea level cabin conditions will be maintained to 8000 feet aircraft altitude.

**Option B.** 8000 feet cabin conditions will be maintained at aircraft altitudes above 8000 feet.

**Option C.** 8000 feet cabin conditions will be maintained at all aircraft altitudes from sea level.

**Correct Answer is.** 8000 feet cabin conditions will be maintained at aircraft altitudes above 8000 feet.

**Explanation.** NIL.

**Question Number.** 93. If cabin pressure is increasing, the cabin rate of change indicator will show.

**Option A.** zero, provided the rate of change is within the normally accepted limits.

**Option B.** a rate of climb.

**Option C.** a rate of descent.

**Correct Answer is.** a rate of descent.

**Explanation.** NIL.

**Question Number.** 94. A negative differential pressure is prevented by.

**Option A.** a blow off valve.

**Option B.** a spill valve.

**Option C.** an inward relief valve.

**Correct Answer is.** an inward relief valve.

**Explanation.** NIL.

**Question Number.** 95. During a normal climb from aerodrome level with the pressurization system 'ON'.

**Option A.** the cabin differential pressure is maintained constant.

**Option B.** the atmospheric pressure decreases more quickly than the cabin pressure.

**Option C.** the pressurization system does not control pressure until 10,000 ft is reached.

**Correct Answer is.** the atmospheric pressure decreases more quickly than the cabin pressure.

**Explanation.** AL/3-23 Fig 2 Pg 3.

**Question Number.** 96. The inward relief valve is usually set to operate at a cabin differential of.

**Option A.** +0.5 PSI.

**Option B.** -0.5 PSI.

**Option C.** +9.25 PSI.

**Correct Answer is.** -0.5 PSI.

**Explanation.** NIL.

**Question Number.** 97. The humidity within a passenger cabin should.

**Option A.** not be greater than 40%.

**Option B.** be between 30% and 70%.

**Option C.** not be less than 60%.

**Correct Answer is.** be between 30% and 70%.

**Explanation.** NIL.

**Question Number.** 98. One of the principles of cooling employed in an air cycle system is.

**Option A.** by compression of ambient air across a turbine.

**Option B.** by surface heat exchange in the C.A.U.

**Option C.** conversion of heat energy to mechanical energy in the C.A.U.

**Correct Answer is.** conversion of heat energy to mechanical energy in the C.A.U.

**Explanation.** A&P Technician Airframe Textbook Page 770 Fig 16-34.

**Question Number.** 99. Rate of change of cabin pressure is.

**Option A.** selected by the pilot and controlled by the pressure controller.

**Option B.** selected by the pilot and controlled by the spill valve.

**Option C.** automatic.

**Correct Answer is.** selected by the pilot and controlled by the pressure controller.

**Explanation.** NIL.

**Question Number.** 100. An aircraft has a maximum differential pressure of 8.5 PSI at cruising altitude. If the ambient pressure is 2.9 PSI, the pressure inside the cabin at cruising altitude would be.

**Option A.** 11.4 PSI.

**Option B.** 5.6 PSI.

**Option C.** 8.5 PSI.

**Correct Answer is.** 11.4 PSI.

**Explanation.** NIL.

**Question Number.** 101. Before filling a vapour cycle cooling system.

**Option A.** flush the system with a solvent.

**Option B.** apply suction to remove air and moisture.

**Option C.** pre-heat the system to 100°F.

**Correct Answer is.** apply suction to remove air and moisture.

**Explanation.** NIL.

**Question Number.** 102. Cabin differential is determined only by.

**Option A.** the selected cabin height.

**Option B.** the height at which the aircraft is flying.

**Option C.** the height at which the aircraft is flying and by the selected cabin height.

**Correct Answer is.** the height at which the aircraft is flying and by the selected cabin height.

**Explanation.** NIL.

**Question Number.** 103. The rate of flow of air from the punkha louvers should not be less than.

**Option A.** 300 ft/min.

**Option B.** 200 ft/min.

**Option C.** 25 ft/min.

**Correct Answer is.** 25 ft/min.

**Explanation.** BCAR Section D.

**Question Number.** 104. An aircraft cabin is air conditioned and pressurized in order to.

**Option A.** maintain human efficiency and comfort during flights at high altitudes.

**Option B.** ensure that the pressure within the fuselage is always less than the ambient pressure, thus increasing the fatigue life of the fuselage.

**Option C.** ensure that the air density within the cabin is maintained at a lower figure than outside the cabin in order to prevent moisture precipitation during rapid decompression.

**Correct Answer is.** maintain human efficiency and comfort during flights at high altitudes.

**Explanation.** NIL.

**Question Number.** 105. An aircraft cabin is air conditioned and pressurized in order to If the pilot selected a cabin height of 8000 ft. whilst taxiing and activated the pressurization system, the cabin pressure would.

**Option A.** decrease to a pressure equivalent to about 500 ft.

**Option B.** remain at ground level pressure.

**Option C.** decrease to a pressure equivalent to 8000 ft.

**Correct Answer is.** remain at ground level pressure.

**Explanation.** NIL.

**Question Number.** 106. A silencer is installed in a pressurization system to reduce.

**Option A.** the noise from the high speed of airflow within the system.

**Option B.** engine noise coming through the ventilators.

**Option C.** the noise from the blowers and/or compressors in the system.

**Correct Answer is.** the noise from the blowers and/or compressors in the system.

**Explanation.** AL/3-24 fig 3 and para 2.5.

**Question Number.** 107. To avoid discomfort, the rate of change of pressure should be low, particularly.

**Option A.** when cabin pressure is decreasing.

**Option B.** during descent.

**Option C.** during ascent.

**Correct Answer is.** during descent.

**Explanation.** NIL.

**Question Number.** 108. In the case of a vapour cycle cooling, system heat is removed from the charge air by.

**Option A.** changing a liquid into a vapour.

**Option B.** reducing the pressure of a vapour.

**Option C.** changing a vapour into a liquid.

**Correct Answer is.** changing a liquid into a vapour.

**Explanation.** AL/3-24 para 13.3.2.

**Question Number.** 109. An inward relief valve will operate.

**Option A.** when cabin pressure is lower than ambient pressure.

**Option B.** when climbing with pressurization OFF.

**Option C.** after an aircraft has landed, to restore ground level conditions in the cabin.

**Correct Answer is.** when cabin pressure is lower than ambient pressure.

**Explanation.** AL/3-23 6.2.

**Question Number.** 110. If an aircraft is operating at 40,000 ft. the pressurization ensures that.

**Option A.** the cabin pressure is equivalent to an altitude of less than 10,000 ft.

**Option B.** the cabin pressure is progressively increased until the operational height is reached.

**Option C.** sea level pressure is maintained in the cabin.

**Correct Answer is.** The cabin pressure is equivalent to an altitude of less than 10,000 ft.

**Explanation.** NIL.

**Question Number.** 111. The pressure controller activates.

**Option A.** the blower or compressor.

**Option B.** the cabin discharge valve.

**Option C.** the spill valve.

**Correct Answer is.** the cabin discharge valve.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 112. When cruising near the operational ceiling, the flight altitude set on the pressurization control panel may be 500 ft. more than the actual flight altitude so as to prevent.

**Option A.** safety valve operation.

**Option B.** inward relief valve operation.

**Option C.** pressure controller hunting.

**Correct Answer is.** pressure controller hunting.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 113. The cabin rate of climb is shown.

**Option A.** as being inside or outside limits by green and red lights, a gauge being used.

**Option B.** by a differential scale on the aircraft rate of climb indicator.

**Option C.** on a specific indicator.

**Correct Answer is.** on a specific indicator.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 114. A water separator would be installed in a pressurization system to.

**Option A.** collect any rain accompanying the ram air.

**Option B.** extract surplus water from the charge air.

**Option C.** extract water from the cabin air before it is discharged to atmosphere.

**Correct Answer is.** extract surplus water from the charge air.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 115. Subsequent to passing through the primary heat exchanger, the supply air in a turbo-fan cold air system flows to the.

**Option A.** inter cooler or secondary heat exchanger.

**Option B.** fan.

**Option C.** turbine.

**Correct Answer is.** fan.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 116. The heat exchanger in a turbo-fan system is cooled by.

**Option A.** engine bleed air or blower air.

**Option B.** air bled from the main cabin supply duct.

**Option C.** ambient ram air.

**Correct Answer is.** ambient ram air.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 117. The effective temperature of a cabin is given by.

**Option A.** temperature, humidity, thermal inertia and heat load.

**Option B.** temperature and humidity.

**Option C.** temperature only.

**Correct Answer is.** temperature and humidity.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 118. An inward relief valve is installed in a pressurization system to ensure that the pressure hull of an aircraft is not subjected to.

**Option A.** too high an internal pressure.

**Option B.** forces which would cause the aircraft to explode.

**Option C.** a high negative differential pressure.

**Correct Answer is.** a high negative differential pressure.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 119. In most pressurization systems, the amount of compressed air delivered to the cabin is.

**Option A.** constant at any particular altitude but varies for different altitudes.

**Option B.** variable, depending on the amount selected by the cabin rate of change selector.

**Option C.** reasonably constant irrespective of altitude.

**Correct Answer is.** reasonably constant irrespective of altitude.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 120. When dissipating heat in a vapour cycle system.

**Option A.** vapour converts to a liquid.

**Option B.** liquid converts to a vapour.

**Option C.** the liquid sublimates.

**Correct Answer is.** vapour converts to a liquid.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 121. International markings for air conditioning pipelines are.

**Option A.** triangles.

**Option B.** rectangles.

**Option C.** dots.

**Correct Answer is.** dots.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 122. Cabin pressure controller maintains a particular cabin altitude by control of.

**Option A.** outflow valve position.

**Option B.** cabin mass air flow.

**Option C.** inward relief valve position.

**Correct Answer is.** outflow valve position.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 123. A cabin humidifier is operated.

**Option A.** on the ground.

**Option B.** at low altitudes.

**Option C.** at high altitudes.

**Correct Answer is.** at high altitudes.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.**124. In an air conditioning system, heat is added to the air by.

**Option A.** restricting duct outlets.

**Option B.** restricting compressor outlet.

**Option C.** restricting compressor inlet.

**Correct Answer is.** restricting compressor outlet.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 125. Ditching control is used for.

**Option A.** rapid aircraft depressurization.

**Option B.** closing all valves and inlets.

**Option C.** deploying life rafts.

**Correct Answer is.** closing all valves and inlets.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 126. The purpose of a mass flow controller is to.

**Option A.** ensure that a constant mass of air is delivered to cabin at all times.

**Option B.** allow pilot to select the desired cabin altitude.

**Option C.** ensure the cabin altitude remains constant during cruise at all altitudes.

**Correct Answer is.** ensure that a constant mass of air is delivered to cabin at all times.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 127. Failure of the normal maximum differential pressure control is catered for by.

**Option A.** inwards relief valve.

**Option B.** spill valves.

**Option C.** cabin safety relief valves.

**Correct Answer is.** cabin safety relief valves.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 128. A turbo fan CAU used for air cycle cooling will.

**Option A.** decrease pressure and temperature of the charge air.

**Option B.** not affect the charge air pressure.

**Option C.** increase the pressure but decrease the temperature.

**Correct Answer is.** decrease pressure and temperature of the charge air.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

**Question Number.** 129. How much air is required for the Flight Deck?

**Option A.** 10 lbs/minute.

**Option B.** Whatever the captain sets.

**Option C.** 10 cubic feet/minute.

**Correct Answer is.** 10 cubic feet/minute.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-20 lh column last para.

11.05.1. Instruments/Avionic Systems - Instrument Systems (ATA 31).

**Question Number.** 1. Which of these barometric instruments uses a restrictor to compute its output?

**Option A.** Mach meter.

**Option B.** VSI.

**Option C.** ASI.

**Correct Answer is.** VSI.

**Explanation.** NIL.

**Question Number.** 2. Track altitude in a radio altimeter system begins at.

**Option A.** 2 500 ft radio alt.

**Option B.** 1 000 ft radio alt.

**Option C.** 10 000 ft radio alt.

**Correct Answer is.** 2 500 ft radio alt.

**Explanation.** Jeppesen Avionics Fundamentals Page 223.

**Question Number.** 3. What is the maximum radio altimeter track altitude?

**Option A.** 500 ft.

**Option B.** 2,500 ft.

**Option C.** 10,000 ft.

**Correct Answer is.** 2,500 ft.

**Explanation.** Aircraft Electricity and Electronics, Eismin p323-324.

**Question Number.** 4. An ECAM system is tested under the following conditions:-.

**Option A.** Aircraft on the ground with one engine running.

**Option B.** Aircraft in the air with both engines running.

**Option C.** Aircraft on the ground with parking brake set/on.

**Correct Answer is.** Aircraft on the ground with parking brake set/on.

**Explanation.** Pallet Aircraft Instruments and Integrated Systems Page 391.

**Question Number. 5.** Which instrument are most likely to damage if you have a rapid drop in pressure, when carrying out a pitot-static leak check?

**Option A.** Altimeter.

**Option B.** vertical speed indicator.

**Option C.** Air speed indicator.

**Correct Answer is.** Altimeter.

**Explanation.** Altimeter is most sensitive to rapid pressure changes.

**Question Number. 6.** The runway heading is.

**Option A.** QFU.

**Option B.** QDM.

**Option C.** QDR.

**Correct Answer is.** QFU.

**Explanation.** NIL. <http://www2.tky.3web.ne.jp/~jahfa/kokuningen/Q.html>

**Question Number. 7.** Apparent drift of a vertical gyro is a function of.

**Option A.** tan of latitude.

**Option B.** cos of latitude.

**Option C.** sin of latitude.

**Correct Answer is.** cos of latitude.

**Explanation.** Pallet Aircraft Instruments and Integrated Systems Page 103.

**Question Number. 8.** A mach meter works.

**Option A.** always.

**Option B.** above 10,000 ft.

**Option C.** always except on the ground.

**Correct Answer is.** always.

**Explanation.** Pallet Aircraft Instruments and Integrated Systems Page 45.

**Question Number. 9.** Radio marker information is displayed on.

**Option A.** ADI.

**Option B.** EICAS.

**Option C.** HIS.

**Correct Answer is.** ADI.

**Explanation.** Aircraft Electricity and Avionics (5th Edition) Eismin Page 358.

**Question Number. 10.** Angle of Attack alarm is sounding too close to stall.  
Rectification is to.

**Option A.** move probe down.

**Option B.** move probe up.

**Option C.** move probe laterally.

**Correct Answer is.** move probe up.

**Explanation.** Move probe up, closer to the Leading Edge stagnation point, so it operates sooner.

**Question Number.** 11. Where is alpha angle used?

**Option A.** IRS.

**Option B.** Accelerometer.

**Option C.** Angle of attack.

**Correct Answer is.** Angle of attack.

**Explanation.** Aircraft Instrument and Integrated Systems - Pallet Page 73.

**Question Number.** 12. Where is the spin up/rundown brake on a gyro instrument?

**Option A.** Outer gimbal.

**Option B.** Rotating vane.

**Option C.** Inner gimbal.

**Correct Answer is.** Inner gimbal.

**Explanation.** NIL.

**Question Number.** 13. On replacing a pre-indexed flux valve you would.

**Option A.** align the aircraft onto its A coefficient so that no error is induced.

**Option B.** fit the serviceable pre indexed flux valve into the same position as the unserviceable pre-indexed flux valve was removed from.

**Option C.** carry out a check swing after fitment.

**Correct Answer is.** fit the serviceable pre indexed flux valve into the same position as the unserviceable pre-indexed flux valve was removed from.

**Explanation.** NIL.

**Question Number.** 14. In Airways flying, what is the barometric scale of the altimeter set to?

**Option A.** 1013.25.

**Option B.** QNH.

**Option C.** QFE.

**Correct Answer is.** 1013.25.

**Explanation.** 1013.25 mb or QNE. A & P Technician Airframe Textbook Chap III page 592.

**Question Number.** 15. Vibration monitoring signals are sent.

**Option A.** via a signal conditioner to the gauge.

**Option B.** via a half-wave rectifier to the gauge.

**Option C.** direct to the gauge.

**Correct Answer is.** via a signal conditioner to the gauge.

**Explanation.** Jeppesen Aircraft Instruments and Avionics Page 90.

**Question Number.** 16. The vacuum system gauge reads 5 inches of mercury. This is from.

**Option A.** zero and minus.

**Option B.** ambient and minus.

**Option C.** zero and positive.

**Correct Answer is.** ambient and minus.

**Explanation.** The 5 inches Hg refers to the 'suction' from ambient.

**Question Number.** 17. A direct reading Bourdon gauge has a restriction in the inlet. This is to.

**Option A.** prevent FOD ingestion.

**Option B.** dampen sudden pressure changes.

**Option C.** allow for calibration.

**Correct Answer is.** dampen sudden pressure changes.

**Explanation.** The restriction is to damp out surges in pressure.

**Question Number.** 18. The hot junction of thermocouple is.

**Option A.** in the combustion chamber.

**Option B.** in the instrument.

**Option C.** aft of combustion chamber.

**Correct Answer is.** aft of combustion chamber.

**Explanation.** The hot junction is the sensor, aft of the combustion chamber.

**Question Number.** 19. When a rad. alt. reaches 2,500 ft. what happens to the display?

**Option A.** Rad. alt. flag in view.

**Option B.** Rad. alt. goes out of view.

**Option C.** Error warning in view.

**Correct Answer is.** Rad. alt. goes out of view.

**Explanation.** Jeppesen Aircraft Radio Systems Page 195.

**Question Number.** 20. Pitot tubes are heated.

**Option A.** by compressed bleed air.

**Option B.** electrically.

**Option C.** by kinetic heating.

**Correct Answer is.** electrically.

**Explanation.** CAIPs AL/10-1 Para 3.2.

**Question Number.** 21. The suction gauge reads 5 inches of mercury. This is.

**Option A.** above zero pressure.

**Option B.** below ambient pressure.

**Option C.** above ambient pressure.

**Correct Answer is.** below ambient pressure.

**Explanation.** The 5 inches Hg refers to the 'suction' from ambient.

**Question Number.** 22. What are the primary colors for use in CRT displays?

**Option A.** Yellow, cyan, magenta.

**Option B.** Red, blue, green.

**Option C.** Red, blue, yellow.

**Correct Answer is.** Red, blue, green.

**Explanation.** Aircraft Instruments and Integrated Systems, Pallet Page 290.

**Question Number.** 23. Alpha vane signal could be fed to ..... when close to stall.

**Option A.** flap position.

**Option B.** fast/slow switch.

**Option C.** thrust levers.

**Correct Answer is.** thrust levers.

**Explanation.** NIL.

**Question Number.** 24. When performing maintenance operations on an aircraft equipped with RVSM system, and a quick release disconnect connection is disturbed.

**Option A.** a full test of the system should be carried out.

**Option B.** a full test of the system should be carried out only if the aircraft manufacturer recommends to do so.

**Option C.** the allowances for the system should be halved.

**Correct Answer is.** a full test of the system should be carried out.

**Explanation.** NIL. <http://www2.eur-rvsm.com/library.htm> PAra.8.3

**Question Number. 25.** For aircraft certificated after 1997 and with RVSM, the maximum tolerance for the system would be.

**Option A.** +/- 300 feet plus +/- 50 feet for instrument errors.

**Option B.** +/- 500 feet for the system overall.

**Option C.** +/- 200 feet plus +/- 50 feet for instrument error.

**Correct Answer is.** +/- 200 feet plus +/- 50 feet for instrument error.

**Explanation.** NIL. <http://www2.eur-rvsm.com/library.htm> PAra.8.3

**Question Number. 26.** The HSI provides information on.

**Option A.** VOR, ILS, map, radar, attitude.

**Option B.** VOR, plan, map, ILS, radar.

**Option C.** VOR, ILS, plan, attitude.

**Correct Answer is.** VOR, plan, map, ILS, radar.

**Explanation.** Attitude is on the EADI.

**Question Number. 27.** The sensing element of the flux valve.

**Option A.** aligns itself to the new heading as the aircraft turns.

**Option B.** remains in the same position attached to the aircraft structure.

**Option C.** aligns itself to the new heading of the aircraft after it has stabilized.

**Correct Answer is.** remains in the same position attached to the aircraft structure.

**Explanation.** Jeppesen - Avionics Fundamentals Page 106-110.

**Question Number. 28.** In a compass swing: North error -2 degrees, South error - 2 degrees. The coefficient C is.

**Option A.** +2 degrees.

**Option B.** -2 degrees.

**Option C.** 0 degrees.

**Correct Answer is.** 0 degrees.

**Explanation.** AL/10-5 page 6 table 1  $(-2)-(-2)/2 = 0$ .

**Question Number. 29.** When aligning an aircraft for a compass swing, the maximum allowable error is.

**Option A.** 5 degrees.

**Option B.** 1 degrees.

**Option C.** 3 degrees.

**Correct Answer is.** 5 degrees.

**Explanation.** CAIPs AL/10-5 9 note.

**Question Number.** 30. The pitot head is fitted on the aircraft. The alignment of pitot head is carried out with.

**Option A.** spirit level.

**Option B.** an inclinometer.

**Option C.** micrometer.

**Correct Answer is.** an inclinometer.

**Explanation.** NIL.

**Question Number.** 31. What kind of gyro is a rate gyro?

**Option A.** Tied down.

**Option B.** Displacement.

**Option C.** Space.

**Correct Answer is.** Tied down.

**Explanation.** AL/10-2 A rate gyro has only 2 axis of freedom. Aircraft Instruments & Integrated Systems Pallet page 129.

**Question Number.** 32. A radio altimeter system can be self-tested.

**Option A.** both on the ground only and in the air.

**Option B.** on the ground only.

**Option C.** in the air only.

**Correct Answer is.** both on the ground only and in the air.

**Explanation.** NIL.

**Question Number.** 33. The apparent wander for directional gyros is.

**Option A.** compensated by applying a constant torque.

**Option B.** maximum at the pole.

**Option C.** dependent on longitude.

**Correct Answer is.** compensated by applying a constant torque.

**Explanation.** NIL.

**Question Number.** 34. The Directional Gyro is checked every 15 minutes for.

**Option A.** erection.

**Option B.** toppling.

**Option C.** drift.

**Correct Answer is.** drift.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 192.

**Question Number.** 35. Random drift of a gyro is caused by.

**Option A.** error in roll when aircraft is turning.

**Option B.** aircraft turning with an error in roll.

**Option C.** gyro friction and unbalance.

**Correct Answer is.** gyro friction and unbalance.

**Explanation.** Automatic Flight Control Pallet and Coyle Page 104.

**Question Number.** 36. Standby Compass adjusting magnets (Flinders Bars) exert the most amount of influence.

**Option A.** when 90 degrees apart.

**Option B.** when parallel to each other.

**Option C.** when 45 degrees apart.

**Correct Answer is.** when 90 degrees apart.

**Explanation.** Angle between flinders bars determines their correcting influence.

**Question Number.** 37. With engine static and engine blanks fitted, EPR gauge reads just above 1.

**Option A.** Gauge requires re-calibration.

**Option B.** Transmitter is unserviceable.

**Option C.** This is normal.

**Correct Answer is.** Gauge requires re-calibration.

**Explanation.** NIL.

**Question Number.** 38. Coefficient A is adjusted.

**Option A.** at 360 degrees.

**Option B.** at 270 degrees.

**Option C.** on any heading.

**Correct Answer is.** on any heading.

**Explanation.** AL/10-5 9.2.7.

**Question Number.** 39. With an aircraft which has more than one compass system.

**Option A.** master adjusted, slave adjusted, each having a corrected compass card.

**Option B.** both are adjusted on each heading.

**Option C.** master and slave adjusted, correction card for master only.

**Correct Answer is.** master adjusted, slave adjusted, each having a corrected compass card.

**Explanation.** Al/10-5 9.2 Note.

**Question Number.** 40. A DC electrical cable must be positioned how far away from a compass?

**Option A.** 20 inches.

**Option B.** 24 inches.

**Option C.** So as to give no more than 2 degrees deflection of compass.

**Correct Answer is.** 24 inches.

**Explanation.** AL/10-5 9.2.

**Question Number.** 41. Which pitot probe provides information to the captains instruments?

**Option A.** Upper.

**Option B.** Lower.

**Option C.** Both.

**Correct Answer is.** Upper.

**Explanation.** NIL. <http://www.b737.org.uk/probes.htm>

**Question Number.** 42. On the CWP, what does amber indicate?

**Option A.** Present status.

**Option B.** Cautionary info.

**Option C.** Warning.

**Correct Answer is.** Cautionary info.

**Explanation.** NIL.

**Question Number.** 43. Which instrument shows Decision Height?

**Option A.** ECAM.

**Option B.** HIS.

**Option C.** ADI.

**Correct Answer is.** ADI.

**Explanation.** Avionics Fundamentals Page 185.

**Question Number.** 44. Where does the HSI receive GND speed information from?

**Option A.** Pitot static probes.

**Option B.** INS.

**Option C.** EICAS.

**Correct Answer is.** INS.

**Explanation.** Avionics Fundamentals Page 128.

**Question Number.** 45. When power is switched off, the gimbal brake.

**Option A.** stops outer gimbal.

**Option B.** restricts outer gimbal.

**Option C.** restricts inner gimbal.

**Correct Answer is.** restricts inner gimbal.

**Explanation.** Used for gimbal lock prevention. Energized off.

**Question Number.** 46. On an EADI the command bars show them.

**Option A.** required flight path compared with horizon.

**Option B.** required flight path compared with aircraft position.

**Option C.** required flight path compared to planned flight path.

**Correct Answer is.** required flight path compared with aircraft position.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 212/213.

**Question Number.** 47. The air data computer inputs to.

**Option A.** altimeter, FMC, secondary radar.

**Option B.** mach meter, standby altimeter, ASI.

**Option C.** cabin rate sensors, mach-meters, ASI, altimeter.

**Correct Answer is.** altimeter, FMC, secondary radar.

**Explanation.** FMC for nav. Secondary Radar is ATC transponder encoder.

**Question Number.** 48. What deviation is indicated by 2 dots in a VOR system?

**Option A.** 6°.

**Option B.** 2.5°.

**Option C.** 10°.

**Correct Answer is.** 10°.

**Explanation.** (Note: VOR is 5° per dot. ILS is 2 1/2° per dot).

<http://www.allstar.fiu.edu/aero/FltDirS.htm>

**Question Number.** 49. How may the basic principle of the radio altimeter be described?

**Option A.** As a series of radio pulses to the ground their frequency depending on the expansion or contraction of an evacuated capsule and the deflection of an E and I bar transducer.

**Option B.** As a comparison of radio altitude against a barometric altitude referenced to ISA sea level (1013.25mb).

**Option C.** As a measure of the time between a RF pulse transmission and the reception of its echo from the ground directly below the aircraft.

**Correct Answer is.** As a measure of the time between a RF pulse transmission and the reception of its echo from the ground directly below the aircraft.

**Explanation.** NIL.

**Question Number.** 50. In a compass system, what senses the horizontal component of the earth's magnetic field and where is it normally fitted?

**Option A.** Directional gyro mounted on the roll axis of the aircraft.

**Option B.** A precession device mounted on the yaw axis of the aircraft.

**Option C.** Flux detectors fitted in the wing tips.

**Correct Answer is.** Flux detectors fitted in the wing tips.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 182.

**Question Number.** 51. An RMI has inputs from VOR and.

**Option A.** a remote compass input.

**Option B.** an azimuth gyro.

**Option C.** no other sources.

**Correct Answer is.** an azimuth gyro.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 194.

**Question Number.** 52. In a modern HSI, the displays are.

**Option A.** course and direction.

**Option B.** course and attitude.

**Option C.** direction and attitude.

**Correct Answer is.** course and direction.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet page 303.

**Question Number.** 53. At what height does the rising runway appear?

**Option A.** 300 ft.

**Option B.** 500 ft.

**Option C.** 200 ft.

**Correct Answer is.** 200 ft.

**Explanation.** Aircraft Radio Systems Powell Page 199.

**Question Number.**54. An H on the EHSI indicates.

**Option A.** ILS approach.

**Option B.** DME hold.

**Option C.** VOR hold.

**Correct Answer is.** DME hold.

**Explanation.** Aircraft Electricity and Electronics Eismin Page 358.

**Question Number.** 55. Compared to air driven gyros, the electric gyro runs.

**Option A.** faster.

**Option B.** slower.

**Option C.** same speed.

**Correct Answer is.** faster.

**Explanation.** NIL.

**Question Number.** 56. A pneumatic indicator takes its indications from.

**Option A.** compressor outlet.

**Option B.** compressor inlet.

**Option C.** reservoir.

**Correct Answer is.** reservoir.

**Explanation.** NIL. <http://www.gage-technique.demon.co.uk/instruments/readoutpneumatic.html>

**Question Number.** 57. What is apparent drift due to?

**Option A.** Errors when aircraft banking.

**Option B.** Earth's rotation.

**Option C.** Gyro pivot friction.

**Correct Answer is.** Earth's rotation.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 102.

**Question Number.** 58. An aircraft airspeed indicator has.

**Option A.** pitot to the capsule.

**Option B.** static to the capsule.

**Option C.** pitot to the capsule and static to the outside of the capsule.

**Correct Answer is.** pitot to the capsule and static to the outside of the capsule.

**Explanation.** NIL.

**Question Number.** 59. Above 2500 ft. the rad. Alt.

**Option A.** pointer is hidden behind a mask with off flag out of view.

**Option B.** continues to indicate but with a warning flag.

**Option C.** pointer goes to zero to show system is being monitored.

**Correct Answer is.** pointer is hidden behind a mask with off flag out of view.

**Explanation.** Avionic Systems: Operation and Maintenance Page 189.

**Question Number.** 60. How does a Mach meter work?

**Option A.** Indicated airspeed / temperature.

**Option B.** True airspeed and speed of sound.

**Option C.** True airspeed / indicated airspeed.

**Correct Answer is.** True airspeed and speed of sound.

**Explanation.** Kermode Mechanics of Flight 10th edition p339, and Flight Instruments and Automatic Flight Control, Harris Page 20.

**Question Number.** 61. When changing a pitot static instrument with quick release couplings.

**Option A.** a leak check is not required.

**Option B.** a leak check is always required.

**Option C.** a leak check is only required if stated by manufacturer.

**Correct Answer is.** a leak check is only required if stated by manufacturer.

**Explanation.** NIL.

**Question Number.** 62. The flux detector element.

**Option A.** gives heading with respect to magnetic north.

**Option B.** changes heading with the heading of the aircraft.

**Option C.** changes its position after the aircraft heading is changed.

**Correct Answer is.** gives heading with respect to magnetic north.

**Explanation.** NIL.

**Question Number.** 63. If rate feedback in a flight director goes open circuit, position indication will.

**Option A.** oscillate.

**Option B.** be sluggish.

**Option C.** go hard over.

**Correct Answer is.** oscillate.

**Explanation.** NIL.

**Question Number.** 64. The needle of a resolver is connected to.

**Option A.** two coils and an electromagnet.

**Option B.** two coils and a permanent magnet.

**Option C.** two coils only.

**Correct Answer is.** two coils only.

**Explanation.** NIL.

**Question Number.** 65. If the compass fluid has bubbles at low altitude.

**Option A.** this is due to excessive high cabin altitude flying.

**Option B.** this has no influence on compass readings.

**Option C.** this is due to insufficient de-aeration.

**Correct Answer is.** this is due to insufficient de-aeration.

**Explanation.** NIL. <http://www.silva.se/files/compass.html#BUBBLES>

**Question Number.** 66. A remote compass compensator unit is replaced. Which of the following is correct?

**Option A.** The swing can be performed at a later date.

**Option B.** No swing is required if the new heading is within 5 degrees of the old.

**Option C.** A compass swing must be performed.

**Correct Answer is.** A compass swing must be performed.

**Explanation.** AL/10-5 10.

**Question Number.** 67. A compass has a residual deviation of +1 degree. To steer a true heading of 180 degrees the pilot must steer.

**Option A.** 179 degrees.

**Option B.** 180 degrees.

**Option C.** 181 degrees.

**Correct Answer is.** 179 degrees.

**Explanation.** AL/10-5 Table 1 columns 7 and 8.

**Question Number.** 68. How is a leading edge flap position indicated in the cockpit?

**Option A.** Servomotor.

**Option B.** A measuring device.

**Option C.** Torque synchro.

**Correct Answer is.** Torque synchro.

**Explanation.** NIL.

**Question Number.** 69. In a Mach meter, what type of compensation is there?

**Option A.** Hair spring.

**Option B.** Square-Law compensation.

**Option C.** Compensation is not required.

**Correct Answer is.** Compensation is not required.

**Explanation.** NIL.

**Question Number.** 70. What effect on the rate of precession will a change of gyro rotor speed have?

**Option A.** No effect.

**Option B.** Decrease the rotor speed, decrease the rate of precession.

**Option C.** Increase the rotor speed, decrease the rate of precession.

**Correct Answer is.** Increase the rotor speed, decrease the rate of precession.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 33.

**Question Number.** 71. A gyroscopic body has its rigidity increased by.

**Option A.** decreasing the mass of the rotor.

**Option B.** decreasing the rotor speed.

**Option C.** increasing the rotor speed.

**Correct Answer is.** increasing the rotor speed.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 33.

**Question Number.** 72. If a constant torque is applied to a gyroscope, the rate of precession.

**Option A.** is unaffected by changes in rotor speed.

**Option B.** increases with a higher rotor speed.

**Option C.** increases with a lower rotor speed.

**Correct Answer is.** increases with a lower rotor speed.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 33.

**Question Number.** 73. Random drift of a gyro is caused by.

**Option A.** unbalance and bearing friction in the gyro.

**Option B.** rotation of the earth.

**Option C.** aircraft turning with an error in roll.

**Correct Answer is.** unbalance and bearing friction in the gyro.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 33 (Real Drift).

**Question Number.** 74. A pendulous vane type erection system fitted to a gyro horizon works on the principle of.

**Option A.** increased reaction of the air from a bisected port.

**Option B.** decreased reaction of the air from a fully open port.

**Option C.** increased reaction of the air from a fully open port.

**Correct Answer is.** increased reaction of the air from a fully open port.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 49.

**Question Number.** 75. During the normal straight and level flight, the gyro of an electrical artificial horizon is kept erect in pitch by a.

**Option A.** mercury switch in the fore and aft axis controlling a torque motor fitted between the inner and outer gimbal rings.

**Option B.** torque motor fitted between the outer gimbal ring and the case controlled by a mercury switch in the athwart ships axis.

**Option C.** torque motor fitted between the outer gimbal ring and the case controlled by a mercury switch in the fore and aft axis.

**Correct Answer is.** torque motor fitted between the outer gimbal ring and the case controlled by a mercury switch in the fore and aft axis.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 51 (see page 48 for 'athwart ship).

**Question Number.** 76. The normal erection supply to the mercury switches of the artificial horizon is disconnected.

**Option A.** for the first 40 seconds after initially switching 'ON'.

**Option B.** during turns.

**Option C.** when the fast erection button is pressed.

**Correct Answer is.** during turns.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 51 bottom.

**Question Number.** 77. The pitch/bank erection system is used in an electrical gyro horizon to.

**Option A.** give full erection control to the roll switch during a turn.

**Option B.** give full erection control to the pitch switch during a turn.

**Option C.** to prevent the pitch switch giving a false indication due to centrifugal effects during a turn.

**Correct Answer is.** to prevent the pitch switch giving a false indication due to centrifugal effects during a turn.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 51.

**Question Number.** 78. The fast erection push on an electrical gyro horizon must not be used for a set period after switching on because.

**Option A.** excessive hunting will take place.

**Option B.** overheating of the gyro rotor windings will occur.

**Option C.** the normal erection switch contact will burn out.

**Correct Answer is.** excessive hunting will take place.

**Explanation.** AL/10-2 9.3.2.

**Question Number.** 79. Apparent drift of a directional gyro is due to.

**Option A.** the effect of the earth's rotation.

**Option B.** unbalance of the gimbals.

**Option C.** bearing friction.

**Correct Answer is.** the effect of the earth's rotation.

**Explanation.** AL/3-23 12.3.2.

**Question Number.** 80. The erection system on a directional gyroscope has.

**Option A.** a switch on the outer gimbal controlling a motor on the inner gimbal.

**Option B.** a switch on the inner gimbal controlling a motor on the inner gimbal.

**Option C.** a switch on the inner gimbal controlling a motor on the outer gimbal.

**Correct Answer is.** a switch on the inner gimbal controlling a motor on the outer gimbal.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 46/7.

**Question Number.** 81. In a rate gyro used to detect movements about a vertical axis, the amount the gimbal ring moves would be increased if the.

**Option A.** angle through which the gyro moves in azimuth increases.

**Option B.** rotor speed decreases.

**Option C.** spring tension was increased.

**Correct Answer is.** rotor speed decreases.

**Explanation.** Nil.

**Question Number.** 82. The Turn and Slip indicator employs.

**Option A.** a vertical gyro.

**Option B.** a rate gyro.

**Option C.** an azimuth gyro.

**Correct Answer is.** a rate gyro.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 54.

**Question Number.** 83. In a Turn and Slip indicator, the effect of increasing the rotor speed would be.

**Option A.** it would have no effect.

**Option B.** it would under read.

**Option C.** it would over read.

**Correct Answer is.** it would under read.

**Explanation.** Nil.

**Question Number.** 84. How is the information on a directional gyro outer gimbal taken off?

**Option A.** By a switch on the outer gimbal.

**Option B.** By a switch on the inner gimbal.

**Option C.** By a flux take-off device.

**Correct Answer is.** By a flux take-off device.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 77/78.

**Question Number.** 85. Why is a directional gyro inner gimbal restricted to +/- 85°?

**Option A.** To ensure outer gimbal erection system works correctly.

**Option B.** To prevent outer gimbal rotating.

**Option C.** To prevent gyro going into gimbal lock.

**Correct Answer is.** To prevent gyro going into gimbal lock.

**Explanation.** Nil.

**Question Number.** 86. The speed of the rotor in a Turn and Slip indicator is approximately.

**Option A.** 2,400 rpm.

**Option B.** 4,200 rpm.

**Option C.** 22,500 rpm.

**Correct Answer is.** 4,200 rpm.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 53.

**Question Number.** 87. In a directional gyro, the inner/outer gimbal is corrected to.

**Option A.** 15 sine latitude.

**Option B.** 15 cosine latitude.

**Option C.** 15 sine longitude.

**Correct Answer is.** 15 sine latitude.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 37/8.

**Question Number.** 88. The electrolyte switches used in gyro systems rely upon.

**Option A.** change in inductance to operate.

**Option B.** change in resistance to operate.

**Option C.** change in voltage applied to operate.

**Correct Answer is.** change in resistance to operate.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 50/51.

**Question Number.** 89. Precession of a gyro depends on.

**Option A.** both answers (a) and (b).

**Option B.** angular velocity of the rotor only.

**Option C.** moment of inertia of the rotor only.

**Correct Answer is.** both answers (a) and (b).

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 53.

**Question Number.** 90. Angular momentum of a gyro rotor depends on.

**Option A.** angular velocity of the rotor.

**Option B.** moment of inertia of the rotor.

**Option C.** moment of inertia and angular velocity of the rotor.

**Correct Answer is.** moment of inertia and angular velocity of the rotor.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 33.

**Question Number.** 91. Air driven gyros, compared to electric gyros, generally rotate.

**Option A.** faster.

**Option B.** the same speed.

**Option C.** slower.

**Correct Answer is.** slower.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 41.

**Question Number.** 92. Gyro rigidity is proportional to.

**Option A.** mass and speed.

**Option B.** mass, and radius of mass from spin axis.

**Option C.** mass, speed and radius of mass from spin axis.

**Correct Answer is.** mass, speed and radius of mass from spin axis.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 33.

**Question Number.** 93. Gyro processional force is.

**Option A.** inversely proportional to the applied force.

**Option B.** directly proportional to applied force.

**Option C.** proportional to the square of the applied force.

**Correct Answer is.** directly proportional to applied force.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 33.

**Question Number.** 94. The speed of a vacuum driven gyro horizon rotor is approximately.

**Option A.** 22,000 rpm.

**Option B.** 15,000 rpm.

**Option C.** 4,200 rpm.

**Correct Answer is.** 15,000 rpm.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 46.

**Question Number.** 95. A V.S.I. is connected to.

**Option A.** vacuum.

**Option B.** static pressure.

**Option C.** pitot pressure.

**Correct Answer is.** static pressure.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 22/23.

**Question Number.** 96. With a V.S.I. pointer at position 1 on the upper half of the scale it indicates.

**Option A.** 1,000 ft/minute rate of descent.

**Option B.** 1,000 ft/minute rate of climb.

**Option C.** 100 ft/minute rate of climb.

**Correct Answer is.** 1,000 ft/minute rate of climb.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 24.

**Question Number.** 97. After disconnecting the supply to an electrically operated gyro instrument it is recommended that, to allow the gyro rotor to stop, before moving the instrument.

**Option A.** seven minutes should elapse.

**Option B.** three minutes should elapse.

**Option C.** fifteen minutes should elapse.

**Correct Answer is.** fifteen minutes should elapse.

**Explanation.** AL/10.2 8.1 c.

**Question Number.** 98. The Port and Starboard static vents on an aircraft are interconnected to.

**Option A.** reduce compressibility error.

**Option B.** minimize errors caused by leaks in the system.

**Option C.** cancel errors caused in the static system when the aircraft yaws.

**Correct Answer is.** cancel errors caused in the static system when the aircraft yaws.

**Explanation.** NIL.

**Question Number.** 99. Which of the following would cause a displacement gyro to topple?

**Option A.** Inverting the gyro.

**Option B.** Running gyro at low speed.

**Option C.** Running gyro at high speed.

**Correct Answer is.** Running gyro at low speed.

**Explanation.** NIL.

**Question Number.** 100. In level flight, a V.S.I. will indicate.

**Option A.** horizontal to left.

**Option B.** vertically down.

**Option C.** vertically up.

**Correct Answer is.** horizontal to left.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 22.

**Question Number.** 101. On descent, the pressure in a V.S.I. capsule.

**Option A.** leads the case pressure.

**Option B.** lags the case pressure.

**Option C.** is the same as case pressure.

**Correct Answer is.** leads the case pressure.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 22.

**Question Number.** 102. A small constant leak in the case of V.S.I. fitted in a pressurized aircraft would, during level flight, cause the instrument to indicate.

**Option A.** a rate of climb.

**Option B.** zero.

**Option C.** a rate of descent.

**Correct Answer is.** zero.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 22.

**Question Number.** 103. When a force is applied to a horizontal gyro, the precession of the rotor will continue until.

**Option A.** as long as the force is applied.

**Option B.** plane of rotation is in line with the plane of the applied force.

**Option C.** plane of rotation is in line with the processional force.

**Correct Answer is.** plane of rotation is in line with the plane of the applied force.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 33.

**Question Number.** 104. An artificial horizon has.

**Option A.** the inner gimbal pivoted laterally.

**Option B.** the inner gimbal pivoted vertically.

**Option C.** the inner gimbal pivoted longitudinally.

**Correct Answer is.** the inner gimbal pivoted laterally.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 47.

**Question Number.** 105. A pressure of one atmosphere is equal to.

**Option A.** 14.7 PSI.

**Option B.** 100 millibar.

**Option C.** 1 inch Hg.

**Correct Answer is.** 14.7 PSI.

**Explanation.** NIL.

**Question Number.** 106. In the directional gyro.

**Option A.** the outer gimbal is pivoted vertically.

**Option B.** the outer gimbal is pivoted longitudinally.

**Option C.** the outer gimbal is pivoted laterally.

**Correct Answer is.** the outer gimbal is pivoted vertically.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 42.

**Question Number.** 107. The millibar is a unit of.

**Option A.** barometric pressure.

**Option B.** pressure altitude.

**Option C.** atmospheric temperature.

**Correct Answer is.** barometric pressure.

**Explanation.** NIL.

**Question Number.** 108. In the Turn and Slip indicator.

**Option A.** the spin axis is longitudinal.

**Option B.** the spin axis is lateral.

**Option C.** the spin axis is vertical.

**Correct Answer is.** the spin axis is lateral.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 53.

**Question Number.** 109. In an altimeter, the.

**Option A.** inside of the capsule is connected to static pressure.

**Option B.** capsule is evacuated and sealed.

**Option C.** capsule and case are connected via a calibrated choke.

**Correct Answer is.** capsule is evacuated and sealed.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 6.

**Question Number.** 110. The units on the calibrated scale of a V.S.I. are expressed in.

**Option A.** hundreds of feet per minute.

**Option B.** knots (kts).

**Option C.** miles per hour (mph).

**Correct Answer is.** hundreds of feet per minute.

**Explanation.** (Light aircraft only - large aircraft are 1000s ft/min).

**Question Number.** 111. A standby air supply for gyro operation could be obtained from.

**Option A.** a tapping from the induction manifold.

**Option B.** a venturi.

**Option C.** a pitot head.

**Correct Answer is.** a venturi.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 40.

**Question Number.** 112. At the lowest point of each vent line you would normally find a.

**Option A.** float valve.

**Option B.** NACA duct.

**Option C.** self-draining non-return valve.

**Correct Answer is.** self-draining non-return valve.

**Explanation.** NIL.

**Question Number.** 113. A rate two turn is.

**Option A.** 90 degrees per minute.

**Option B.** 360 degrees per minute.

**Option C.** 180 degrees per minute.

**Correct Answer is.** 360 degrees per minute.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 54, Aircraft Instruments and Integrated Systems Page 131.

**Question Number.** 114. The rate of turn information from a turn coordinator (compared to a Turn and Slip) is.

**Option A.** more instantaneous.

**Option B.** less accurate.

**Option C.** more accurate.

**Correct Answer is.** more accurate.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 55.

**Question Number.** 115. Temperature correction in a sensitive altimeter mechanism is provided by a.

**Option A.** bi-metal U-spring acting on the capsule.

**Option B.** balance weight.

**Option C.** U-spring acting on the capsule.

**Correct Answer is.** bi-metal U-spring acting on the capsule.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 8.

**Question Number.** 116. The capsule in a vertical speed indicator will be expanded when the aircraft is.

**Option A.** climbing.

**Option B.** descending.

**Option C.** in level flight.

**Correct Answer is.** descending.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 22/23.

**Question Number.** 117. After replacing an instrument of the pitot-static group, it is necessary to.

**Option A.** calibrate the instrument concerned.

**Option B.** carry out a leak test on the appropriate system(s).

**Option C.** blow through the lines with a clean low pressure air supply.

**Correct Answer is.** carry out a leak test on the appropriate system(s).

**Explanation.** AL/10-1 15.5.

**Question Number.** 118. If the pitot and static pipe lines were cross connected at the instrument panel connection, application of pressure to the pitot head would cause the.

**Option A.** altimeter reading to decrease, vertical speed indicator to indicate climb.

**Option B.** altimeter reading to increase, vertical speed indicator to indicate descent.

**Option C.** altimeter reading to decrease, vertical speed indicator to indicate descent.

**Correct Answer is.** altimeter reading to decrease, vertical speed indicator to indicate descent.

**Explanation.** NIL.

**Question Number.** 119. A constant force applied to the inner gimbal of a vertical gyro would cause.

**Option A.** a continual precession in roll.

**Option B.** a roll error and gyro topple.

**Option C.** a pitch error and gyro topple.

**Correct Answer is.** a continual precession in roll.

**Explanation.** NIL.

**Question Number.** 120. A rate of turn indicator dial marked '2 minutes' refers to a.

**Option A.** rate 3 turn.

**Option B.** rate 2 turn.

**Option C.** rate 1 turn.

**Correct Answer is.** rate 1 turn.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 54.

**Question Number.** 121. A pitot or static leak check is carried out.

**Option A.** only when an instrument is changed.

**Option B.** only when a leak is suspected.

**Option C.** whenever the pitot or static systems are disturbed.

**Correct Answer is.** whenever the pitot or static systems are disturbed.

**Explanation.** AL/10-1 15.5.

**Question Number.** 122. The temperature of boiling water at standard pressure on the Fahrenheit and Centigrade scale is.

**Option A.** 100 deg. and 32 deg. Respectively.

**Option B.** 180 deg. and 100 deg. Respectively.

**Option C.** 212 deg. and 100 deg. Respectively.

**Correct Answer is.** 212 deg. and 100 deg. Respectively.

**Explanation.** NIL.

**Question Number.** 123. A temperature of 59°F is equivalent to.

**Option A.** 14.69°C.

**Option B.** 32°C.

**Option C.** 15°C.

**Correct Answer is.** 15°C.

**Explanation.** NIL.

**Question Number.** 124. Aircraft heading (HDG) is.

**Option A.** the angle between True North and the longitudinal axis of the aircraft.

**Option B.** the angle between True North and the desired track.

**Option C.** the angle between True North and the actual track.

**Correct Answer is.** the angle between True North and the longitudinal axis of the aircraft.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 87.

**Question Number.** 125. Wind angle is the direction of the wind measured.

**Option A.** in degrees from the desired track.

**Option B.** in degrees from True North.

**Option C.** in degrees from the aircraft's heading.

**Correct Answer is.** in degrees from True North.

**Explanation.** NIL.

**Question Number.** 126. Limit stops are fitted in an artificial horizon to.

**Option A.** limit the outer gimbal movement.

**Option B.** reduce gimbal nutation.

**Option C.** prevent gimbal lock.

**Correct Answer is.** prevent gimbal lock.

**Explanation.** NIL.

**Question Number.** 127. The electrical output from a remote gyro to an attitude director indicator is.

**Option A.** by a control synchro.

**Option B.** by a differential synchro.

**Option C.** by a torque synchro.

**Correct Answer is.** by a control synchro.

**Explanation.** Avionics Fundamentals Page 93 Fig 5-20.

**Question Number.** 128. Agonic lines link places of.

**Option A.** zero variation.

**Option B.** different variation.

**Option C.** equal variation.

**Correct Answer is.** zero variation.

**Explanation.** NIL.

<https://ntc.cap.af.mil/ops/DOT/school/L23CockpitFam/magneticcompass.cfm>

**Question Number.** 129. Position error is caused by.

**Option A.** pitot head position.

**Option B.** instrument location in the instrument panel.

**Option C.** mechanical imperfections in an instrument.

**Correct Answer is.** pitot head position.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 17.

**Question Number.** 130. To convert degrees Centigrade to degrees Kelvin.

**Option A.** add 112 degrees.

**Option B.** use the formula  $(\text{deg C} \times 9/5) + 32$ .

**Option C.** add 273 degrees.

**Correct Answer is.** add 273 degrees.

**Explanation.** NIL.

**Question Number.** 131. Damping on a RATE GYRO can be either.

**Option A.** viscous, eddy current or air dash pot.

**Option B.** eddy current, variable spring or moving iron.

**Option C.** viscous, eddy current or variable spring.

**Correct Answer is.** viscous, eddy current or air dash pot.

**Explanation.** NIL.

**Question Number.** 132. The electrical output from a remote gyro to an attitude director indicator is.

**Option A.** by a control synchro.

**Option B.** by a differential synchro.

**Option C.** by a torque synchro.

**Correct Answer is.** by a control synchro.

**Explanation.** Avionics Fundamentals Page 93 Fig 5-20.

**Question Number.** 133. Electrical driven gyros are.

**Option A.** rotated at the same speed as air driven gyros.

**Option B.** rotated slower than air driven gyros.

**Option C.** rotated faster than air driven gyros.

**Correct Answer is.** rotated faster than air driven gyros.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 41.

**Question Number.** 134. In a ratio meter temperature indicating circuit, there is a break in the circuit to the bulb. This will give.

**Option A.** mid-scale deflection.

**Option B.** full scale deflection.

**Option C.** no scale deflection.

**Correct Answer is.** full scale deflection.

**Explanation.** Think of it this way - resistance increases with temperature, and that drives it toward fsd. If the bulb circuit is broken, the resistance will be infinite.

**Question Number.** 135. With the gyro at normal running speed, a torque applied to the inner gimbal ring of a vertical gyro will cause the.

**Option A.** outer and inner ring to move.

**Option B.** inner ring to move.

**Option C.** outer ring to move.

**Correct Answer is.** outer ring to move.

**Explanation.** NIL.

**Question Number.** 136. When an aircraft is descending, the pressure in the altimeter case.

**Option A.** will cause the aneroid capsule to contract.

**Option B.** will cause the aneroid capsule to expand.

**Option C.** will not affect the aneroid capsule.

**Correct Answer is.** will cause the aneroid capsule to contract.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 5.

**Question Number.** 137. The supply of Desync indicating system.

**Option A.** is direct current.

**Option B.** is alternating current at 400 c/s.

**Option C.** is alternating current at 50 c/s.

**Correct Answer is.** is direct current.

**Explanation.** NIL.

**Question Number.** 138. A sensitive altimeter reading 100 ft. when the millibar scale is set to the atmospheric pressure at airfield level (QFE).

**Option A.** indicates that the airfield is 100 ft. above sea level.

**Option B.** indicates that the instrument is unserviceable.

**Option C.** indicates that the aircraft is in a region of high pressure and the reading must be corrected to I.S.A. standards.

**Correct Answer is.** indicates that the instrument is unserviceable.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 9.

**Question Number.** 139. After using a pitot-static test set the pressure in the aircraft static system should be released to the atmosphere by.

**Option A.** removing the static connector from its static vent.

**Option B.** venting the static system via an internal bleed in the test set.

**Option C.** removing the static connector from its static vent after waiting for a period of three minutes.

**Correct Answer is.** venting the static system via an internal bleed in the test set.

**Explanation.** NIL.

**Question Number.** 140. An altimeter is operated.

**Option A.** by the vacuum system.

**Option B.** by the pitot system.

**Option C.** by the static system.

**Correct Answer is.** by the static system.

**Explanation.** NIL.

**Question Number.** 141. What is the purpose of the bimetallic strip in the altimeter?

**Option A.** Compensates for non-linear tension in the hairspring.

**Option B.** Corrects for capsule elasticity.

**Option C.** Compensates for change in density.

**Correct Answer is.** Corrects for capsule elasticity.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 5.

**Question Number.** 142. Which axis does the directional gyro spin on?

**Option A.** Vertical.

**Option B.** Horizontal.

**Option C.** Both vertical and horizontal.

**Correct Answer is.** Horizontal.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 8.

**Question Number.** 143. The capsule in an altimeter responds to.

**Option A.** absolute pressure.

**Option B.** gauge pressure.

**Option C.** differential pressure.

**Correct Answer is.** absolute pressure.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 36.

**Question Number.** 144. The aero plane monitor on the artificial horizon is fitted to the.

**Option A.** inner gimbal.

**Option B.** rotor.

**Option C.** instrument case.

**Correct Answer is.** instrument case.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 5.

**Question Number.** 145. True airspeed in an Air Data Computer is a function of.

**Option A.** airspeed and altitude.

**Option B.** mach number and temperature.

**Option C.** airspeed and temperature.

**Correct Answer is.** mach number and temperature.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 272.

**Question Number.** 146. The advantage of an instantaneous V.S.I. over a conventional one is.

**Option A.** it has an accelerometer which prevents the lag of a conventional one.

**Option B.** it does not require warming up.

**Option C.** it does not require pitot/static pressure.

**Correct Answer is.** it has an accelerometer which prevents the lag of a conventional one.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 27.

**Question Number.** 147. For a particular I.A.S. as the density decreases with altitude, the T.A.S.

**Option A.** decreases.

**Option B.** remains the same.

**Option C.** increases.

**Correct Answer is.** increases.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 24.

**Question Number.** 148. The type of gyro used in a gyro compass is a.

**Option A.** directional gyro.

**Option B.** vertical gyro.

**Option C.** rate gyro.

**Correct Answer is.** directional gyro.

**Explanation.** NIL.

**Question Number.** 149. A desiccant used in the storage of instruments.

**Option A.** is sodium-bicarbonate.

**Option B.** is silica-gel.

**Option C.** is anti-freeze oil.

**Correct Answer is.** is silica-gel.

**Explanation.** NIL.

**Question Number.** 150. What effect on the rate of precession will a change of gyro rotor speed have?

**Option A.** No effect.

**Option B.** Decrease the rotor speed, decrease the rate of precession.

**Option C.** Increase the rotor speed, decrease the rate of precession.

**Correct Answer is.** Increase the rotor speed, decrease the rate of precession.

**Explanation.** NIL.

**Question Number.** 151. Bourdon Tubes have.

**Option A.** toroidal cross section.

**Option B.** oval cross section.

**Option C.** circular cross section.

**Correct Answer is.** oval cross section.

**Explanation.** Flight Instruments and Automatic Flight Control Systems David Harris Page 182 Figure.

**Question Number.** 152. In a Bourdon tube.

**Option A.** one end is sealed and the other end open to the pressure source.

**Option B.** one end is sealed and the other end open to atmosphere.

**Option C.** both ends sealed.

**Correct Answer is.** one end is sealed and the other end open to the pressure source.

**Explanation.** Flight Instruments and Automatic Flight Control Systems David Harris Page 182.

**Question Number.** 153. Pressure gauge calibrators (Dead Weight Testers) use the.

**Option A.** Brahm's press principle.

**Option B.** Boyle's Law.

**Option C.** Charle's Law.

**Correct Answer is.** Brahm's press principle.

**Explanation.** NIL.

**Question Number.** 154. The fluid suitable for use in a Dead Weight Tester is.

**Option A.** anti-freeze oil.

**Option B.** castor-oil.

**Option C.** kerosene.

**Correct Answer is.** castor-oil.

**Explanation.** NIL. <http://www.bcmsensor.com/pressure/datasheets/PDH.htm>

**Question Number.** 155. The distance readout on an HSI is.

**Option A.** from the aircraft DME system.

**Option B.** dialled in by the pilot.

**Option C.** from the aircraft ATC system.

**Correct Answer is.** from the aircraft DME system.

**Explanation.** NIL.

**Question Number.** 156. A gyroscope having one plane of freedom at right angles to the plane of rotation, and its gimbal restrained either electrically or by a spring, is known as.

**Option A.** a rate gyro.

**Option B.** an earth gyro.

**Option C.** a tied gyro.

**Correct Answer is.** a rate gyro.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 52.

**Question Number.** 157. Pressure may be expressed in.

**Option A.** force per unit area.

**Option B.** weight or mass.

**Option C.** force per unit volume.

**Correct Answer is.** force per unit area.

**Explanation.** NIL.

**Question Number.** 158. What is the purpose of the hair spring in a Bourdon tube pressure gauge?

**Option A.** To reduce 'backlash'.

**Option B.** To return the pointer to zero.

**Option C.** To act a controlling force.

**Correct Answer is.** To reduce 'backlash'.

**Explanation.** NIL.

**Question Number.** 159. The ADIs attitude information is normally obtained from the aircraft's.

**Option A.** attitude rate gyros.

**Option B.** directional gyros.

**Option C.** vertical gyros.

**Correct Answer is.** vertical gyros.

**Explanation.** NIL.

**Question Number.** 160. One dot VOR deviation represents.

**Option A.** 5°.

**Option B.** 2 miles.

**Option C.** 1¼°.

**Correct Answer is.** 5°.

**Explanation.** NIL.

**Question Number.** 161. An instrument used for measuring negative pressures.

**Option A.** cannot be of the Bourdon tube type.

**Option B.** has anti-clockwise pointer movement if Bourdon tube operated.

**Option C.** has the Bourdon tube reversed within the case.

**Correct Answer is.** cannot be of the Bourdon tube type.

**Explanation.** Flight Instruments and Automatic Flight Control Systems David Harris  
Page 182.

**Question Number.** 162. An absolute pressure gauge measures.

**Option A.** the applied pressure referred to atmospheric pressure.

**Option B.** pressures extremely accurately.

**Option C.** the applied pressure referred to a perfect vacuum.

**Correct Answer is.** the applied pressure referred to a perfect vacuum.

**Explanation.** NIL.

**Question Number.** 163. Gauge pressure as indicated on a direct reading Bourdon Tube pressure gauge is equal to.

**Option A.** absolute pressure minus atmospheric pressure.

**Option B.** atmospheric pressure minus absolute pressure.

**Option C.** absolute pressure plus atmospheric pressure.

**Correct Answer is.** absolute pressure minus atmospheric pressure.

**Explanation.** NIL.

**Question Number.** 164. The to/from indicator on an HSI informs the pilot of which direction he is tracking relative to.

**Option A.** an ILS station.

**Option B.** an ADF station.

**Option C.** a VOR station.

**Correct Answer is.** a VOR station.

**Explanation.** NIL.

**Question Number.** 165. A pressure gauge, such as a hydraulic brake pressure gauge, indicates 1,000 p.s.i. In terms of absolute pressure, this represents.

**Option A.** 985.3 p.s.i.

**Option B.** 1,014.7 p.s.i.

**Option C.** 1,000 p.s.i.

**Correct Answer is.** 1,014.7 p.s.i.

**Explanation.** NIL.

**Question Number.** 166. To fill a Dead Weight Tester.

**Option A.** remove platform and fill cylinder.

**Option B.** screw out hand wheel and fill reservoir.

**Option C.** screw in hand wheel and fill reservoir.

**Correct Answer is.** screw out hand wheel and fill reservoir.

**Explanation.** NIL.

**Question Number.** 167. With an aircraft on the ground and QNH set on the millibar scale of the altimeter, the altimeter will read.

**Option A.** the airfield height.

**Option B.** off scale.

**Option C.** zero.

**Correct Answer is.** the airfield height.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 9.

**Question Number.** 168. When checking a sensitive altimeter on a pre-flight inspection.

**Option A.** the ambient air pressure is set on the millibar scale.

**Option B.** the standard sea level barometric pressure is always set on the millibar scale.

**Option C.** the ambient air pressure corrected for temperature is set on the millibar scale.

**Correct Answer is.** the ambient air pressure is set on the millibar scale.

**Explanation.** QFE is set and it should read airfield height.

**Question Number.** 169. The HSI compass card is positioned by the.

**Option A.** compass system.

**Option B.** aircraft ADF system.

**Option C.** heading select knob.

**Correct Answer is.** compass system.

**Explanation.** NIL.

**Question Number.** 170. The applied pressure to an A.S.I. varies with the.

**Option A.** square of the speed.

**Option B.** square root of the speed.

**Option C.** cube root of the speed.

**Correct Answer is.** square of the speed.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 15.

**Question Number.** 171. The supply to an A.S.I.

**Option A.** is pitot pressure only.

**Option B.** are pitot and static pressure.

**Option C.** is static pressure only.

**Correct Answer is.** are pitot and static pressure.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 13.

**Question Number.** 172. The capsule for an A.S.I. will be expanding when the aircraft is.

**Option A.** climbing.

**Option B.** accelerating.

**Option C.** decelerating.

**Correct Answer is.** accelerating.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 13.

**Question Number.** 173. The deflection of the ADI command bars when flying a localizer approach is proportional to.

**Option A.** the difference between the amplitudes on the two modulations.

**Option B.** the sum of the amplitude of the two modulations.

**Option C.** the difference in amplitude of the two r.f. carriers.

**Correct Answer is.** the difference between the amplitudes on the two modulations.

**Explanation.** NIL.

**Question Number.** 174. If an aircraft is flying straight and level in still air, airspeed will be.

**Option A.** less than the ground speed.

**Option B.** equal to the ground speed.

**Option C.** greater than the ground speed.

**Correct Answer is.** equal to the ground speed.

**Explanation.** NIL.

**Question Number.** 175. If an aircraft flying in still air at 400 knots, encounters a head wind of 50 knots, its ground speed is.

**Option A.** 450 knots.

**Option B.** 350 knots.

**Option C.** 400 knots.

**Correct Answer is.** 350 knots.

**Explanation.** NIL.

**Question Number.** 176. To provide a linear scale on an A.S.I., a.

**Option A.** 10 to 1 gearing is used.

**Option B.** ranging bar and screws are fitted.

**Option C.** bi-metal corrector is employed.

**Correct Answer is.** ranging bar and screws are fitted.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 44 fig 2.18 and text below.

**Question Number.** 177. A Mach meter is an instrument which indicates the speed of.

**Option A.** sound relative to the aircraft's altitude.

**Option B.** the aircraft relative to the speed of sound at ground level.

**Option C.** the aircraft relative to the local sonic speed.

**Correct Answer is.** the aircraft relative to the local sonic speed.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 19, and Aircraft Instruments and Integrated Systems Pallet Page 45.

**Question Number.** 178. The moving element of a ratio meter has.

**Option A.** three coils.

**Option B.** one coil.

**Option C.** two coils.

**Correct Answer is.** two coils.

**Explanation.** Flight Instruments and Automatic Flight Control Systems Page 186 Fig 7.4 and para below.

**Question Number.** 179. When carrying out a pressure leak test on an altimeter, you are checking for leaks in the.

**Option A.** instrument case.

**Option A.** pressure chamber.

**Option A.** capsule stack.

**Correct Answer is.** instrument case.

**Explanation.** NIL.

**Question Number.** 180. If an altimeter millibar scale was set to 1013.25 and the barometric pressure at that time was 1020, the altimeter should read.

**Option A.** zero feet.

**Option B.** positive altitude.

**Option C.** below zero feet (negative altitude).

**Correct Answer is.** below zero feet (negative altitude).

**Explanation.** Assuming aircraft is on the ground.

**Question Number.** 181. An aircraft flying towards a VOR station shows indications of 120° and 'TO'. After passing over the station, on the same course, the indications will be.

**Option A.** 120° and FROM.

**Option B.** 300° and FROM.

**Option C.** 300° and TO.

**Correct Answer is.** 120° and FROM.

**Explanation.** NIL.

**Question Number.** 182. The command bars in a flight director system indicate.

**Option A.** the actual path with respect to required path.

**Option B.** the required path with respect to actual path.

**Option C.** true horizon.

**Correct Answer is.** the required path with respect to actual path.

**Explanation.** NIL.

**Question Number.** 183. When changing a windscreen panel which has a standby magnetic compass located in the vicinity.

**Option A.** precautions should be taken that the bonding tag is attached to the correct attachment bolt.

**Option B.** precautions must be taken to ensure that the attachment bolts are of the specified type.

**Option C.** The attachment bolts should be tightened in an anti-clockwise direction around the window.

**Correct Answer is.** precautions must be taken to ensure that the attachment bolts are of the specified type.

**Explanation.** NIL.

**Question Number.** 184. On a conventional RMI the angle between the compass datum and the radio pointer arrow is.

**Option A.** the relative bearing.

**Option B.** the magnetic bearing.

**Option C.** the complimentary bearing.

**Correct Answer is.** the relative bearing.

**Explanation.** NIL.

**Question Number.** 185. A compass is made aperiodic by.

**Option A.** locking.

**Option B.** tying it to the case.

**Option C.** using fluid.

**Correct Answer is.** using fluid.

**Explanation.** NIL.

**Question Number.** 186. Isogonal lines link places of.

**Option A.** different variation.

**Option B.** equal variation.

**Option C.** zero variation.

**Correct Answer is.** equal variation.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 81.

**Question Number.** 187. In an artificial horizon Pendulosity Error is caused by.

**Option A.** bottom lightness of inner gimbals.

**Option B.** bottom heaviness of inner gimbals.

**Option C.** displacement of erection control device.

**Correct Answer is.** bottom heaviness of inner gimbals.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 49 (acceleration error).

**Question Number.** 188. If True Airspeed is 470 knots, what is the Equivalent Air speed?

**Option A.** 278 knots.

**Option B.** 662 knots.

**Option C.** 550 knots.

**Correct Answer is.** 278 knots.

**Explanation.** True airspeed is always higher than EAS (or IAS) at any altitude above Sea Level.

**Question Number.** 189. If the Airspeed Indicator reading is 300 Knots, what is the Calibrated Airspeed?

**Option A.** 296 knots.

**Option B.** 304 knots.

**Option C.** 293 knots.

**Correct Answer is.** 304 knots.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 14.

**Question Number.** 190. In an Artificial Horizon, Erection Error is caused by.

**Option A.** displacement of erection control device.

**Option B.** bottom heaviness of inner gimbals.

**Option C.** bottom lightness of inner gimbals.

**Correct Answer is.** displacement of erection control device.

**Explanation.** NIL.

**Question Number.** 191. A Vertical Speed indicator Metering Unit Consist of.

**Option A.** both a) & b).

**Option B.** an orifice.

**Option C.** a capillary.

**Correct Answer is.** both a) & b).

**Explanation.** NIL.

**Question Number.** 192. Flux Valve senses angle of horizontal component with respect to the aircraft's.

**Option A.** lateral axis.

**Option B.** longitudinal axis.

**Option C.** both lateral and longitudinal axis.

**Correct Answer is.** longitudinal axis.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 64/65.

**Question Number.** 193. The manual VOR input is for.

**Option A.** the radio magnetic indicator.

**Option B.** the ADI.

**Option C.** the course deviation bar.

**Correct Answer is.** the course deviation bar.

**Explanation.** NIL.

**Question Number.** 194. After correction of the north-south heading reading on a compass swing, the resultant correction is known as.

**Option A.** magnetic heading.

**Option B.** residual deviation.

**Option C.** correct heading.

**Correct Answer is.** residual deviation.

**Explanation.** NIL.

**Question Number.** 195. Apparent drift on directional gyro is corrected by.

**Option A.** series of balance holes drilled in gyro rotor.

**Option B.** mercury switch on outer ring.

**Option C.** an adjustment nut on inner ring.

**Correct Answer is.** an adjustment nut on inner ring.

**Explanation.** Flight Instruments and Automatic Flight Control Systems Page 45.

**Question Number.** 196. If a micro adjuster is replaced in a compass system, you would.

**Option A.** carry out a new compass swing.

**Option B.** set it to zero datum.

**Option C.** set it up the same as the one removed.

**Correct Answer is.** carry out a new compass swing.

**Explanation.** NIL.

**Question Number.** 197. In a compass swing: North error -2 degrees, South error + 2 degrees. The coefficient C is.

**Option A.** +2 degrees.

**Option B.** 0 degrees.

**Option C.** -2 degrees.

**Correct Answer is.** -2 degrees.

**Explanation.** AL/10-5 Table 1. This is not the same as a previous question.

**Question Number.** 198. Purpose of Altitude Alerting is to warn the pilot of.

**Option A.** approach to or deviation from selected altitude.

**Option B.** selection of altitude.

**Option C.** altitude information.

**Correct Answer is.** approach to or deviation from selected altitude.

**Explanation.** NIL.

<http://www.domingoaereo.hpg.ig.com.br/Boeing727/Manual/warnings.htm>

**Question Number.** 199. Aircraft certified before 1997 with RVSM, maximum tolerance for the system is.

**Option A.** +/- 500ft system tolerance.

**Option B.** +/- 200ft system, +/-50ft for instrument error.

**Option C.** +/- 300ft system, +/-50ft for instrument error.

**Correct Answer is.** +/- 300ft system, +/-50ft for instrument error.

**Explanation.** NIL. <http://www2.eur-rvsm.com/library.htm>

**Question Number.** 200. Machmeters work on.

**Option A.** static.

**Option B.** pitot and static.

**Option C.** pitot.

**Correct Answer is.** pitot and static.

**Explanation.** NIL.

**Question Number.** 201. An aircraft with Mach warning will warn.

**Option A.** when Mach 1 is exceeded.

**Option B.** when Mcrit is reached.

**Option C.** when envelope limit is reached.

**Correct Answer is.** when Mcrit is reached.

**Explanation.** NIL.

**Question Number.** 202. An HSI provides what information?

**Option A.** VOR, map, attitude, ILS.

**Option B.** VOR, plan, ILS, map, radar.

**Option C.** VOR, ILS, plan, attitude.

**Correct Answer is.** VOR, plan, ILS, map, radar.

**Explanation.** NIL.

**Question Number.** 203. Compressibility error in a pitot head is caused by.

**Option A.** compression of air in the tube at high speed.

**Option B.** blockage in the pitot tube.

**Option C.** misalignment of pitot head.

**Correct Answer is.** compression of air in the tube at high speed.

**Explanation.** Flight Instruments and Automatic Flight Control Systems - David Harris  
P17 ASI Errors (3).

**Question Number.** 204. The earth's magnetic field is.

**Option A.** vertical at the poles, horizontal at the magnetic equator.

**Option B.** vertical across the earth.

**Option C.** horizontal across the earth.

**Correct Answer is.** vertical at the poles, horizontal at the magnetic equator.  
**Explanation.** NIL.

**Question Number.**205. There is an air bubble in the compass:.

**Option A.** The fluid is not aerated properly.

**Option B.** It is due to high altitude.

**Option C.** It is required, to compensate for expansion of the fluid.

**Correct Answer is.** It is due to high altitude.

**Explanation.** NIL.

**Question Number.** 206. A flux detector output is a.

**Option A.** rectified D.C. voltage.

**Option B.** A.C. voltage at twice the frequency of the excitation voltage.

**Option C.** A.C. voltage at the same frequency as the excitation voltage.

**Correct Answer is.** A.C. voltage at twice the frequency of the excitation voltage.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 189.

11.05.2. Instruments/Avionic Systems - Avionic Systems.

**Question Number.** 1. Autopilot servo brake is energized.

**Option A.** to actuate on.

**Option B.** at the same time as the clutch.

**Option C.** to actuate off.

**Correct Answer is.** to actuate off.

**Explanation.** Pallet Aircraft Electrical Systems 3rd Edition Page 142.

**Question Number.2.** Which category are hand mikes considered essential?

**Option A.** Aerial work aircraft.

**Option B.** Light aircraft.

**Option C.** Heavy passenger aircraft.

**Correct Answer is.** Light aircraft.

**Explanation.** ANO Schedule 4 Scale N and Article 47, prohibit them on Transport Category aircraft. However, no direct reference to them being 'essential' on light aircraft is found.

**Question Number. 3.** Emergency frequency is.

**Option A.** 125.5 Hz.

**Option B.** 121.5 Hz.

**Option C.** 123.5 Hz.

**Correct Answer is.** 121.5 Hz.

**Explanation.** JAR OPS 1.820 or 1.850. Jeppesen A&P Technician Airframe Textbook Page 12-25.

**Question Number. 4.** 121.5 MHz is what frequency?

**Option A.** ILS.

**Option B.** VOR.

**Option C.** VHF.

**Correct Answer is.** VHF.

**Explanation.** 118-137 MHz is VHF frequency. Jeppesen A&P Technician Airframe Textbook Page 12-13.

**Question Number. 5.** 112.1 MHz is what frequency?

**Option A.** VHF.

**Option B.** ILS.

**Option C.** VOR.

**Correct Answer is.** VOR.

**Explanation.** 112-118 MHz is VOR frequency. Less than 112 MHz odd decimals are ILS. Jeppesen A&P Technician Airframe Textbook Page 12-14.

**Question Number. 6.** On a fiberglass aerial, what paint should be used?

**Option A.** Cellulose only.

**Option B.** Not cellulose.

**Option C.** Polyurethane.

**Correct Answer is.** Not cellulose.

**Explanation.** CAIPs RL/2-2 8.1.2.

**Question Number.** 7. When painting a neoprene coated radio antenna.

**Option A.** use any paint.

**Option B.** use cellulose paint.

**Option C.** do not use cellulose paint.

**Correct Answer is.** do not use cellulose paint.

**Explanation.** CAIPs RL/2-2 8.1.2.

**Question Number.** 8. How many axis does the aircraft autopilot control?

**Option A.** Four.

**Option B.** Three.

**Option C.** Two.

**Correct Answer is.** Three.

**Explanation.** Pallet Automatic Flight Control 2nd Edition Page 81. Jeppesen A&P Technician Airframe Textbook Page 12-36.

**Question Number.** 9. ILS marker beacon lights are.

**Option A.** blue, amber, white.

**Option B.** blue, white, green.

**Option C.** green, blue, amber.

**Correct Answer is.** blue, amber, white.

**Explanation.** Aircraft Electricity and Avionics (5th Edition) Eismin Page 312. Jeppesen A&P Technician Airframe Textbook Page 12-24.

**Question Number.** 10. 111.1 MHz is.

**Option A.** a VOR frequency.

**Option B.** an ILS frequency.

**Option C.** a HF frequency.

**Correct Answer is.** an ILS frequency.

**Explanation.** Jeppesen Aircraft Radio Systems Page 69 shows this as a localizer frequency. Jeppesen A&P Technician Airframe Textbook Page 12-24.

**Question Number.** 11. An autopilot PFCU servo brake is.

**Option A.** energized on.

**Option B.** energized at the same time as the clutch.

**Option C.** energized off.

**Correct Answer is.** energized off.

**Explanation.** Aircraft Electrical Systems, Pallet Page 142.

**Question Number.** 12. The aviation distress frequency is.

**Option A.** 121.5 kHz.

**Option B.** 122.5 MHz

**Option C.** 121.5 MHz

**Correct Answer is.** 121.5 MHz

**Explanation.** JAR OPS 1.820 or 1.850 c. Jeppesen A&P Technician Airframe Textbook Page 12-25.

**Question Number.** 13. A radar altimeter in track mode is effective to.

**Option A.** 100 ft.

**Option B.** 2500 ft.

**Option C.** 2000 ft.

**Correct Answer is.** 2500 ft.

**Explanation.** Aircraft Electricity and Electronics. Eismin Page 323 - 324.

**Question Number.** 14. 112.1 MHz is.

**Option A.** an ILS frequency.

**Option B.** an ADF frequency.

**Option C.** a VOR frequency.

**Correct Answer is.** a VOR frequency.

**Explanation.** 112 - 118 MHz are VOR frequencies. Jeppesen A&P Technician Airframe Textbook Page 12-14.

**Question Number.** 15. What does a Decca Navigation system operate on?

**Option A.** Very High Frequency.

**Option B.** Low Frequency.

**Option C.** High Frequency.

**Correct Answer is.** Low Frequency.

**Explanation.** Decca navigation is low frequency.

**Question Number.** 16. Which of the following has an hyperbolic curve?

**Option A.** VOR.

**Option B.** DME.

**Option C.** Loran C.

**Correct Answer is.** Loran C.

**Explanation.** Loran C is a type of LF Navigation. Jeppesen Avionic Fundamentals Page 153. Also Aircraft Radio Systems by James Powell Page 101.

**Question Number.** 17. A GPS satellite will come into view.

**Option A.** 20° above the horizon with respect to the viewer.

**Option B.** 15° above the horizon with respect to the viewer.

**Option C.** 10° above the horizon with respect to the viewer.

**Correct Answer is.** 15° above the horizon with respect to the viewer.

**Explanation.** Elevation mask' is 15 degrees.

**Question Number.** 18. Restrictions to the use of hand held microphones apply to.

**Option A.** transport category aircraft only.

**Option B.** private aircraft.

**Option C.** aerial work and transport category aircraft.

**Correct Answer is.** transport category aircraft only.

**Explanation.** ANO Schedule 4 Scale N.

**Question Number.** 19. The purpose of the clutch in an auto throttle servo is.

**Option A.** to allow the pilot to override.

**Option B.** to limit the range of control movement.

**Option C.** to protect the servo motor in the event of inadvertent runaway.

**Correct Answer is.** to allow the pilot to override.

**Explanation.** Pallet Automatic Flight Control Pg 289.

**Question Number.** 20. Track mode of an RA is operational.

**Option A.** from 0 to 2,500 feet.

**Option B.** from 1.0 to 100 feet.

**Option C.** above 10,000 feet.

**Correct Answer is.** from 0 to 2,500 feet.

**Explanation.** The radio altimeter is operational from 0 - 2500 ft Jeppesen Avionic Fundamentals Page 223.

**Question Number.** 21. How many aerials are there in a TCAS system?

**Option A.** 1.

**Option B.** 3.

**Option C.** 2.

**Correct Answer is.** 2.

**Explanation.** Avionic Systems: Operation and Maintenance page 160.

**Question Number.** 22. Wavelength of band radar is.

**Option A.** 3 cm.

**Option B.** 5 cm.

**Option C.** 10 m.

**Correct Answer is.** 3 cm.

**Explanation.** Introduction to Avionics Dale Cundy Page 82.

**Question Number.** 23. Precipitation static is caused by.

**Option A.** lightning strikes.

**Option B.** HF radiation.

**Option C.** skin to air particle collisions.

**Correct Answer is.** skin to air particle collisions.

**Explanation.** Aircraft Electricity and Electronics - Eismun page 211.

**Question Number.** 24. HF aerials have weak points designed at.

**Option A.** both ends.

**Option B.** the front end.

**Option C.** the back end.

**Correct Answer is.** the back end.

**Explanation.** CAIPs RL/2-2 para 2.2.4.

**Question Number.** 25. What is the reply frequency of an aircraft transponder?

**Option A.** 1000 MHz.

**Option B.** 1030 MHz.

**Option C.** 1090 MHz.

**Correct Answer is.** 1090 MHz.

**Explanation.** Avionic Fundamentals page 211.

**Question Number.** 26. CAT 2 RVR limit is.

**Option A.** 1200 ft.

**Option B.** 1000 ft.

**Option C.** 10,000 ft.

**Correct Answer is.** 1200 ft.

**Explanation.** CAT II ILS Runway Visual Range (RVR) is 'not less than 1200ft'. Ref: Avionic Fundamentals page 199.

**Question Number.** 27. With autopilot engaged, which control surface is inhibited?

**Option A.** THS.

**Option B.** Elevators.

**Option C.** Ailerons.

**Correct Answer is.** THS.

**Explanation.** A&P Airframe Technician Textbook Pg 12-35.

**Question Number.** 28. When flaps are lowered, the automatic trim system will.

**Option A.** angle of incidence remains the same.

**Option B.** increase the angle of incidence of the THS.

**Option C.** decrease the angle of incidence of the THS.

**Correct Answer is.** decrease the angle of incidence of the THS.

**Explanation.** NIL.

**Question Number.** 29. In autopilot, the control column.

**Option A.** does not move.

**Option B.** moves in pitch.

**Option C.** moves in pitch and roll.

**Correct Answer is.** moves in pitch and roll.

**Explanation.** A&P Airframe Technician Textbook Pg. 12-47 (Parallel system). This is assuming it is a non-fly-by-wire aircraft.

**Question Number.** 30. A hyperbolic system is.

**Option A.** VOR.

**Option B.** LORAN C.

**Option C.** ILS.

**Correct Answer is.** LORAN C.

**Explanation.** Loran C is a type of Omega Navigation. Jeppesen Avionic Fundamentals Page 153.

**Question Number.** 31. When is auto throttle disengaged?

**Option A.** On landing.

**Option B.** After thrust reverser has deployed beyond 90% so that TO/GA can be selected in case of emergency.

**Option C.** On selection of thrust reverse.

**Correct Answer is.** On selection of thrust reverse.

**Explanation.** Pallet Automatic Flight Control Page 286.

**Question Number.** 32. In aircraft with an autopilot and an auto trim, a pitch command input will cause.

**Option A.** column will not move and trim system will move.

**Option B.** column to move but trim system not to move.

**Option C.** column to move and trim system to move.

**Correct Answer is.** column to move and trim system to move.

**Explanation.** A&P Technician Airframe Textbook 12-47 - This is assuming it is a no fly-by-wire aircraft.

**Question Number.** 33. In regard to the aircraft transponder, what is the pulse frequency?

**Option A.** Number of pulses per signal.

**Option B.** Amount of times interrogating signal is sent per second.

**Option C.** Amount of times reply signal is sent per second.

**Correct Answer is.** Amount of times reply signal is sent per second.

**Explanation.** NIL.

**Question Number.** 34. CAT 2 RVR limit is.

**Option A.** 400 m.

**Option B.** 200 m.

**Option C.** 800 m.

**Correct Answer is.** 400 m.

**Explanation.** CAT II ILS Runway Visual Range (RVR) is 'not less than 1200ft'. 1200 ft = 400m Ref: Avionic Fundamentals page 199.

**Question Number.** 35. How many programs can a FMC store?

**Option A.** One current.

**Option B.** Two. Both active.

**Option C.** Two. One active and one standby.

**Correct Answer is.** Two. One active and one standby.

**Explanation.** Pallet Aircraft Instruments and Integrated Systems Page 399 on. Boeing 757 chapter 34-61-00 page 201.

**Question Number.** 36. EPR and speed for auto throttle is activated at.

**Option A.** take off.

**Option B.** approach.

**Option C.** cruise.

**Correct Answer is.** take off.

**Explanation.** Pallet Automatic Flight Control 4th Edition Page 286.

**Question Number.** 37. How does an IRS calculate velocity?

**Option A.** Integration of accelerometers.

**Option B.** Differentiation of laser gyro.

**Option C.** Double integration of accelerometers.

**Correct Answer is.** Integration of accelerometers.

**Explanation.** Pallet Automatic Flight Control 4th Edition Page 191.

**Question Number.** 38. In an autopilot, what controls pitch mode?

**Option A.** Glideslope.

**Option B.** VOR.

**Option C.** Localizer.

**Correct Answer is.** Glideslope.

**Explanation.** Pallet Automatic Flight Control 4th Edition Page 187.

**Question Number.** 39. Glideslope controls autopilot in.

**Option A.** yaw.

**Option B.** roll.

**Option C.** pitch.

**Correct Answer is.** pitch.

**Explanation.** Pallet Automatic Flight Control 4th Edition Page 187.

**Question Number.** 40. Static dischargers help eliminate radio interference by dissipating static electricity into the atmosphere at.

**Option A.** all voltage levels.

**Option B.** low current levels.

**Option C.** high voltage levels.

**Correct Answer is.** low current levels.

**Explanation.** Reference found in an older version of A&P Technician Airframe Textbook Page 700 (Not in latest edition). Quote 'If the aircraft is equipped with static dischargers, the static discharge occurs at lower current and more frequently'.

**Question Number.** 41. What is B-RNAV?

**Option A.** Indicates true airspeed.

**Option B.** Indicates bearing and airspeed until next active waypoint.

**Option C.** Ability to store 6 waypoints.

**Correct Answer is.** Indicates bearing and airspeed until next active waypoint.

**Explanation.** See Module 11 Forum.

**Question Number.** 42. An Automatic Flight Control System receives inputs from the following ground based transmitters.

**Option A.** DME, ILS, ADF.

**Option B.** VOR, ILS.

**Option C.** RA, ADF, ILS.

**Correct Answer is.** VOR, ILS.

**Explanation.** An AFCS uses VOR and ILS (RA is not ground based).

**Question Number.** 43. What is the wavelength of C band radar?

**Option A.** 17 m.

**Option B.** 3 cm.

**Option C.** 7 cm.

**Correct Answer is.** 7 cm.

**Explanation.** C Band is 4 - 8 cm. Most aircraft systems use about 5.6cm. Ref Boeing and Jeppesen A&P Technician Airframe Textbook Page 12-27.

**Question Number.** 44. What is primary radar?

**Option A.** Radar that sends out pulse and receives reflected pulse.

**Option B.** Land based.

**Option C.** Radar that gives height and position.

**Correct Answer is.** Radar that sends out pulse and receives reflected pulse.

**Explanation.** NIL.

**Question Number.** 45. What is ILS marker beacon frequency?

**Option A.** 75 MHz.

**Option B.** 100 MHz.

**Option C.** 50 MHz.

**Correct Answer is.** 75 MHz.

**Explanation.** Automatic Flight Control. Pallet, 4th Edition Page 183/4.

**Question Number.** 46. TCAS is selected.

**Option A.** by a switch, by pilot on selector panel.

**Option B.** automatically.

**Option C.** not available in cruise.

**Correct Answer is.** by a switch, by pilot on selector panel.

**Explanation.** NIL.

**Question Number.**47. The manual VOR input is for.

**Option A.** glideslope.

**Option B.** course deviation bar.

**Option C.** RMI.

**Correct Answer is.** course deviation bar.

**Explanation.** B737 MM Chapter 34-31-02.

**Question Number.** 48. The mach trim is initiated by.

**Option A.** an electric motor.

**Option B.** the autopilot motor.

**Option C.** a PCU.

**Correct Answer is.** the autopilot motor.

**Explanation.** Automatic Flight Control, Pallet, Page 231.

**Question Number.** 49. What is the color of the middle marker beacon?

**Option A.** Amber.

**Option B.** Blue.

**Option C.** White.

**Correct Answer is.** Amber.

**Explanation.** Jeppesen - Avionics Fundamentals, Page 219 fig 14-2.

**Question Number.** 50. A GPS system is formed from.

**Option A.** receiver, processing unit, interactive console.

**Option B.** satellites, processing unit, display unit.

**Option C.** space, control, user.

**Correct Answer is.** space, control, user.

**Explanation.** NIL. <http://www.robins.af.mil/lkn/jssmogps.htm>

**Question Number.** 51. For aircraft with dual CMCs, when only one CMC is available, it.

**Option A.** can be connected to either side.

**Option B.** must be connected to the left side.

**Option C.** must be connected to the right side.

**Correct Answer is.** must be connected to the left side.

**Explanation.** Aircraft Electricity and Electronics Fifth Edition Eismun Chap 13 page 271.

**Question Number.** 52. Laser gyros are.

**Option A.** aligned to the magnetic north.

**Option B.** aligned to the true north.

**Option C.** aligned to the aircraft structure.

**Correct Answer is.** aligned to the aircraft structure.

**Explanation.** Jeppesen Avionics Fundamentals Page 99.

**Question Number.** 53. Laser gyros.

**Option A.** have rotational parts.

**Option B.** do not have rotational parts.

**Option C.** have movable parts.

**Correct Answer is.** do not have rotational parts.

**Explanation.** Jeppesen Avionics Fundamentals Page 99.

**Question Number.** 54. A radio coupled approach is.

**Option A.** localizer first, followed by glideslope.

**Option B.** in any order.

**Option C.** glideslope first, followed by localizer.

**Correct Answer is.** localizer first, followed by glideslope.

**Explanation.** Automatic Flight Control Pallet Page 184-185.

**Question Number.** 55. Aileron signal is fed to the rudder channel.

**Option A.** for yaw damping compensation.

**Option B.** for turn command back-up.

**Option C.** for turn coordination.

**Correct Answer is.** for turn coordination.

**Explanation.** Automatic Flight Control. Pallet. 4th Edition Page 121/122.

**Question Number.** 56. The rate of G/S warning in GPWS.

**Option A.** changes with radio altitude.

**Option B.** does not change.

**Option C.** changes with barometric altitude.

**Correct Answer is.** changes with radio altitude.

**Explanation.** Avionic Fundamentals page 263.

**Question Number.** 57. What frequency are VOR and ILS?

**Option A.** UHF.

**Option B.** VHF.

**Option C.** HF.

**Correct Answer is.** VHF.

**Explanation.** Aircraft Instruments and Integrated Systems Page 426.

**Question Number.** 58. A radio frequency of 16 MHz would be used for.

**Option A.** weather radar.

**Option B.** marker beacons.

**Option C.** HF communications.

**Correct Answer is.** HF communications.

**Explanation.** NIL.

**Question Number.** 59. An aircraft lands in auto land. After touch down and thrust reversers are deployed. What happens to auto throttle?

**Option A.** Automatically switches off.

**Option B.** Advances throttles.

**Option C.** Stays armed for go around in an emergency.

**Correct Answer is.** Automatically switches off.

**Explanation.** Automatic Flight Control Pallet and Coyle Page 286.

**Question Number.** 60. Pilot's instinctive cut-out buttons are positioned.

**Option A.** on right side of control wheel.

**Option B.** on side of control wheel furthest from throttles.

**Option C.** on left side of control wheel.

**Correct Answer is.** on side of control wheel furthest from throttles.

**Explanation.** JAR 25.1329 (d).

**Question Number.** 61. ILS and VOR operate in which range.

**Option A.** HF.

**Option B.** VHF.

**Option C.** UHF.

**Correct Answer is.** VHF.

**Explanation.** Jeppesen A&P Technician Airframe Textbook 12-1.

**Question Number.** 62. FMC secondary flight-plan is selected.

**Option A.** on the ground by the pilot.

**Option B.** in the air by the pilot.

**Option C.** by calendar date monthly.

**Correct Answer is.** in the air by the pilot.

**Explanation.** FMC has a primary (active) and a secondary (alternative) stored flight plan.

**Question Number.** 63. GPWS operating in mode 1 and 2 when close to ground will give.

**Option A.** amber warning.

**Option B.** red caption and aural 'whoop whoop pull up'.

**Option C.** red caption and aural 'pull up, undercarriage, flaps, throttle'.

**Correct Answer is.** red caption and aural 'whoop whoop pull up'.

**Explanation.** NIL.

**Question Number.** 64. The components of an ILS are.

**Option A.** a localizer and the marker beacons.

**Option B.** a localizer, a glide slope and the marker beacons.

**Option C.** a localizer and a glide slope.

**Correct Answer is.** a localizer, a glide slope and the marker beacons.

**Explanation.** Aircraft Radio Systems by James Powell page 69.

**Question Number.** 65. In ILS, the glideslope provides.

**Option A.** distance checks.

**Option B.** vertical steering.

**Option C.** lateral steering.

**Correct Answer is.** vertical steering.

**Explanation.** Aircraft Radio Systems by James Powell page 69.

**Question Number.** 66. If the 90 Hz tone modulation in a localizer receiver predominates, the deviation indicator will show.

**Option A.** fly right.

**Option B.** the flag.

**Option C.** fly left.

**Correct Answer is.** fly right.

**Explanation.** Aircraft Radio Systems by James Powell page 73.

**Question Number.** 67. Autopilot will operate above what altitude?

**Option A.** 750 ft.

**Option B.** 1000 ft.

**Option C.** 500 ft.

**Correct Answer is.** 500 ft.

**Explanation.** NIL.

**Question Number.** 68. A radio coupled autopilot in pitch uses.

**Option A.** ADF.

**Option B.** VOR.

**Option C.** glideslope.

**Correct Answer is.** glideslope.

**Explanation.** NIL.

**Question Number.** 69. EPR and thrust modes in auto throttle are the only modes that can be selected in.

**Option A.** cruise.

**Option B.** approach.

**Option C.** take off.

**Correct Answer is.** take off.

**Explanation.** NIL.

**Question Number.** 70. An inertial navigation unit uses pin programming for.

**Option A.** magnetic orientation.

**Option B.** location.

**Option C.** aircraft type.

**Correct Answer is.** location.

**Explanation.** Pin programming for IRU`s and INU`s are carried out on the aircraft rack mounted side. The purpose being to tell the installed unit which position it is serving within the aircraft i.e left, ctr or right side! The unit is universal for all.

**Question Number.** 71. How can it be verified if FMC update is correct?

**Option A.** Dataplate on the FMC.

**Option B.** BITE.

**Option C.** FMC via CDU.

**Correct Answer is.** FMC via CDU.

**Explanation.** NIL.

**Question Number.** 72. GPWS will show a fault if the following fails:.

**Option A.** Radio altimeter.

**Option B.** Air speed indicator.

**Option C.** Pressure altimeter.

**Correct Answer is.** Radio altimeter.

**Explanation.** Of the three, GPWS has only connection to the RA. It does use barometric vertical speed however.

**Question Number.** 73. INS has mercury switches on.

**Option A.** all gimbals.

**Option B.** outer gimbal.

**Option C.** inner gimbal.

**Correct Answer is.** all gimbals.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 116.

**Question Number.** 74. If the runway picture in the EADI moves down during an ILS approach, the aircraft must fly.

**Option A.** up.

**Option B.** down.

**Option C.** nowhere - this is normal on an ILS approach.

**Correct Answer is.** down.

**Explanation.** NIL.

**Question Number.** 75. What modulation is used for the beams of a localiser in an ILS?

**Option A.** 150 Hz right of runway centerline, 90 Hz left of runway center line.

**Option B.** 90 Hz below the glide path, 150 Hz above the glide path.

**Option C.** 150 Hz left of runway centerline, 90 Hz right of runway center line.

**Correct Answer is.** 150 Hz right of runway centerline, 90 Hz left of runway center line. **Explanation.** Aircraft Radio Systems Powell Page 70.

**Question Number.** 76. In what frequency range does the automatic direction finding (ADF) system operate?

**Option A.** 108.00 - 117.95 MHz.

**Option B.** 1025 - 1150 KHz.

**Option C.** 190 - 1759 KHz.

**Correct Answer is.** 190 - 1759 KHz.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 12-13.

**Question Number.** 77. How does an aircraft distinguish its own Distance Measuring Equipment reply from those for other aircraft?

**Option A.** By changing at random the time delay between the pulse pairs of the interrogation signal.

**Option B.** By modulation of an audio tone.

**Option C.** By using an alternate frequency.

**Correct Answer is.** By changing at random the time delay between the pulse pairs of the interrogation signal.

**Explanation.** Aircraft Radio Systems Powell Page 106.

**Question Number.** 78. From where is bearing information received for display on the digital-distance radio-magnetic indicator (DDRMI)?

**Option A.** From VOR and ADF systems.

**Option B.** From ADF only.

**Option C.** From VOR only.

**Correct Answer is.** From VOR and ADF systems.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 197.

**Question Number.** 79. Which frequency is used to achieve line of sight radio communication?

**Option A.** HF.

**Option B.** VHF.

**Option C.** VHF and UHF.

**Correct Answer is.** VHF and UHF.

**Explanation.** NIL.

[http://www.tpub.com/content/aviation/14014/css/14014\\_166.htm](http://www.tpub.com/content/aviation/14014/css/14014_166.htm)

**Question Number.** 80. Why is an aerial tuning unit used in a high frequency (HF) communication system?

**Option A.** To extend or retract the aerial and so vary its physical length.

**Option B.** To electrically lengthen or shorten the aerial for optimum matching of impedance.

**Option C.** To select the transmission/reception frequency in the HF band.

**Correct Answer is.** To electrically lengthen or shorten the aerial for optimum matching of impedance.

**Explanation.** NIL.

<http://dSPACE.dial.pipex.com/town/pipexdsl/r/arar93/mds975/Content/aerials2.htm> 1

**Question Number.** 81. What would be the purpose of an input from an inertial reference system being connected to a weather radar?

**Option A.** To place the weather radar target in azimuth and distance for the display.

**Option B.** To ensure that there is no radar transmission with aircraft on ground.

**Option C.** To provide stabilization for the radar antenna.

**Correct Answer is.** To provide stabilization for the radar antenna.

**Explanation.** NIL. <http://www.artietheairplane.com/radar.htm>

**Question Number.** 82. Which systems provide envelope modulation information for a Ground Proximity Warning System (GPWS).

**Option A.** Rudder/ailerons.

**Option B.** Auto throttle.

**Option C.** Flaps/undercarriage.

**Correct Answer is.** Flaps/undercarriage.

**Explanation.** NIL.

**Question Number.** 83. The Time Reference Scanning Beam (TRSB) corresponds to ILS localizer and glide path. How does it operate?

**Option A.** It operates in the same manner as ILS but utilizes higher frequencies.

**Option B.** Azimuth and elevation transmitters produce a narrow beam which is rapidly scanned TO and FRO or UP and DOWN.

**Option C.** It operates in conjunction with DME at lower frequencies than ILS.

**Correct Answer is.** Azimuth and elevation transmitters produce a narrow beam which is rapidly scanned TO and FRO or UP and DOWN.

**Explanation.** Aircraft Radio Systems Powell Page 224.

**Question Number.** 84. The FMS navigation database is updated.

**Option A.** every 28 days.

**Option B.** after a B or C check has been completed.

**Option C.** daily.

**Correct Answer is.** every 28 days.

**Explanation.** NIL.

**Question Number.** 85. In an IRS system you would expect to find.

**Option A.** ring laser gyros.

**Option B.** three strap down accelerometers.

**Option C.** an azimuth gyro system.

**Correct Answer is.** ring laser gyros.

**Explanation.** Assuming they mean a strap down system. (Note: in b, it is the system which is strap down, not the accelerometers, in c, azimuth gyro is not the only type of gyro involved).

**Question Number.** 86. In an INS system the accelerometer is a mass.

**Option A.** a remotely mounted mass on the airframe.

**Option B.** a mass suspended in free air.

**Option C.** suspended between two springs in a tube.

**Correct Answer is.** suspended between two springs in a tube.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet Page 256. (Note: the mass is suspended in fluid, and is not remote).

**Question Number.** 87. In a modern aircraft the ACARS system is used primarily for.

**Option A.** reporting defects on the aircraft automatically.

**Option B.** communications between the aircraft and base.

**Option C.** as part of the passenger telephone system.

**Correct Answer is.** communications between the aircraft and base.

**Explanation.** NIL.

**Question Number.** 88. What are the main areas of the autopilot?

**Option A.** Error, correction, demand, resolved.

**Option B.** Error, correction, follow up, demand.

**Option C.** Error, correction, follow up, command.

**Correct Answer is.** Error, correction, follow up, command.

**Explanation.** NIL.

**Question Number.** 89. VHF frequency is.

**Option A.** 108 - 136 MHz.

**Option B.** 108 - 112 MHz.

**Option C.** 108 - 118 MHz.

**Correct Answer is.** 108 - 136 MHz.

**Explanation.** Aircraft Electricity and Electronics Eismin Page 295.

**Question Number.** 90. The call system for the captain will have the audio signal of a.

**Option A.** horn.

**Option B.** hi tone chime.

**Option C.** two tone chime.

**Correct Answer is.** hi tone chime.

**Explanation.** B737.

**Question Number.** 91. Channel 3 on a CVR records.

**Option A.** first officer.

**Option B.** flight deck.

**Option C.** captain.

**Correct Answer is.** flight deck.

**Explanation.** JAR 25.1457.

**Question Number.** 92. DME works on the frequency of.

**Option A.** UHF.

**Option B.** HF.

**Option C.** VHF.

**Correct Answer is.** UHF.

**Explanation.** Aircraft Electricity and Electronics Eismin Page 310 and 278.

**Question Number.** 93. A radial is referenced.

**Option A.** to a VOR.

**Option B.** from a beacon.

**Option C.** on a compass.

**Correct Answer is.** from a beacon.

**Explanation.** NIL.

**Question Number.** 94. ADF works by using.

**Option A.** both loop and sense aerial.

**Option B.** loop aerial.

**Option C.** sense aerial.

**Correct Answer is.** both loop and sense aerial.

**Explanation.** NIL.

**Question Number.** 95. How is the next database on the FMC activated?

**Option A.** Manually in the air.

**Option B.** Manually, on the ground.

**Option C.** Automatically by due date.

**Correct Answer is.** Manually in the air.

**Explanation.** NIL.

**Question Number.** 96. What GPWS mode gives a 'Whoop Whoop, Pull-up' command?

**Option A.** Mode 6.

**Option B.** Mode 3.

**Option C.** Mode 2.

**Correct Answer is.** Mode 2.

**Explanation.** Transport Category Aircraft Systems Page 9.19.

**Question Number.** 97. A transponder that is compatible for use with a TCAS system would be.

**Option A.** Mode A.

**Option B.** Mode S.

**Option C.** Mode C.

**Correct Answer is.** Mode S.

**Explanation.** Introduction to TCAS version 7 US Department of Transport FAA Page 17 (Target Surveillance).

**Question Number.** 98. GPS.

**Option A.** uses 18 satellites equally spaced around 6 orbits.

**Option B.** uses 21 satellites equally spaced around 7 orbits.

**Option C.** uses 24 satellites equally spaced around 6 orbits.

**Correct Answer is.** uses 24 satellites equally spaced around 6 orbits.

**Explanation.** NIL.

**Question Number.** 99. Random precession of the inner gimbal ring is detected by placing mercury switches.

**Option A.** on both gimbal rings.

**Option B.** on outer gimbal ring.

**Option C.** on inner gimbal ring.

**Correct Answer is.** on inner gimbal ring.

**Explanation.** NIL.

**Question Number.** 100. The IRS laser gyro is a.

**Option A.** displaced gyro.

**Option B.** displacement gyro.

**Option C.** rate gyro.

**Correct Answer is.** rate gyro.

**Explanation.** Rate integrated gyro. Aircraft Electricity and Electronics 5th Ed. Eismin Page 373.

**Question Number.** 101. What man oeuvre does TCAS II advise the pilot to make?

**Option A.** RA.

**Option B.** TA.

**Option C.** either RA or TA.

**Correct Answer is.** RA.

**Explanation.** Introduction to TCAS version 7 US Department of Transport FAA Page 27 (Threat Detection).

**Question Number.** 102. What are the shapes of traffic shown on a TCAS display?

**Option A.** White diamonds, red squares and amber circles.

**Option B.** White squares, red diamonds and amber circles.

**Option C.** White circles, red diamonds and amber squares.

**Correct Answer is.** White diamonds, red squares and amber circles.

**Explanation.** Introduction to TCAS version 7 US Department of Transport FAA Page 27 (Threat Detection).

**Question Number.** 103. The laser ring gyro.

**Option A.** does not have gimbal and rotating parts.

**Option B.** has a stabilized platform.

**Option C.** does not have gimbal.

**Correct Answer is.** does not have gimbal and rotating parts.

**Explanation.** Aircraft Electricity and Electronics 5th Ed. Eismin Page 373.

**Question Number.** 104. 3 autopilot computers are considered.

**Option A.** Fail resistant.

**Option B.** Fail Operable.

**Option C.** Fail Passive.

**Correct Answer is.** Fail Operable.

**Explanation.** NIL.

**Question Number.** 105. In autopilot with THS in motion, the.

**Option A.** elevator is inhibited.

**Option B.** Mach trim is inhibited.

**Option C.** Auto Trim is inhibited.

**Correct Answer is.** Auto Trim is inhibited.

**Explanation.** NIL.

**Question Number.** 106. How can a pilot over-ride the auto-throttle?

**Option A.** By deselecting auto-throttle first.

**Option B.** It is not possible.

**Option C.** Manually through a clutch on the throttle levers.

**Correct Answer is.** Manually through a clutch on the throttle levers.

**Explanation.** NIL.

**Question Number.** 107. Where is the auto throttle disconnect switch?

**Option A.** Within reach of the Captain.

**Option B.** Within reach of both pilots.

**Option C.** Within reach of the First Officer.

**Correct Answer is.** Within reach of both pilots.

**Explanation.** NIL.

**Question Number.** 108. Decca navigation uses.

**Option A.** VHF.

**Option B.** HF.

**Option C.** LF.

**Correct Answer is.** LF.

**Explanation.** NIL. <http://webhome.idirect.com/~jproc/hyperbolic/decca.html>

**Question Number.** 109. There are two FMS installed on the aircraft. If one FMS fails during flight.

**Option A.** the whole FMS system is unserviceable until the pilot switches over to standby.

**Option B.** it has no effect, because the second FMS was in the stand-by mode, now it is active.

**Option C.** the failed FMS has a blank screen.

**Correct Answer is.** the failed FMS has a blank screen.

**Explanation.** Aircraft Instruments and Integrated Systems Pallet page 406.

**Question Number.** 110. Which of the following has priority over TCAS warnings?

**Option A.** Gear position warning.

**Option B.** Stall warning.

**Option C.** Resolution Advisories.

**Correct Answer is.** Stall warning.

**Explanation.** NIL.

**Question Number.** 111. The ILS marker beacon operates at a frequency of.

**Option A.** 75 MHz.

**Option B.** 50 MHz.

**Option C.** 100 MHz.

**Correct Answer is.** 75 MHz.

**Explanation.** Aircraft Electricity and Electronics Eismin page 311.

**Question Number.** 112. The manual input for the VOR course corrector is related to.

**Option A.** the CDI offset bar.

**Option B.** the ILS system.

**Option C.** the RMI.

**Correct Answer is.** the CDI offset bar.

**Explanation.** NIL.

**Question Number.** 113. A flat plate antenna is a.

**Option A.** a Doppler antenna.

**Option B.** parabolic antenna.

**Option C.** a series of slots and wave guides.

**Correct Answer is.** a series of slots and wave guides.

**Explanation.** Aircraft Electricity and Electronics Eismin page 342.

**Question Number.** 114. To obtain an accurate GPS fix, the GPS receiver must be in line of sight of.

**Option A.** 6 satellites.

**Option B.** 4 satellites.

**Option C.** 3 satellites.

**Correct Answer is.** 4 satellites.

**Explanation.** Aircraft Electricity and Electronics Eismin Pages 319. 4 satellites are required to provide height information as well as position.

<http://www.tycoelectronics.com/gps/basics.asp>.

**Question Number.** 115. Which of the following systems is inhibited when a test is performed of the rad. alt. system?

**Option A.** altitude alert.

**Option B.** TCAS.

**Option C.** GPWS.

**Correct Answer is.** GPWS.

**Explanation.** NIL.

**Question Number.** 116. The GPS satellite system consists of.

**Option A.** 20 satellites and 5 standby satellite.

**Option B.** 21 satellites and 3 standby satellites.

**Option C.** 24 satellites and 1 standby satellites.

**Correct Answer is.** 21 satellites and 3 standby satellites.

**Explanation.** Aircraft Electricity and Electronics Eismen Pages 318 and 319.

**Question Number.** 117. A Mode C transponder gives the following info:.

**Option A.** Altitude.

**Option B.** Interrogation.

**Option C.** Altitude and interrogation.

**Correct Answer is.** Altitude.

**Explanation.** Avionics Fundamentals Page 211.

**Question Number.** 118. The auto throttle system at touchdown will.

**Option A.** go to idle and disconnect.

**Option B.** go to idle.

**Option C.** apply reverse thrust.

**Correct Answer is.** go to idle and disconnect.

**Explanation.** Pallet Automatic Flight Control Page 286.

**Question Number.** 119. When will the decision height aural warning sound?

**Option A.** At decision height.

**Option B.** Before decision height.

**Option C.** After decision height.

**Correct Answer is.** At decision height.

**Explanation.** NIL.

**Question Number.** 120. FMCS Pin Programming is allowed.

**Option A.** to compensate for FMC position on the aircraft.

**Option B.** under CAA Rules.

**Option C.** for the database of aircraft landing altitudes.

**Correct Answer is.** to compensate for FMC position on the aircraft.

**Explanation.** NIL.

**Question Number.** 121. Before the aero plane is moved from the loading pier, the pilot must.

**Option A.** insert the latitude and longitude of the pier into the INS.

**Option B.** insert the latitude and longitude of the first waypoint into the INS.

**Option C.** set the altitude to be fed into the INS.

**Correct Answer is.** insert the latitude and longitude of the pier into the INS.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 82.

**Question Number.** 122. A 'strap-down' inertial navigation system has.

**Option A.** accelerometers on a stable platform and gyros fixed to the airframe.

**Option B.** accelerometers and gyros fixed to the airframe.

**Option C.** accelerometers fixed to the airframe and gyros on a stable platform.

**Correct Answer is.** accelerometers and gyros fixed to the airframe.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 90.

**Question Number.** 123. A force re-balance accelerometer in an IN system has the acceleration force balanced by a.

**Option A.** constant force.

**Option B.** linear force.

**Option C.** non-linear force.

**Correct Answer is.** linear force.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 33.

**Question Number.** 124. An accelerometer in an IN system must be able to detect accelerations down to.

**Option A.**  $10^{-6}$  g.

**Option B.**  $10^{-2}$  g.

**Option C.**  $10^{-3}$  g.

**Correct Answer is.**  $10^{-6}$  g.

**Explanation.** NIL.

**Question Number.** 125. A laser gyro output is.

**Option A.** inversely proportional to angular turning rate.

**Option B.** directly proportional to frequency addition.

**Option C.** directly proportional to angular turning rate.

**Correct Answer is.** directly proportional to angular turning rate.

**Explanation.** NIL.

**Question Number.** 126. In an IN system, Coriolis effect is the result of.

**Option A.** the effect of the earth's rotation on a stable platform.

**Option B.** gyro wander.

**Option C.** platform misalignment.

**Correct Answer is.** the effect of the earth's rotation on a stable platform.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 85.

**Question Number.** 127. The Inertial Navigation System computes distance from acceleration by.

**Option A.** two successive integrations.

**Option B.** a differential followed by an integration.

**Option C.** a single integration.

**Correct Answer is.** two successive integrations.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 81.

**Question Number.** 128. Coriolis effect is corrected for by.

**Option A.** re-aligning the stable platform.

**Option B.** adding a correction term to the accelerometer outputs.

**Option C.** torquing the gyros.

**Correct Answer is.** adding a correction term to the accelerometer outputs.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page.

**Question Number.** 129. In an IN system, the output of the accelerometer is linear because of a.

**Option A.** pendulous suspension.

**Option B.** linear spring.

**Option C.** force balance system.

**Correct Answer is.** force balance system.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 76.

**Question Number.** 130. The three accelerometers on a stable platform are mounted.

**Option A.** parallel to each other.

**Option B.** orthogonally.

**Option C.** 120 degrees apart.

**Correct Answer is.** orthogonally.

**Explanation.** NIL.

**Question Number.** 131. In an IN system, the purpose of the stable platform is to.

**Option A.** provide attitude reference.

**Option B.** prevent unwanted acceleration affecting the accelerometers.

**Option C.** stop the gyros from toppling.

**Correct Answer is.** prevent unwanted acceleration affecting the accelerometers.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 77.

**Question Number.** 132. The type of gyro generally used in an IN system is a.

**Option A.** rate gyro.

**Option B.** rate integrating gyro.

**Option C.** displacement gyro.

**Correct Answer is.** rate integrating gyro.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 77.

**Question Number.** 133. Earth rate is approximately.

**Option A.** 5 degrees per hour.

**Option B.** 15 degrees per hour.

**Option C.** 84 degrees per hour.

**Correct Answer is.** 15 degrees per hour.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 37.

**Question Number.** 134. In a gimbal system, the stable platform is the.

**Option A.** azimuth gimbal.

**Option B.** roll gimbal.

**Option C.** pitch gimbal.

**Correct Answer is.** azimuth gimbal.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 77/78.

**Question Number.** 135. To prevent gimbal lock on the stable platform it is normal to use.

**Option A.** a pitch gimbal.

**Option B.** four gimbals.

**Option C.** three gimbals.

**Correct Answer is.** four gimbals.

**Explanation.** NIL.

**Question Number.** 136. When the inertial platform is torqued to perform like a Schuler pendulum.

**Option A.** the platform rotates with respect to the aircraft.

**Option B.** the platform remains fixed with respect to the local vertical.

**Option C.** the platform oscillates with respect to the local vertical.

**Correct Answer is.** the platform oscillates with respect to the local vertical.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 86.

**Question Number.** 137. A Schuler pendulum has a period of oscillation of.

**Option A.** 8.4 minutes.

**Option B.** 84.4 seconds.

**Option C.** 84.4 minutes.

**Correct Answer is.** 84.4 minutes.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 86.

**Question Number.** 138. An IN system requires data from the.

**Option A.** air data computer.

**Option B.** Doppler system.

**Option C.** satellites.

**Correct Answer is.** air data computer.

**Explanation.** NIL.

**Question Number.** 139. When in manual mode, the C.D.U. alert lamp of the IN system will flash.

**Option A.** when an error is detected.

**Option B.** thirty seconds before a track change is required.

**Option C.** two minutes before the next waypoint.

**Correct Answer is.** two minutes before the next waypoint.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 89.

**Question Number.** 140. TK (cross track) is the.

**Option A.** perpendicular distance from the desired track.

**Option B.** angle in degrees that aircraft track is left or right of desired track.

**Option C.** actual track across the earth's surface.

**Correct Answer is.** perpendicular distance from the desired track.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 88.

**Question Number.** 141. The output of an INS can be fed to.

**Option A.** attitude indicators.

**Option B.** vertical speed indicators.

**Option C.** altimeters.

**Correct Answer is.** attitude indicators.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 85.

**Question Number.** 142. The three accelerometers on a strap down platform are mounted.

**Option A.** 90° to each other.

**Option B.** 120° apart.

**Option C.** parallel to each other.

**Correct Answer is.** 90° to each other.

**Explanation.** NIL.

**Question Number.** 143. A basic I.N.S. platform has.

**Option A.** 3 axis accelerometer.

**Option B.** 2 accelerometers and 3 gyros.

**Option C.** 3 accelerometers and 2 gyros (pitch and roll).

**Correct Answer is.** 2 accelerometers and 3 gyros.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 78.

**Question Number.** 144. Using I.N.S. an aircraft flies.

**Option A.** course directed by ground station.

**Option B.** rhumb line.

**Option C.** great circle arc.

**Correct Answer is.** great circle arc.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 81.

**Question Number.** 145. What must be entered in to the I.N.S. before the aircraft moves?

**Option A.** Present position.

**Option B.** E.T.A.

**Option C.** Waypoints.

**Correct Answer is.** Present position.

**Explanation.** NIL.

**Question Number.** 146. Selection of the INS Mode Selector Unit (MSU) to ATT REF is made.

**Option A.** to feed information to the Captain and 1st Officers ADI displays.

**Option B.** when attitude information is lost.

**Option C.** when navigation information is lost.

**Correct Answer is.** when navigation information is lost.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 85.

**Question Number.** 147. For the INS, the Battery Unit provides.

**Option A.** standby power only when on the ground, to maintain the alignment phase.

**Option B.** both when airborne and on the ground.

**Option C.** standby power when airborne, switched by weight-off switches in the undercarriage.

**Correct Answer is.** both when airborne and on the ground.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 85.

**Question Number.** 148. Control Display Unit (CDU) selection of TKE displays.

**Option A.** difference in degrees from True North in a clockwise direction from the desired track.

**Option B.** distance perpendicular from the selected track.

**Option C.** difference in degrees that the aircraft track is to the right or left of the desired track.

**Correct Answer is.** difference in degrees that the aircraft track is to the right or left of the desired track.

**Explanation.** Flight Instruments and Automatic Flight Control, David Harris Page 88.

**Question Number.** 149. The Earth Rate Compensation is computed from.

**Option A.** the earth's rotational rate ( $15^\circ/\text{hour}$ ) times the sine of the longitude.

**Option B.** the earth's rotational rate ( $15^\circ/\text{hour}$ ) times the cosine of the latitude.

**Option C.** the earth's rotational rate ( $15^\circ/\text{hour}$ ) times the sine of the latitude.

**Correct Answer is.** the earth's rotational rate ( $15^\circ/\text{hour}$ ) times the sine of the latitude.

**Explanation.** NIL.

**Question Number.** 150. INS wind speed is calculated from.

**Option A.** the vectorial addition of TAS and GS.

**Option B.** the vectorial addition of IAS and TAS.

**Option C.** the vectorial addition of IAS and GS.

**Correct Answer is.** the vectorial addition of TAS and GS.

**Explanation.** NIL.

**Question Number.** 151. Centripetal error compensation is achieved by.

**Option A.** an additional signal is added to the N/S accelerometer to cancel the centripetal error.

**Option B.** allowing the platform to oscillate at a fixed rate.

**Option C.** the platform is torqued to align the N/S accelerometer along its insensitive axis.

**Correct Answer is.** an additional signal is added to the N/S accelerometer to cancel the centripetal error.

**Explanation.** NIL.

**Question Number.** 152. Transport Rate compensation is achieved by.

**Option A.** an additional signal added to the N/S accelerometer output depending on heading.

**Option B.** allowing the platform to oscillate at a fixed rate.

**Option C.** the platform being torqued by a computed torquing signal.

**Correct Answer is.** the platform being torqued by a computed torquing signal.

**Explanation.** NIL.

**Question Number.** 153. If the battery fails on the ground (INS System).

**Option A.** a red warning light appears on the MSU and a horn sounds.

**Option B.** an amber light appears on the MSU and a horn sounds.

**Option C.** a red light appears on the CDU and a horn sounds.

**Correct Answer is.** a red warning light appears on the MSU and a horn sounds.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 85.

**Question Number.** 154. An IRS alignment.

**Option A.** takes 10 minutes and present position can be entered any time during the alignment.

**Option B.** takes 10 minutes and present position must be entered before alignment.

**Option C.** takes 10 minutes and the previous flight shut down present position is used for the alignment.

**Correct Answer is.** takes 10 minutes and present position can be entered any time during the alignment.

**Explanation.** NIL.

**Question Number.** 155. For an IRS system to pass the 'Alignment System Performance Test' the.

**Option A.** latitude entered must be within given limits of the latitude computed by IRU.

**Option B.** the No. 1 and No.2 must both have the same latitude and longitude present position entered.

**Option C.** entered present latitude and longitude must agree with the latitude and longitude at the last power down.

**Correct Answer is.** latitude entered must be within given limits of the latitude computed by IRU.

**Explanation.** NIL.

**Question Number.** 156. A laser gyro dither mechanism ensures that.

**Option A.** that the two contra-rotating beams each operate at different frequencies.

**Option B.** the contra-rotating beams are synchronized together.

**Option C.** optical 'backscatter' does not cause the contra-rotating beams to lock together.

**Correct Answer is.** optical 'backscatter' does not cause the contra-rotating beams to lock together.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris  
Page 47.

**Question Number.** 157. The localizer deviation signal for the flight director comes from the.

**Option A.** flight director computer.

**Option B.** VHF comm system.

**Option C.** VHF nav system.

**Correct Answer is.** VHF nav system.

**Explanation.** NIL.

**Question Number.** 158. The heading error signal used in the heading select mode.

**Option A.** is the difference between the desired course and the actual course.

**Option B.** is the difference between the desired heading and the actual heading.

**Option C.** comes direct from the compass system.

**Correct Answer is.** is the difference between the desired heading and the actual heading.

**Explanation.** NIL.

**Question Number.** 159. The crab angle of the aircraft during VOR or LOC modes is displayed by the.

**Option A.** difference between the course arrow and aircraft heading.

**Option B.** difference between the selected heading and aircraft heading.

**Option C.** selected course counter.

**Correct Answer is.** difference between the course arrow and aircraft heading.

**Explanation.** NIL.

**Question Number.** 160. VOR left-right deviation signals come from the.

**Option A.** DME system.

**Option B.** VLF nav system.

**Option C.** VHF nav set.

**Correct Answer is.** VHF nav set.

**Explanation.** NIL.

**Question Number.** 161. Above the glideslope, the ILS glideslope signal modulation is.

**Option A.** 90 Hz.

**Option B.** 90 KHZ.

**Option C.** 150 Hz.

**Correct Answer is.** 90 Hz.

**Explanation.** Automatic Flight Control, Pallet, page 181, Fig.6.6 and Aircraft Radio Systems, Powell, Page 72, top of L/H column.

**Question Number.** 162. The localizer modulation signal to the left of the localizer center line, as seen from the localizer transmitter, is.

**Option A.** 150 Hz.

**Option B.** 90 Hz.

**Option C.** 90 KHz.

**Correct Answer is.** 150 Hz.

**Explanation.** It says 'as seen from the localizer transmitter'.

**Question Number.** 163. The correct sense demand generated for a selected heading  $180^\circ$ , when the aircraft heading is  $150^\circ$  is.

**Option A.** straight ahead.

**Option B.** turn right.

**Option C.** turn left.

**Correct Answer is.** turn right.

**Explanation.** NIL.

**Question Number.** 164. When an aircraft is flying along the extended center line of the runway it is in the.

**Option A.** equi-signal sector.

**Option B.** 90 Hz modulation sector.

**Option C.** 150 Hz modulation sector.

**Correct Answer is.** equi-signal sector.

**Explanation.** NIL.

**Question Number.** 165. The localizer system offers approach guidance to the runway in terms of.

**Option A.** the vertical plane.

**Option B.** distance to touch down.

**Option C.** the horizontal plane.

**Correct Answer is.** the horizontal plane.

**Explanation.** NIL.

**Question Number.** 166. The glideslope transmitter is located.

**Option A.** adjacent to the touch-down point of the runway.

**Option B.** at the end opposite to the approach end of the runway.

**Option C.** at the approach end of the runway.

**Correct Answer is.** adjacent to the touch-down point of the runway.

**Explanation.** Automatic Flight Control, Pallet, page 181 (bottom of the page) and Aircraft Radio Systems, Powell, page 72, Fig. 5.5.

**Question Number.** 167. The glideslope and localizer frequencies.

**Option A.** are fixed and common to all runways therefore frequency selection is not necessary.

**Option B.** have to be selected separately.

**Option C.** are paired and one frequency selector suffices for both.

**Correct Answer is.** are paired and one frequency selector suffices for both.

**Explanation.** Aircraft Radio Systems, Powell, page 71 and Avionics Fundamentals, Jeppesen, page 206.

**Question Number.** 168. The glideslope system offers approach guidance to runways in terms of.

**Option A.** the horizontal plane.

**Option B.** the vertical plane.

**Option C.** distance to touchdown.

**Correct Answer is.** the vertical plane.

**Explanation.** Automatic Flight Control Pallet Page 181.

**Question Number.** 169. The glideslope equipment operates in the.

**Option A.** VHF band.

**Option B.** HF band.

**Option C.** UHF band.

**Correct Answer is.** UHF band.

**Explanation.** Automatic Flight Control Pallet Page 181.

**Question Number.** 170. The localizer equipment operates in the.

**Option A.** UHF band.

**Option B.** HF band.

**Option C.** VHF band.

**Correct Answer is.** VHF band.

**Explanation.** Automatic Flight Control Pallet Page 181.

**Question Number.** 171. The aircraft equipment determines the bearing of a ground station by comparing.

**Option A.** the phase of one 30 Hz modulation with that of a 9960 Hz modulation.

**Option B.** the amplitude of two 30 Hz modulations.

**Option C.** the phase of two 30 Hz modulations.

**Correct Answer is.** the phase of two 30 Hz modulations.

**Explanation.** Aircraft Radio Systems, Powell Pages 59 and 60 and Radio Aids, R.B. Under down and David Cockburn Page 72.

**Question Number.** 172. The number of different radials provided by a ground station is.

**Option A.** infinite.

**Option B.** 360.

**Option C.** 180 per quadrant, i.e. 720 in 360°.

**Correct Answer is.** infinite.

**Explanation.** NIL.

**Question Number.** 173. Which of the following frequencies is allocated to VOR?

**Option A.** 103.9 MHz.

**Option B.** 127.2 MHz.

**Option C.** 114.3 MHz.

**Correct Answer is.** 114.3 MHz.

**Explanation.** Aircraft Radio Systems, Powell Pages 58 All frequencies between 112.00 and 117.95 MHz (High Power VORs) and all odd frequencies between 108.00 and 111.95 MHz (Terminal VORs).

**Question Number.** 174. Aerial masts may be damaged by.

**Option A.** killfrost anti-icing fluid.

**Option B.** Skydrol hydraulic fluids.

**Option C.** water.

**Correct Answer is.** Skydrol hydraulic fluids.

**Explanation.** NIL.

**Question Number.** 175. Most radio aerial masts are.

**Option A.** insulated from the fuselage.

**Option B.** not bonded.

**Option C.** bonded.

**Correct Answer is.** bonded.

**Explanation.** NIL.

**Question Number.** 176. When an aircraft is heading due north (magnetic) towards a VOR station the reference and variable signals will be.

**Option A.** 270° out of phase.

**Option B.** 180° out of phase.

**Option C.** in phase.

**Correct Answer is.** 180° out of phase.

**Explanation.** Aircraft is due South of the station.

**Question Number.** 177. The middle marker modulation is keyed with.

**Option A.** dots.

**Option B.** dashes.

**Option C.** alternate dots and dashes.

**Correct Answer is.** alternate dots and dashes.

**Explanation.** NIL.

**Question Number.** 178. The modulation of the outer marker is.

**Option A.** 400 Hz.

**Option B.** 1300 Hz.

**Option C.** 3000 Hz.

**Correct Answer is.** 400 Hz.

**Explanation.** Aircraft Electricity and Electronics Eismin Pages 311-312.

**Question Number.** 179. The approximate distance of the middle marker from the runway threshold is.

**Option A.** 7 miles.

**Option B.** 3 miles.

**Option C.** 3500 ft.

**Correct Answer is.** 3500 ft.

**Explanation.** NIL. [http://www.avionicswest.com/marker\\_beacon\\_receiver.htm](http://www.avionicswest.com/marker_beacon_receiver.htm)

**Question Number.** 180. Marker information is usually provided to the pilot.

**Option A.** visually.

**Option B.** aurally.

**Option C.** both visually and aurally.

**Correct Answer is.** both visually and aurally.

**Explanation.** Aircraft Electricity and Electronics Eismin Pages 311.

**Question Number.** 181. An over station sensor (OSS) detects.

**Option A.** radio deviation signals proportional to distance from a localizer transmitter.

**Option B.** the rapid rate of the VOR signal over the cone of confusion.

**Option C.** radio deviation signals proportional to distance from a VOR transmitter.

**Correct Answer is.** the rapid rate of the VOR signal over the cone of confusion.

**Explanation.** NIL.

**Question Number.** 182. Incompatible Flight Director modes are.

**Option A.** VRU and compass.

**Option B.** VOR and glide path.

**Option C.** altitude hold and ILS.

**Correct Answer is.** altitude hold and ILS.

**Explanation.** NIL.

**Question Number.** 183. The VOR system comprises.

**Option A.** reference phase signal.

**Option B.** variable phase signal.

**Option C.** variable and reference phase signals.

**Correct Answer is.** variable and reference phase signals.

**Explanation.** Aircraft Electricity and Electronics Eismin Pages 306 and 307.

**Question Number.** 184. The most sensitive system between ILS and VOR is.

**Option A.** they both have the same sensitivity.

**Option B.** ILS.

**Option C.** VOR.

**Correct Answer is.** ILS.

**Explanation.** NIL.

**Question Number.** 185. If an aircraft is flying on a heading of 000 away from a VOR station, the TO/FROM indicator would show.

**Option A.** no indication.

**Option B.** from.

**Option C.** to.

**Correct Answer is.** from.

**Explanation.** NIL.

**Question Number.** 186. How does the flight director computer differentiate between VOR and ILS frequencies?

**Option A.** Discriminator on control panel.

**Option B.** Frequency discriminator in receiver.

**Option C.** Trigger pulse from ground station.

**Correct Answer is.** Frequency discriminator in receiver.

**Explanation.** NIL.

**Question Number.** 187. The glideslope transmitter operates on.

**Option A.** frequencies of 108 to 118 MHZ.

**Option B.** the UHF band.

**Option C.** the VHF band.

**Correct Answer is.** the UHF band.

**Explanation.** Aircraft Electricity and Electronics Eismin Page 308.

**Question Number.** 188. The pilots instinctive autopilot disengage button is on the.

**Option A.** left of the control column.

**Option B.** side of the controls away from the throttles.

**Option C.** right of the control column.

**Correct Answer is.** side of the controls away from the throttles.

**Explanation.** Flight Instruments and Automatic Flight Control Systems, David Harris Page 133.

**Question Number.** 189. If the autopilot automatically disconnects in the auto land mode, the audible warning.

**Option A.** can only be switched off by re-engaging the autopilot.

**Option B.** is switched off by the instinctive cut-out button.

**Option C.** switches off after a time interval.

**Correct Answer is.** is switched off by the instinctive cut-out button.

**Explanation.** JAR AWO Para 153.

**Question Number.** 190. A category 3B aircraft using fail operational automatic landing equipment will have.

**Option A.** a decision height depending on RVR.

**Option B.** no decision height.

**Option C.** a decision height of 50ft.

**Correct Answer is.** a decision height of 50ft.

**Explanation.** Automatic Flight Control Pallet Page 279.

**Question Number.** 191. For an aircraft to be certified for automatic landing, an auto throttle system is.

**Option A.** a matter of choice for the operator.

**Option B.** mandatory.

**Option C.** dependent on the operation of the aircraft at slow speeds.

**Correct Answer is.** dependent on the operation of the aircraft at slow speeds.

**Explanation.** JAR AWO Para 306 b.

**Question Number.** 192. With auto throttle engaged, the application of reverse thrust will.

**Option A.** disconnect the auto throttle.

**Option B.** drive the throttles to the minimum thrust position.

**Option C.** drive the throttles to the reverse thrust position.

**Correct Answer is.** disconnect the auto throttle.

**Explanation.** NIL.

**Question Number.** 193. During ATC transponder operation, side lobe suppression acts to.

**Option A.** mute the DME operation during transmit phase.

**Option B.** supply altitude readout.

**Option C.** mute coms transmission during transponder operation.

**Correct Answer is.** mute the DME operation during transmit phase.

**Explanation.** NIL.

**Question Number.** 194. During operation of a twin HF radio system transceiver.

**Option A.** #1 HF system operation is inhibited during #2 operation.

**Option B.** #1 HF system can transmit but not receive.

**Option C.** both systems can be operated simultaneously.

**Correct Answer is.** #1 HF system operation is inhibited during #2 operation.

**Explanation.** NIL.

**Question Number.** 195. L band DME transmits on a frequency of.

**Option A.** 2210 MHz.

**Option B.** 4133 MHz.

**Option C.** 1090 MHz.

**Correct Answer is.** 1090 MHz.

**Explanation.** NIL.

**Question Number.** 196. Function of ADF & VOR and DME in navigation system with reference to aircraft and beacon is;

**Option A.** the first provides bearing line from aircraft to beacon and latter provides distance between aircraft and beacon.

**Option B.** the first provides distance between aircraft and beacon and latter provides bearing line from aircraft to beacon.

**Option C.** None of above.

**Correct Answer is.** the first provides bearing line from aircraft to beacon and latter provides distance between aircraft and beacon.

**Explanation.** NIL.

**Question Number.** 197. Which two frequencies are paired?

**Option A.** DME and Glideslope.

**Option B.** Localizer and DME.

**Option C.** Glideslope and localizer.

**Correct Answer is.** Glideslope and localizer.

**Explanation.** NIL.

**Question Number.** 198. Localizer beam width is the angle where the two edges of beam are apart at the runway threshold by.

**Option A.** 700 ft.

**Option B.** 7 ft.

**Option C.** 70 ft.

**Correct Answer is.** 700 ft.

**Explanation.** Avionics Fundamentals Page 200.

**Question Number.** 199. What happens if frequency decreases without altering the physical length of aerial?

**Option A.** The aerial becomes capacitively reactive.

**Option B.** The aerial becomes inductively reactive.

**Option C.** The aerial becomes inductively capacitive.

**Correct Answer is.** The aerial becomes capacitively reactive.

**Explanation.** NIL.

**Question Number.** 200. What happens if frequency increases without altering the physical length of aerial?

**Option A.** The aerial becomes inductively reactive.

**Option B.** The aerial becomes inductively capacitive.

**Option C.** The aerial becomes capacitively reactive.

**Correct Answer is.** The aerial becomes inductively reactive.

**Explanation.** NIL.

**Question Number.** 201. Aerials provide optimum output at one particular frequency, when its load is purely.

**Option A.** resistive.

**Option B.** inductive.

**Option C.** capacitive.

**Correct Answer is.** resistive.

**Explanation.** NIL.

**Question Number.** 202. The torque pre-set in an autopilot system is.

**Option A.** to stop the motor overheating.

**Option B.** to allow it to be overridden at a certain force.

**Option C.** to give control surface feel.

**Correct Answer is.** to allow it to be overridden at a certain force.

**Explanation.** NIL.

**Question Number.** 203. Most aerials are.

**Option A.** bonded.

**Option B.** made from non-conductive material.

**Option C.** not bonded.

**Correct Answer is.** bonded.

**Explanation.** NIL.

**Question Number.** 204. The Middle Marker beacon is what color?

**Option A.** White.

**Option B.** Blue.

**Option C.** Amber.

**Correct Answer is.** Amber.

**Explanation.** NIL.

**Question Number.** 205. Laser gyros have.

**Option A.** no rotating parts.

**Option B.** rotating parts.

**Option C.** moving parts.

**Correct Answer is.** no rotating parts.

**Explanation.** A laser gyro has moving parts (dither motor vibrates) but not rotating parts.

**Question Number.** 206. Laser gyros are aligned to.

**Option A.** magnetic north.

**Option B.** true north.

**Option C.** aircraft structure.

**Correct Answer is.** aircraft structure.

**Explanation.** NIL.

**Question Number.** 207. Triplex autopilot is.

**Option A.** fail operational.

**Option B.** fail soft.

**Option C.** fail passive.

**Correct Answer is.** fail operational.

**Explanation.** Automatic Flight Control Pallet Page 282.

**Question Number.** 208. Flight management control system (FMCS) utilizes.

**Option A.** VOR, ADF, DME.

**Option B.** ILS, VOR, ADF.

**Option C.** ILS, DME, ADC.

**Correct Answer is.** ILS, DME, ADC.

**Explanation.** FMCS does not normally utilize ADF.

**Question Number.** 209. ACARS is.

**Option A.** a satellite communication system.

**Option B.** a way of reporting defects to maintenance base in flight.

**Option C.** a navigation system.

**Correct Answer is.** a way of reporting defects to maintenance base in flight.

**Explanation.** Aircraft Electricity and Electronics Eismis Page 250.

**Question Number.** 210. Where is an ATC transponder mode 'A' selected ON?

**Option A.** The altimeter.

**Option B.** The ATC control panel.

**Option C.** The airspeed indicator.

**Correct Answer is.** The ATC control panel.

**Explanation.** NIL.

**Question Number.** 211. How many data bases are required in an FMS system?

**Option A.** 3 (one is used for redundancy).

**Option B.** 1.

**Option C.** 2.

**Correct Answer is.** 2.

**Explanation.** NIL.

**Question Number.** 212. What channel of the autopilot does the glideslope control?

**Option A.** Roll.

**Option B.** Pitch.

**Option C.** Yaw.

**Correct Answer is.** Pitch.

**Explanation.** NIL.

**Question Number.** 213. What is secondary radar?

**Option A.** Signal returned from a transponder.

**Option B.** A backup radar on an airfield.

**Option C.** Reflected radar bounce from an aircraft.

**Correct Answer is.** Signal returned from a transponder.

**Explanation.** NIL.

**Question Number.** 214. In an auto throttle system, when is EPR or thrust mode used?

**Option A.** Approach.

**Option B.** Take-off.

**Option C.** Cruise.

**Correct Answer is.** Take-off.

**Explanation.** E.H.J. Pallet 3rd edition page 284 3rd paragraph.

**Question Number.** 215. What is Mode 1 & 2 of GPWS used for?

**Option A.** Excessive descent rate, excessive terrain closure rate.

**Option B.** Excessive descent rate, unsafe terrain clearance.

**Option C.** Excessive terrain closure rate, altitude loss after take-off.

**Correct Answer is.** Excessive descent rate, excessive terrain closure rate.

**Explanation.** NIL.

**Question Number.** 216. For radio communication over a distance of over 250 miles we use.

**Option A.** VHF.

**Option B.** HF.

**Option C.** VLF.

**Correct Answer is.** HF.

**Explanation.** NIL.

**Question Number.** 217. Autopilot, when on approach to landing, how many axis are used?

**Option A.** 2.

**Option B.** 4.

**Option C.** 3.

**Correct Answer is.** 3.

**Explanation.** NIL.

11.06. Electrical Power (ATA 24).

**Question Number.** 1. A lead-acid battery is considered to be fully charged when the.

**Option A.** cells begin to gas freely.

**Option B.** SG and voltage remain constant for specified period.

**Option C.** SG reaches 1.180.

**Correct Answer is.** SG and voltage remain constant for specified period.

**Explanation.** EEL/1-1 4.4.8 and Pallett Aircraft Electrical Systems 3rd Edition Page 23.

**Question Number.** 2. The preferred method of battery charging a Ni-Cad battery is constant.

**Option A.** voltage.

**Option B.** current.

**Option C.** power.

**Correct Answer is.** current.

**Explanation.** CAIPs EEL/1-5 Para 4.1.

**Question Number. 3.** When a current transformer is disconnected, what should be done?

**Option A.** Terminals shorted.

**Option B.** Resistor placed across terminals.

**Option C.** Left open circuit.

**Correct Answer is.** Terminals shorted.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 61.

**Question Number. 4.** What does the differential sensing coil sense?

**Option A.** Power.

**Option B.** Volts.

**Option C.** Current.

**Correct Answer is.** Current.

**Explanation.** NIL.

**Question Number. 5.** Where does the GCU gets its power?

**Option A.** RAT.

**Option B.** Battery.

**Option C.** PMG.

**Correct Answer is.** PMG.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 7-24. PMG is main supply for GCU, battery is back up power for GCU.

**Question Number. 6.** Galley loads are wired in.

**Option A.** parallel so load shedding will lower current consumption.

**Option B.** either series or parallel depending on the design.

**Option C.** series.

**Correct Answer is** parallel so load shedding will lower current consumption.

**Explanation.** All loads on an aircraft are wired in parallel.

**Question Number. 7.** A fuse-type current limiter.

**Option A.** can be used as a radio suppressor.

**Option B.** limits current flow to a load.

**Option C.** opens a circuit after a time/current condition has been exceeded.

**Correct Answer is.** opens a circuit after a time/current condition has been exceeded.

**Explanation.** See Pallett Aircraft Electrical Systems 3rd Edition Page 112, or, Aircraft Electricity and Electronics, Eismin Page 99. However, another type of current limiter holds the current but does not open the circuit see Aircraft Electricity and Electronics Eismin Page 202.

**Question Number.** 8. When a load is shed from a bus bar, the

**Option A.** bus bar voltage decreases.

**Option B.** current consumption from the bar decreases.

**Option C.** bus bar voltage increases.

**Correct Answer is.** current consumption from the bar decreases.

**Explanation.** Aircraft Electricity and Electronics, Eismin, Page 241. Load shedding reduces current consumption.

**Question Number.** 9. In unparalleled AC generation systems, the phase rotation of one generator in relation to the others.

**Option A.** must be synchronized prior to paralleling.

**Option B.** is unimportant.

**Option C.** must be BCA.

**Correct Answer is.** is unimportant.

**Explanation.** Phase relationship is unimportant in an unparalleled system (although answer b says it will be paralleled, thereby changing the question???)

**Question Number.** 10. In a multi-generator system, the generator which takes more than its reactive power share is protected by.

**Option A.** over-voltage and under-voltage protection circuits.

**Option B.** over-current and under-current protection circuits.

**Option C.** over-excitation and under-excitation protection circuits.

**Correct Answer is.** over-voltage and under-voltage protection circuits.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 49.

**Question Number.** 11. Sharing of electrical loads by paralleled DC generators is controlled by.

**Option A.** equalizing circuits which control the field excitation of the generators.

**Option B.** automatic load shedding.

**Option C.** equalizing circuits which control the speed of the generators.

**Correct Answer is.** equalizing circuits which control the field excitation of the generators.

**Explanation.** Changing the speed would also change the frequency and thus the phase relationship. Generators are always controlled by adjusting the field strength.

**Question Number.** 12. Excessive commutator sparking can be caused by.

**Option A.** rotating field diode failure.

**Option B.** brushes positioned on MNA.

**Option C.** weak spring tension.

**Correct Answer is.** weak spring tension.

**Explanation.** Weak spring tension of the brushes can cause excessive sparking.

**Question Number.** 13. Before checking the SG of a battery recently removed from an aircraft.

**Option A.** take the temperature of the electrolyte.

**Option B.** carry out a capacity test.

**Option C.** allow to stabilize for one hour.

**Correct Answer is.** take the temperature of the electrolyte.

**Explanation.** CAIPs EEL/1-1.

**Question Number.** 14. On an AC external power plug, the interlock circuit is controlled by pins.

**Option A.** AB.

**Option B.** CD.

**Option C.** EF.

**Correct Answer is.** EF.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 72.

**Question Number.** 15. Over-voltage protection circuits are activated.

**Option A.** before the over voltage limit is exceeded.

**Option B.** after a fixed time delay.

**Option C.** dependent on the magnitude of the overvoltage.

**Correct Answer is.** dependent on the magnitude of the overvoltage.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 119.

**Question Number.** 16. A diode connected across a coil will.

**Option A.** suppress arcing when relay is opening and closing.

**Option B.** prevent back EMF and allow faster switching.

**Option C.** prevent the coil being fitted the wrong way.

**Correct Answer is.** prevent back EMF and allow faster switching.

**Explanation.** NIL.

<http://homepages.which.net/~paul.hills/Solenoids/SolenoidsBody.html>

**Question Number.** 17. Which fault does not always trip the GCR?

**Option A.** Under-frequency and under-volts.

**Option B.** Over-frequency and over-volts.

**Option C.** Over-frequency and under-frequency.

**Correct Answer is.** Over-frequency and under-frequency.

**Explanation.** A and b are both wrong because under and over voltage will both trip the relay. On some aircraft, under frequency will NOT trip the relay, so c is the 'least incorrect'.

**Question Number.** 18. Differential protection in a generating system.

**Option A.** detects current difference between source and load.

**Option B.** detects voltage difference between source and load.

**Option C.** uses the volts coil to trip the GCR.

**Correct Answer is.** detects current difference between source and load.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 121.

**Question Number.** 19. Open phase sensing on a current transformer.

**Option A.** is detected on generator neutral circuit.

**Option B.** is detected using all phases.

**Option C.** is detected using any phase.

**Correct Answer is.** is detected on generator neutral circuit.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 121, & B737 Manual.

**Question Number.** 20. If the battery is switched off in flight, the.

**Option A.** captain's instruments will be powered from the standby bus.

**Option B.** battery is disconnected from bus.

**Option C.** generator voltage falls to zero.

**Correct Answer is.** battery is disconnected from bus.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 4.

**Question Number.** 21. To flash a generator field the.

**Option A.** generator is on line and producing a voltage less than the flashing voltage.

**Option B.** generator rotates but is not on line.

**Option C.** generator must be stationary.

**Correct Answer is.** generator must be stationary.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 4.

**Question Number.** 22. Voltage is controlled by.

**Option A.** the constant speed drive.

**Option B.** the voltage regulator.

**Option C.** the swashplate.

**Correct Answer is.** the voltage regulator.

**Explanation.** The voltage is controlled by the voltage regulator.

**Question Number.** 23. The ground interlock pins are numbered.

**Option A.** A and B.

**Option B.** C and N.

**Option C.** E and F.

**Correct Answer is.** E and F.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 72.

**Question Number.** 24. Distilled water should be added to a ni-cad battery.

**Option A.** only in the battery workshop.

**Option B.** at any time.

**Option C.** when fully charged.

**Correct Answer is.** only in the battery workshop.

**Explanation.** CAIP EEL/1-3 para 4.

**Question Number.** 25. Overflowing electrolyte in a ni-cad battery indicates.

**Option A.** not enough charging current.

**Option B.** excessive charging current.

**Option C.** low electrolyte temperature.

**Correct Answer is.** excessive charging current.

**Explanation.** Jeppesen A&P Airframe Technician Page 7-31, 7-32.

**Question Number.** 26. During a normal engine shutdown, generator tripping is initiated by.

**Option A.** under voltage.

**Option B.** under frequency.

**Option C.** overcurrent.

**Correct Answer is.** under voltage.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 120.

**Question Number.** 27. What would you use to neutralize NiCad battery spillage?

**Option A.** Boric acid.

**Option B.** Distilled water.

**Option C.** Bicarbonate of soda.

**Correct Answer is.** Boric acid.

**Explanation.** Boric acid.

**Question Number.** 28. Before operating generators in parallel, their voltages should be matched to prevent.

**Option A.** large circulating currents developing.

**Option B.** overloading the generator drive and shearing of splines.

**Option C.** voltage spikes of sufficient magnitude to trigger GCU overvoltage circuits.

**Correct Answer is.** overloading the generator drive and shearing of splines.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 52.

**Question Number.** 29. Consumer loads are connected to a bus bar.

**Option A.** in series so when loads are shed voltage is reduced.

**Option B.** in parallel so when loads are shed current is reduced.

**Option C.** in series so when loads are shed current is reduced.

**Correct Answer is.** in parallel so when loads are shed current is reduced.

**Explanation.** All loads are connected in parallel with each other.

**Question Number.** 30. A current transformer connected on the neutral star point of a generator is for.

**Option A.** overload protection.

**Option B.** differential current protection.

**Option C.** negative sequence protection.

**Correct Answer is.** differential current protection.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 121.

**Question Number.** 31. Differential protection as applied to AC generation systems compares.

**Option A.** generator current to bus bar current.

**Option B.** generator voltage to bus bar voltage.

**Option C.** ambient pressure to cabin pressure.

**Correct Answer is.** generator current to bus bar current.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 121.

**Question Number.** 32. In an AC generation system, the frequency and phase rotation.

**Option A.** must be synchronized prior to paralleling.

**Option B.** is of no consequence after paralleling.

**Option C.** must be out of phase prior to paralleling.

**Correct Answer is.** must be synchronized prior to paralleling.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 48.

**Question Number.** 33. Diodes are placed across a contactor to.

**Option A.** ensure smooth contactor operation.

**Option B.** prevent contact bounce.

**Option C.** speed up operation by reducing back EMF.

**Correct Answer is.** speed up operation by reducing back EMF.

**Explanation.** NIL.

<http://homepages.which.net/~paul.hills/Solenoids/SolenoidsBody.html>

**Question Number.** 34. Placing the battery master switch to off during flight will.

**Option A.** isolate the battery from the main bus bar.

**Option B.** shut down the APU.

**Option C.** disconnect all power to the main bus bar.

**Correct Answer is.** isolate the battery from the main bus bar.

**Explanation.** The Battery master switch simply connects the battery to the main bus bar, allowing it to be charged from the generator(s).

**Question Number.** 35. Whilst operating paralleled AC constant frequency generators, it is important to maintain generator outputs at the same voltage.

**Option A.** to prevent a circulating current of considerable magnitude developing between two or more generators.

**Option B.** to prevent CSD shock loading.

**Option C.** to prevent a circulating current developing between two or more TRUs.

**Correct Answer is.** to prevent a circulating current of considerable magnitude developing between two or more generators.

**Explanation.** NIL.

**Question Number.** 36. A voltage regulator installed in series with a generator field.

**Option A.** uses a voltage coil in series with generator output.

**Option B.** uses a voltage coil in parallel with generator output.

**Option C.** uses a current coil in parallel with generator output.

**Correct Answer is.** uses a voltage coil in parallel with generator output.

**Explanation.** Aircraft Electricity and Electronics, Eismin page 199-200.

**Question Number.** 37. CSD warning lights on the flight deck normally indicate.

**Option A.** high oil pressure, low oil temperature low oil pressure, high oil temperature.

**Option B.** low oil pressure, low oil temperature.

**Option C.** low oil pressure, high oil temperature.

**Correct Answer is.** low oil pressure, high oil temperature.

**Explanation.** Jeppesen A&P Airframe Technician Textbook , page 7-50.

**Question Number.** 38. The output frequency of a hydraulically driven standby generator is controlled by.

**Option A.** an hydraulically actuated swash plate.

**Option B.** a CSD.

**Option C.** an IDG.

**Correct Answer is.** an hydraulically actuated swash plate.

**Explanation.** NIL.

**Question Number.** 39. An AC generator used with a CSD.

**Option A.** needs a voltage controller to maintain voltage with increasing load.

**Option B.** does not need a voltage controller because current is kept constant.

**Option C.** does not need a voltage controller because voltage is kept constant.

**Correct Answer is.** needs a voltage controller to maintain voltage with increasing load.

**Explanation.** NIL.

**Question Number.** 40. Power to a GCU is supplied.

**Option A.** initially by a 'field tickling' supply and then PMG output.

**Option B.** by the battery bus or rectified generator output.

**Option C.** by the generator output only.

**Correct Answer is.** initially by a 'field tickling' supply and then PMG output.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 7-24. PMG is main supply for GCU, battery is back up power for GCU.

**Question Number.** 41. Trip signals for a GCR are.

**Option A.** over frequency and under voltage.

**Option B.** differential protection and under voltage.

**Option C.** under frequency and overcurrent.

**Correct Answer is.** differential protection and under voltage.

**Explanation.** NIL.

**Question Number.** 42. Abnormal CSD operation is monitored on the flight deck by observing indications of.

**Option A.** low oil quantity / low oil temperature.

**Option B.** high oil temperature / low oil pressure.

**Option C.** High oil temperature / low oil quantity.

**Correct Answer is.** high oil temperature / low oil pressure.

**Explanation.** Jeppesen A&P Airframe Technician Textbook , page 7-50.

**Question Number.** 43. Wires in hot temperature areas should be bound with.

**Option A.** Teflon.

**Option B.** Nomex.

**Option C.** PVC.

**Correct Answer is.** Teflon.

**Explanation.** This is probably referring to the Teflon tape referred to in Aircraft Electricity and Electronics by Eismin 5th Edition Page 69. Also AC43 Para.11.96 z and Appendix 1 (Teflon is Dupont tradename for PTFE).

**Question Number.** 44. A heat gun should be operated at.

**Option A.** 100°C above the specified.

**Option B.** 100°C below the specified.

**Option C.** the specified temperature.

**Correct Answer is.** the specified temperature.

**Explanation.** A heat gun should be operated at the specified temperature, or 100°C (approx) above the heat shrink temperature.

**Question Number.** 45. High voltages on a generator in a parallel system should be prevented because.

**Option A.** it will trip the GCR.

**Option B.** it will damage the drive shaft.

**Option C.** it will cause high circulating current in the bus / other generators.

**Correct Answer is.** it will trip the GCR.

**Explanation.** NIL.

**Question Number.** 46. Over-voltage condition trips the generator. The time taken to trip the GCU depends on.

**Option A.** amplitude of voltage.

**Option B.** closing of fuel and hydraulic valves.

**Option C.** time delay circuit.

**Correct Answer is.** amplitude of voltage.

**Explanation.** Inverse time delay - c could also be considered correct. Aircraft Electricity and

Electronics, Eismin, page 203.

**Question Number.** 47. Speed of an HMG is controlled by a.

**Option A.** CSD unit.

**Option B.** swashplate.

**Option C.** ID unit.

**Correct Answer is.** swashplate.

**Explanation.** Speed of an HMG is controlled by a swashplate.

**Question Number.** 48. A permanent magnet should have.

**Option A.** low retentivity, low coercivity.

**Option B.** high retentivity, low coercivity.

**Option C.** low retentivity, high coercivity.

**Correct Answer is.** high retentivity, low coercivity.

**Explanation.** NIL.

**Question Number.** 49. What will happen if the aircraft battery becomes overheated?

**Option A.** The power supply to the battery charger will be interrupted.

**Option B.** The battery charger will switch to trickle charge mode.

**Option C.** The hot battery bus will be disconnected from the battery.

**Correct Answer is.** The battery charger will switch to trickle charge mode.

**Explanation.** B737 switches to trickle charge. However, see Pallett Aircraft Electrical Systems 3rd Edition Figure 1.32 for charger disconnect system.

**Question Number.** 50. When the temperature increases in a lead acid battery, the SG will.

**Option A.** decrease.

**Option B.** increase.

**Option C.** remain the same.

**Correct Answer is.** decrease.

**Explanation.** Since volume increases, but mass remains constant, with temperature, density decreases.

**Question Number.** 51. On testing a generator it is found to require adjusting, where would you adjust it?

**Option A.** In the cockpit on the flight engineers panel.

**Option B.** On the GCU.

**Option C.** By means of a remote trimmer.

**Correct Answer is.** By means of a remote trimmer.

**Explanation.** Adjusted with a remote trimmer.

**Question Number.** 52. Control of hydraulically powered emergency electrical generator frequency is.

**Option A.** by CSU.

**Option B.** by angle of swash plate.

**Option C.** by IDG.

**Correct Answer is.** by angle of swash plate.

**Explanation.** Control of an HPG is via a swashplate.

**Question Number.** 53. When a ni-cad battery is fully charged.

**Option A.** the electrolyte level is higher level than normal.

**Option B.** the electrolyte level is lower than normal.

**Option C.** the electrolyte level stays the same.

**Correct Answer is.** the electrolyte level is higher level than normal.

**Explanation.** Jeppesen A&P Technician Airframe Textbook 7-32.

**Question Number.** 54. Electrical load on aircraft is controlled by.

**Option A.** a BPCU.

**Option B.** an IRS.

**Option C.** a GCU.

**Correct Answer is.** a BPCU.

**Explanation.** B767 MM 42-41-00 quote: 'The BPCU shares status information with the GCU's. The BPCU controls all electrical buses and controls load shedding.'

**Question Number.** 55. A 4:1 step-up transformer receives 120VAC in its primary and has 1600 Ohms resistance in its secondary. What is the current drawn from the source?

**Option A.** 1.2 A.

**Option B.** 0.3 A.

**Option C.** 3 A.

**Correct Answer is.** 1.2 A.

**Explanation.** Find current in secondary  $I = V/R = 480/1600 = 3/10A$ . Next find current in Primary =  $4 \times 3/10 = 12/10 = 1.2A$ .

**Question Number.** 56. After engine start using a Ni-Cad battery, the pilot observes on the battery charger indicator, an initial high current draw followed by a rapid decrease in current.

**Option A.** there is a problem with the charging circuit and he must shut-down the engines.

**Option B.** the battery is faulty.

**Option C.** no cause for concern.

**Correct Answer is.** no cause for concern.

**Explanation.** This is normal.

**Question Number.** 57. Topping up a Ni-Cad battery in situ.

**Option A.** is not allowed.

**Option B.** is only allowed in the shop.

**Option C.** is permitted.

**Correct Answer is.** is not allowed.

**Explanation.** CAIPs EEL/1-3 Para 6.4.

**Question Number.** 58. In a lead-acid battery after numerous checks, one cell has low reading.

**Option A.** It needs topping up.

**Option B.** It must be replaced.

**Option C.** It is defective.

**Correct Answer is.** It must be replaced.

**Explanation.** NIL.

**Question Number.** 59. A short range passenger aircraft has complete electrical failure. What time duration would the battery be expected to power essential equipment?

**Option A.** 30 minutes.

**Option B.** Forever.

**Option C.** 60 minutes.

**Correct Answer is.** 30 minutes.

**Explanation.** AWN 81 para 3.1.2 - now transferred to CAP 747 GR no 4.

**Question Number.** 60. An external power plug has two short pins. These are used for.

**Option A.** ground handling bus.

**Option B.** the interlock circuit.

**Option C.** a guide for correct alignment of the plug in the socket.

**Correct Answer is.** the interlock circuit.

**Explanation.** Aircraft Instruments and Integrated Systems, Pallett Page 290.

**Question Number.** 61. The purpose of a synchronizing bus bar is.

**Option A.** to allow monitoring and trimming from the flight deck.

**Option B.** to enable two propeller systems to be synchronized.

**Option C.** to monitor total current load.

**Correct Answer is.** to allow monitoring and trimming from the flight deck.

**Explanation.** Aircraft Electrical Systems Pallett Page 51 and 52.

**Question Number.** 62. To confirm the state of charge of a ni-cad battery.

**Option A.** measure the discharge time.

**Option B.** subject the battery to load, check voltage and check the SG of each cell.

**Option C.** subject the battery to load and check the voltage.

**Correct Answer is.** measure the discharge time.

**Explanation.** CAIPs EEL/1-3 4.5.6 and 4.7.

**Question Number.** 63. Circulating currents are associated with.

**Option A.** AC and DC generators in parallel.

**Option B.** AC generators in parallel.

**Option C.** DC generators in parallel.

**Correct Answer is.** AC generators in parallel.

**Explanation.** NIL.

**Question Number.** 64. Generator brush bedding.

**Option A.** should only be done if 50% of the width and 80% of the length is already being done.

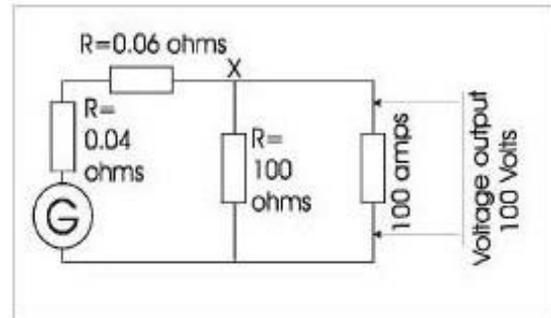
**Option B.** should not be done on the aircraft.

**Option C.** can be done on the aircraft.

**Correct Answer is.** can be done on the aircraft.

**Explanation.** CAIPs EEL/1-4 4.3.6 (Does not say that it cannot be done on the aircraft - but would be difficult).

**Question Number.65.**What is the amperage at point " to the nearest amp?



**Option A.** 100 Amps.

**Option B.** 101 Amps.

**Option C.** 102 Amps.

**Correct Answer is.** 101 Amps.

**Explanation.** 100 volts across far right load, therefore 100 volts also across 100ohm load (parallel circuit theory)  $I = V/R = 100/100 = 1A$  through 100 ohm load. (Ohms Law) Total current at " is  $100 + 1 = 101$  Amps. (Kirkchoff's Law).

**Question Number. 66.** Pitot tubes are heated by.

**Option A.** DC.

**Option B.** AC.

**Option C.** AC or DC.

**Correct Answer is.** AC or DC.

**Explanation.** Aircraft Instruments and Integrated Systems, Pallett 3rd edition Page 32.

**Question Number. 67.** Paralleling is used for.

**Option A.** AC and DC electrical generators.

**Option B.** DC electrical generators only.

**Option C.** AC electrical generators only.

**Correct Answer is.** AC and DC electrical generators.

**Explanation.** NIL.

**Question Number. 68.** Battery charging procedures can be found in ATA.

**Option A.** Chapter 24 Section 21.

**Option B.** Chapter 24 Section 31.

**Option C.** Chapter 31 Section 21.

**Correct Answer is.** Chapter 24 Section 31.

**Explanation.** NIL.

**Question Number.** 69. In a carbon pile regulator, the resistive element is.

**Option A.** in series with the field and changes resistance with surface area contact.

**Option B.** in parallel with the field and changes resistance with changing length.

**Option C.** in series with the field and changes resistance with changing length.

**Correct Answer is.** in series with the field and changes resistance with surface area contact.

**Explanation.** CAIPs EEL/1-2 3.1.

**Question Number.** 70. Maximum battery temperature on charging before protection circuit starts is.

**Option A.** 144 degrees C.

**Option B.** 144 degrees F.

**Option C.** 71 degrees F.

**Correct Answer is.** 144 degrees F.

**Explanation.** NIL.

**Question Number.** 71. If an aircraft has no battery charger, the battery is charged by.

**Option A.** constant current until a predetermined limit when it automatically switches to constant voltage.

**Option B.** constant current.

**Option C.** constant voltage.

**Correct Answer is.** constant voltage.

**Explanation.** NIL.

**Question Number.** 72. The output of a carbon pile regulator with no variation of loading is.

**Option A.** stationary.

**Option B.** pulse width modulating.

**Option C.** fluctuating.

**Correct Answer is.** stationary.

**Explanation.** CAIPs EEL/1-2 3.1.1.

**Question Number.** 73. In a transistor voltage regulator, the voltage output is controlled by.

**Option A.** zeners and transistors.

**Option B.** diodes and transformers.

**Option C.** transformers and transistors.

**Correct Answer is.** zeners and transistors.

**Explanation.** CAIPs EEL/1-2 3.3.1.

**Question Number.** 74. A paralleled relay for a DC system is energized and connected by.

**Option A.** voltage coil.

**Option B.** current coil.

**Option C.** voltage and current coil.

**Correct Answer is.** voltage and current coil.

**Explanation.** Pallett Aircraft Electrical Systems Page 16, 17, 18.

**Question Number.** 75. Increasing the real load primarily.

**Option A.** increases output voltage and increases frequency.

**Option B.** decreases output voltage.

**Option C.** decreases frequency.

**Correct Answer is.** decreases frequency.

**Explanation.** NIL.

**Question Number.** 76. Inductive reactive load causes.

**Option A.** no effect on torque but produces extra heat dissipated.

**Option B.** increase in torque only.

**Option C.** increase in torque and increase in heat dissipated.

**Correct Answer is.** no effect on torque but produces extra heat dissipated.

**Explanation.** NIL.

**Question Number.** 77. The power factor of an AC generator identifies the proportion of.

**Option A.** apparent power from the generator that does work.

**Option B.** real power from the generator that does work.

**Option C.** reactive power from the generator that does work.

**Correct Answer is.** real power from the generator that does work.

**Explanation.** NIL.

**Question Number.** 78. Differential protection in an AC system protects against.

**Option A.** line-line, line-line-line, line-earth faults.

**Option B.** short circuits.

**Option C.** a reverse current flowing from the battery.

**Correct Answer is.** short circuits.

**Explanation.** Aircraft Electrical Systems. Pallett Page 121.

**Question Number.** 79. When resetting the CSD on the ground, the engine should be.

**Option A.** rotating at Nsync.

**Option B.** rotating at idle.

**Option C.** stationary.

**Correct Answer is.** stationary.

**Explanation.** NIL.

**Question Number.** 80. One of the main purposes of a CSD is to.

**Option A.** prevent engine overload.

**Option B.** enable generators to be paralleled.

**Option C.** maintain constant load on the generator.

**Correct Answer is.** enable generators to be paralleled.

**Explanation.** Pallett Aircraft Electrical Systems Page 37.

**Question Number.** 81. In an under volt condition in an AC generator system, the most likely consequence is.

**Option A.** activation of the time delay circuit.

**Option B.** energies the bus tie relay.

**Option C.** deactivation of the field regulatory TRs.

**Correct Answer is.** activation of the time delay circuit.

**Explanation.** NIL.

**Question Number.** 82. If voltage and frequency of the generator drop to zero in flight, it would be an indication that the.

**Option A.** bus tie interlock is inoperative.

**Option B.** CSD driveshaft had sheared.

**Option C.** phase sequence detection circuit has operated.

**Correct Answer is.** CSD driveshaft had sheared.

**Explanation.** NIL.

**Question Number.** 83. Assuming all systems are operating normally, as aircraft electrical load increases, generator output voltage will.

**Option A.** increases and amperage output increases.

**Option B.** remain constant and amperage output increases.

**Option C.** decrease and amperage output increases.

**Correct Answer is.** remain constant and amperage output increases.

**Explanation.** NIL.

**Question Number.** 84. When installing multiple batteries on aircraft, they are connected in.

**Option A.** series.

**Option B.** either parallel or series and switched between as an option.

**Option C.** parallel.

**Correct Answer is.** either parallel or series and switched between as an option.

**Explanation.** Aircraft Electrical Systems. Pallett Page 23/26/27.

**Question Number.** 85. What is the small pin on the DC ground power connector?

**Option A.** Positive to external power relay.

**Option B.** Positive to battery relay.

**Option C.** Ground or earth.

**Correct Answer is.** Positive to external power relay.

**Explanation.** Aircraft Electrical Systems. Pallett Page 70.

**Question Number.** 86. How is RAT driven?

**Option A.** Airstream.

**Option B.** Compressor.

**Option C.** Fan.

**Correct Answer is.** Airstream.

**Explanation.** Ram Air Turbine.

**Question Number.** 87. How is an aircraft battery rated?

**Option A.** Ampere hours.

**Option B.** Joules.

**Option C.** Watts.

**Correct Answer is.** Ampere hours.

**Explanation.** Aircraft Electrical Systems Pallett Page 21.

**Question Number.** 88. A reduction in field strength of a DC shunt motor driving a constant load will result in.

**Option A.** reduced torque and increased speed.

**Option B.** increased torque and speed.

**Option C.** increased torque and reduced speed.

**Correct Answer is.** increased torque and speed.

**Explanation.** Aircraft Electrical Systems Pallett Page 138 (reduces Back EMF).

**Question Number.** 89. What are the 2 short prongs on an AC plug for?

**Option A.** Using AC current to pull on interlock circuit.

**Option B.** To prevent arcing during plug connection / disconnection.

**Option C.** To help plug location/fit.

**Correct Answer is.** To prevent arcing during plug connection / disconnection.

**Explanation.** The short prongs are for DC only. Aircraft Electrical System, Pallett pg 72.

**Question Number.** 90. A vibration contact voltage regulator consists of a shunt winding and a.

**Option A.** current regulation coil in series.

**Option B.** voltage regulating coil in series.

**Option C.** voltage regulating coil in parallel.

**Correct Answer is.** current regulation coil in series.

**Explanation.** Aircraft Electrical Systems. Pallett Page 11.

**Question Number.** 91. What is the purpose of diode in a power GCR?

**Option A.** To allow flow in the event of failure of the relay.

**Option B.** To speed up the operation.

**Option C.** To prevent back-flow of current in the EMF coil.

**Correct Answer is.** To prevent back-flow of current in the EMF coil.

**Explanation.** The diode is to prevent the high current flow in the coil due to induction as the relay switches off.

**Question Number.** 92. Eddy currents are.

**Option A.** circulating currents.

**Option B.** caused by heating effect of the coil.

**Option C.** caused by resistance of the coil.

**Correct Answer is.** circulating currents.

**Explanation.** NIL. <http://www.google.com/search?q=define:Eddy+Currents>

**Question Number.** 93. The small pins in the power connector plug are.

**Option A.** negative.

**Option B.** neutral.

**Option C.** positive.

**Correct Answer is.** positive.

**Explanation.** Aircraft Electrical Systems Pallett Page 70.

**Question Number.** 94. When an over volt is present on an AC generator system, the tripping circuit.

**Option A.** trips after a time delay inversely proportional to over volt amplitude.

**Option B.** trips after a time delay.

**Option C.** trips at a set level.

**Correct Answer is.** trips after a time delay inversely proportional to overvolt amplitude.

**Explanation.** Aircraft Electrical Systems Pallett Page 119/120.

**Question Number.** 95. In an AC distribution system, the purpose of the synchronizing bus-bar is to.

**Option A.** provide a means of monitoring the load.

**Option B.** provide interconnection between the generator load bus bars.

**Option C.** supply essential services.

**Correct Answer is.** provide interconnection between the generator load bus bars.

**Explanation.** Aircraft Electrical Systems Pallett Page 81.

**Question Number.** 96. Vibrating contact voltage regulator sensing coil is.

**Option A.** across the generator output.

**Option B.** in series with the field windings.

**Option C.** in parallel with the field windings.

**Correct Answer is.** in parallel with the field windings.

**Explanation.** EEL/1-2 Page 5, Aircraft Electrical Systems Page 11.

**Question Number.** 97. A current transformer connected across the neutral of a 3 phase generator is for.

**Option A.** load monitoring.

**Option B.** phase sequence monitoring.

**Option C.** differential protection.

**Correct Answer is.** differential protection.

**Explanation.** Aircraft Electrical Systems Pallett Page 121.

**Question Number.** 98. Zener diodes are for.

**Option A.** voltage stabilization.

**Option B.** voltage regulation.

**Option C.** rectification.

**Correct Answer is.** voltage regulation.

**Explanation.** An old Module 4 question. Although Zener diodes can be used (back-to-back) to protect equipment from voltage spikes (voltage stabilisation) they are more commonly associated with voltage regulation.

**Question Number.** 99. AC generator output indications are measured in.

**Option A.** KVA & KW.

**Option B.** KW & KVAR.

**Option C.** KW.

**Correct Answer is.** KVA & KW.

**Explanation.** An AC generator is rated in KVA and KW (or KVA and power factor, from which KW can be calculated). However, a DC generator is rated in KW only.

**Question Number.** 100. Load shedding allows.

**Option A.** less current to the bus bar.

**Option B.** more current to the bus bar.

**Option C.** more voltage to the bus bar.

**Correct Answer is.** less current to the bus bar.

**Explanation.** Load shedding is carried out to reduce current (voltage is constant).

**Question Number.** 101. How may the output of a transistorized voltage regulator be described?

**Option A.** Variable AC.

**Option B.** Pulse width modulated DC.

**Option C.** Slightly variable DC.

**Correct Answer is.** Pulse width modulated DC.

**Explanation.** A voltage regulator has two outputs, one to the generator field (pulse width modulated on a transistorized regulator) and one to the bus bar (constant voltage but variable current depending on load). The answer here depends upon which output they are referring.

**Question Number.** 102. In the event of complete AC generator failure in an AC split bus bar generation system, how is power maintained to the essential AC bus-bar?

**Option A.** By power fed from a battery supplied static inverter.

**Option B.** By power fed from a hot battery bus-bar only.

**Option C.** By power fed from static inverter only.

**Correct Answer is.** By power fed from a battery supplied static inverter.

**Explanation.** Aircraft Electrical Systems Pallett Page 78 Fig. 5.2.

**Question Number.** 103. Which components within a generator control unit connects the output of the field power supply to the generator exciter?

**Option A.** Generator power pilot relay.

**Option B.** Generator line contactor.

**Option C.** Generator control relay.

**Correct Answer is.** Generator control relay.

**Explanation.** Not sure of the point of this question. The GCR is the only one which is (sometimes) 'within' the GCU. (Never heard of a 'generator power pilot relay').

**Question Number.** 104. In what units are static inverters rated?

**Option A.** kVA.

**Option B.** kVAR.

**Option C.** kW.

**Correct Answer is.** kVA.

**Explanation.** VA or KVA, just like an AC generator.

**Question Number.** 105. In a generator system, a stability winding is used.

**Option A.** in series with the field to prevent oscillations.

**Option B.** to control output current.

**Option C.** to prevent voltage overshoot.

**Correct Answer is.** to prevent voltage overshoot.

**Explanation.** EEL/1-2 3.4.5 (d).

**Question Number.** 106. On engine shutdown, what prevents GCR being tripped?

**Option A.** Under-volt.

**Option B.** Under-frequency.

**Option C.** Under-current.

**Correct Answer is.** Under-frequency.

**Explanation.** Aircraft Electrical Systems Pallett page 120.

**Question Number.** 107. How is real and reactive load sharing achieved in an AC parallel generator system?

**Option A.** Real load by control of the constant speed drives, reactive load by adjustment of generator fields.

**Option B.** Real and reactive loads by control of the constant speed drives only. Output voltage is controlled by adjustment of generator fields.

**Option C.** Real load by control of generator fields, Reactive loads by adjustment of the constant speed drives.

**Correct Answer is.** Real load by control of the constant speed drives, reactive load by adjustment of generator fields.

**Explanation.** Aircraft Electrical Systems Pallett page 48 and 49.

**Question Number.** 108. Other than when there is a fault in an aircraft battery or its charging system, when is the charger switched off automatically?

**Option A.** When the battery is used for excessively high discharge currents such as in starting.

**Option B.** When the alternators are fully loaded.

**Option C.** When there is a failure of one alternator in a split-bus bar system.

**Correct Answer is.** When the battery is used for excessively high discharge currents such as in starting.

**Explanation.** NIL.

**Question Number.** 109. The trimmer resistor in a carbon pile volts regulator is.

**Option A.** in series with the generator field.

**Option B.** in series with the generator volts coil.

**Option C.** in parallel with the generator volts coil.

**Correct Answer is.** in series with the generator volts coil.

**Explanation.** EEL/1-2 Fig 1.

**Question Number.** 110. When a field relay trips the generator off-line, it can be reset.

**Option A.** after the fault has been cleared.

**Option B.** by cycling the generator switch.

**Option C.** on the ground only.

**Correct Answer is.** on the ground only.

**Explanation.** NIL.

**Question Number.** 111. In a paralleled AC generator system both A phases must be in synchronization and.

**Option A.** CBA must equal ABC.

**Option B.** phase rotation does not matter.

**Option C.** CBA must equal CBA.

**Correct Answer is.** CBA must equal CBA.

**Explanation.** NIL.

**Question Number.** 112. When loads are shed from a bus bar automatically.

**Option A.** bus bar current decreases.

**Option B.** bus bar current rises.

**Option C.** bus bar voltage rises.

**Correct Answer is.** bus bar current decreases.

**Explanation.** NIL.

**Question Number.** 113. What controls output from the generator?

**Option A.** BPCU.

**Option B.** GCU.

**Option C.** ELCU.

**Correct Answer is.** GCU.

**Explanation.** Aircraft Electricity and Electronics, Eismín, has full descriptions of all 3 units.

**Question Number.** 114. Specific Gravity in a lead acid battery should give an indication of.

**Option A.** charge.

**Option B.** electrolyte temperature.

**Option C.** electrolyte level.

**Correct Answer is.** charge.

**Explanation.** Nil.

**Question Number.** 115. During normal engine shut-down, the generator.

**Option A.** breaker and control relay are both tripped.

**Option B.** breaker is tripped only.

**Option C.** control relay is tripped only.

**Correct Answer is.** breaker is tripped only.

**Explanation.** B757 Maintenance Training Manual.

**Question Number.** 116. The generator warning light will come on when.

**Option A.** voltage is too high.

**Option B.** voltage is above battery voltage.

**Option C.** voltage is below battery voltage.

**Correct Answer is.** voltage is below battery voltage.

**Explanation.** NIL.

**Question Number.** 117. When replacing a current transformer.

**Option A.** it can be fitted any way round.

**Option B.** voltage/current selection must be made prior to fitting.

**Option C.** it can only be fitted one way round.

**Correct Answer is.** it can only be fitted one way round.

**Explanation.** NIL.

**Question Number.** 118. The economy coil on a relay.

**Option A.** reduces current required to hold closed.

**Option B.** makes it cheaper to make.

**Option C.** reduces current required to close.

**Correct Answer is.** reduces current required to hold closed.

**Explanation.** NIL.

**Question Number.** 119. What is the function of the generator control relay?

**Option A.** Bring the generator on-line.

**Option B.** Connect the generator to the bus bar.

**Option C.** Control output voltage.

**Correct Answer is.** Bring the generator on-line.

**Explanation.** NIL.

**Question Number.** 120. The current consumed by a DC starter motor will.

**Option A.** remain constant.

**Option B.** increase as the engine speed increases.

**Option C.** decrease as the engine speed increases.

**Correct Answer is.** decrease as the engine speed increases.

**Explanation.** Decreases due to the back EMF as engine speed increases.

**Question Number.** 121. A neutralizing agent for sulphuric acid is.

**Option A.** borax powder.

**Option B.** citric acid.

**Option C.** sodium bicarbonate.

**Correct Answer is.** sodium bicarbonate.

**Explanation.** Jeppesen A & P Technician Airframe Textbook p 7-30 refers.

**Question Number.** 122. In a split bus power distribution system.

**Option A.** each generator supplies its own bus and distribution system in normal operation.

**Option B.** generators are paralleled on connection to the tie bus.

**Option C.** power is split between 115V AC and 28V DC.

**Correct Answer is.** each generator supplies its own bus and distribution system in normal operation.

**Explanation.** NIL.

**Question Number.** 123. Flashing a generator field.

**Option A.** decreases resistance.

**Option B.** restores magnetism.

**Option C.** increases resistance.

**Correct Answer is.** restores magnetism.

**Explanation.** NIL.

**Question Number.** 124. When checking SG of electrolyte of lead acid battery, what should be taken into account?

Electrolyte temperature.

**Option B.** Battery charge.

**Option C.** Ambient temperature.

**Correct Answer is.** Electrolyte temperature.

**Explanation.** EEL/1-1 4.3.4.

**Question Number.** 125. How do you check condition of Ni-Cad battery in situ?

**Option A.** By voltmeter connected to the battery terminal.

**Option B.** By voltmeter in the cockpit when battery is off load.

**Option C.** By voltmeter in the cockpit, when battery is on load.

**Correct Answer is.** By voltmeter in the cockpit, when battery is on load.

**Explanation.** Aircraft Electrical Systems, Pallett Page 23.

**Question Number.** 126. The reactive load circuit in a multi-engine AC generator system.

**Option A.** modifies generator field excitation current.

**Option B.** modifies generator drive speed.

**Option C.** modifies generator field excitation voltage.

**Correct Answer is.** modifies generator field excitation current.

**Explanation.** Aircraft Electrical Systems, Pallett Page 49.

**Question Number.** 127. A vibrating type voltage regulator uses a volts coil.

**Option A.** in series with the generator output.

**Option B.** in series with the current coil.

**Option C.** in parallel with the generator output.

**Correct Answer is.** in parallel with the generator output.

**Explanation.** EEL/1-2 3.2.1.

**Question Number.** 128. The purpose of the economy contacts in a relay is to.

**Option A.** prevent contact pitting and burning.

**Option B.** reduce the current required to hold the contacts closed.

**Option C.** close the auxiliary contacts before the main contacts.

**Correct Answer is.** reduce the current required to hold the contacts closed.

**Explanation.** NIL.

**Question Number.** 129. A vibrating contact voltage regulator has.

**Option A.** a resistor in series with the points.

**Option B.** a volts coil in parallel with the points.

**Option C.** a resistor in parallel with the points.

**Correct Answer is.** a resistor in parallel with the points.

**Explanation.** EEL/1-2 Figure 3.

**Question Number.** 130. Brush bedding-in on a starter generator can be carried out.

**Option A.** when 80 percent of the brush area has been previously bedded in, on the bench.

**Option B.** only off the aircraft.

**Option C.** during flight.

**Correct Answer is.** only off the aircraft.

**Explanation.** NIL.

**Question Number.** 131. What would be the cause of a low electrolyte level in a nicad battery?

**Option A.** Evaporation.

**Option B.** Over charging current.

**Option C.** Undercharging current.

**Correct Answer is.** Over charging current.

**Explanation.** CAIPs EEL/1.3 Page 3 Para 3.4.1.

**Question Number.** 132. An AC generator connected to a CSD requires.

**Option A.** a separate voltage regulator.

**Option B.** no voltage regulator as the CSD will control generator frequency.

**Option C.** no voltage regulator as the CSD will control the voltage.

**Correct Answer is.** a separate voltage regulator.

**Explanation.** NIL.

**Question Number.** 133. If electrolyte from a lead-acid battery is spilled in the battery compartment, which procedure should be followed?

**Option A.** Apply sodium bicarbonate solution to the affected area followed by a water rinse.

**Option B.** Apply boric acid solution to the affected area followed by a water rinse.

**Option C.** Rinse the affected area thoroughly with clean water.

**Correct Answer is.** Apply sodium bicarbonate solution to the affected area followed by a water rinse.

**Explanation.** CAIPs EEL/1-1 4.1.4.

**Question Number.** 134. Which statement regarding the hydrometer reading of a lead-acid storage battery electrolyte is true?

**Option A.** A specific gravity correction should be subtracted from the hydrometer reading if the electrolyte temperature is above 20°C.

**Option B.** The hydrometer reading will give a true indication of the capacity of the battery regardless of the electrolyte temperature.

**Option C.** The hydrometer reading does not require a temperature correction if the electrolyte temperature is 60°F.

**Correct Answer is.** The hydrometer reading does not require a temperature correction if the electrolyte temperature is 60°F.

**Explanation.** CAIPs EEL/1-1 4.3.4 (American Text such as Jeppesen AandP Technician Airframe Textbook Page 7-27 specify 80°F as the standard, but CAIPs specifies 60°F as standard - take your pick).

**Question Number.** 135. An increase in the speed of a DC generator will cause the voltage to rise with the following resultant action in the voltage regulator:-.

**Option A.** The volts coil to exert more pull thus increasing the current in the generator field.

**Option B.** The volts coil to increase its magnetic field thus decreasing the field excitation.

**Option C.** The volts coil to exert less pull thus increasing the resistance of the carbon pile.

**Correct Answer is.** The volts coil to increase its magnetic field thus decreasing the field excitation.

**Explanation.** EEL/1-2 3.1.1.

**Question Number.** 136. The equalizing coils on voltage regulators will.

**Option A.** be connected to each other when the generators are paralleled.

**Option B.** have current passing through them only when the generators are not paralleled.

**Option C.** have current passing through them from the higher loaded generator to the lower.

**Correct Answer is.** have current passing through them from the higher loaded generator to the lower.

**Explanation.** Aircraft Electricity and Electronics Thomas Eismin 5th Edition page 200.

**Question Number.** 137. A fully charged lead-acid battery will not freeze until extremely low temperatures are reached because.

**Option A.** the acid is in the plates, thereby increasing the specific gravity of the solution.

**Option B.** increased internal resistance generates sufficient heat to prevent freezing.

**Option C.** most of the acid is in the solution.

**Correct Answer is.** most of the acid is in the solution.

**Explanation.** CAIPs EEL/1-1 4.6.2.

**Question Number.** 138. What determines the amount of current which will flow through a battery while it is being charged by a constant voltage source?

**Option A.** The total plate area of the battery.

**Option B.** The state-of-charge of the battery.

**Option C.** The ampere-hour capacity of the battery.

**Correct Answer is.** The state-of-charge of the battery.

**Explanation.** NIL.

**Question Number.** 139. The method used to rapidly charge a nickel-cadmium battery utilizes.

**Option A.** constant current and varying voltage.

**Option B.** constant voltage and varying current.

**Option C.** constant current and constant voltage.

**Correct Answer is.** constant voltage and varying current.

**Explanation.** Aircraft Electricity and Electronics Eismin Page 52. CAIPs EEL/1-3 4.5.1.

**Question Number.** 140. The presence of small amounts of potassium carbonate deposits on the top of nickel-cadmium battery cells that have been in service for time is an indication of.

**Option A.** normal operation.

**Option B.** excessive gassing.

**Option C.** excessive plate sulphation.

**Correct Answer is.** excessive gassing.

**Explanation.** Aircraft Electrical Systems Page 23 and Aircraft Electricity and Electronics Eismin Page 50 but see also CAIPs EEL/1-3 4.2 (h).

**Question Number.** 141. The servicing and charging of nickel-cadmium and lead-acid batteries together in the same service area is likely to result in.

**Option A.** contamination of both types of batteries.

**Option B.** increased explosion and/or fire hazard.

**Option C.** normal battery service life.

**Correct Answer is.** contamination of both types of batteries.

**Explanation.** CAIPs EEL/2-1 Page 1 Para 2.11.

**Question Number.** 142. If the current drawn from No.1 generator of a twin generator DC system is less than that drawn from No.2 generator, the current in the No.2 generator equalizing coil will flow.

**Option A.** in the same direction as the current flow in the voltage coil, reducing the output of

No.2 generator.

**Option B.** in the same direction as the current flow in the voltage coil, increasing the output of No.2 generator.

**Option C.** in the opposite direction to the current flow in the voltage coil, reducing the output of No.2 generator.

**Correct Answer is.** in the same direction as the current flow in the voltage coil, reducing the output of No.2 generator.

**Explanation.** CAIPs EEL/1-3 4.2 (h).

**Question Number.** 143. On a C.S. driven generator, operation of the Disconnect Solenoid will disconnect the generator drive and.

**Option A.** it will automatically reset itself when the fault is rectified.

**Option B.** it can only be reset when all loads are switched off.

**Option C.** resetting can only be carried out on the ground.

**Correct Answer is.** resetting can only be carried out on the ground.

**Explanation.** NIL.

**Question Number.** 144. In a constant frequency AC system, real load sharing is achieved by regulating the.

**Option A.** generator drive torque.

**Option B.** generator speed.

**Option C.** voltage regulator.

**Correct Answer is.** generator drive torque.

**Explanation.** Aircraft Electrical Systems, Pallett Page 48-49.

**Question Number.** 145. A constant speed drive unit has a warning light indication.

**Option A.** for low speed.

**Option B.** for low oil pressure.

**Option C.** for when it is disconnected from the generator.

**Correct Answer is.** for low oil pressure.

**Explanation.** NIL.

**Question Number.** 146. The electrolyte of a nickel-cadmium battery is the lowest when the battery is.

**Option A.** being charged.

**Option B.** under load condition.

**Option C.** in a discharged condition.

**Correct Answer is.** in a discharged condition.

**Explanation.** EEL/1-3 3.4.2.

**Question Number.** 147. Nickel-cadmium batteries which are stored for a long period of time will show a low fluid level because the.

**Option A.** fluid evaporates through vents.

**Option B.** electrolyte becomes absorbed in the plates.

**Option C.** fluid level was not periodically replenished.

**Correct Answer is.** electrolyte becomes absorbed in the plates.

**Explanation.** Jeppesen A&P Technician Airframe Textbook page 7-32 and 7-33. a) could also be correct.

**Question Number.** 148. The purpose of 'field flashing' is to.

**Option A.** test the insulation resistance of a field winding with a 1000V supply.

**Option B.** measure the residual magnetism in a field winding 24 hours after the field supply is removed.

**Option C.** change the polarity of residual magnetism in a field winding.

**Correct Answer is.** change the polarity of residual magnetism in a field winding.

**Explanation.** Aircraft Electrical Systems, Pallett Page 4.

**Question Number.** 149. The purpose of an inverter is to convert.

**Option A.** DC to AC.

**Option B.** AC to DC.

**Option C.** AC to a higher frequency AC.

**Correct Answer is.** DC to AC.

**Explanation.**

**Question Number.** 150. How can the state-of-charge of a nickel-cadmium battery be determined?

**Option A.** By the level of the electrolyte.

**Option B.** By measuring the specific gravity of the electrolyte.

**Option C.** By measuring discharge.

**Correct Answer is.** By measuring discharge.

**Explanation.** CAIPs EEL/1-3 4.5.6.

**Question Number.** 151. What may result if water is added to a nickel-cadmium battery when it is not fully charged?

**Option A.** Excessive spewing will occur during the charging cycle.

**Option B.** The cell temperature will run too low for proper output.

**Option C.** No adverse results since water may be added anytime.

**Correct Answer is.** Excessive spewing will occur during the charging cycle.

**Explanation.** CAIPs EEL/1-3 4.3.

**Question Number.** 152. In nickel-cadmium batteries, a rise in cell temperature.

**Option A.** causes an increase in internal resistance.

**Option B.** increases cell voltage.

**Option C.** causes a decrease in internal resistance.

**Correct Answer is.** causes a decrease in internal resistance.

**Explanation.** CAIPs EEL/1-3 4.5.8 (a).

**Question Number.** 153. When a charging current is applied to a nickel-cadmium battery, the cells emit gas only.

**Option A.** toward the end of the charging cycle.

**Option B.** when the electrolyte level is low.

**Option C.** if they are defective.

**Correct Answer is.** toward the end of the charging cycle.

**Explanation.** CAIPs EEL/1-3 4.5.5.

**Question Number.** 154. The equalizing coil in the carbon pile regulator.

**Option A.** modifies the effect of the voltage sensing coil.

**Option B.** becomes inoperative when the undervolting relay energizes.

**Option C.** is connected in series with the carbon pile.

**Correct Answer is.** modifies the effect of the voltage sensing coil.

**Explanation.** NIL.

**Question Number.** 155. In a constant frequency AC system, reactive load sharing is achieved by regulating the.

**Option A.** generator speed.

**Option B.** generator drive torque.

**Option C.** voltage regulator.

**Correct Answer is.** voltage regulator.

**Explanation.** Pallett Aircraft Electrical Systems Page 48.

**Question Number.** 156. Under-frequency in an AC supply would cause.

**Option A.** overheating of inductive devices.

**Option B.** overvoltage of capacitive devices.

**Option C.** over speeding of AC motors.

**Correct Answer is.** overheating of inductive devices.

**Explanation.** Inductive devices will pass more current if it is lower frequency.

**Question Number.** 157. The electrolyte in a lead-acid battery contains.

**Option A.** nitric acid.

**Option B.** sulphuric acid.

**Option C.** hydrochloric acid.

**Correct Answer is.** sulphuric acid.

**Explanation.** CAIPs EEL/1-1 4.1.4.

**Question Number.** 158. In the procedure to be followed after spillage of battery acid, neutralizing may be carried out.

**Option A.** by applying a coating of petroleum jelly.

**Option B.** with a dilute solution of sodium bicarbonate.

**Option C.** by washing with distilled water.

**Correct Answer is.** with a dilute solution of sodium bicarbonate.

**Explanation.** NIL.

**Question Number.** 159. Frequency (Hz) is the number of cycles per.

**Option A.** revolution.

**Option B.** second.

**Option C.** minute.

**Correct Answer is.** second.

**Explanation.** NIL.

**Question Number.** 160. The three voltages of a three phase generator are.

**Option A.** 90 degrees apart.

**Option B.** 120 degrees apart.

**Option C.** 180 degrees apart.

**Correct Answer is.** 120 degrees apart.

**Explanation.** NIL.

**Question Number.** 161. To restore the level of electrolyte which has been lost due to normal gassing during battery charging.

**Option A.** sulphuric acid must be added.

**Option B.** electrolyte of the same specific gravity as that contained in the battery must be added.

**Option C.** distilled water must be added.

**Correct Answer is.** distilled water must be added.

**Explanation.** CAIPS EEL/1-1 4.6.1.

**Question Number.** 162. A 12 volt lead-acid battery.

**Option A.** has 24 cells.

**Option B.** has 6 cells.

**Option C.** has 12 cells.

**Correct Answer is.** has 6 cells.

**Explanation.** NIL.

**Question Number.** 163. The active component of an A.C. circuit is 4 amps and the reactive is 3 amps. Ammeter reading will be.

**Option A.** 3.4 amps.

**Option B.** 7 amps.

**Option C.** 5 amps.

**Correct Answer is.** 5 amps.

**Explanation.** Total current is the vector sum of active (real) and reactive currents. 3, 4, 5 triangle in this case.

**Question Number.** 164. In a delta connected generator.

**Option A.** line volts equals 1.73 phase volts.

**Option B.** phase volts equals 1.73 line volts.

**Option C.** line volts equals phase volts.

**Correct Answer is.** line volts equals phase volts.

**Explanation.** NIL.

**Question Number.** 165. The only practical method of maintaining a constant voltage output from an aircraft generator under varying conditions of speed and load is to vary the.

**Option A.** speed at which the armature rotates.

**Option B.** number of conductors in the armature.

**Option C.** strength of the magnetic field.

**Correct Answer is.** strength of the magnetic field.

**Explanation.** NIL.

**Question Number.** 166. As the generator load is increased (within its rated capacity), the voltage will.

**Option A.** remain constant and the amperage output will decrease.

**Option B.** remain constant and the amperage output will increase.

**Option C.** decrease and the amperage output will increase.

**Correct Answer is.** decrease and the amperage output will increase.

**Explanation.** Assuming no voltage regulator is considered, otherwise b is the answer.

**Question Number.** 167. When checking the specific gravity of the electrolyte in a battery.

**Option A.** one cell only need be checked as the remainder will read the same.

**Option B.** each cell should be checked as the readings may differ.

**Option C.** only the end cells need be checked as they contain the terminals.

**Correct Answer is.** each cell should be checked as the readings may differ.

**Explanation.** NIL.

**Question Number.** 168. A lead-acid battery is considered to be fully charged when the.

**Option A.** S.G. and voltage remain constant for specified period.

**Option B.** cells begin to gas freely.

**Option C.** S.G. reaches 1.180.

**Correct Answer is.** S.G. and voltage remain constant for specified period.

**Explanation.** CAIPs EEL/1-1 4.7.

**Question Number.** 169. Which aircraft circuit would be most likely to use frequency wild 200V AC?

**Option A.** Hydraulic pump.

**Option B.** Standby compass.

**Option C.** Windscreen heating.

**Correct Answer is.** Windscreen heating.

**Explanation.** Any heating or lighting circuit can be frequency wild.

**Question Number.** 170. To prevent corrosion at the terminals of a lead-acid battery.

**Option A.** petroleum jelly may be applied to the connections.

**Option B.** the connectors may be painted.

**Option C.** copper connectors are used.

**Correct Answer is.** petroleum jelly may be applied to the connections.

**Explanation.** CAIPs EEL/1-1 4.2 (vi).

**Question Number.** 171. Before taking S.G. readings of a lead-acid battery recently removed from an aircraft.

**Option A.** the electrolyte temperature must be noted.

**Option B.** a period of 1 hour should have elapsed to allow the S.G. to stabilize.

**Option C.** the battery must be charged at the 10 hour rate for one hour.

**Correct Answer is.** the electrolyte temperature must be noted.

**Explanation.** NIL.

**Question Number.** 172. The output of a DC generator is controlled by varying the.

**Option A.** armature current.

**Option B.** engine speed.

**Option C.** field current.

**Correct Answer is.** field current.

**Explanation.** NIL.

**Question Number.** 173. A generator rated at 30 kVA power factor 0.8 has a maximum continuous power output of.

**Option A.** 37.5 kW.

**Option B.** 30 kW.

**Option C.** 24 kW.

**Correct Answer is.** 24 kW.

**Explanation.**  $PF = TP/AP$   $0.8 = TP/30$   $TP = 24$ .

**Question Number.** 174. The specific gravity of the electrolyte in a lead-acid battery.

**Option A.** remains constant with changes in the state of charge but is a useful guide to the amount of acid contained in the electrolyte.

**Option B.** remains substantially constant regardless of the state of charge and is not therefore a guide to the state of charge.

**Option C.** changes with the state of charge and is therefore a measure of the state of charge.

**Correct Answer is.** changes with the state of charge and is therefore a measure of the state of charge.

**Explanation.** NIL.

**Question Number.** 175. A battery which is assumed to be 100% efficient and to have a capacity of 60 ampere-hours at the 10 hour rate will deliver.

**Option A.** 6 amps for 10 hours.

**Option B.** 60 amps for 10 hours or 6 amps for 10 hours depending upon the rate of demand.

**Option C.** 60 amps for 10 hours.

**Correct Answer is.** 6 amps for 10 hours.

**Explanation.** NIL.

**Question Number.** 176. Two 12V 25 ampere batteries connected in series will produce.

**Option A.** 12V with 25 ampere hour capacity.

**Option B.** 24V with 25 ampere hour capacity.

**Option C.** 12V with 50 ampere hour capacity.

**Correct Answer is.** 24V with 25 ampere hour capacity.

**Explanation.** NIL.

**Question Number.** 177. As an installed battery becomes fully charged by the aircraft generator.

**Option A.** the battery voltage nears its nominal level so the charging current decreases.

**Option B.** the battery contactor isolates the battery from the generator.

**Option C.** the generator voltage decreases to supply the steadily decreasing current.

**Correct Answer is.** the battery voltage nears its nominal level so the charging current decreases.

**Explanation.** NIL.

**Question Number.** 178. On a DC shunt generator without a voltage regulator, if the load increases the generator output voltage will.

**Option A.** increase.

**Option B.** remain constant.

**Option C.** decrease.

**Correct Answer is.** decrease.

**Explanation.** NIL.

**Question Number.** 179. For battery charging, the electrical supply connected to the battery must be.

**Option A.** AC at 50 c.p.s.

**Option B.** AC at 400 c.p.s.

**Option C.** DC.

**Correct Answer is.** DC.

**Explanation.** NIL.

**Question Number.** 180. When using A.C. power on the bus bar you require 28V D.C. for battery charging.

**Option B.** an A.C. inverter would be required.

**Option B.** an A.C. transformer and rectifier would be required.

**Option B.** a D.C. transformer and rectifier would be required.

**Correct Answer is.** an A.C. transformer and rectifier would be required.

**Explanation.** NIL.

**Question Number.** 181. Two similar 12V batteries connected in parallel will produce.

**Option A.** 24V emf. with the same capacity as each battery.

**Option B.** 12V emf. with twice the capacity of each battery.

**Option C.** 24V emf. with twice the capacity of each battery.

**Correct Answer is.** 12V emf. with twice the capacity of each battery.

**Explanation.** NIL.

**Question Number.** 182. If a NiCad battery overheats, it is an indication of.

**Option A.** the generator voltage regulator setting is too low.

**Option B.** the generator is not connected to the bus bar.

**Option C.** thermal runaway.

**Correct Answer is.** thermal runaway.

**Explanation.** NIL.

**Question Number.** 183. When checking a NiCad battery in situ for serviceability.

**Option A.** a load is applied to the battery and the voltmeter reading noted.

**Option B.** a hydrometer must be used.

**Option C.** the electrical circuits must be isolated before installing shorting strips.

**Correct Answer is.** a load is applied to the battery and the voltmeter reading noted.

**Explanation.** NIL.

**Question Number.** 184. The output from an AC generator is taken from.

**Option A.** slip rings.

**Option B.** slip rings via commutator.

**Option C.** connections on the stator.

**Correct Answer is.** connections on the stator.

**Explanation.** NIL.

**Question Number.** 185. Load sharing on a DC generation system is achieved by.

**Option A.** circulating currents affecting the carbon pile for voltage trimming.

**Option B.** the load differences causing torque signals to vary the engine speed.

**Option C.** tach generators varying the generators outputs as the engine speed varies.

**Correct Answer is.** circulating currents affecting the carbon pile for voltage trimming.

**Explanation.** NIL.

**Question Number.** 186. If a nickel cadmium aircraft battery is not required for immediate service, it should be stored.

**Option A.** in the fully discharged condition.

**Option B.** in a totally dry condition.

**Option C.** in the fully charged condition.

**Correct Answer is.** in the fully discharged condition.

**Explanation.** CAIPs EEL/1-3 8.

**Question Number.** 187. The correct way to determine the state of charge of a nickel cadmium battery is.

**Option A.** by checking the specific gravity of each cell.

**Option B.** by checking the voltage of each cell under load.

**Option C.** by a complete discharge and a measured recharge.

**Correct Answer is.** by a complete discharge and a measured recharge.

**Explanation.** EEL/1-3 4.5.6.

**Question Number.** 188. A DC generator will be connected to the bus bar after the RCCO contacts close due to.

**Option A.** increasing battery voltage.

**Option B.** increasing generator voltage.

**Option C.** a differential voltage of 0.5V battery voltage higher than generator.

**Correct Answer is.** increasing generator voltage.

**Explanation.** NIL.

**Question Number.** 189. Spillage of a lead acid electrolyte is detected by.

**Option A.** indicating paper that turns red.

**Option B.** indicating paper that turns blue.

**Option C.** litmus paper that turns black.

**Correct Answer is.** indicating paper that turns red.

**Explanation.** Acid turns litmus paper red.

**Question Number.** 190. To restore electrolyte after spillage.

**Option A.** add a mixture of acid and water of the same s.g. as that in the battery.

**Option B.** add acid only.

**Option C.** add distilled water only.

**Correct Answer is.** add a mixture of acid and water of the same s.g. as that in the battery.

**Explanation.** NIL.

**Question Number.** 191. When a DC generator fails, the pilot will receive the following indications:-

**Option A.** Rising voltage and current discharge with a red PFWL.

**Option B.** An audio bell and red PFWL.

**Option C.** Zero current on the ammeter and a red PFWL.

**Correct Answer is.** Zero current on the ammeter and a red PFWL.

**Explanation.** NIL.

**Question Number.** 192. The purpose of an inverter is to convert.

**Option A.** DC to AC.

**Option B.** AC to a higher frequency AC.

**Option C.** AC to DC.

**Correct Answer is.** DC to AC.

**Explanation.** Aircraft Electrical Systems Pallett Page 66.

**Question Number.** 193. With a vibrating-contact type voltage regulator the adjustment of generator voltage is carried out by.

**Option A.** adjustment of voltage coil resistance.

**Option B.** alteration of contact spring tension.

**Option C.** alteration of the field resistance.

**Correct Answer is.** alteration of contact spring tension.

**Explanation.** Aircraft Electrical Systems, Pallett Page 12, and Aircraft Electricity and Electronics - Eismin Page 199.

**Question Number.** 194. Battery SG is measured using a.

**Option A.** hygrometer.

**Option B.** hypsometer.

**Option C.** hydrometer.

**Correct Answer is.** hydrometer.

**Explanation.** NIL.

**Question Number.** 195. A battery for use on aircraft must have a capacity of.

**Option A.** 0.8.

**Option B.** 0.5.

**Option C.** 0.9.

**Correct Answer is.** 0.8.

**Explanation.** NIL. [http://www.energysys.com/defense/documents/aft\\_manual.pdf](http://www.energysys.com/defense/documents/aft_manual.pdf)

**Question Number.** 196. When connecting aircraft batteries, the last lead to connect is the.

**Option A.** negative.

**Option B.** positive earth.

**Option C.** positive.

**Correct Answer is.** negative.

**Explanation.** Aircraft Electricity and Electronics Eismin Page 43.

**Question Number.** 197. Polarization in a cell is.

**Option A.** the fact that hydrogen bubbles form on the -ve plate.

**Option B.** the fact that as a battery discharges, the -ve plate's potential approaches that of the + ve plate's.

**Option C.** the establishing of a potential across the cell.

**Correct Answer is.** the fact that hydrogen bubbles form on the -ve plate.

**Explanation.** NIL.

**Question Number.** 198. Battery capacity is checked by.

**Option A.** discharging while maintaining the voltage constant by varying a resistor in the circuit and checking the time to be discharged.

**Option B.** discharging at a constant current and checking the time taken to reach the discharged state.

**Option C.** measuring the terminal voltage whilst on load and multiplying by the current drawn.

**Correct Answer is.** discharging while maintaining the voltage constant by varying a resistor in the circuit and checking the time to be discharged.

**Explanation.** Pallett Aircraft Electrical Systems Page 21.

**Question Number.** 199. The frequency of an AC generator is dependent on the.

**Option A.** number of pairs of poles and the speed of the rotor.

**Option B.** number of conductors and the field strength.

**Option C.** field strength and the speed of the generator.

**Correct Answer is.** number of pairs of poles and the speed of the rotor.

**Explanation.** NIL.

**Question Number.** 200. To adjust the voltage output of an AC generator, whilst maintaining constant frequency, it is necessary to.

**Option A.** alter the reactance of the stator winding circuit.

**Option B.** alter the field current.

**Option C.** alter the driving speed.

**Correct Answer is.** alter the field current.

**Explanation.** Pallett Aircraft Electrical Systems Page 46.

**Question Number.** 201. In a paralleled AC generation system load sharing is for.

**Option A.** reactive load only.

**Option B.** real load only.

**Option C.** real and reactive load.

**Correct Answer is.** real and reactive load.

**Explanation.** NIL.

**Question Number.** 202. Single phase components in a 3 phase system may be connected between.

**Option A.** phases A and B only.

**Option B.** the phase and earth only.

**Option C.** any phase and earth or between any two phases.

**Correct Answer is.** any phase and earth or between any two phases.

**Explanation.** NIL.

**Question Number.** 203. A frequency wild supply would be suitable for.

**Option A.** instruments and navigation systems.

**Option B.** deicing loads.

**Option C.** 3-phase torque motors.

**Correct Answer is.** deicing loads.

**Explanation.** NIL.

**Question Number.** 204. Three 12V, 40Ah accumulators in series would give.

**Option A.** 36V 120Ah.

**Option B.** 12V 120Ah.

**Option C.** 36V 40Ah.

**Correct Answer is.** 36V 40Ah.

**Explanation.** NIL.

**Question Number.** 205. Three 12V, 40Ah accumulators in parallel would give.

**Option A.** 12V 40Ah.

**Option B.** 12V 120Ah.

**Option C.** 36V 120Ah.

**Correct Answer is.** 12V 120Ah.

**Explanation.** NIL.

**Question Number.** 206. An inverter can be an AC generator driven by.

**Option A.** an AC motor.

**Option B.** either an AC or DC motor.

**Option C.** a DC motor.

**Correct Answer is.** a DC motor.

**Explanation.** NIL.

**Question Number.** 207. When mixing electrolyte for lead acid batteries.

**Option A.** the method of mixing is unimportant.

**Option B.** add acid to water.

**Option C.** add water to acid.

**Correct Answer is.** add acid to water.

**Explanation.** NIL.

**Question Number.** 208. The RPM of a 6 pole, 400 Hz alternator is.

**Option A.** 6000.

**Option B.** 8000.

**Option C.** 4000.

**Correct Answer is.** 8000.

**Explanation.**  $400/3 \times 60$ .

**Question Number.** 209. The ratio between apparent power and true power is the.

**Option A.** efficiency.

**Option B.** power factor.

**Option C.** power rating.

**Correct Answer is.** power factor.

**Explanation.** Pallett Aircraft Electrical Systems Page 3.

**Question Number.** 210. Apparent power is measured in.

**Option A.** Volt Amps.

**Option B.** Kilovolts.

**Option C.** Watts.

**Correct Answer is.** Volt Amps.

**Explanation.** Pallett Aircraft Electrical Systems Page 35.

**Question Number.** 211. A Ni-Cad battery consists of 19, 1.2 volt cells. What will be the nominal battery output?

**Option A.** 20V.

**Option B.** 24V.

**Option C.** 22V.

**Correct Answer is.** 22V.

**Explanation.** NIL.

**Question Number.** 212. The preferred method of battery charging a Ni-Cad battery is constant.

**Option A.** speed.

**Option B.** current.

**Option C.** voltage.

**Correct Answer is.** current.

**Explanation.** NIL.

**Question Number.** 213. When operating two AC generators unparalleled, the phase of each.

**Option A.** is unimportant.

**Option B.** must be in opposition to one another.

**Option C.** must be synchronized.

**Correct Answer is.** is unimportant.

**Explanation.** It says 'UNparalleled'.

**Question Number.** 214. When the GPU is connected to the aircraft.

**Option A.** it supplies essential services.

**Option B.** it is not paralleled with the aircraft generator.

**Option C.** it is paralleled with the aircraft generator.

**Correct Answer is.** it is not paralleled with the aircraft generator.

**Explanation.** Nil.

**Question Number.** 215. A lead-acid battery with 12 cells connected in series (no-load voltage = 2.1 volts per cell) furnishes 10 amperes to a load of 2 ohms resistance. The internal resistance of the battery in this instance is.

**Option A.** 5.0 ohms.

**Option B.** 2.52 ohms.

**Option C.** 0.52 ohms.

**Correct Answer is.** 0.52 ohms.

**Explanation.**  $OCV = 2.1 \times 12 = 25.2$   $CCV = 10 \times 2 = 20$ . Internal voltage drop = 5.2 V. Internal  $R = V/I = 5.2/10 = 0.52$ .

**Question Number.** 216. The rating of an aircraft alternator is 40 KVA at PF 0.8 lagging.

**Option A.** The maximum load under all conditions is 40KVA.

**Option B.** The maximum load under all conditions is 40KW.

**Option C.** The maximum load permitted is 32KW.

**Correct Answer is.** The maximum load permitted is 32KW.

**Explanation.**  $PF = TP/AP$   $0.8 = TP/40$   $AP = 40 \times 0.8 = 32$  KW.

**Question Number.** 217. An I.D.G (integrated drive generator).

**Option A.** does not require a CSDU.

**Option B.** incorporates the alternator and CSD as one unit.

**Option C.** has separate CSDU.

**Correct Answer is.** incorporates the alternator and CSD as one unit.

**Explanation.** Pallett Aircraft Electrical Systems Page 43.

**Question Number.** 218. A P.M.G (Permanent Magnet Generator) is a small built in generator which.

**Option A.** only rotates after starting.

**Option B.** only rotates during starting.

**Option C.** provides initial excitation.

**Correct Answer is.** provides initial excitation.

**Explanation.** NIL.

**Question Number.** 219. To parallel an alternator with another alternator the alternators must have the same.

**Option A.** frequency, voltage and phase relationship.

**Option B.** frequency, RPM and speed.

**Option C.** frequency, RPM and phase relationship.

**Correct Answer is.** frequency, voltage and phase relationship.

**Explanation.** NIL.

**Question Number.** 220. Speed of an alternator may be controlled by.

**Option A.** keeping engine rpm constant.

**Option B.** varying the field current.

**Option C.** CSDU (constant speed drive unit).

**Correct Answer is.** CSDU (constant speed drive unit).

**Explanation.** NIL.

**Question Number.** 221. Frequency wild' alternators supply.

**Option A.** capacitive circuits.

**Option B.** inductive circuits.

**Option C.** resistive circuits.

**Correct Answer is.** resistive circuits.

**Explanation.** NIL.

**Question Number.** 222. The real load of an alternator is directly related to.

**Option A.** output voltage.

**Option B.** output shaft rpm.

**Option C.** output shaft torque.

**Correct Answer is.** output shaft torque.

**Explanation.** Pallett Aircraft Electrical Systems Page 48.

**Question Number.** 223. How is initial voltage build-up ensured in a brushless generating system, before full output is available from the voltage regulator?

**Option A.** Excitation from the DC bus bars is automatically provided during the start sequence.

**Option B.** A switch must be operated by the crew to provide excitation from the dc bus bar to bring generator on line.

**Option C.** Permanent magnets are mounted between the exciter field poles.

**Correct Answer is.** Permanent magnets are mounted between the exciter field poles.

**Explanation.** NIL.

**Question Number.** 224. Insulation resistance of electrical machines is.

**Option A.** normally lower when the machine is hot.

**Option B.** not affected by change of temperature of machine.

**Option C.** normally higher when the machine is hot.

**Correct Answer is.** normally higher when the machine is hot.

**Explanation.** NIL.

**Question Number.** 225. The purpose of a thermistor in a brushless AC generator is to.

**Option A.** keep the resistance of the rectifiers nearly constant at varying temperatures.

**Option B.** keep the exciter field resistance nearly constant at varying temperatures.

**Option C.** compensate for temperature changes in the main AC stator windings.

**Correct Answer is.** keep the exciter field resistance nearly constant at varying temperatures.

**Explanation.** Aircraft Electrical Systems, Pallett Page 45 and diagram.

**Question Number.** 226. The term 'random paralleling' means the incoming alternator's output voltage frequency and phase relationship is.

**Option A.** not the same.

**Option B.** the outputs are constant.

**Option C.** the same.

**Correct Answer is.** not the same.

**Explanation.** NIL.

**Question Number.** 227. One lamp is connected across corresponding phases of two alternators. They will be synchronized when.

**Option A.** the lamp is maximum brightness.

**Option B.** the lamp is extinguished.

**Option C.** the lamp is either at maximum brightness or is extinguished.

**Correct Answer is.** the lamp is extinguished.

**Explanation.** NIL.

**Question Number.** 228. Automatic synchronizing means that the incoming alternator's voltage and frequency.

**Option A.** can be synchronized using the two lamps provided at the system's panel.

**Option B.** cannot be checked.

**Option C.** can be checked at the system's electrical panel by selecting the relevant alternator.

**Correct Answer is.** an be checked at the system's electrical panel by selecting the relevant alternator.

**Explanation.** NIL.

**Question Number.** 229. The danger of random paralleling is the possibility of.

**Option A.** crash engagement.

**Option B.** disconnection of the other alternators.

**Option C.** ground power disconnection.

**Correct Answer is.** crash engagement.

**Explanation.** NIL.

**Question Number.** 230. What is monitored in a constant speed drive?

**Option A.** Hi oil temperature and low oil press.

**Option B.** Low oil press and CSD speed.

**Option C.** Low oil temperature and low oil press.

**Correct Answer is.** Hi oil temperature and low oil press.

**Explanation.** NIL.

**Question Number.** 231. The CSD or IDG speed governor setting.

**Option A.** is adjusted with the engine running.

**Option B.** is adjusted with the engine stationary.

**Option C.** is not allowed to be adjusted.

**Correct Answer is.** is adjusted with the engine stationary.

**Explanation.** NIL.

**Question Number.** 232. An external ground power supply can be used for.

**Option A.** all normal services required by flight and ground crew.

**Option B.** only the ground handling bus bar services.

**Option C.** only the emergency bus bar services.

**Correct Answer is.** all normal services required by flight and ground crew.

**Explanation.** NIL.

**Question Number.** 233. The APU generator can normally be.

**Option A.** connected in parallel with the aircraft's main generators.

**Option B.** used during flight as a backup supply if the main aircraft supply fails.

**Option C.** connected in parallel with the ground power supply.

**Correct Answer is.** used during flight as a backup supply if the main aircraft supply fails.

**Explanation.** NIL.

**Question Number.** 234. The impedance on a run of co-axial cable is.

**Option A.** inversely proportional to the length of cable.

**Option B.** not affected by length of cable.

**Option C.** proportional to the length of cable.

**Correct Answer is.** not affected by length of cable.

**Explanation.** NIL.

[http://www.epanorama.net/documents/wiring/cable\\_impedance.html](http://www.epanorama.net/documents/wiring/cable_impedance.html)

**Question Number.** 235. Galley loads are supplied from the.

**Option A.** ground service bus.

**Option B.** main bus bar.

**Option C.** battery bus bar.

**Correct Answer is.** main bus bar.

**Explanation.** NIL.

**Question Number.** 236. A NiCad battery is stored in the.

**Option A.** fully discharged condition.

**Option B.** dry condition.

**Option C.** fully charged condition.

**Correct Answer is.** fully discharged condition.

**Explanation.** NIL.

**Question Number.** 237. Transformer rectifier unit (TRUs) change.

**Option A.** three phase AC to direct current.

**Option B.** direct current to AC.

**Option C.** single phase to direct current.

**Correct Answer is.** single phase to direct current.

**Explanation.** CAAIPS Leaflet 6-4 Page 13.

**Question Number.** 238. A frequency wild AC generator is used for.

**Option A.** fluorescent lights.

**Option B.** instruments.

**Option C.** deicing loads.

**Correct Answer is.** deicing loads.

**Explanation.** NIL.

**Question Number.** 239. What should you do if the electrolyte is found to be low in one cell of a lead acid battery?

**Option A.** Cell is defective, replace the battery.

**Option B.** Replace the defective cell.

**Option C.** Top-up the individual cell with distilled water.

**Correct Answer is.** Top-up the individual cell with distilled water.

**Explanation.** NIL.

**Question Number.** 240. What is the purpose of the diode on a contactor?

**Option A.** Prevent spikes.

**Option B.** Prevent bounce.

**Option C.** To prevent current going the wrong way.

**Correct Answer is.** Prevent spikes.

**Explanation.** It is known as a 'flywheel diode'.

11.07.01. Equipment and Furnishings (ATA 25).

**Question Number.** 1. Cargo and baggage compartments in which a fire is completely confined come under.

**Option A.** Class C.

**Option B.** Class D.

**Option C.** Class B.

**Correct Answer is.** Class D.

**Explanation.** JAR 25.857.

**Question Number.** 2. Aircraft emergency escape slides are usually pressurized with.

**Option A.** oxygen.

**Option B.** helium.

**Option C.** CO<sub>2</sub>.

**Correct Answer is.** CO<sub>2</sub>.

**Explanation.** All inflatable emergency equipment are inflated with CO<sub>2</sub>.

**Question Number.** 3. Vertical projected separation between seat rows must be.

**Option A.** 4 inches.

**Option B.** 3 inches.

**Option C.** 5 inches.

**Correct Answer is.** 3 inches.

**Explanation.** Awn 64 Para 4.3 (now in CAP747).

**Question Number.** 4. Life jackets are inflated with cylinders of.

**Option A.** CO2.

**Option B.** air.

**Option C.** Nitrogen.

**Correct Answer is.** CO2.

**Explanation.** CAIPs AL/3-12. 4 b All inflatable safety equipment use CO2.

**Question Number.** 5. The minimum passenger aisle width for an aircraft with a seating capacity of 20 or more is.

**Option A.** 15.

**Option B.** dependent upon aircraft type.

**Option C.** 24.

**Correct Answer is.** 15.

**Explanation.** JAR 25.815.

**Question Number.** 6. When testing emergency slide bottles.

**Option A.** any pin could be checked by connecting directly to ground.

**Option B.** one pin must be grounded to the cartridge body at one time.

**Option C.** all three pins must be shorted together and grounded to the cartridge body.

**Correct Answer is.** all three pins must be shorted together and grounded to the cartridge body.

**Explanation.** Testing of the cartridges is the same procedure as testing fire bottle cartridges. CAIPs EEL/1-73.6.3 on.

**Question Number.** 7. Where would you find information regarding galley equipment?

**Option A.** AWN 99.

**Option B.** BCARs.

**Option C.** ANO.

**Correct Answer is.** AWN 99.

**Explanation.** CAP 747.

**Question Number.** 8. How often are life jackets inspected?

**Option A.** In accordance with the manufacturers specification.

**Option B.** In accordance with the AMM.

**Option C.** Every 12 months.

**Correct Answer is.** In accordance with the manufacturers specification.

**Explanation.** Leaflet 5-2 4.1 and CAIPs AL/3-12 4.1.

**Question Number.** 9. Toilets must have a smoke detection.

**Option A.** aural and visual warning in the main cabin.

**Option B.** light in the cockpit.

**Option C.** connected to a pump to pump the smoke out.

**Correct Answer is.** light in the cockpit.

**Explanation.** JAR 25.854 says a) or b).

**Question Number.** 10. Where would you find information on life-raft deployment?

**Option A.** JARs.

**Option B.** Cabin safety on-board card.

**Option C.** Cabin operations manual.

**Correct Answer is.** Cabin operations manual.

**Explanation.** NIL.

**Question Number.** 11. How do you clean seat belts?

**Option A.** With MEK.

**Option B.** With white spirit.

**Option C.** With warm water with low alkalinity soap.

**Correct Answer is.** With warm water with low alkalinity soap.

**Explanation.** NIL.

**Question Number.** 12. After a successful ditching, the life rafts deployment will.

**Option A.** be rapid and obvious with easily and readily displayed instructions adjacent to the life rafts.

**Option B.** be briefed by the cabin crew.

**Option C.** have detailed instructions in a booklet in a seat pocket.

**Correct Answer is.** be rapid and obvious with easily and readily displayed instructions adjacent to the life rafts.

**Explanation.** NIL.

**Question Number.** 13. Type and Quantity of emergency equipment to be carried is specified in which document?

**Option A.** CAAIPs Leaflet 5-7.

**Option B.** Schedule 4 of the ANO.

**Option C.** Airworthiness Notice 79.

**Correct Answer is.** Schedule 4 of the ANO.

**Explanation.** NIL.

**Question Number.** 14. Where the aircraft passenger seating capacity exceeds 149 but less than 200 then:

**Option A.** 1 megaphone is required.

**Option B.** 3 megaphones are required.

**Option C.** 2 megaphones are required.

**Correct Answer is.** 2 megaphones are required.

**Explanation.** JAR Ops 1.810.

**Question Number.** 15. Megaphones must be stowed so they can withstand an inertia force of.

**Option A.** 15g.

**Option B.** 9g.

**Option C.** 12g.

**Correct Answer is.** 9g.

**Explanation.** JAR 25.561 and 25.1421.

**Question Number.** 16. The cylinder in a life jacket is inflated using.

**Option A.** CO<sub>2</sub>.

**Option B.** nitrogen.

**Option C.** compressed air.

**Correct Answer is.** CO<sub>2</sub>.

**Explanation.** AL/3-12 2.

11.07.02. Equipment and Furnishings (ATA 25).

**Question Number.** 1. What is the minimum separation between a seat back cushion and another seat or fixed structure?

**Option A.** 28 inches.

**Option B.** 24 inches.

**Option C.** 26 inches.

**Correct Answer is.** 26 inches.

**Explanation.** Awn 64 Para 4.1.

**Question Number.** 2. Cargo nets are manufactured from.

**Option A.** hessian.

**Option B.** nylon.

**Option C.** polypropylene.

**Correct Answer is.** nylon.

**Explanation.** Cargo nets are made from nylon or polyester (not polypropylene).

**Question Number.** 3. A galley trolley will be designed to.

**Option A.** does not matter as the trolleys move.

**Option B.** not exceed the floor limits more than 3 times in one hour.

**Option C.** not exceed the floor loading limits.

**Correct Answer is.** not exceed the floor loading limits.

**Explanation.** AWN 99 para 5.6.

**Question Number.** 4. When loading a cargo aircraft.

**Option A.** the weight limits of the aircraft could be exceeded under careful monitored circumstances.

**Option B.** the CofG limits of the aircraft could be exceeded under careful monitored circumstances.

**Option C.** the manufacturer specifies the maximum floor loads.

**Correct Answer is.** the manufacturer specifies the maximum floor loads.

**Explanation.** NIL.

**Question Number.** 5. Galley equipment which does not need electrical power is called.

**Option A.** controlled equipment.

**Option B.** uncontrolled equipment.

**Option C.** minimum equipment.

**Correct Answer is.** uncontrolled equipment.

**Explanation.** AWN 99 4.1, 4.2.

**Question Number.** 6. Galley trolleys must have placards indicating.

**Option A.** location, position, flight number.

**Option B.** maximum weight, position, flight number.

**Option C.** Must be stowed for take-off, landing and turbulence.

**Correct Answer is.** Must be stowed for take-off, landing and turbulence.

**Explanation.** AWN 99 5.11.

**Question Number.** 7. PTV type entertainment equipment.

**Option A.** has no capacity for digital information processing and transmitting.

**Option B.** is installed with seat electronic unit and multiplexing techniques.

**Option C.** is not the part of maintenance schedule.

**Correct Answer is.** is installed with seat electronic unit and multiplexing techniques.

**Explanation.** PTV = Personal Television.

**Question Number.** 8. Hot fluids in an aircraft galley must have closed container lids at temperatures above.

**Option A.** 65°C.

**Option B.** 55°C.

**Option C.** 45°C.

**Correct Answer is.** 45°C.

**Explanation.** CAP 455 AWN No.99 5.2.

**Question Number.** 9. With regard to forward/rearward passenger seat installation.

**Option A.** you can only fit seats facing forward.

**Option B.** you can fit seats facing forward or rearward.

**Option C.** you can only fit seats as stated in the Declaration of Design and Performance (DPP).

**Correct Answer is.** you can only fit seats as stated in the Declaration of Design and Performance (DPP).

**Explanation.** AWN 64 Para.2.2.

**Question Number.** 10. Attendant call is achieved by pressing a button on the passenger service unit (PSU). To reset the light.

**Option A.** the button is pushed again.

**Option B.** the button is pulled out.

**Option C.** a reset switch on the attendants panel is operated.

**Correct Answer is.** the button is pushed again.

**Explanation.** NIL.

**Question Number.** 11. On large aero planes, containerized cargo is held down by.

**Option A.** rope.

**Option B.** side cart guides and fore and aft latches.

**Option C.** netting.

**Correct Answer is.** side cart guides and fore and aft latches.

**Explanation.** NIL.

**Question Number.** 12. A galley catering trolley with electrics is classed as.

**Option A.** an uncontrolled item.

**Option B.** a controlled item.

**Option C.** neither, as it is removable.

**Correct Answer is.** a controlled item.

**Explanation.** AWN99 Para 4.1.

**Question Number.** 13. The minimum vertical projected separation between seat rows is.

**Option A.** 7 inches.

**Option B.** 3 inches.

**Option C.** 5 inches.

**Correct Answer is.** 3 inches.

**Explanation.** CAP 747 GR No.2 Dimension C.

11.08.01 Fire Protection (ATA 26).

**Question Number.** 1. On pulling the fire handle, the aural warning.

**Option A.** goes off, the light goes off, hydraulics, bleed air and generator goes off.

**Option B.** stays on, the light extinguishes, the generator goes off line.

**Option C.** goes off, the light remains on, the generator goes off line.

**Correct Answer is.** goes off, the light remains on, the generator goes off line.

**Explanation.** B757 AMM.

**Question Number.** 2. Engine wing fire bottles should be charged with nitrogen at 15°C to.

**Option A.** 1250 psi.

**Option B.** 600 psi.

**Option C.** 1500 psi.

**Correct Answer is.** 600 psi.

**Explanation.** Transport Category Aircraft Systems Page 9-7. Pallett Aircraft Electrical Systems 3rd Edition Page 166";.

**Question Number.** 3. A fire that can be put out by a crew member in a cargo bay is in a.

**Option A.** class A compensation.

**Option B.** class D compensation.

**Option C.** class B compensation.

**Correct Answer is.** class B compensation.

**Explanation.** Transport Category Aircraft Systems Page 9-3 and JAR 25.857.

**Question Number.** 4. In a capacitive fire detection system, if.

**Option A.** there is a break, the system will not work.

**Option B.** there is a break, the system will work but not test satisfactory.

**Option C.** there is a short to earth, the system will work but not test satisfactory.

**Correct Answer is.** there is a break, the system will work but not test satisfactory.

**Explanation.** CAIPs AL/3-9 Para 4.2.1.

**Question Number.** 5. A fire detection zone wiring can pass through another fire zone when.

**Option A.** the system and the extinguishing system are the same.

**Option B.** the system is different but the extinguishant is the same.

**Option C.** the system is the same but the extinguishant is different.

**Correct Answer is.** the system and the extinguishing system are the same.

**Explanation.** JAR 25 1203 f2.

**Question Number.** 6. When a fire test on a Systron Donor fire detector system is carried out.

**Option A.** a signal passes through the unbroken center conductor to produce the warning.

**Option B.** it checks the integrity of the contacts.

**Option C.** the signal passes through the center and back through the outer to give warning.

**Correct Answer is.** it checks the integrity of the contacts.

**Explanation.** Jeppesen a+p Technician Airframe Textbook page 11-6 b describes a systrondonner system. This is the same system the CAA call a sensor/responder system in CAIPs EEL/17 para 2.2.4 in para d.

**Question Number.** 7. When inspecting lavatory installations.

**Option A.** the ashtray should not be located close to the toilet paper holder.

**Option B.** No Smoking' sign should be fitted next to the ashtrays only.

**Option C.** the ashtray must be made of a thermoplastic material.

**Correct Answer is.** the ashtray should not be located close to the toilet paper holder.

**Explanation.** Awn 83 5.4.

**Question Number.** 8. Lavatories must have, in the disposal container.

**Option A.** Freon extinguisher with white ball markings indicating when discharged.

**Option B.** Freon extinguisher with black ball markings indicating when discharged.

**Option C.** water/glycol extinguisher with white ball markings indicating when discharged.

**Correct Answer is.** Freon extinguisher with black ball markings indicating when discharged.

**Explanation.** The temperature sensitive strip changes color from white to black at the indicated temp. B737 MM 26-24-00 pg1. JAR 25-854 a, b.

**Question Number.** 9. A fire detection loop must be capable of.

**Option A.** using master warning visual and aural signals.

**Option B.** detecting fire/overheat condition within 5 seconds and extinguishing such that after 30 seconds the condition is no longer present.

**Option C.** using master warning visual signals only.

**Correct Answer is.** using master warning visual and aural signals.

**Explanation.** Aircraft Electrical Systems Pallett Page 163.

**Question Number.** 10. A Systron-Donner fire detection system uses.

**Option A.** helium gas.

**Option B.** oxygen gas.

**Option C.** nitrogen gas.

**Correct Answer is.** helium gas.

**Explanation.** Transport Category Aircraft Systems. Jeppesen Page 9-22.

**Question Number.** 11. A toilet is fitted with thermal protection.

**Option A.** to protect against freezing at altitude.

**Option B.** to protect against the dangers of smoke and fire in the event of an overheat.

**Option C.** to protect against continuous flushing.

**Correct Answer is.** to protect against the dangers of smoke and fire in the event of an overheat.

**Explanation.** AWN 57 Para.2.3.

**Question Number.** 12. What external warning is there for an APU fire?

**Option A.** Aural.

**Option B.** Both aural and a red light.

**Option C.** Red light.

**Correct Answer is.** Both aural and a red light.

**Explanation.** AL/3-26 2.8.

**Question Number.** 13. Engine fire bottle pressure switches are operated by.

**Option A.** AC or DC.

**Option B.** DC.

**Option C.** AC.

**Correct Answer is.** DC.

**Explanation.** NIL.

**Question Number.** 14. Fire tests on aircraft internal furnishings must be carried out.

**Option A.** every two years.

**Option B.** every five years.

**Option C.** only when equipment items fail random tests.

**Correct Answer is.** only when equipment items fail random tests.

**Explanation.** NIL.

**Question Number.** 15. A cockpit check on the engine fire wire system is a.

**Option A.** calibration check.

**Option B.** continuity check.

**Option C.** function check.

**Correct Answer is.** continuity check.

**Explanation.** B747-400 AMM.

**Question Number.** 16. When the fire handle is operated it.

**Option A.** cuts off fuel and hydraulics. Generator remains on line to provide electrical power.

**Option B.** cuts off field current, hydraulics and fuel and operates fire extinguishers.

**Option C.** operates fire extinguisher only.

**Correct Answer is.** cuts off field current, hydraulics and fuel and operates fire extinguishers.

**Explanation.** NIL. <http://www.b737.org.uk/fireprotection.htm>

**Question Number.** 17. What is the contamination monitor for, in a Systron Donner fire detection system?

**Option A.** Volts drop.

**Option B.** Dirty contacts.

**Option C.** Integrity comparator.

**Correct Answer is.** Dirty contacts.

**Explanation.** EEL/1-7 2.2.4 (d).

**Question Number.** 18. Fireproofing of cabin material should be done.

**Option A.** every 2 years.

**Option B.** when a sample fails.

**Option C.** every 5 years.

**Correct Answer is.** when a sample fails.

**Explanation.** NIL.

**Question Number.** 19. What test is carried out to ensure serviceability of a squib?

**Option A.** Bottles are fired.

**Option B.** Safety ohmmeter is used to check voltage.

**Option C.** A continuity check.

**Correct Answer is.** A continuity check.

**Explanation.** Trick question. A continuity check is carried out - with a safety ohmmeter. But a safety ohmmeter does not check voltage.

**Question Number.** 20. In a gas fire wire system, what causes the fire wire caption to come on when heat is applied?

**Option A.** Continuity.

**Option B.** Pressure.

**Option C.** Capacitance increase.

**Correct Answer is.** Pressure.

**Explanation.** Jeppesen A&P Airframe Technician Textbook Page 16-8 Lindberg System.

**Question Number.** 21. Toilet fire detection issues can be found in.

**Option A.** AWN 83.

**Option B.** CAAIPs.

**Option C.** AWN 80.

**Correct Answer is.** AWN 83.

**Explanation.** AWN 83 - now transferred to CAP 747 GR no 20.

**Question Number.** 22. The outside casing of a fire wire has.

**Option A.** same potential as ground.

**Option B.** 28VDC potential above ground.

**Option C.** 115VDC potential above ground.

**Correct Answer is.** same potential as ground.

**Explanation.** NIL.

**Question Number.** 23. A cargo compartment which will contain a fire itself and ventilate is a class.

**Option A.** A.

**Option B.** D.

**Option C.** C.

**Correct Answer is.** D.

**Explanation.** JAR 25.857.

**Question Number.** 24. Smoke detectors consist of a.

**Option A.** lamp detecting 2% smoke.

**Option B.** photoelectric cell detecting 10% smoke.

**Option C.** photoelectric cell detecting 2% smoke.

**Correct Answer is.** photoelectric cell detecting 10% smoke.

**Explanation.** Transport Category Aircraft Systems Page 9.2.

**Question Number.** 25. In a toilet smoke condition, what would be the indication?

**Option A.** Either a light or an audible warning in the cabin.

**Option B.** Light in the cabin.

**Option C.** Audible warning in the cabin.

**Correct Answer is.** Either a light or an audible warning in the cabin.

**Explanation.** JAR 25.854.

**Question Number.** 26. What do you check when carrying out an insulation check on a continuous fire wire loop?

**Option A.** The fire wire, sensor & controller.

**Option B.** The outside of the fire wire to earth.

**Option C.** The fire wire.

**Correct Answer is.** The fire wire.

**Explanation.** Pallets Aircraft Electrical System Third Edition page 163 fig 10.17.

**Question Number.** 27. When the fire-handle switch is pulled, a.

**Option A.** red warning light stays on. Generator, hydraulics & fuel stays on.

**Option B.** red warning light goes off. Generator goes offline.

**Option C.** red warning light stays on. Generator, hydraulics, & fuel is cut off.

**Correct Answer is.** red warning light stays on. Generator, hydraulics, & fuel is cut off.

**Explanation.** B737 MM. Warning light is an indication of fire. Light goes off only when fire is extinguished.

11.08.02. Fire Protection (ATA 26).

**Question Number.** 1. What are the minimum number of fire bottles in a cabin with 201- 300 people?

**Option A.** 3 BCF.

**Option B.** 4 Fire Extinguishers.

**Option C.** 4 Methyl Bromide.

**Correct Answer is.** 4 Fire Extinguishers.

**Explanation.** JAR OPS 1.790, AWN 60.

**Question Number.** 2. How often do hand-held extinguishers have to be weighed?

**Option A.** Bi-annually.

**Option B.** Every 5 years.

**Option C.** Annually.

**Correct Answer is.** Annually.

**Explanation.** CAIPs AL/3-10 para 6.3 and 7.1.

**Question Number.** 3. The weight of an extinguisher is stamped.

**Option A.** on bracket.

**Option B.** on head fitting.

**Option C.** on base of body.

**Correct Answer is.** on head fitting.

**Explanation.** CAIPs AL/3-10, para 6.3.

**Question Number.** 4. How can fire extinguisher be identified as being used?

**Option A.** Check the tell-tale wire.

**Option B.** Weighed.

**Option C.** Check the pressure.

**Correct Answer is.** Weighed.

**Explanation.** AL/3-10 6.3.

**Question Number.** 5. Portable fire extinguishers are operated by.

**Option A.** turning upside down and squeeze button/trigger.

**Option B.** breaking the telltale/tamper-proof seal then operated by the handle.

**Option C.** one single operation until fire extinguisher is empty.

**Correct Answer is.** breaking the telltale/tamper-proof seal then operated by the handle.

**Explanation.** NIL.

**Question Number.** 6. How many fire extinguishers are required on an aircraft with 501 passengers?

**Option A.** 6.

**Option B.** 7.

**Option C.** 5.

**Correct Answer is.** 7.

**Explanation.** JAR 25.851.

**Question Number.** 7. How many fire extinguishers are required on an aircraft having 401 - 500 passengers?

**Option A.** 6.

**Option B.** 8.

**Option C.** 5.

**Correct Answer is.** 6.

**Explanation.** JAR 25.851.

**Question Number.** 8. CO2 fire extinguishers are used on.

**Option A.** all fires in fuselage.

**Option B.** engines only.

**Option C.** baggage holds only.

**Correct Answer is.** all fires in fuselage.

**Explanation.** AL/3-10 3.3.

11.09. Flight Controls (ATA 27).

**Question Number.** 1. In an aircraft flying control system employing servo-tabs, the installation of external ground locks to the main control surface.

**Option A.** would not prevent movement of the control column.

**Option B.** is unnecessary since the system is irreversible and therefore the control surface cannot be displaced by the wind.

**Option C.** would also prevent movement of the control column.

**Correct Answer is.** would not prevent movement of the control column.

**Explanation.** Aircraft Flight Barnard and Philpot, Second Edition Page 253 (first line).

**Question Number. 2.** A full time yaw damper system detects.

**Option A.** band pass frequencies.

**Option B.** all frequencies.

**Option C.** only low frequencies.

**Correct Answer is.** band pass frequencies.

**Explanation.** Pallett Automatic Flight Control 4th Edition Page 222 on.

**Question Number. 3.** With respect to flight spoilers, they.

**Option A.** can operate both on the ground and in flight.

**Option B.** only operate on the ground.

**Option C.** only operate in flight.

**Correct Answer is.** can operate both on the ground and in flight.

**Explanation.** Flight spoilers are used in flight and on the ground. However Ground spoilers can ONLY be used on the ground. Jeppesen Transport Category Aircraft Systems Page 5-6. Pallett Automatic Flight Control 2nd Edition Page 51.

**Question Number. 4.** The bearing used in a fiber pulley is.

**Option A.** a ball bearing.

**Option B.** a roller bearing.

**Option C.** a plain bearing.

**Correct Answer is.** a ball bearing.

**Explanation.** Ball bearings are used in fibre pulleys.

**Question Number. 5.** When the primary stops fitted to a control run have been contacted.

**Option A.** a clearance exists at the secondary stops.

**Option B.** the secondary stops have been over-ridden.

**Option C.** the secondary stops will just be in contact.

**Correct Answer is.** a clearance exists at the secondary stops.

**Explanation.** The clearance is on the secondary stops.

**Question Number. 6.** Excessive wear on both sides of the control cable pulley groove is evidence of.

**Option A.** excessive cable tension.

**Option B.** pulley misalignment.

**Option C.** cable misalignment.

**Correct Answer is.** pulley misalignment.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 1-45.

**Question Number.** 7. A universal protractor used to measure degrees of aileron travel should be zeroed.

**Option A.** when the aircraft is in level flight attitude.

**Option B.** with the aileron in the neutral position.

**Option C.** with the aileron in the down position.

**Correct Answer is.** with the aileron in the neutral position.

**Explanation.** Jeppesen A&P technician Airframe Textbook Page 1-40.

**Question Number.** 8. A flying control static friction check.

**Option A.** can only be carried out during flight.

**Option B.** demonstrates the force the pilot requires to overcome system inertia and move the controls.

**Option C.** will demonstrate that a high force is always necessary to operate non-powered controls.

**Correct Answer is.** demonstrates the force the pilot requires to overcome system inertia and move the controls.

**Explanation.** A static friction check demonstrates the force the pilot requires to overcome system inertia and move the controls.

**Question Number.** 9. What is an aileron balance cable for?

**Option A.** To allow the cable to be tensioned.

**Option B.** To correct for wing heaviness.

**Option C.** To allow aircraft to fly hands off.

**Correct Answer is.** To allow the cable to be tensioned.

**Explanation.** Jeppesen A&P technician Airframe Textbook Page 1-27.

**Question Number.** 10. With the elevator trim wheel adjusted fully aft. (nose up), range of movement of the elevator is restricted.

**Option A.** would make no difference to the movement.

**Option B.** for 'down' travel movement.

**Option C.** for 'up' travel movement.

**Correct Answer is.** for 'up' travel movement.

**Explanation.** Use of trim reduces the associated control movement direction range.

**Question Number.** 11. On the ground, spoilers/speed brakes deploy to.

**Option A.** 15°.

**Option B.** 30°.

**Option C.** 60°.

**Correct Answer is.** 60°.

**Explanation.** Transport Category Aircraft Systems Jeppesen Page 5-6. In the air - 30 degrees and a further 15 degrees with ailerons.

**Question Number.** 12. A horn balance on a control will.

**Option A.** increase degree of movement at high speed.

**Option B.** decrease degree of movement at low speed.

**Option C.** decrease degree of movement at high speed.

**Correct Answer is.** increase degree of movement at high speed.

**Explanation.** For a given pilot effort, the horn balance increases movement.

**Question Number.** 13. In normal flight, if the control column is pulled back, a servo tab fitted to the elevator will.

**Option A.** move up.

**Option B.** remain in line with the elevator.

**Option C.** move down.

**Correct Answer is.** move down.

**Explanation.** NIL.

**Question Number.** 14. In normal flight, if the control wheel is moved to the left, then the aileron on the right wing will.

**Option A.** decrease the angle of attack of the right hand wing.

**Option B.** increase the angle of attack of the right hand wing.

**Option C.** keep the angle of attack of the right wing constant.

**Correct Answer is.** increase the angle of attack of the right hand wing.

**Explanation.** Could also be answered 'b', depending on whether it means the cause or the effect. The down going aileron (the right one) has an increase in AoA locally, which makes the wing lift, thus reducing the AoA of the wing as a whole. Choose your interpretation.

**Question Number.** 15. On an aircraft fitted with elevons in normal flight, if a column is moved forward, the elevons will.

**Option A.** remain stationary.

**Option B.** both move down.

**Option C.** both move up.

**Correct Answer is.** both move down.

**Explanation.** NIL.

**Question Number.** 16. To avoid moments bending the root of the wing, the aircraft will be fitted with.

**Option A.** integrated fuel monitoring system.

**Option B.** symmetrical flight control trim.

**Option C.** automatic trim control for controlled turns and rudder movements.

**Correct Answer is.** symmetrical flight control trim.

**Explanation.** Probably referring to Load Alleviation Function. Jeppesen Transport Category Aircraft Systems Page 5-29.

**Question Number.** 17. A yaw damper gain could be fitted with.

**Option A.** decreases sensitivity for decreased speed.

**Option B.** increased sensitivity for increased speed.

**Option C.** decreases sensitivity for increased speed.

**Correct Answer is.** increased sensitivity for increased speed.

**Explanation.** Automatic Flight Control, Pallett Page 223.

**Question Number.** 18. In an aircraft system employing balance tabs, the installation of external ground locks between the control surface and the balance tabs.

**Option A.** would prevent the movement of the control column.

**Option B.** is unnecessary since the system is irreversible.

**Option C.** would not prevent the movement of the control column.

**Correct Answer is.** would prevent the movement of the control column.

**Explanation.** A+P Technician Airframe Textbook Page 1-29.

**Question Number.** 19. The two switches for pitch trim are located.

**Option A.** on the control column acting like an 'AND' switch.

**Option B.** on the control column with the captain having priority over the First Officer.

**Option C.** on the control column acting like an 'OR' switch.

**Correct Answer is.** on the control column acting like an 'AND' switch.

**Explanation.** The 'split' trim switch has one half closing a relay to 'enable' power to the trim motor, and to engage the clutch. The other switch half is to supply the power to the motor. Both must be operated together, to operate the trim.

**Question Number.** 20. If the flaps are sluggish or erratic on final approach, the possible cause may be.

**Option A.** flap tracks out of rigging.

**Option B.** bearing seized.

**Option C.** flap motor internal leakage.

**Correct Answer is.** flap motor internal leakage.

**Explanation.** Jeppesen Transport Category Aircraft Systems Page 5-19.

**Question Number.** 21. In fully Fly By Wire aircraft, wing root bending moments are reduced by.

**Option A.** transfer of fuel from one wing tank to another.

**Option B.** operation of the elevator.

**Option C.** symmetrical application of ailerons.

**Correct Answer is.** symmetrical application of ailerons.

**Explanation.** CAIPs EEL/1-2.

**Question Number.** 22. Yaw damping rate changes with.

**Option A.** airspeed.

**Option B.** flap position.

**Option C.** altitude.

**Correct Answer is.** airspeed.

**Explanation.** Avionic Fundamentals page 292.

**Question Number.** 23. What is the main purpose of a frizee aileron?

**Option A.** Decrease drag on the up going wing.

**Option B.** Help pilot overcome aerodynamic loads.

**Option C.** Increase drag on the up going wing.

**Correct Answer is.** Decrease drag on the up going wing.

**Explanation.** The Fries aileron increases drag on the up-going aileron, which is on the down going wing. And Vise versa on the other aileron.

**Question Number.** 24. What happens to a hydraulically operated flight control surface when pressure is removed?

**Option A.** Droop.

**Option B.** Remain in last position.

**Option C.** Go to neutral.

**Correct Answer is.** Droop.

**Explanation.** "The drop in pressure releases a valve which lets the fluid pass easily from one side of actuator piston to the other. This is to prevent a hydraulic lock and permit manual reversion. Surfaces behave like manually controlled surfaces."

**Question Number.** 25. Oscillation and hunting of flight control surface are prevented by.

**Option A.** fitting a tach generator.

**Option B.** feedback from the servo motor.

**Option C.** feedback from control surface.

**Correct Answer is.** fitting a tach generator.

**Explanation.** Automatic Flight Control by E.H.J.Pallett 3rd edition, page-157 (feedback, para 2).

**Question Number.** 26. Stick shaker activates at a speed which is above the stalling speed by.

**Option A.** 4%.

**Option B.** 7%.

**Option C.** 10.321%.

**Correct Answer is.** 7%.

**Explanation.** Aircraft Electricity and Electronics, Eismin 5th Edition Page-370.

**Question Number.** 27. A wing mounted stall warning vane.

**Option A.** moves down at impending stall.

**Option B.** moves up at impending stall.

**Option C.** gives a visual indication of impending stall.

**Correct Answer is.** moves up at impending stall.

**Explanation.** NIL.

**Question Number.** 28. During an autopilot controlled turn.

**Option A.** ailerons, rudder and THS will move.

**Option B.** ailerons and rudder will move.

**Option C.** ailerons, rudder and elevators will move.

**Correct Answer is.** ailerons, rudder and elevators will move.

**Explanation.** NIL.

**Question Number.** 29. On a full fly-by-wire system, a speed brake screw jack servomotor is controlled by the.

**Option A.** flight augmentation computer.

**Option B.** flight control computer.

**Option C.** flight management and guidance computer.

**Correct Answer is.** flight control computer.

**Explanation.** Transport Category Aircraft Systems Page 5-26.

**Question Number. 30.** In a fly-by-wire aircraft, what controls the roll spoilers?

**Option A.** Flight control computer.

**Option B.** Flight augmentation computer.

**Option C.** Flight management computer.

**Correct Answer is.** Flight control computer.

**Explanation.** Transport Category Aircraft Systems Page 5-26.

**Question Number. 31.** Mass balance weights are used to.

**Option A.** balance the trailing edge of flying control surfaces.

**Option B.** counteract flutter on control surfaces.

**Option C.** balance the tabs.

**Correct Answer is.** counteract flutter on control surfaces.

**Explanation.** NIL.

**Question Number. 32.** Active load control involves.

**Option A.** limiting the deflection of control surface with airspeed.

**Option B.** intervention & monitoring the human pilot.

**Option C.** varying lift force to control vertical movement of the aircraft.

**Correct Answer is.** varying lift force to control vertical movement of the aircraft.

**Explanation.** Automatic Flight Control Pallett and Coyle Page 292.

**Question Number. 33.** Active load control uses.

**Option A.** elevator and aileron.

**Option B.** aileron and spoiler.

**Option C.** elevator and stab.

**Correct Answer is.** aileron and spoiler.

**Explanation.** Transport Category Aircraft Systems 5-29 (Load Alleviation Function).

**Question Number. 34.** The purpose of the autopilot servo-motor torque setting is to.

**Option A.** protect the servo motor.

**Option B.** damp the system oscillation.

**Option C.** prevent control surface runaway.

**Correct Answer is.** prevent control surface runaway.

**Explanation.** Automatic Flight Control Pallett and Coyle.

**Question Number. 35.** In a fully Fly By Wire Aircraft, ground spoilers are deployed automatically when the aircraft is on ground and.

**Option A.** brakes are deployed.

**Option B.** thrust reversers are deployed.

**Option C.** weight on ground switch is activated.

**Correct Answer is.** thrust reversers are deployed.

**Explanation.** A320 Ground Spoiler Logic diagram - also.  
<http://www.b737.org.uk/flightcontrols.htm>.

**Question Number.** 36. In a fully Fly By Wire aircraft, rudder trim is nulled by the.

**Option A.** Flight Augmentation Computers.

**Option B.** electric flight control unit.

**Option C.** Flight Guidance and Management Computer.

**Correct Answer is.** Flight Augmentation Computers.

**Explanation.** Transport Category Aircraft Systems Page 5-26.

**Question Number.** 37. Aileron input is fed into the yaw damper system to.

**Option A.** prevent nose pitching down.

**Option B.** prevent nose pitching up.

**Option C.** prevent adverse yaw in a turn.

**Correct Answer is.** prevent adverse yaw in a turn.

**Explanation.** NIL.

**Question Number.** 38. Pitch trimming in autopilot is initiated by.

**Option A.** C of G movement.

**Option B.** pitch of aircraft in cruise.

**Option C.** continued pitch input.

**Correct Answer is.** continued pitch input.

**Explanation.** If the elevator is deflected over a long time, the AFCS trims the horizontal stabilizer to eliminate the elevator deflection load.

**Question Number.** 39. Differential aileron control will.

**Option A.** cause a nose up moment.

**Option B.** prevent yawing in conjunction with rudder input.

**Option C.** cause a nose down moment.

**Correct Answer is.** prevent yawing in conjunction with rudder input.

**Explanation.** NIL.

**Question Number.** 40. On a fly-by-wire aircraft, what controls stabilizer trim?

**Option A.** SEC.

**Option B.** ELAC and SEC.

**Option C.** ELAC.

**Correct Answer is.** ELAC and SEC.

**Explanation.** Transport Category Aircraft Systems 5-23.

**Question Number.** 41. In an automatic flight control system, when may the yaw damper be applied?

**Option A.** During manual control only.

**Option B.** During either manual or automatic control.

**Option C.** During automatic control only.

**Correct Answer is.** During either manual or automatic control.

**Explanation.** Automatic Flight Control Pallett Page 222 - 226.

**Question Number.** 42. Flutter can be prevented by.

**Option A.** mass balance.

**Option B.** trim tabs.

**Option C.** balance panels.

**Correct Answer is.** mass balance.

**Explanation.** NIL.

**Question Number.** 43. In a fully fly by wire system, if the elevator loses all electrical power.

**Option A.** servos lock at last position.

**Option B.** servos remain stationary and provide damping.

**Option C.** servos move to neutral and lock.

**Correct Answer is.** servos remain stationary and provide damping.

**Explanation.** A319/A320/A321 Flight Crew Operating Manual.

**Question Number.** 44. In an auto trim system, for the trim system to operate.

**Option A.** operation of the trim controls is required.

**Option B.** autopilot need not be engaged.

**Option C.** autopilot must be engaged.

**Correct Answer is.** autopilot need not be engaged.

**Explanation.** Automatic Flight Control, Pallett Page 213 - 218.

**Question Number.** 45. In an autopilot coordinated turn, when the turn angle is reached.

**Option A.** both ailerons are down.

**Option B.** one is up one is down.

**Option C.** the ailerons are faired.

**Correct Answer is.** the ailerons are faired.

**Explanation.** Due to the aircraft's neutral lateral stability, the ailerons are neutralized (faired) and the aircraft will hold the turn.

**Question Number.** 46. How is automatic angle of attack protection provided?

**Option A.** Fast/Slow indication.

**Option B.** Reduce flap deployment.

**Option C.** Auto throttle applying more power.

**Correct Answer is.** Auto throttle applying more power.

**Explanation.** NIL.

**Question Number.** 47. A single failure of fly by wire.

**Option A.** will reduce the operational height and speed.

**Option B.** will limit the flight profile.

**Option C.** has no effect on the aircraft's operation.

**Correct Answer is.** has no effect on the aircraft's operation.

**Explanation.** NIL.

**Question Number.** 48. Fly-by-wire load alleviation function in turbulent weather conditions will result in.

**Option A.** spoiler moving symmetrically upward.

**Option B.** ailerons moving symmetrically upward.

**Option C.** ailerons and spoiler moving symmetrically upward.

**Correct Answer is.** ailerons and spoiler moving symmetrically upward.

**Explanation.** NIL.

**Question Number.** 49. Auto trim will switch to 'slow' when.

**Option A.** flaps are retracted.

**Option B.** landing gear up and locked.

**Option C.** flaps are extended.

**Correct Answer is.** flaps are retracted.

**Explanation.** NIL.

**Question Number.** 50. How is the stabilizer automatically controlled in normal manual operation?

**Option A.** Mach/Speed Trim.

**Option B.** Pitch Trim.

**Option C.** Electric Trim.

**Correct Answer is.** Mach/Speed Trim.

**Explanation.** NIL.

**Question Number.** 51. Spoiler position feedback is provided by a.

**Option A.** a S.C.M.

**Option B.** an R.V.D.T.

**Option C.** a micro switch.

**Correct Answer is.** an R.V.D.T.

**Explanation.** NIL.

**Question Number.** 52. Rudder 'Q' limiting.

**Option A.** restricts rudder movement with increase in airspeed.

**Option B.** increases rudder movement with increase in airspeed.

**Option C.** increases feel as airspeed increases.

**Correct Answer is.** restricts rudder movement with increase in airspeed.

**Explanation.** NIL.

**Question Number.** 53. Elevators combine the functions of both.

**Option A.** elevator and aileron.

**Option B.** rudder and aileron.

**Option C.** rudder and elevator.

**Correct Answer is.** elevator and aileron.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 1-16 Fig 1-36.

**Question Number.** 54. A differential aileron system is designed to.

**Option A.** minimize flutter.

**Option B.** prevent adverse yaw.

**Option C.** compensate for aileron reversal.

**Correct Answer is.** prevent adverse yaw.

**Explanation.** NIL.

**Question Number.** 55. An artificial feel system is required.

**Option A.** for power assisted control systems.

**Option B.** for proportional control systems.

**Option C.** for power operated control systems.

**Correct Answer is.** for power operated control systems.

**Explanation.** NIL.

**Question Number.** 56. A tandem P.F.C.U.

**Option A.** has the actuator rams co-axial.

**Option B.** has two control surfaces under its control.

**Option C.** has the actuator rams parallel.

**Correct Answer is.** has the actuator rams co-axial.

**Explanation.** NIL.

[http://www.tpub.com/content/engine/14105/css/14105\\_157.htm](http://www.tpub.com/content/engine/14105/css/14105_157.htm)

**Question Number.** 57. What is the purpose of a differential Frise aileron?

**Option A.** To decrease the drag and decrease the rate of yaw and turn.

**Option B.** Has no effect on rate of yaw and turn.

**Option C.** To increase the drag to increase the rate of yaw and turn.

**Correct Answer is.** To increase the drag to increase the rate of yaw and turn.

**Explanation.** NIL.

**Question Number.** 58. Active load control uses.

**Option A.** elevator and stab.

**Option B.** elevator and ailerons.

**Option C.** ailerons and spoilers.

**Correct Answer is.** ailerons and spoilers.

**Explanation.** NIL.

**Question Number.** 59. An artificial feel system is necessary in a powered flying control system to.

**Option A.** increasing the sensitivity of the control system.

**Option B.** provide the pilot with simulated stick forces.

**Option C.** prevent overloading of the power control units.

**Correct Answer is.** provide the pilot with simulated stick forces.

**Explanation.** NIL.

**Question Number.** 60. In the event of hydraulic failure in a power control system, a requirement of the manual reversion is that it must be.

**Option A.** operated by the standby hydraulic system.

**Option B.** automatic and instantaneous.

**Option C.** possible, but not recommended.

**Correct Answer is.** automatic and instantaneous.

**Explanation.** NIL.

**Question Number.** 61. The purpose of control cable regulators is to.

**Option A.** maintain preset cable tensions during flight.

**Option B.** compensate for high temperature only.

**Option C.** compensate for low temperature only.

**Correct Answer is.** maintain preset cable tensions during flight.

**Explanation.** NIL.

**Question Number.** 62. Range of movements of power operated flying control surfaces are limited by.

**Option A.** travel of the jack body.

**Option B.** mechanical stops in the control system.

**Option C.** travel of the jack ram.

**Correct Answer is.** mechanical stops in the control system.

**Explanation.** NIL.

**Question Number.** 63. The aircraft is controlled about the lateral axis by the.

**Option A.** ailerons.

**Option B.** rudder.

**Option C.** elevator.

**Correct Answer is.** elevator.

**Explanation.** NIL.

**Question Number.** 64. The aircraft is controlled about the normal axis by the.

**Option A.** elevator.

**Option B.** rudder.

**Option C.** ailerons.

**Correct Answer is.** rudder.

**Explanation.** NIL.

**Question Number.** 65. The purpose of the Servo Valve in a power operated control is.

**Option A.** to provide pressure to operate the control.

**Option B.** to direct hydraulic fluid to the jack in response to the pilots control in cockpit.

**Option C.** to revert the system to manual operation.

**Correct Answer is.** to direct hydraulic fluid to the jack in response to the pilots control in cockpit.

**Explanation.** Jeppesen A & P Technician Textbook page 12-38.

**Question Number.** 66. A stick shaker is a device which.

**Option A.** helps extricate an aircraft from soft ground.

**Option B.** gives a short period of extra lift to assist take off.

**Option C.** vibrates the control column near stalling speed.

**Correct Answer is.** vibrates the control column near stalling speed.

**Explanation.** NIL.

**Question Number.** 67. The aircraft is controlled about the longitudinal axis by the.

**Option A.** ailerons.

**Option B.** elevator.

**Option C.** rudder.

**Correct Answer is.** ailerons.

**Explanation.** NIL.

**Question Number.** 68. Rudder vators when moved, will move.

**Option A.** either opposite each other or together, depending on the selection.

**Option B.** together only.

**Option C.** opposite to each other only.

**Correct Answer is.** either opposite each other or together, depending on the selection. **Explanation.** Jeppesen A&P Technician Airframe Textbook Page 16.

**Question Number.** 69. As a consequence of the C of G being close to its aft limit.

**Option A.** the stick forces when pitching the nose down will be very high.

**Option B.** the stick forces to man oeuvre longitudinally will be low due to the low stability.

**Option C.** the stick forces will be high in fore and aft pitch, due to the high longitudinal stability.

**Correct Answer is.** the stick forces when pitching the nose down will be very high.

**Explanation.** NIL.

**Question Number.** 70. An anti-balance tab is moved.

**Option A.** hydraulically.

**Option B.** when the C.G. changes.

**Option C.** via a fixed linkage.

**Correct Answer is.** via a fixed linkage.

**Explanation.** NIL.

**Question Number.** 71. A servo tab is operated.

**Option A.** directly by the pilot to produce forces which in turn move the main control surfaces.

**Option B.** by a trim wheel and moves in the opposite direction to the main control surfaces when moved.

**Option C.** automatically, and moves in the same direction as the main control surfaces.

**Correct Answer is.** directly by the pilot to produce forces which in turn move the main control surfaces.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 23.

**Question Number.** 72. When checking full range of control surface movement, they must be positioned by.

**Option A.** operating the flight deck/cockpit controls until the system is against the primary stops.

**Option B.** moving them by hand directly until against the primary stops.

**Option C.** moving them by hand directly until against the secondary stops.

**Correct Answer is.** operating the flight deck/cockpit controls until the system is against the primary stops.

**Explanation.** NIL.

**Question Number.** 73. The higher speed of the high wing in a banked turn causes it to have more drag than the low wing, this may be compensated for by.

**Option A.** operating the ailerons into the opposite sense once the correct angle of bank has been reached.

**Option B.** use of the rudder control.

**Option C.** increasing the 'nose up' pitch by use of the elevators.

**Correct Answer is.** use of the rudder control.

**Explanation.** NIL.

**Question Number.** 74. The type of flap which extends rearwards when lowered is called a.

**Option A.** split flap.

**Option B.** plain flap.

**Option C.** Fowler flap.

**Correct Answer is.** Fowler flap.

**Explanation.** NIL.

**Question Number.** 75. Which of the following trailing edge flaps give an increase in wing area?

**Option A.** Split flap.

**Option B.** Slotted flap.

**Option C.** Fowler flap.

**Correct Answer is.** Fowler flap.

**Explanation.** NIL.

**Question Number.** 76. Which of the following is not a primary flying control?

**Option A.** Tail plane.

**Option B.** Elevator.

**Option C.** Rudder.

**Correct Answer is.** Tail plane.

**Explanation.** NIL.

**Question Number.** 77. A tab which assists the pilot to move a flying control by moving automatically in the opposite direction to the control surface is called a.

**Option A.** trim tab.

**Option B.** servo tab.

**Option C.** geared balance tab.

**Correct Answer is.** geared balance tab.

**Explanation.** NIL.

**Question Number.** 78. What is fitted on the aircraft to enable the pilot to reduce his speed rapidly in event of severe turbulence, or speed tending to rise above the Never Exceed Limit?

**Option A.** Wheel brakes.

**Option B.** Air brakes.

**Option C.** Lift dumpers.

**Correct Answer is.** Air brakes.

**Explanation.** NIL.

**Question Number.** 79. When spoilers are used asymmetrically, they combine with.

**Option A.** ailerons.

**Option B.** elevators.

**Option C.** rudder.

**Correct Answer is.** ailerons.

**Explanation.** NIL.

**Question Number.** 80. What is used to correct any tendency of the aircraft to move towards an undesirable flight attitude?

**Option A.** Trim tabs.

**Option B.** Spring tabs.

**Option C.** Balance tabs.

**Correct Answer is.** Trim tabs.

**Explanation.** NIL.

**Question Number.** 81. With hydraulic ram operated flying controls, when the pressure is reduced to zero, the flying control surfaces.

**Option A.** stay at neutral.

**Option B.** droop.

**Option C.** remain in the position they were when power was removed.

**Correct Answer is.** droop.

**Explanation.** NIL.

**Question Number.** 82. Powered flying control actuators.

**Option A.** are operated by the autopilot only.

**Option B.** transmit pilot input to the control surfaces.

**Option C.** provide feedback to the pilot.

**Correct Answer is.** transmit pilot input to the control surfaces.

**Explanation.** NIL.

**Question Number.** 83. A stick shaker operates.

**Option A.** just before the stall.

**Option B.** after the stall.

**Option C.** at the onset of the stall.

**Correct Answer is.** just before the stall.

**Explanation.** Flight Instruments and Automatic Flight Control Systems Page 168.

**Question Number.** 84. In a power assisted flight control system, the feel required is normally supplied by.

**Option A.** Q feel.

**Option B.** air loads on the control surfaces.

**Option C.** stretching springs.

**Correct Answer is.** air loads on the control surfaces.

**Explanation.** AL/3-7 8.1 and 8.2.1 Power 'assisted' controls have aerodynamic feedback. Power 'operated' controls use a Q feel system.

**Question Number.** 85. "Irreversibility of a fully powered control surface is provided by."

**Option A.** nulling of the servo valve.

**Option B.** air loads on the control surface.

**Option C.** the jack ram being attached to structure.

**Correct Answer is.** nulling of the servo valve.

**Explanation.** Nulling the servo valve produces a hydraulic lock.

**Question Number.** 86. Q feel units use.

**Option A.** pitot pressure only.

**Option B.** pitot and static pressures.

**Option C.** static pressure only.

**Correct Answer is.** pitot and static pressures.

**Explanation.** Avionics Fundamentals pg 257 fig 17-31.

**Question Number.** 87. Spoiler panels are positioned so that when deployed.

**Option A.** pitch trim is not affected.

**Option B.** no yaw takes place.

**Option C.** roll will not occur.

**Correct Answer is.** pitch trim is not affected.

**Explanation.** NIL.

**Question Number.** 88. Powered flight control systems are used on transport aircraft.

**Option A.** because at low level air density is high.

**Option B.** because the pilot has too many tasks to perform.

**Option C.** due to the increase in speed and size of aircraft.

**Correct Answer is.** due to the increase in speed and size of aircraft.

**Explanation.** NIL.

**Question Number.** 89. A differential aileron control system results in.

**Option A.** aileron drag being reduced on the inner wing in a turn.

**Option B.** aileron drag being compensated by small rudder movements.

**Option C.** aileron drag being reduced on the outer wing in a turn.

**Correct Answer is.** aileron drag being reduced on the outer wing in a turn.

**Explanation.** NIL.

**Question Number.** 90. Spoiler panels are controlled by.

**Option A.** the aileron control wheel and speed brake lever.

**Option B.** a speed brake lever only.

**Option C.** the aileron control wheel only.

**Correct Answer is.** the aileron control wheel and speed brake lever.

**Explanation.** NIL.

**Question Number.** 91. A lift transducer is normally fitted.

**Option A.** on the elevator control system.

**Option B.** to the nose area of the aircraft.

**Option C.** on the leading edge of the wing.

**Correct Answer is.** on the leading edge of the wing.

**Explanation.** Lift transducer, also known as a stall sensor.

**Question Number.** 92. "If electrical power is removed from a fly by wire spoiler system, the spoiler panels."

**Option A.** go to down if any are not already down.

**Option B.** go to full up.

**Option C.** remain where they are.

**Correct Answer is.** go to down if any are not already down.

**Explanation.** NIL.

**Question Number.** 93. In a fly-by-wire control system, the follow-up transducer is fitted to.

**Option A.** the control system computer.

**Option B.** the hydraulic actuator.

**Option C.** the pilots input.

**Correct Answer is.** the hydraulic actuator.

**Explanation.** NIL.

**Question Number.** 94. The down position of the speed brake lever is detected to.

**Option A.** prevent inadvertent operation.

**Option B.** lock the speed brakes down during flight.

**Option C.** allow the ground speed brakes to be used on touchdown.

**Correct Answer is.** prevent inadvertent operation.

**Explanation.** NIL.

**Question Number.** 95. Asymmetric flap operation is prevented to keep to a minimum the tendency of.

**Option A.** yawing.

**Option B.** rolling.

**Option C.** pitch changes.

**Correct Answer is.** rolling.

**Explanation.** NIL.

**Question Number.** 96. High thrust stall warning is activated when the thrust of opposite engine reads.

**Option A.** greater than 75%.

**Option B.** greater than 50%.

**Option C.** greater than 90%.

**Correct Answer is.** greater than 75%.

**Explanation.** NIL.

**Question Number.** 97. A differential aileron control is one which gives.

**Option A.** a larger aileron up travel than down.

**Option B.** the down-going aileron more travel than the up-going one.

**Option C.** equal aileron travel in each direction, but variable for stick movement.

**Correct Answer is.** a larger aileron up travel than down.

**Explanation.** NIL.

**Question Number.** 98. When the control column is moved back and the hand-wheel turned to the left.

**Option A.** the elevators move down and the left aileron moves down.

**Option B.** the left aileron moves up and the elevators move up.

**Option C.** the elevators move up and the left aileron moves down.

**Correct Answer is.** the left aileron moves up and the elevators move up.

**Explanation.** NIL.

**Question Number.** 99. A series type yaw damper.

**Option A.** moves the rudder and the ailerons to damp out Dutch roll.

**Option B.** moves the rudder pedals and the rudder.

**Option C.** moves the rudder only.

**Correct Answer is.** moves the rudder only.

**Explanation.** NIL.

**Question Number.** 100. A stick shaker.

**Option A.** is a linear actuator attached to the base of the control column.

**Option B.** is an eccentric flywheel driven by an electric motor and mounted on the control column.

**Option C.** vibrates the elevators to cause buffeting of the airframe.

**Correct Answer is.** is an eccentric flywheel driven by an electric motor and mounted on the control column.

**Explanation.** AL/3-21 page 22 para 13.3.2 and Transport Category Aircraft Systems Page 211.

**Question Number.** 101. If the control column is moved forward and to the left.

**Option A.** left aileron moves down, right aileron up, elevator down.

**Option B.** left aileron moves up, right aileron down, elevator down.

**Option C.** left aileron moves up, right aileron moves down, elevator up.

**Correct Answer is.** left aileron moves up, right aileron down, elevator down.

**Explanation.** NIL.

**Question Number.** 102. On an aircraft fitted with spoilers for lateral control, roll to the right is caused by.

**Option A.** left spoiler extending, right spoiler remaining retracted.

**Option B.** right spoiler extending, left spoiler remaining retracted.

**Option C.** both spoilers extending.

**Correct Answer is.** right spoiler extending, left spoiler remaining retracted.

**Explanation.** NIL.

**Question Number.** 103. When an aileron trim control in the cockpit is moved to counteract a tendency to fly left wing low, an aileron trim tab fitted to the port aileron will.

**Option A.** move up and cause the left aileron to move down but the right aileron will remain neutral.

**Option B.** move up and cause the left aileron to move down and the right aileron to move down to a lesser degree.

**Option C.** move up and this will cause the left aileron to move down and the right aileron to move up.

**Correct Answer is.** move up and cause the left aileron to move down and the right aileron to move down to a lesser degree.

**Explanation.** NIL.

**Question Number.** 104. You have adjusted the elevator trim tab to correct for nose heavy.

What was the direction of travel of the trim tab?

**Option A.** The port elevator tab has moved up and starboard moved down.

**Option B.** The elevator trim tab has moved up.

**Option C.** The elevator trim tab has moved down.

**Correct Answer is.** The elevator trim tab has moved down.

**Explanation.** NIL.

**Question Number.** 105. Pulleys in a flight control system are made from.

**Option A.** brass.

**Option B.** stainless steel.

**Option C.** Tufnol or aluminum alloy.

**Correct Answer is.** Tufnol or aluminum alloy.

**Explanation.** NIL.

**Question Number.** 106. A tension regulator in the flight control cable system of a large all metal aircraft is used primarily to.

**Option A.** retain a set tension.

**Option B.** increase cable tension in cold weather.

**Option C.** decrease cable tension in cold weather.

**Correct Answer is.** retain a set tension.

**Explanation.** NIL.

**Question Number.** 107. An interrupter arm incorporated in a flying control locking mechanism.

**Option A.** locks the ailerons and elevators.

**Option B.** restricts movement of the throttles.

**Option C.** dampens the rudder movement.

**Correct Answer is.** restricts movement of the throttles.

**Explanation.** NIL.

**Question Number.** 108. The yaw damper must be designed to allow the rudder to control in response to the aircraft's.

**Option A.** pitch Frequency.

**Option B.** roll frequency.

**Option C.** dutch roll frequency.

**Correct Answer is.** dutch roll frequency.

**Explanation.** NIL.

**Question Number.** 109. The alpha vane signal can be fed to \_\_\_\_\_ when the aircraft is close to stall.

**Option A.** flap position.

**Option B.** fast/slow switch.

**Option C.** throttle lever.

**Correct Answer is.** throttle lever.

**Explanation.** NIL.

**Question Number.** 110. Moving the elevator trim wheel fully aft, then the.

**Option A.** aircraft tends to go nose down.

**Option B.** aircraft tends to go nose up.

**Option C.** aircraft tends to roll to the right.

**Correct Answer is.** aircraft tends to go nose up.

**Explanation.** NIL.

**Question Number.** 111. Ground spoilers are used to.

**Option A.** increase wing loading on take-off.

**Option B.** prevent FOD ingestion into the engines on landing and taxiing.

**Option C.** decrease wing loading on landing.

**Correct Answer is.** decrease wing loading on landing.

**Explanation.** NIL.

**Question Number.** 112. The outboard ailerons on some aircraft.

**Option A.** are isolated at slow speeds.

**Option B.** are isolated to prevent aileron reversal.

**Option C.** are isolated to improve sensitivity.

**Correct Answer is.** are isolated to prevent aileron reversal.

**Explanation.** NIL.

**Question Number.** 113. The effect of the rudder on an aircraft can be increased by.

**Option A.** increasing the distance of the control surfaces from the aircraft's center of gravity.

**Option B.** increasing the altitude of the aircraft.

**Option C.** decreasing the velocity of the aircraft.

**Correct Answer is.** increasing the distance of the control surfaces from the aircraft's center of gravity.

**Explanation.** NIL.

11.10. Fuel Systems (ATA 28).

**Question Number.** 1. A fuel cross feed valve is usually in.

**Option A.** the closed position.

**Option B.** the open position.

**Option C.** its last position.

**Correct Answer is.** the closed position.

**Explanation.** Fuel cross feed valves must be closed for flight.

**Question Number.** 2. Sliding couplings in fuel systems are used on.

**Option A.** low pressure systems.

**Option B.** high pressure systems.

**Option C.** air or vapour systems.

**Correct Answer is.** air or vapour systems.

**Explanation.** CAIPs AL/3-17 5.8.3.

**Question Number.** 3. A fuel cross-feed valve is lubricated.

**Option A.** by internal cooling.

**Option B.** by air.

**Option C.** by the fuel.

**Correct Answer is.** by the fuel.

**Explanation.** NIL.

**Question Number.** 4. Fuel cross feed valves are operated by the.

**Option A.** 28 V DC bus.

**Option B.** 115 V AC.

**Option C.** battery.

**Correct Answer is.** 28 V DC bus.

**Explanation.** 737 MM 28-22-00 Page 1, A320 FCOM 28.30 pg1.

**Question Number.** 5. Fuel systems that are interconnected must have.

**Option A.** separate venting for each tank.

**Option B.** no airspace.

**Option C.** air spaces interconnected.

**Correct Answer is.** air spaces interconnected.

**Explanation.** CAIPs AL/3-17.

**Question Number. 6.** As fuel level increases, system capacitance.

**Option A.** decreases.

**Option B.** no change.

**Option C.** increases.

**Correct Answer is.** increases.

**Explanation.** The dielectric constant of kerosene is more than that of air. B757 MM Chapter 28-41-00.

**Question Number. 7.** When refueling.

**Option A.** the fuel nozzle will automatically cut off the supply when the tank is full.

**Option B.** it is important not to fill the expansion space in the tank.

**Option C.** it is important to fill the expansion space in the tank.

**Correct Answer is.** it is important not to fill the expansion space in the tank.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 15-18.

**Question Number. 8.** When using Biopor microbial fuel growth treatment.

**Option A.** it is added to the fuel and burnt.

**Option B.** it is applied dry and left.

**Option C.** it is applied wet and flushed out.

**Correct Answer is.** it is added to the fuel and burnt.

**Explanation.** Jeppesen Aircraft Gas Turbine Power plants 7-3.

**Question Number. 9.** Microbial growth is.

**Option A.** red dots.

**Option B.** brown black slime.

**Option C.** green sludge.

**Correct Answer is.** brown black slime.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 15-38.

**Question Number. 10.** Bladder type fuel tanks are secured by.

**Option A.** bolts.

**Option B.** contact adhesive.

**Option C.** press type rivets.

**Correct Answer is.** press type rivets.

**Explanation.** AL/3-15 4.1.3 says press studs or cords.

**Question Number.** 11. A zero fuel test on a fuel quantity indicating system is carried out with.

**Option A.** tanks completely full.

**Option B.** tanks completely empty.

**Option C.** tanks empty apart from unusable fuel.

**Correct Answer is.** tanks empty apart from unusable fuel.

**Explanation.** AL/10-3 11.14.1.e.

**Question Number.** 12. After a tank bag has been replaced, a fuel flow test should be carried out at.

**Option A.** tank outlet.

**Option B.** engine inlet.

**Option C.** tank shut-off valve point.

**Correct Answer is.** engine inlet.

**Explanation.** NIL.

**Question Number.** 13. In biologically contaminated fuel, corrosion takes place.

**Option A.** below the fungal colonies.

**Option B.** the top of the tank.

**Option C.** the bottom 2 inches of the tank.

**Correct Answer is.** below the fungal colonies.

**Explanation.** AL/3-15 para 8.3.

**Question Number.** 14. If an aircraft has ability to transfer fuel in flight, provision must be made to.

**Option A.** shut off fuel before structural damage.

**Option B.** provide overflow facility to dump fuel.

**Option C.** stop engine from using tank during transfer.

**Correct Answer is.** shut off fuel before structural damage.

**Explanation.** JAR 25.957.

**Question Number.** 15. In a fuel system with interconnected vents.

**Option A.** an expansion space is not required.

**Option B.** the expansion space must be 2% of the tank capacity.

**Option C.** the expansion space must be 10% of the tank capacity.

**Correct Answer is.** the expansion space must be 2% of the tank capacity.

**Explanation.** JAR 25.969.

**Question Number.** 16. Fuel tanks interconnected must have.

**Option A.** vents to allow over fueling.

**Option B.** protection against overflow for tanks and fuel system.

**Option C.** tank where fuel is fed from both tanks to engine inlet.

**Correct Answer is.** protection against overflow for tanks and fuel system.

**Explanation.** JAR 25.969.

**Question Number.** 17. When a FADEC system loses air data input it goes to.

**Option A.** soft reversion.

**Option B.** hard reversion.

**Option C.** mechanical reversion.

**Correct Answer is.** soft reversion.

**Explanation.** TTS FADEC Booklet Page 13.

**Question Number.** 18. Pressure refueling is carried out at.

**Option A.** 20 PSI.

**Option B.** 40 PSI.

**Option C.** 15 PSI.

**Correct Answer is.** 40 PSI.

**Explanation.** AL/3-17 5.4 says 'up to 50 psi'.

**Question Number.** 19. Cross feed valves permit fuel transfer from.

**Option A.** tank to tank.

**Option B.** left tank to right tank.

**Option C.** any tank to any engine.

**Correct Answer is.** any tank to any engine.

**Explanation.** B737 MM 28-22-00 Page 1.

**Question Number.** 20. What is fitted to the fuel jettison pipe to prevent vaporization?

**Option A.** An anti-corona device.

**Option B.** A corona device.

**Option C.** A nozzle.

**Correct Answer is.** An anti-corona device.

**Explanation.** NIL.

**Question Number.** 21. What happens to the capacitance in a fuel contents gauge as fuel is used?

**Option A.** Depends on altitude.

**Option B.** Increases.

**Option C.** Decreases.

**Correct Answer is.** Decreases.

**Explanation.** Aircraft Electricity and Electronics Eismin Page 353.

**Question Number.** 22. When an aircraft is put into storage for medium / long periods, the fuel tanks should.

**Option A.** have some fuel left in to prevent sealant from deteriorating/drying out.

**Option B.** be full.

**Option C.** be empty.

**Correct Answer is.** have some fuel left in to prevent sealant from deteriorating/drying out.

**Explanation.** AL/3-15 9.3.

**Question Number.** 23. Integral fuel booster pumps.

**Option A.** require ram air cooling.

**Option B.** lets the fuel do cooling.

**Option C.** require no cooling.

**Correct Answer is.** lets the fuel do cooling.

**Explanation.** NIL

**Question Number.** 24. The purpose of a scavenge system within a fuel system is.

**Option A.** to ensure that all unused fuel is returned to the tanks efficiently.

**Option B.** to ensure that all available fuel can be used.

**Option C.** to ensure that any water in the fuel is constantly dispersed thus reducing microbiological contamination.

**Correct Answer is.** to ensure that any water in the fuel is constantly dispersed thus reducing microbiological contamination.

**Explanation.** Transport Category Aircraft Systems Page 6.17.

**Question Number.** 25. In a light fixed wing aircraft, the fuel warning light indicates.

**Option A.** pump failure.

**Option B.** the tank does not pressurize.

**Option C.** ice blockage, filter popped or pump fail.

**Correct Answer is.** ice blockage, filter popped or pump fail.

**Explanation.** NIL.

**Question Number.** 26. How is fuel supplied to a turbine engine?

**Option A.** By a fuel boost pump.

**Option B.** By suction from the engine driven fuel pump.

**Option C.** By a gravity feed pump.

**Correct Answer is.** By a fuel boost pump.

**Explanation.** NIL.

**Question Number.** 27. A fuel tank suction valve will open when.

**Option A.** the booster pump fails.

**Option B.** both the engine driven and booster pump fail.

**Option C.** the engine driven pump fails.

**Correct Answer is.** the booster pump fails.

**Explanation.** NIL.

**Question Number.** 28. To prevent water condensation in a fuel tank.

**Option A.** the tank should be filled as full as possible.

**Option B.** the tank should be filled with the minimum fuel possible.

**Option C.** the filler cap should be left open.

**Correct Answer is.** the tank should be filled as full as possible.

**Explanation.** NIL.

**Question Number.** 29. To protect the center tank fuselage area from a vapour build up.

**Option A.** ram air is circulated around the tank.

**Option B.** a shroud vent and overboard drain is fitted.

**Option C.** cabin air is bled around the tank.

**Correct Answer is.** cabin air is bled around the tank.

**Explanation.** NIL.

**Question Number.** 30. When a fuel jettison valve is in transit, the magnetic indicator would show.

**Option A.** amber and in line.

**Option B.** amber and cross line.

**Option C.** green and in line.

**Correct Answer is.** amber and cross line.

**Explanation.** NIL.

**Question Number.** 31. When considering the basic categories of fuel tank construction, which of the following is most prone to leaks?

**Option A.** Rigid.

**Option B.** Integral.

**Option C.** Flexible.

**Correct Answer is.** Integral.

**Explanation.** NIL.

**Question Number.** 32. On removal of a fuel tank booster pump, fuel is observed running out of the boost pump canister, this could be caused by.

**Option A.** the pressure outlet check valve is not correctly seated.

**Option B.** fuel draining out of the pressure switch bleed.

**Option C.** fuel leaking past the inlet screens.

**Correct Answer is.** the pressure outlet check valve is not correctly seated.

**Explanation.** NIL.

**Question Number.** 33. Cross feed valves are normally fitted with.

**Option A.** two 28V DC motors.

**Option B.** two three-phase AC motors.

**Option C.** two single phase AC motors.

**Correct Answer is.** two 28V DC motors.

**Explanation.** NIL.

**Question Number.** 34. A shroud vent and overload drain would normally be found on.

**Option A.** fuel tank vent pipes.

**Option B.** fuel jettison system.

**Option C.** the APU fuel feed.

**Correct Answer is.** fuel tank vent pipes.

**Explanation.** NIL.

**Question Number.** 35. To shut-off the LP fuel supply to the engine for the purpose of engine removal you would.

**Option A.** close the cross bleed valve.

**Option B.** close the HP fuel lock.

**Option C.** pull the fire handle.

**Correct Answer is.** pull the fire handle.

**Explanation.** After first pulling the fire bottle CBs.

**Question Number.** 36. A leak from a fuel tank which manifests as fuel dripping from the tank is classified as a.

**Option A.** stain.

**Option B.** seep.

**Option C.** run.

**Correct Answer is.** run.

**Explanation.** AL/3-15 page 8 para 5.4.1.

**Question Number.** 37. Calcium Chromate tablets can be fitted in integral tanks. Before installation the linen bag should be wetted with.

**Option A.** Water.

**Option B.** Methylated Spirit.

**Option C.** Kerosene.

**Correct Answer is.** Water.

**Explanation.** NIL.

**Question Number.** 38. A check valve is fitted to a fuel jettison system to.

**Option A.** prevent the center from being defueled.

**Option B.** prevent the dumping of the outer tanks.

**Option C.** automatically stop the fuel jettison operation after a period of time.

**Correct Answer is.** prevent the dumping of the outer tanks.

**Explanation.** NIL.

**Question Number.** 39. The advantages of integral fuel tanks are that they.

**Option A.** are cheaper to manufacture, more durable and easier to maintain.

**Option B.** use the maximum volume for fuel and have the minimum amount of weight.

**Option C.** are easier to design and construct and use the maximum volume of fuel.

**Correct Answer is.** use the maximum volume for fuel and have the minimum amount of weight.

**Explanation.** NIL.

**Question Number.** 40. On Large transport aircraft fuel is delivered to each engine using.

**Option A.** a parallel system.

**Option B.** the same system for each engine.

**Option C.** a separate system for each engine.

**Correct Answer is.** the same system for each engine.

**Explanation.** "This question can be interpreted an many ways, and all three answers arguably correct. However, based upon the fact that the fuel system can feed any engine from any tank, we have interpreted it as 'every engine is fed from the same system'."

#### 11.11. Hydraulic Power (ATA 29)

**Question Number.** 1. A purpose of a 'cut-out' in a hydraulic system.

**Option A.** is to prevent creep in jack operated services which have several selected positions.

**Option B.** is to limit loss of fluid in the event of pipe fracture.

**Option C.** is to relieve the pump of load when the operation of services is complete and the accumulator charged with fluid.

**Correct Answer is.** is to relieve the pump of load when the operation of services is complete and the accumulator charged with fluid.

**Explanation.** CAIPs AL/3-21 5.2.

**Question Number.** 2. Hydraulic pressure can be restored by.

**Option A.** compressing the air charge in an accumulator.

**Option B.** the use of a pressure/heat exchanger.

**Option C.** compressing the fluid in a reservoir.

**Correct Answer is.** compressing the air charge in an accumulator.

**Explanation.** CAIPs AL/3-21 Para 7.

**Question Number.** 3. What is the color of the band on a hydraulic seal?

**Option A.** Yellow.

**Option B.** Green.

**Option C.** White.

**Correct Answer is.** Green.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 8-44.

**Question Number.** 4. A maintainer valve in an hydraulic system will.

**Option A.** allow continued press to essential systems during times of reduced supply.

**Option B.** dampen pressure inputs.

**Option C.** maintain a high pressure to all systems.

**Correct Answer is.** allow continued press to essential systems during times of reduced supply.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 8-31 Also known as priority valves CAIPs AL/3-21 5.3.

**Question Number.** 5. Where is the temperature overheat switch located in a hydraulic pump?

**Option A.** In the pressure line.

**Option B.** In the suction line.

**Option C.** In the case drain.

**Correct Answer is.** In the case drain.

**Explanation.** Jeppesen Transport Category Aircraft Systems 7-10 and 7-8.

**Question Number.** 6. What happens if a component has an internal hydraulic leak?

**Option A.** Fluid loss.

**Option B.** Increase in fluid pressure.

**Option C.** Increase in fluid temperature.

**Correct Answer is.** Increase in fluid temperature.

**Explanation.** Increase in temperature is an indication of internal leaks.

**Question Number.** 7. What happens to hydraulic fluid when it is overheated?

**Option A.** Increase acidity.

**Option B.** Increase viscosity.

**Option C.** Increase alkalinity.

**Correct Answer is.** Increase acidity.

**Explanation.** Hi acidity is a common problem revealed after an oil system analysis.

**Question Number.** 8. How is the hydraulic pump depressurizing solenoid actuated?

**Option A.** Energized both open and closed depending on cockpit selection.

**Option B.** Energized Open.

**Option C.** Energized Closed for fail-safe.

**Correct Answer is.** Energized Closed for fail-safe.

**Explanation.** The depressurizing valve (sometimes called an 'offloading valve') is energized closed, to fail-safe open.

**Question Number.** 9. How do you prevent hydraulic fluid frothing?

**Option A.** By pressurizing.

**Option B.** Vent Reservoir to atmosphere.

**Option C.** Pass over a tray.

**Correct Answer is.** By pressurizing.

**Explanation.** Jeppesen A&P Technician Airframe Textbook 8-16.

**Question Number.** 10. Accumulators as fitted to aircraft hydraulic systems.

**Option A.** are only ever used in an emergency.

**Option B.** store fluid under pressure.

**Option C.** provide additional fluid if leaks occur.

**Correct Answer is.** store fluid under pressure.

**Explanation.** CAIPs AL/3-21 Para 7.

**Question Number.** 11. A Skydrol hydraulic fluid seal would be made of.

**Option A.** natural rubber.

**Option B.** synthetic rubber.

**Option C.** butyl rubber, ethylene propylene or Teflon.

**Correct Answer is.** butyl rubber, ethylene propylene or Teflon.

**Explanation.** CAIPs AL/3-21 Para 3.3.1.

**Question Number.** 12. Synthetic hydraulic fluid subjected to overheating is high in.

**Option A.** acidity.

**Option B.** alkalinity.

**Option C.** viscosity.

**Correct Answer is.** acidity.

**Explanation.** Overheating causes acidity.

**Question Number.** 13. A normal hydraulic system will.

**Option A.** show pressure and source of hydraulics.

**Option B.** show fluid temperature and quantity.

**Option C.** illuminate a light in the cockpit when the system is ready.

**Correct Answer is.** show pressure and source of hydraulics.

**Explanation.** Some systems show temperature, but they are not 'normal'.

**Question Number.** 14. A constant volume hydraulic system uses what to relieve pressure in system when no services are being used?

**Option A.** Pressure relief valve.

**Option B.** Return line back to pump.

**Option C.** ACOV.

**Correct Answer is.** ACOV.

**Explanation.** CAIPs AL/3-21 12.2.

**Question Number.** 15. The control of hydraulically powered emergency electrical generator frequency is by.

**Option A.** restriction valve.

**Option B.** angle of swashplate.

**Option C.** IDG.

**Correct Answer is.** angle of swashplate.

**Explanation.** NIL.

**Question Number.** 16. Hydraulic systems normally operate at.

**Option A.** 1800 PSI.

**Option B.** 3000 PSI.

**Option C.** 300 PSI.

**Correct Answer is.** 3000 PSI.

**Explanation.** Transport Category Aircraft Systems Jeppesen Pages 7-5 & 7-7.

**Question Number.** 17. When flushing hydraulic systems.

**Option A.** flush with methylated spirit.

**Option B.** flush with any hydraulic oil.

**Option C.** flush with same hydraulic oil.

**Correct Answer is.** flush with same hydraulic oil.

**Explanation.** NIL.

**Question Number.** 18. When replenishing a hydraulic system.

**Option A.** use any hydraulic fluid.

**Option B.** use any hydraulic fluid made by the same manufacturer.

**Option C.** use the same/correct hydraulic fluid.

**Correct Answer is.** use the same/correct hydraulic fluid.

**Explanation.** Transport Category Aircraft Systems Jeppesen Page 7-2.

**Question Number.** 19. When replacing a flexible pipe.

**Option A.** do a bonding check.

**Option B.** tighten only hand tight.

**Option C.** use two spanners to stop pipe from twisting.

**Correct Answer is.** use two spanners to stop pipe from twisting.

**Explanation.** AL/3-13 6.5.

**Question Number.** 20. How do you remove air from hydraulic fluid?

**Option A.** Vent to atmosphere.

**Option B.** Pass through a restriction.

**Option C.** Pass over a tray.

**Correct Answer is.** Pass over a tray.

**Explanation.** NIL.

**Question Number.** 21. A pressure control relay in a hydraulic pump is.

**Option A.** energized to the run position.

**Option B.** used to prevent anything happening until there is hydraulic pressure.

**Option C.** de-energized to start the pump.

**Correct Answer is.** de-energized to start the pump.

**Explanation.** NIL.

**Question Number.** 22. A constant delivery pump has its output varied with.

**Option A.** regulators.

**Option B.** gears.

**Option C.** servo pressure.

**Correct Answer is.** regulators.

**Explanation.** Constant delivery is constant flow rate.

**Question Number.** 23. A variable angled pump starts at.

**Option A.** half way position.

**Option B.** minimum stroke.

**Option C.** maximum stroke.

**Correct Answer is.** maximum stroke.

**Explanation.** CAIPs AL/3-23.

**Question Number.** 24. A check flow valve in a hydraulic system prevents.

**Option A.** pump cavitation.

**Option B.** reverse flow.

**Option C.** overpressure.

**Correct Answer is.** reverse flow.

**Explanation.** NIL.

**Question Number.** 25. A duplex seal consist of.

**Option A.** a square section rubber ring within a steel washer.

**Option B.** a hard rubber square section ring with a soft rubber square section inner ring.

**Option C.** a rubber 'T' section ring sandwiched between two Teflon rings.

**Correct Answer is.** a rubber 'T' section ring sandwiched between two Teflon rings.  
**Explanation.** NIL.

**Question Number.** 26. When is an hydraulic de-pressurizing valve energized?

**Option A.** When selected on.

**Option B.** When there is sufficient hydraulic pressure available.

**Option C.** When selected off.

**Correct Answer is.** When selected off.

**Explanation.** AL/3-21 4.2.

**Question Number.** 27. A fixed volume axial pump contains the following rotating parts.

**Option A.** Drive Shaft, Swash Plate & Valve Block.

**Option B.** Swash Plate & Valve Block.

**Option C.** Drive Shaft, Swash Plate & Cylinder Block.

**Correct Answer is.** Drive Shaft, Swash Plate & Cylinder Block.

**Explanation.** AL/3-21 Figure 2.

**Question Number.** 28. An hydraulic closed system is one where.

**Option A.** pressure is maintained at the selector valves at all times.

**Option B.** there is no pressure at the selector valves when no functions are required.

**Option C.** most of the major components of the system are included in a self-contained unit.

**Correct Answer is.** pressure is maintained at the selector valves at all times.

**Explanation.** AL/3-21 12.1-12.3.

**Question Number.** 29. What constitutes a hydraulic power pack?

**Option A.** Variable swashplate pump.

**Option B.** Reservoir, pump, selector valve, filter.

**Option C.** Hydraulic oil accumulator.

**Correct Answer is.** Reservoir, pump, selector valve, filter.

**Explanation.** Jeppeson A & P Technician Airframe P8-15

**Question Number.** 30. If an accumulator loses air pressure there will be.

**Option A.** rapid depressurization of system.

**Option B.** pump cavitation.

**Option C.** rapid fluctuations of instruments.

**Correct Answer is.** rapid fluctuations of instruments.

**Explanation.** NIL.

**Question Number.** 31. A marker number on a pipe indicates.

**Option A.** the thickness of the wall on the pipe.

**Option B.** the specification of the pipe throughout the pipe run.

**Option C.** the type of fluid used to pressure test the pipe.

**Correct Answer is.** the specification of the pipe throughout the pipe run.

**Explanation.** NIL.

**Question Number.** 32. "One reason for fitting an accumulator in an hydraulic system is to."

**Option A.** minimize the possibility of pump cavitation.

**Option B.** absorb pressure surges.

**Option C.** relieve excess pressure.

**Correct Answer is.** absorb pressure surges.

**Explanation.** NIL.

**Question Number.** 33. A thermal relief valve is fitted to an hydraulic system to.

**Option A.** prevent a leak back of pressure.

**Option B.** prevent excess temperature.

**Option C.** relieve excess pressure.

**Correct Answer is.** relieve excess pressure.

**Explanation.** Thermal relief valves relieve the pressure build-up due to excessive temperature.

**Question Number.** 34. A component in a hydraulic system which ensures instantaneous action when a service is selected is.

**Option A.** accumulator.

**Option B.** engine driven pump.

**Option C.** selector.

**Correct Answer is.** accumulator.

**Explanation.** NIL.

**Question Number.** 35. A shuttle valve is used for.

**Option A.** preventing fluid loss from a leaking jack.

**Option B.** maintaining fluid press when the emergency system fails.

**Option C.** change over from main to auxiliary system in the case of failure.

**Correct Answer is.** change over from main to auxiliary system in the case of failure.

**Explanation.** AL/3-21 6.4

**Question Number.** 36. Restrictor valves in an hydraulic system are used to.

**Option A.** restrict the rate of pressure build up.

**Option B.** control the rate of system operation.

**Option C.** limit the maximum pressure.

**Correct Answer is.** control the rate of system operation.

**Explanation.** AL/3-21 6.2.

**Question Number.** 37. The purpose of a mechanical sequence valve is to ensure the operation of.

**Option A.** landing gear and doors.

**Option B.** safety switches.

**Option C.** brake anti-skid units.

**Correct Answer is.** landing gear and doors.

**Explanation.** NIL.

**Question Number.** 38. The purpose of a non-return valve is to.

**Option A.** direct fluid to the hydraulic actuator.

**Option B.** restrict the movement of components.

**Option C.** isolate one component from another.

**Correct Answer is.** direct fluid to the hydraulic actuator.

**Explanation.** AL/3-21 Page 10.

**Question Number.** 39. The end fittings on a NRV are normally different to.

**Option A.** facilitate bleeding of the system.

**Option B.** allow a full flow from the valve.

**Option C.** prevent incorrect installation.

**Correct Answer is.** prevent incorrect installation.

**Explanation.** AL/3-21 Page 10.

**Question Number.** 40. A hydraulic accumulator is charged with initial air pressure of 1000 PSI. When the hydraulic system pressure of 3000 PSI is reached, the air pressure is.

**Option A.** 4000 PSI.

**Option B.** 3000 PSI.

**Option C.** 1000 PSI.

**Correct Answer is.** 3000 PSI.

**Explanation.** NIL.

**Question Number.** 41. Automatic cut-out valve hammering is caused by.

**Option A.** low accumulator pressure.

**Option B.** moisture in the fluid.

**Option C.** relief valve set too high.

**Correct Answer is.** low accumulator pressure.

**Explanation.** NIL.

**Question Number.** 42. Hand pumps are normally single cylinder double acting because of the.

**Option A.** two NRVS fitted.

**Option B.** relief valve.

**Option C.** piston ram displacement.

**Correct Answer is.** two NRVS fitted.

**Explanation.** CAIPs AL/3-21 Page 6.

**Question Number.** 43. During a leak test of an hydraulic system, system pressure.

**Option A.** is not important.

**Option B.** must be minimum working.

**Option C.** must be at maximum.

**Correct Answer is.** must be at maximum.

**Explanation.** NIL.

**Question Number.** 44. Constant delivery hydraulic pumps.

**Option A.** require an automatic cut-out valve in the system.

**Option B.** require an automatic cut-out valve and accumulator in the system.

**Option C.** are self-idling.

**Correct Answer is.** require an automatic cut-out valve and accumulator in the system.

**Explanation.** NIL.

**Question Number.** 45. Mechanical sequence valves are operated by.

**Option A.** a striker pin.

**Option B.** the pilot.

**Option C.** the operation of a NRV.

**Correct Answer is.** a striker pin.

**Explanation.** NIL.

**Question Number.** 46. Pressure relay valves are fitted.

**Option A.** before a pressure gauge.

**Option B.** before a pressure sequence valve.

**Option C.** before a pressure relief valve.

**Correct Answer is.** before a pressure gauge.

**Explanation.** AL/3-21 13.3.2.

**Question Number.** 47. Before checking the initial pressure in the hydraulic accumulator.

**Option A.** the reservoir must be checked for correct level.

**Option B.** the fluid pressure must be released.

**Option C.** all air must be bled from the system.

**Correct Answer is.** the fluid pressure must be released.

**Explanation.** NIL.

**Question Number.** 48. Hydraulic reservoirs are pressurized to.

**Option A.** provide a reserve of stored energy.

**Option B.** maintain a constant fluid level.

**Option C.** minimize the possibility of pump cavitation.

**Correct Answer is.** minimize the possibility of pump cavitation.

**Explanation.** CAIPs AL/3-21 Para 15 Page 7.

**Question Number.** 49. In aircraft hydraulic systems, it is permissible to use.

**Option A.** only the specified fluid.

**Option B.** any fluid of the same specific gravity.

**Option C.** any hydraulic fluid available.

**Correct Answer is.** only the specified fluid.

**Explanation.** NIL.

**Question Number.** 50. The essential components of a hydraulic system of the constant delivery type are an.

**Option A.** accumulator and automatic cut-out valve.

**Option B.** accumulator and shuttle valve.

**Option C.** accumulator and relay valve.

**Correct Answer is.** accumulator and automatic cut-out valve.

**Explanation.** NIL.

**Question Number.** 51. An automatic cut-out valve will.

**Option A.** limit pump wear.

**Option B.** prevent the hydraulic lock forming.

**Option C.** raise fluid boiling point.

**Correct Answer is.** prevent the hydraulic lock forming.

**Explanation.** NIL.

**Question Number.** 52. A maintaining valve is fitted to a hydraulic system.

**Option A.** to maintain a back pressure to the accumulator.

**Option B.** relieve excessive pressure to return.

**Option C.** to ensure a supply of fluid to essential services in the event of system failure.

**Correct Answer is.** to ensure a supply of fluid to essential services in the event of system failure.

**Explanation.** NIL.

**Question Number.** 53. A thermal relief valve.

**Option A.** senses fluid temperature change.

**Option B.** senses fluid pressure.

**Option C.** provides cooling for the fluid.

**Correct Answer is.** senses fluid pressure.

**Explanation.** A&P Technician Airframe Textbook 8-14

**Question Number.** 54. Hydraulic systems are normally flushed with.

**Option A.** methylated spirits.

**Option B.** the same type of fluid as used in the system.

**Option C.** any clean hydraulic fluid.

**Correct Answer is.** the same type of fluid as used in the system.

**Explanation.** NIL.

**Question Number.** 55. Phosphate Ester hydraulic fluid requires which kind of seals?

**Option A.** Butyl Rubber.

**Option B.** Synthetic Rubber.

**Option C.** Natural Rubber.

**Correct Answer is.** Butyl Rubber.

**Explanation.** AL/3-21 3.3.

**Question Number.** 56. A RAT hydraulic pump is for.

**Option A.** landing gear and auto-brake systems.

**Option B.** nose wheel steering.

**Option C.** flying controls if hydraulic power lost.

**Correct Answer is.** flying controls if hydraulic power lost.

**Explanation.** NIL.

**Question Number.** 57. Hydraulic hand-pump fluid supply is taken from.

**Option A.** a tap into a convenient return line.

**Option B.** a stack pipe higher than the normal level.

**Option C.** the bottom of the reservoir.

**Correct Answer is.** the bottom of the reservoir.

**Explanation.** AL3-21 8.1.

**Question Number.** 58. Hand pumps in hydraulic systems are normally.

**Option A.** single acting.

**Option B.** low pressure.

**Option C.** double acting.

**Correct Answer is.** double acting.

**Explanation.** Jeppeson A & P technician Airframe P8-23.

**Question Number.** 59. To enable an hydraulic system to operate two components requiring different pressures.

**Option A.** a pressure reducing valve is used.

**Option B.** a pressure regulating valve is used.

**Option C.** a pressure relief valve is used.

**Correct Answer is.** a pressure reducing valve is used.

**Explanation.** NIL.

**Question Number.** 60. The force exerted by a hydraulic cylinder is equal to.

**Option A.** area \* volume.

**Option B.** area \* pressure.

**Option C.** pressure \* stroke.

**Correct Answer is.** area \* pressure.

**Explanation.** NIL.

**Question Number.** 61. A tandem PFCU.

**Option A.** has two control surfaces under its control.

**Option B.** has the rams parallel.

**Option C.** has the actuator rams co-axial.

**Correct Answer is.** has the actuator rams co-axial.

**Explanation.** NIL.

**Question Number.** 62. The reason why slack must be left in a flexible hose during installation, is a flexible hose under pressure.

**Option A.** expands in length and diameter.

**Option B.** contracts in length and diameter.

**Option C.** contracts in length and expands in diameter.

**Correct Answer is.** contracts in length and expands in diameter.

**Explanation.** A&P Mechanics General Handbook page 115.

**Question Number.** 63. An automatic cut-out valve is necessary in a hydraulic system with.

**Option A.** a fixed volume pump.

**Option B.** pressures above 3000 PSI.

**Option C.** a variable volume pump.

**Correct Answer is.** a fixed volume pump.

**Explanation.** NIL.

11.12. Ice and Rain Protection (ATA 30).

**Question Number.** 1. How is a serrated rod ice detector bench tested?

**Option A.** Screwdriver torque test.

**Option B.** By a motor load test.

**Option C.** Motor test and go/no-go gap measurement.

**Correct Answer is.** Screwdriver torque test.

**Explanation.** Retard rotation [of the detector] with slight thumb pressure using a torque screwdriver.' Ref: CAIPs AL/11-6.

**Question Number.** 2. Windshield heating provides.

**Option A.** thermal expansion for a tighter fit.

**Option B.** impact resistance enhancement.

**Option C.** increases strength to resist cabin pressure.

**Correct Answer is.** Impact resistance enhancement.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 13-6 (last paragraph).

**Question Number. 3.** At what pressure and temperature is anti-ice fluid applied?

**Option A.** 7°F at 100 PSI.

**Option B.** 70°C at 100 PSI.

**Option C.** 70°F at 10 PSI.

**Correct Answer is.** 70°C at 100 PSI.

**Explanation.** CAIPs AL/11-3 5.2.2.

**Question Number. 4.** The advantage of leading edge fluid de-icing is.

**Option A.** Less of a fire hazard.

**Option B.** Aerodynamic shape is not disturbed.

**Option C.** More efficient.

**Correct Answer is.** Aerodynamic shape is not disturbed.

**Explanation.** The advantage of leading edge fluid de-icing is aerodynamic shape is not disturbed.

**Question Number. 5.** On large transport aircraft, the windshield wiper system is.

**Option A.** one system for both sides but with the same power source.

**Option B.** independent on each side but with the same power source.

**Option C.** independent on each side with different power sources.

**Correct Answer is.** independent on each side with different power sources.

**Explanation.** Aircraft Electrical Systems, Pallett, Page 178.

**Question Number. 6.** Prior to securing a leading edge de-icing boot you must.

**Option A.** remove all paint.

**Option B.** paint the surface.

**Option C.** shave rivet to prevent further abrasion.

**Correct Answer is.** remove all paint.

**Explanation.** CAIPs AL/11-1 4.2.2.

**Question Number. 7.** On a 'hot rod' type of ice detector, it is switched on.

**Option A.** all the time.

**Option B.** when selected by the crew.

**Option C.** when in the air.

**Correct Answer is.** when selected by the crew.

**Explanation.** AL/11-6 3.2.1.

**Question Number. 8.** Ice formation on wings is due to.

**Option A.** suspended ice crystals melting on contact with the wing and instantly re-freezing.

**Option B.** ice crystals forming layers on contact with the wing.

**Option C.** supercooled water changing state on contact with the wing.

**Correct Answer is.** supercooled water changing state on contact with the wing.

**Explanation.** AL/11-6 2.

**Question Number.** 9. When a vibrating rod ice detector has de-iced, the warning lamp on the flight deck.

**Option A.** goes out immediately.

**Option B.** goes out after one more cycle.

**Option C.** goes out after a set period of time.

**Correct Answer is.** goes out after a set period of time.

**Explanation.** CAIPs AL/11-6 3.4.1.

**Question Number.** 10. De-misting of passenger windows is provided by.

**Option A.** sealed window.

**Option B.** an electrical heating element.

**Option C.** air from the cabin.

**Correct Answer is.** air from the cabin.

**Explanation.** CAIPs AL/3-24 fig 1.

**Question Number.** 11. A deicer boot is completely bonded to the leading edge to.

**Option A.** provide smoother airflow over leading edge.

**Option B.** prevent electrical static build up.

**Option C.** provide more efficient deicer cycles.

**Correct Answer is.** prevent electrical static build up.

**Explanation.** CAIPs AL/11-1 3.4 (unless they mean 'bonded' as in cemented. In which case the answer is b).

**Question Number.** 12. In a cockpit window heater system, the autotransformer.

**Option A.** supplies DC power for heating.

**Option B.** supplies AC Power for heating.

**Option C.** steps up output for severe weather conditions.

**Correct Answer is.** steps up output for severe weather conditions.

**Explanation.** Aircraft Electrical Systems Pallett Page 62/63 (Note: a transformer cannot 'supply').

**Question Number.** 13. Windshield rain repellent is applied.

**Option A.** when rain is on windows and spread by wipers.

**Option B.** before rain and spread on window surface by wipers.

**Option C.** when in heavy rain so vision is unobscured.

**Correct Answer is.** when rain is on windows and spread by wipers.

**Explanation.** Jeppesen, A&P Airframe Textbook Page 13-17.

<http://www.b737.org.uk/iceandrain.htm>

**Question Number.** 14. Pneumatic rain removal systems.

**Option A.** use engine bleed air at high velocity to remove water droplets from windscreen.

**Option B.** are not permitted on large transport aircraft.

**Option C.** use a pneumatic motor to drive windscreen wipers.

**Correct Answer is.** use engine bleed air at high velocity to remove water droplets from windscreen.

**Explanation.** Jeppesen A & P Technician Airframe Textbook page 13-18.

**Question Number.** 15. Windscreen wiper torque tests are carried out at.

**Option A.** blade attachment end.

**Option B.** centre point of the blade.

**Option C.** the shaft end.

**Correct Answer is.** the shaft end.

**Explanation.** NIL.

**Question Number.** 16. Windscreen autotransformers.

**Option A.** step down voltage.

**Option B.** step up voltage.

**Option C.** are used to supply extra current under difficult conditions.

**Correct Answer is.** step up voltage.

**Explanation.** AL/11-4 4.2.2.

**Question Number.** 17. An ice deposit formed when liquid water flows over the airframe before freezing, and which is dense, tough and sticks closely to the surface is called.

**Option A.** glaze Ice.

**Option B.** rime Ice.

**Option C.** hoar Frost.

**Correct Answer is.** glaze Ice.

**Explanation.** NIL.

**Question Number.** 18. When testing pitot head heaters.

**Option A.** they can only be checked by noting the temperature rise of the probe.

**Option B.** they must only be switched on for the minimum time required to check serviceability.

**Option C.** they should be switched on for five minutes to allow to stabilize before taking ammeter readings.

**Correct Answer is.** they must only be switched on for the minimum time required to check serviceability.

**Explanation.** NIL.

**Question Number.** 19. A rotary knife edge ice detector provides warning of ice by.

**Option A.** increased torque caused by ice formation slowing the rotating wheel and illuminating a warning light in the cockpit.

**Option B.** decreased torque caused by ice formation slowing the rotating wheel and illuminating a warning light in the cockpit.

**Option C.** ice formation stopping the rotation of a rotary knife edge and illuminating a warning light in the cockpit.

**Correct Answer is.** decreased torque caused by ice formation slowing the rotating wheel and illuminating a warning light in the cockpit. OR increased torque caused by ice formation slowing the rotating wheel and illuminating a warning light in the cockpit.

**Explanation.** Aircraft Electrical Systems, Pallet, page 174.

**Question Number.** 20. Windscreen heating is supplied from.

**Option A.** frequency wild generator, direct to the windscreen.

**Option B.** DC generator, via a transformer.

**Option C.** frequency wild generator, via a rectifier.

**Correct Answer is.** frequency wild generator, direct to the windscreen.

**Explanation.** Aircraft Electrical Systems, Pallett, page 173, fig. 10-29.

**Question Number.** 21. A wing thermal anti-ice annunciator is illuminated permanently in flight deck without selection being made. The most probable cause would be.

**Option A.** a short circuit.

**Option B.** an open circuit.

**Option C.** normal.

**Correct Answer is.** a short circuit.

**Explanation.** NIL.

**Question Number.** 22. Air for anti-icing of the wings is obtained from.

**Option A.** air conditioning ducting.

**Option B.** engine compressors.

**Option C.** a combustion heater.

**Correct Answer is.** engine compressors.

**Explanation.** NIL.

**Question Number.** 23. The usual material for pipelines in a fluid deice system.

**Option A.** stainless steel.

**Option B.** Monel.

**Option C.** nylon.

**Correct Answer is.** nylon.

**Explanation.** NIL.

**Question Number.** 24. When operating a windscreen wiper on the ground, make sure to.

**Option A.** use slow wiper only.

**Option B.** use water as lubricant when operating.

**Option C.** place soft cloth between blade and window.

**Correct Answer is.** use water as lubricant when operating.

**Explanation.** CAAIPs Leaflet 6-8 para 5.1.2.

**Question Number.** 25. What is run-back ice?

**Option A.** Glaze ice.

**Option B.** Rime ice.

**Option C.** Glime ice.

**Correct Answer is.** Glaze ice.

**Explanation.** AC20-147.

11.13. Landing Gear (ATA 32).

**Question Number.** 1. Spongy brakes are usually a result of.

**Option A.** internal leakage.

**Option B.** air in the system.

**Option C.** external leakage.

**Correct Answer is.** air in the system.

**Explanation.** CAAIPs 5-8 Jeppesen A&P Technician Airframe Textbook Page 9-31.

**Question Number.** 2. Over inflated tires may cause damage to the.

**Option A.** brake drum.

**Option B.** wheel hub.

**Option C.** wheel flange.

**Correct Answer is.** wheel flange.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 1-32.

**Question Number.** 3. A brake DE booster valve is provided for.

**Option A.** applying brake pressure slowly and releasing the the brakes quickly.

**Option B.** increasing the pressure and applying the brakes rapidly.

**Option C.** decreasing the pressure and slowly releasing the brakes.

**Correct Answer is.** applying brake pressure slowly and releasing the the brakes quickly.

**Explanation.** NIL. [www.adtl.army.mil/cgi-bin/atdl/fm/1-509/ch10.html](http://www.adtl.army.mil/cgi-bin/atdl/fm/1-509/ch10.html)

**Question Number.** 4. Tubeless tires are stored.

**Option A.** at 15 to 20 P.S.I.

**Option B.** horizontally maximum of four high with smallest diameter tire on top.

**Option C.** vertically.

**Correct Answer is.** vertically.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 9-47 CAIPs AL/3-18 15.1.

**Question Number.** 5. On a wheel bogie unit, positive camber is when the.

**Option A.** bottom of the wheels are closer together.

**Option B.** top of the wheels are closer together.

**Option C.** front of the wheels are closer together.

**Correct Answer is.** bottom of the wheels are closer together.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 9-13.

**Question Number.** 6. A badly corroded and pitted brake disk will.

**Option A.** wear brake pads too quickly, and should be replaced.

**Option B.** be serviceable, and provide better grip.

**Option C.** produce a loss of fluid.

**Correct Answer is.** wear brake pads too quickly, and should be replaced.

**Explanation.** Badly corroded brakes should be replaced.

**Question Number.** 7. How much oxygen is in a tire (as a maximum)?

**Option A.** 5% by pressure.

**Option B.** 15% by volume.

**Option C.** 5% by volume.

**Correct Answer is.** 5% by volume.

**Explanation.** AWN 70, and JAR 25.733.

**Question Number.** 8. A tire specification 32 x 10.75-14. What does the 10.75 refer to.

**Option A.** Section Width.

**Option B.** Bead diameter.

**Option C.** Overall diameter.

**Correct Answer is.** Section Width.

**Explanation.** CAIPs AL/3-18 3.1.

**Question Number.** 9. When servicing an oleo, fluid comes out of the air valve when the leg is depressurized?

**Option A.** The leg is serviceable - the separator has bottomed.

**Option B.** Leaking air/oil seals.

**Option C.** Separator plate stuck open.

**Correct Answer is.** The leg is serviceable - the separator has bottomed.

**Explanation.** CAIPs AL/3-6.

**Question Number.** 10. The type of fluid in an oleo strut will depend upon.

**Option A.** type of fluid most readily available.

**Option B.** the type of seal material.

**Option C.** heat generated in operation of the system.

**Correct Answer is.** heat generated in operation of the system.

**Explanation.** The type of fluid in an oleo strut will depend upon heat generated in operation of the system.

**Question Number.** 11. A restrictor valve.

**Option A.** speed up the flow in one direction.

**Option B.** may be used to slow down undercarriage extension.

**Option C.** restrict the extent of travel of the undercarriage.

**Correct Answer is.**        may be used to slow down undercarriage extension.

**Explanation.** CAIPs AL/3-6 Page 7&8.

**Question Number.** 12. The function of the oil in a shock absorber is to.

**Option A.** ensure the separator does not bottom.

**Option B.** damp the rebound.

**Option C.** absorb the landing shock.

**Correct Answer is.** damp the rebound.

**Explanation.** Jeppesen A&P technician Airframe Textbook Page 9-5.

**Question Number.** 13. The purpose of the flutter plate in a shock absorber is to.

**Option A.** permit free flow of oil during compression and restriction of oil during extension.

**Option B.** restrict the compression of the air.

**Option C.** separate the oil from the air.

**Correct Answer is.**        permit free flow of oil during compression and restriction of oil during extension.

**Explanation.** NIL.

**Question Number.** 14. Made up wheels should be stored.

**Option A.** vertical at working pressure.

**Option B.** vertical at 20/30 PSI charge.

**Option C.** horizontal no more than 4 high.

**Correct Answer is.**        vertical at 20/30 PSI charge.

**Explanation.** CAIPS AL3-18 para 15-1 and 15-3.

**Question Number.** 15. "After MLG down and securely locked, a red light is illuminated in the flight deck. The possible causes are."

**Option A.** shorted sensor.

**Option B.** out of adjustment sensor.

**Option C.** wiring problem.

**Correct Answer is.**        out of adjustment sensor.

**Explanation.** Aircraft Electrical Systems Pallett Page 176.

**Question Number.** 16. When checking for alignment of a MLG, check.

**Option A.** symmetry, tracking, camber.

**Option B.** symmetry, splay, tracking.

**Option C.** symmetry, twist, tracking.

**Correct Answer is.** symmetry, tracking, camber.

**Explanation.** A+P Technician Airframe Textbook Page 9-13.

**Question Number.** 17. These markings are found on a tire 32 x 10.45 R 14. What does the number 32 mean?

**Option A.** Outer diameter.

**Option B.** width.

**Option C.** Inner diameter.

**Correct Answer is.** Outer diameter.

**Explanation.** CAIPs AL/3-18 3.1.

**Question Number.** 18. A green/grey dot marking on aircraft tire casing represents.

**Option A.** breather points.

**Option B.** the light part of the tire.

**Option C.** military reference.

**Correct Answer is.** breather points.

**Explanation.** CAIPs AL/3-18 3.6, CAAIPs Leaflet 5-7 2.4.

**Question Number.** 19. In detachable flange type wheels, the flange is secured by.

**Option A.** a retainer plate.

**Option B.** a lock ring.

**Option C.** bolts.

**Correct Answer is.** a lock ring.

**Explanation.** CAIPs AL/3-18 4.7.1.

**Question Number.** 20. Fuse plugs in aircraft tires are.

**Option A.** for over temperature protection.

**Option B.** for overpressure protection.

**Option C.** to deflate the tire before removal.

**Correct Answer is.** for overpressure protection.

**Explanation.** AL/3-19 3.1.2 Fuse plugs protect the tire from explosion due to overpressure, albeit the overpressure as a result of temperature rise.

**Question Number.** 21. A breaker strip in an aircraft tire is.

**Option A.** to provide strength.

**Option B.** to provide a wear indication.

**Option C.** to indicate the position for tire levers.

**Correct Answer is.** to provide strength.

**Explanation.** NIL. [www.dunlopaircrafttires.com/tirecare/dm1172/dm1172.pdf](http://www.dunlopaircrafttires.com/tirecare/dm1172/dm1172.pdf)

**Question Number.** 22. If fluid leaks along with air whilst oleo charging, this is.

**Option A.** Caused by a leaky seal.

**Option B.** Normal.

**Option C.** due to excessive charging pressure.

**Correct Answer is.** caused by a leaky seal.

**Explanation.** AL/3-6 3.3.3 iii.

**Question Number.** 23. A red dot / triangle mark on aircraft tires means.

**Option A.** military reference.

**Option B.** the light part of the tire.

**Option C.** breather points.

**Correct Answer is.** the light part of the tire.

**Explanation.** CAIPs AL/3-18 3.6, CAAIPs Leaflet 5-7 3.7.

**Question Number.** 24. On selection of MLG down, the gear extends then begins to retract again. The cause is.

**Option A.** a faulty selector valve.

**Option B.** a faulty actuator.

**Option C.** gear lowered at too high an airspeed.

**Correct Answer is.** a faulty selector valve.

**Explanation.** NIL.

**Question Number.** 25. When fitting a tire, the red dot should be positioned.

**Option A.** on the other side of the wheel opposite to the charging valve.

**Option B.** opposite the charging valve.

**Option C.** adjacent to the charging valve.

**Correct Answer is.** adjacent to the charging valve.

**Explanation.** Dunlop Aircraft Tires General Servicing Instructions Para 3.2.1.10.

**Question Number.** 26. Composite brake units.

**Option A.** weigh the same as normal brake units and fade away at high temperatures.

**Option B.** have less weight than normal brake units but fade away at high temperatures.

**Option C.** have less weight than normal brake units and have increased efficiency at high temperatures.

**Correct Answer is.**        have less weight than normal brake units and have increased efficiency at high temperatures.

**Explanation.** A&P Technician Airframe Textbook Page 9-20 'Carbon Brakes'.

**Question Number.** 27. A restrictor valve can be used.

**Option A.** to increase the speed of undercarriage retraction.

**Option B.** to increase the speed of the undercarriage extension.

**Option C.** to reduce the speed of the undercarriage extension.

**Correct Answer is.**        to reduce the speed of the undercarriage extension.

**Explanation.** CAIPs AL/3-6 4.2.

**Question Number.** 28. When an undercarriage is lowered, it tends to creep back up. The fault could be.

**Option A.** the emergency system.

**Option B.** a leaky selector valve.

**Option C.** a stuck relief valve.

**Correct Answer is.**        a leaky selector valve.

**Explanation.** NIL.

**Question Number.** 29. Vents holes are found on.

**Option A.** tubeless tires.

**Option B.** tubed tires.

**Option C.** tubed and tubeless tires.

**Correct Answer is.** tubed and tubeless tires.

**Explanation.** AL/3-18 2.4. A&P Technician Airframe Textbook Page 9-42 says both tubed and tubeless. So does Dunlop General Servicing Instructions.

**Question Number.** 30. At what temperature does a yellow fuse plug melt at?

**Option A.** 150°C.

**Option B.** 250°C.

**Option C.** 200°C.

**Correct Answer is.**        200°C.

**Explanation.** Boeing 757 Carbon Brake wheel, Description and Operation 32-42-82 Part AHA1648 - Yellow Plug Temperature 390°F.

**Question Number.** 31. The cam plate in a nose undercarriage is.

**Option A.** part of the shimmy damper.

**Option B.** to align for nose wheel on nose undercarriage retraction.

**Option C.** for alignment of the nose wheel steering on nose undercarriage extension.  
**Correct Answer is.** to align for nose wheel on nose undercarriage retraction.  
**Explanation.** NIL.

**Question Number.** 32. What is tire creep related to?

**Option A.** Horizontal movement of the tire.

**Option B.** Vertical movement of the tire.

**Option C.** Tire moving around the wheel.

**Correct Answer is.** Tire moving around the wheel.

**Explanation.** Leaflet 5-7 Para 9

**Question Number.** 33. 'Aquaplaning' can be reduced by.

**Option A.** increased flaring.

**Option B.** lowering slats.

**Option C.** an anti-skid device.

**Correct Answer is.** an anti-skid device.

**Explanation.** NIL.

**Question Number.** 34. Why is a hydraulic damper fitted to a nose wheel steering system?

**Option A.** To reduce vibration and shimmy.

**Option B.** To centralize the nose wheel during an up selection.

**Option C.** To centralize the nose leg assembly during an up selection.

**Correct Answer is.** To reduce vibration and shimmy.

**Explanation.** NIL.

**Question Number.** 35. What decides the type of oil used in an undercarriage leg?

**Option A.** The material of the leg.

**Option B.** The types of seals the leg uses.

**Option C.** Neither, any oil can be used.

**Correct Answer is.** The types of seals the leg uses.

**Explanation.** NIL.

**Question Number.** 36. in an anti-skid system.

**Option A.** Brakes are modulated to give most efficient braking.

**Option B.** Brakes release on rising torque.

**Option C.** Brakes release on falling torque.

**Correct Answer is.** Brakes are modulated to give most efficient braking.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 10-37.

**Question Number.** 37. If an undercarriage oleo has insufficient deflection, the likely cause is.

**Option A.** oil level too high.

**Option B.** loss of pressure/leakage.

**Option C.** air pressure too high.

**Correct Answer is.** air pressure too high.

**Explanation.** NIL.

**Question Number.** 38. A Maxaret is used in what system?

**Option A.** Tire inflation.

**Option B.** Skid control.

**Option C.** Self-centering landing gear.

**Correct Answer is.** Skid control.

**Explanation.** NIL.

**Question Number.** 39. The pilot receives an audible warning on the flight deck as the aircraft is descending to land. The most likely reason for this warning is.

**Option A.** the airspeed is too high.

**Option B.** the landing gear is not locked down.

**Option C.** the rate of descent is too high.

**Correct Answer is.** the landing gear is not locked down.

**Explanation.** Jeppesen A & P Airframe Technician Textbook page 10-12.

**Question Number.** 40. A restrictor in the landing gear hydraulic retraction and lowering system is positioned in the.

**Option A.** landing gear up line.

**Option B.** landing gear down line.

**Option C.** return line from the landing gear selector.

**Correct Answer is.** landing gear up line.

**Explanation.** The restrictor is placed in the retraction line to slow the rate of exit of fluid from the jack on extension, to slow the rate of extension. CAIPs AL/3-6 fig 4 shows them in the down line - this is a well-known error in CAIPs.

**Question Number.** 41. Wheel speed information is used in auto speed brake systems.

**Option A.** to stow the spoilers automatically when the aircraft has nearly stopped.

**Option B.** to ensure the aircraft has touched down and to give a slight time lapse before spoiler deployment.

**Option C.** To ensure the aircraft is still rolling.

**Correct Answer is.** to ensure the aircraft has touched down and to give a slight time lapse before spoiler deployment.

**Explanation.** NIL.

**Question Number.** 42. A fusible plug fitted to an aircraft wheel prevents.

**Option A.** over inflation of tires during servicing.

**Option B.** brakes seizure, if brake stators and rotors weld together under excessive temperatures.

**Option C.** tire bursts due to high temperatures created by excessive braking.

**Correct Answer is.** tire bursts due to high temperatures created by excessive braking.

**Explanation.** CAAIPs Leaflet 5-8 para 3.1.3 and A&P Technician Airframe Textbook 9-6.

**Question Number.** 43. If the shuttle valve was stuck in the normal position.

**Option A.** neither system will be available.

**Option B.** emergency braking will not be available.

**Option C.** normal braking will not be available.

**Correct Answer is.** emergency braking will not be available.

**Explanation.** NIL.

**Question Number.** 44. The breaker strip of a tire is fitted.

**Option A.** between the apex strip and the casing piles.

**Option B.** between the bead and the casing piles.

**Option C.** between the tread rubber and the casing piles.

**Correct Answer is.** between the tread rubber and the casing piles.

**Explanation.** CAAIP Leaflet 5-7 fig 1.

**Question Number.** 45. Nose wheel steering in a modern aircraft is by.

**Option A.** rudder pedals.

**Option B.** the control column.

**Option C.** a separate pilot operated control.

**Correct Answer is.** a separate pilot operated control.

**Explanation.** NIL.

**Question Number.** 46. The fusible plugs installed in some aircraft wheel will.

**Option A.** facilitate servicing of the wheel assembly.

**Option B.** melt at a specified elevated temperature.

**Option C.** eliminate the need to check air pressure

**Correct Answer is.** melt at a specified elevated temperature.

**Explanation.** NIL.

**Question Number.** 47. Excessive wear in the shoulder area of an aircraft tire is an indication of.

**Option A.** under-inflation.

**Option B.** over-inflation.

**Option C.** excessive toe-in.

**Correct Answer is.** under-inflation.

**Explanation.** NIL.

**Question Number.** 48. Ribbed tires with marker tie bars may be worn to.

**Option A.** the top of the tie bar.

**Option B.** the base of the tie bar.

**Option C.** 1 mm from the rib base.

**Correct Answer is.** the top of the tie bar.

**Explanation.** NIL.

**Question Number.** 49. On large aircraft, bogie type undercarriages are used to.

**Option A.** spread the weight over a large area.

**Option B.** absorb increased landing shock.

**Option C.** prevent skidding.

**Correct Answer is.** spread the weight over a large area.

**Explanation.** NIL.

**Question Number.** 50. To position the bogie beam at a suitable angle for retraction and landing, a.

**Option A.** castoring damper is used.

**Option B.** snobbery is used.

**Option C.** hop damper is used.

**Correct Answer is.** hop damper is used.

**Explanation.** NIL.

**Question Number.** 51. On large aircraft, braked wheel assemblies are normally inflated with.

**Option A.** nitrogen.

**Option B.** an argon and CO2 mixture.

**Option C.** nitrogen and not more than 5% of air.

**Correct Answer is.** nitrogen and not more than 5% of air.

**Explanation.** JAR 25.733 (e).

**Question Number.** 52. Brake DE boosters.

**Option A.** increase the hydraulic pressure entering the brakes.

**Option B.** reduce the hydraulic pressure entering the brakes.

**Option C.** assist the operation of the anti-skid unit.

**Correct Answer is.** reduce the hydraulic pressure entering the brakes.

**Explanation.** NIL.

**Question Number.** 53. A modulator is fitted in conjunction with.

**Option A.** brake control valves.

**Option B.** non-return valve.

**Option C.** anti-skid units.

**Correct Answer is.** anti-skid units.

**Explanation.** AL/3-21 6.6.

**Question Number.** 54. In the case of pressurized aircraft, the nose-wheel bay.

**Option A.** is pressurized to a value higher than ambient but less than cabin pressure.

**Option B.** is subject to cabin pressure.

**Option C.** is not pressurized.

**Correct Answer is.** is not pressurized.

**Explanation.** NIL.

**Question Number.** 55. An undercarriage that has the axle mounted directly onto the shock absorber is of which type.

**Option A.** Articulated.

**Option B.** Hydro Mechanical.

**Option C.** Direct Acting.

**Correct Answer is.** Direct Acting.

**Explanation.** NIL.

**Question Number.** 56. The minimum aquaplaning ground speed is.

**Option A.** 9.6 times the root square of the tire pressure in psi.

**Option B.** 8.6 times the root square of the tire pressure in psi.

**Option C.** 8.6 times the tire pressure in bar.

**Correct Answer is.** 8.6 times the root square of the tire pressure in psi.

**Explanation.** <http://www.gremlines.com/page13.html>

**Question Number.** 57. Tubed tires are stored.

**Option A.** horizontally, up to 4 in total staggering them to prevent distortion of beads.

**Option B.** horizontally, up to 4 in total in a rack with supporting tubes so each tire is supported at 2 points.

**Option C.** horizontally, up to 4 in total with the smallest at the top.

**Correct Answer is.** horizontally, up to 4 in total in a rack with supporting tubes so each tire is supported at 2 points.

**Explanation.** CAAIPs Leaflet 5-7 15.2.1 and 15.2.2.

**Question Number.** 58. On a main landing gear, what is positive camber?

**Option A.** Top of wheels closer to fuselage.

**Option B.** Front of wheels closer to fuselage.

**Option C.** Bottom of wheels closer to fuselage.

**Correct Answer is.** Bottom of wheels closer to fuselage.

**Explanation.** <http://www.desertrides.com/reference/terms.php#C>

**Question Number.** 59. When the landing gear is locked up, the cockpit indicator shows.

**Option A.** red light.

**Option B.** no indication.

**Option C.** green light.

**Correct Answer is.** no indication.

**Explanation.** Jeppesen A & P Airframe Technician Textbook page 10-12.

**Question Number.** 60. When checking the alignment of a main landing gear, check.

**Option A.** symmetry, tracking, camber.

**Option B.** symmetry, tracking, twist.

**Option C.** symmetry, tracking, splay.

**Correct Answer is.** symmetry, tracking, camber.

**Explanation.** NIL.

**Question Number.** 61. Tire creep could be caused by.

**Option A.** overpressure.

**Option B.** excessive wear.

**Option C.** under pressure.

**Correct Answer is.** under pressure.

**Explanation.** NIL.

**Question Number.** 62. When inflating a tire and you notice ice in the valve stem.

**Option A.** heat the valve stem gently with a blow torch.

**Option B.** wait for ice to melt before carrying on with inflation.

**Option C.** carry on inflating as ice in the valve stem is no problem.

**Correct Answer is.** wait for ice to melt before carrying on with inflation.

**Explanation.** NIL.

**Question Number.** 63. A method of helping to prevent aquaplaning is by fitting tires which have.

**Option A.** water dispersing treads.

**Option B.** a plain tread.

**Option C.** twin contact.

**Correct Answer is.** water dispersing treads.

**Explanation.** NIL.

**Question Number.** 64. Un-mounted tubeless tires must be stored.

**Option A.** vertically.

**Option B.** horizontally.

**Option C.** in the manufactures boxes.

**Correct Answer is.** vertically.

**Explanation.** AL/3-18 15.1.

**Question Number.** 65. With a single oleo leg with a stub axle used, the torque links will.

**Option A.** keep the wheel in track.

**Option B.** assist the wheel to castor.

**Option C.** allow the wheel to shimmy.

**Correct Answer is.** keep the wheel in track.

**Explanation.** Jeppesen A & P Airframe Technician textbook page 9-12.

**Question Number.** 66. When fitting a tire to a hub, the red spot on the tire should be in line with.

**Option A.** maker's serial number.

**Option B.** the valve assembly.

**Option C.** opposite side to the valve assembly.

**Correct Answer is.** the valve assembly.

**Explanation.** Jeppesen A & P Airframe Technician Textbook page 9-49.

**Question Number.** 67. A red or yellow line on an inner tube would indicate.

**Option A.** light spot.

**Option B.** balance indicator.

**Option C.** heavy spot.

**Correct Answer is.** heavy spot.

**Explanation.** NIL.

**Question Number.** 68. On a multi-brake unit with automatic adjusters, brake wear is checked by.

**Option A.** using a go-no go gauge to measure the gap between the cylinder and the thrust plate.

**Option B.** application of the brakes and checking indicator pin protrusion.

**Option C.** measuring the protrusion of the indicator pins with the brakes released.

**Correct Answer is.** application of the brakes and checking indicator pin protrusion.

**Explanation.** Dunlop component maintenance manual Ch. 32-42-98.

11.14. Lights (ATA 33).

**Question Number.** 1. With aircraft lights - which of the following is true?

**Option A.** Starboard light green, port light red, tail light white.

**Option B.** Starboard light red, port light green, tail light Red.

**Option C.** Starboard light red, port light green, tail light White.

**Correct Answer is.** Starboard light green, port light red, tail light white.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 145.

**Question Number.** 2. Emergency floor lighting system is inoperative, then.

**Option A.** the aircraft is not allowed to fly until repaired.

**Option B.** the aircraft is allowed to fly in daylight conditions only.

**Option C.** the aircraft is allowed to fly empty to a main base.

**Correct Answer is.** the aircraft is allowed to fly empty to a main base.

**Explanation.** Can fly without passengers in accordance with the MEL. No reference found.

**Question Number.** 3. A fluorescent tube contains.

**Option A.** orange coatings, rare gases and mercury vapour.

**Option B.** phosphor coatings, rare gases and mercury vapour.

**Option C.** iodine coatings and rare gases.

**Correct Answer is.** phosphor coatings, rare gases and mercury vapour.

**Explanation.** <http://www.users.mis.net/~pthrush/lighting/flour.html>

**Question Number.** 4. A white steady light is required.

**Option A.** of at least 3 candelas, at the rear of the aircraft 70 degrees either side of dead astern.

**Option B.** of at least 3 lumens, at the rear of the aircraft 110 degrees either side of dead astern.

**Option C.** of at least 3 candelas, at the rear of the aircraft 110 degrees either side of dead astern.

**Correct Answer is.** of at least 3 candelas, at the rear of the aircraft 70 degrees either side of dead astern.

**Explanation.** CAP 393 Rules of the Air Rule 11 (2) (a) (iii).

**Question Number.** 5. How many floor path lights can you fly with unserviceable?

**Option A.** 15%.

**Option B.** 25%.

**Option C.** 20%.

**Correct Answer is.** 25%.

**Explanation.** AWN 56 2.11.

**Question Number.** 6. What is the arc of a landing light?

**Option A.** 15°.

**Option B.** 11°.

**Option C.** 20°.

**Correct Answer is.** 11°.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 146 Fig 10-1.

**Question Number.** 7. The visible angle of a white tail navigation light is.

**Option A.** 11°.

**Option B.** 140°.

**Option C.** 110°.

**Correct Answer is.** 140°.

**Explanation.** Pallett Aircraft Electrical Systems 3rd Edition Page 146, and JAR 25.1387.

**Question Number.** 8. Wing navigation lights must be visible through which angle?

**Option A.** 110°.

**Option B.** 125°.

**Option C.** 180°.

**Correct Answer is.** 110°.

**Explanation.** Aircraft Electrical Systems Pallett Page 146, and JAR 25.1387, and EEL/1-10 301 a).

**Question Number.** 9. Cockpit dome lighting is provided by the.

**Option A.** battery bus and ground services bus.

**Option B.** battery bus.

**Option C.** ground services bus.

**Correct Answer is.** battery bus and ground services bus.

**Explanation.** Aircraft Electricity and Electronics, Eismin 5th edition page 256.

**Question Number.** 10. Upper and lower strobe lights are colored.

**Option A.** green.

**Option B.** red.

**Option C.** white.

**Correct Answer is.** red.

**Explanation.** Transport Category Aircraft Systems Jeppesen Page 7-2.

**Question Number.** 11. Cargo bay lights on a modern aircraft are supplied by.

**Option A.** AC handling bus.

**Option B.** DC handling bus.

**Option C.** the battery bus.

**Correct Answer is.** AC handling bus.

**Explanation.** BAe 146 AMM (AC ground service bus bar) although other aircraft (A340, B747) use 28VDC ground bus.

**Question Number.** 12. What will happen if the Master Dim and test switch is switched to the on position?

**Option A.** Rectangular indicator lights will illuminate.

**Option B.** All lights will illuminate.

**Option C.** Dome lights will illuminate.

**Correct Answer is.** Rectangular indicator lights will illuminate.

**Explanation.** NIL.

**Question Number.** 13. Escape route lighting must not have more than.

**Option A.** 20% obscured.

**Option B.** 10% obscured.

**Option C.** 15% obscured.

**Correct Answer is.** 20% obscured.

**Explanation.** NIL.

**Question Number.** 14. How many emergency lights are allowed to be inoperative?

**Option A.** 25%.

**Option B.** 10%.

**Option C.** None.

**Correct Answer is.** 25%.

**Explanation.** JAR 25.812 (l) (1), and CAAIPs Leaflet 5-11 2.11.1.

**Question Number.** 15. The angle of a runway turnoff light is.

**Option A.** 40°.

**Option B.** 60°.

**Option C.** 50°.

**Correct Answer is.** 50°.

**Explanation.** Aircraft Electrical Systems Pallett Page 146.

**Question Number.** 16. Cabin fluorescent lighting circuits are supplied with.

**Option A.** 28 V DC.

**Option B.** 115 V AC.

**Option C.** 28 V AC.

**Correct Answer is.** 115 V AC.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 7-76 (figure 7-115).

**Question Number.** 17. How are passenger reading lights normally tested?

**Option A.** Each one is switched on individually at passenger panel.

**Option B.** By using a READ LIGHT TEST switch at any passenger panel.

**Option C.** By using a READ LIGHT TEST switch on the cabin attendant panel.

**Correct Answer is.** Each one is switched on individually at passenger panel.  
**Explanation.** NIL.

**Question Number.** 18. In what position should the selector switch be for a standby and emergency lighting system during flight.

**Option A.** Armed.

**Option B.** OFF.

**Option C.** ON.

**Correct Answer is.** Armed.

**Explanation.** Transport Category Aircraft Systems 11-23.

**Question Number.** 19. The emergency lighting system must be designed so that after any single transverse vertical separation of the fuselage during crash landing the maximum amount of emergency lighting that fails is.

**Option A.** 15%.

**Option B.** 10%.

**Option C.** 25%.

**Correct Answer is.** 25%.

**Explanation.** JAR 25.812.

**Question Number.** 20. A rotating beacon must have a minimum light rating of.

**Option A.** 100 candelas.

**Option B.** 50 candelas.

**Option C.** 20 candelas.

**Correct Answer is.** 20 candelas.

**Explanation.** CAP 393 Section 2 Rules of the Air Para. 11 (2) (d).

**Question Number.** 21. Service lights include.

**Option A.** refuelling lights, engine scanning lights, logo lights.

**Option B.** avionics bay lights, engine scanning lights, baggage compartment lights.

**Option C.** baggage compartment lights, avionics bay lights, refuelling lights.

**Correct Answer is.** baggage compartment lights, avionics bay lights, refuelling lights. **Explanation.** EEL/1-10 3.5.

**Question Number.** 22. If the 'blow-back' device on a landing lamp operates, how is it reset?

**Option A.** The linkage must be repositioned and latched when the aircraft is on the ground.

**Option B.** Select full 'RETRACT'.

**Option C.** It cannot. The unit must be replaced because of the high stress loads experienced.

**Correct Answer is.** Select full 'RETRACT'.

**Explanation.** EEL/1-10 3.3.1.

**Question Number.** 23. Before touching or disconnecting a strobe light head, a time period must elapse to avoid electrical shock or burning. That time period is at least.

**Option A.** 2 minutes.

**Option B.** 5 minutes.

**Option C.** 1 minute.

**Correct Answer is.** 2 minutes.

**Explanation.** EEL/1-10 5.5.

**Question Number.** 24. The rear light of an aircraft must be white and, in addition, must show through an inclusive angle of.

**Option A.** 110 degrees and be 5 candelas minimum.

**Option B.** 110 degrees and be 40 candelas minimum.

**Option C.** 140 degrees and be 3 candelas minimum.

**Correct Answer is.** 140 degrees and be 3 candelas minimum.

**Explanation.** CAP 393 Section 2 Rules of the Air Para 2 a iii and CAIPs EEL/1-10 3.1 c).

**Question Number.** 25. Self-illuminating signs.

**Option A.** are instantly seen in dark areas by persons who are not dark adapted.

**Option B.** require a period of daylight, or intense artificial light to operate.

**Option C.** are self powered and contain phosphor and helium gas.

**Correct Answer is.** are instantly seen in dark areas by persons who are not dark adapted.

**Explanation.** EEL/1-10 4.8.

**Question Number.** 26. When an annunciator light is selected to 'DIM', the resistor is in.

**Option A.** parallel with the light and the transistor is not conducting.

**Option B.** series with the light and the transistor is not conducting.

**Option C.** series with the light and the transistor is conducting.

**Correct Answer is.** series with the light and the transistor is conducting.

**Explanation.** The transistor is conducting all the time the light is switched on. Pallett - Aircraft Electrical Systems. Page 153.

**Question Number.** 27. Storm lights are usually fluorescent lights that are switched on.

**Option A.** because lightning has less effect on fluorescent lamp units.

**Option B.** and the glare-shield lights are automatically dimmed.

**Option C.** to reduce the effect of lightning on the pilot's sight.

**Correct Answer is.** to reduce the effect of lightning on the pilot's sight.

**Explanation.** NIL. [http://www.flightsim.com/cgi/kds?\\$/main/special/real777](http://www.flightsim.com/cgi/kds?$/main/special/real777)

**Question Number.** 28. Captain and First Officer's 'Dome' lights can be dimmed.

**Option A.** individually - they are wired in parallel.

**Option B.** together - they are wired in series.

**Option C.** First Officer's only in emergency mode.

**Correct Answer is.** together - they are wired in series.

**Explanation.** Pallett - Aircraft Electrical Systems. Page 153.

**Question Number.** 29. In the CWS system, the caution light is colored.

**Option A.** red.

**Option B.** amber.

**Option C.** green.

**Correct Answer is.** amber.

**Explanation.** CAIPs EEL/1-10 4.4.1.

**Question Number.** 30. On a CWS, which has the highest priority?

**Option A.** Fire warning.

**Option B.** Hydraulic pump failure.

**Option C.** Duct overheat.

**Correct Answer is.** Fire warning.

**Explanation.** NIL.

**Question Number.** 31. What inert gas is used in a typical strobe light?

**Option A.** Freon.

**Option B.** Halon.

**Option C.** Xenon.

**Correct Answer is.** Xenon.

**Explanation.** NIL.

**Question Number. 32.** Floor proximity lighting is a mandatory requirement and each light should be spaced.

**Option A.** at 60 inch intervals.

**Option B.** at 70 inch intervals.

**Option C.** at 40 inch intervals.

**Correct Answer is.** at 40 inch intervals.

**Explanation.** CAAIPs Leaflet 5-11 2.7.1.

**Question Number. 33.** Tritium Gas is used in a.

**Option A.** strobe light.

**Option B.** landing Light.

**Option C.** self illuminating lights.

**Correct Answer is.** self illuminating lights.

**Explanation.** EEL/1-10 4.8.1.

**Question Number. 34.** A strobe light is a light unit that takes form of glass tube filled with which gas and its light colour is what?

**Option A.** Xenon Gas and blue-white.

**Option B.** Helium gas and white.

**Option C.** Neon gas and blue.

**Correct Answer is.** Xenon Gas and blue-white.

**Explanation.** EEL/1-10 3.2.3.

**Question Number. 35.** The aircraft has a partial failure of its emergency lighting system.

**Option A.** continue with reduced passenger load.

**Option B.** ferry flight to main base for rectification.

**Option C.** ground the aircraft.

**Correct Answer is.** continue with reduced passenger load.

**Explanation.** A club66 user who got this question, queried it with the CAA. He was told (by the CAA assessor)that the answer is b. However, no reference has been found.

**Question Number. 36.** Navigation lights are supplied by the following circuit.

**Option A.** Dual circuit.

**Option B.** Single circuit.

**Option C.** Individual circuits.

**Correct Answer is.** Single circuit.

**Explanation.** Aircraft Electricity and Electronics Eismin Page 250.

**Question Number.** 37. Automatic no smoking sign will illuminate.

**Option A.** below 10,000ft and descending.

**Option B.** when landing gear doors are not closed.

**Option C.** when landing gear is up.

**Correct Answer is.** below 10,000ft and descending.

**Explanation.** NIL.

11.15. Oxygen (ATA 35).

**Question Number.** 1. Anoxia is due to.

**Option A.** lack of oxygen.

**Option B.** low air pressure on the body.

**Option C.** release of nitrogen bubbles in the blood.

**Correct Answer is.** lack of oxygen.

**Explanation.** CAAIPs Leaflet 5-9 Para 2.1.

**Question Number.** 2. The dilutor demand regulator functions.

**Option A.** all the time.

**Option B.** only when the supply valve is opened by the user.

**Option C.** when the user breathes in.

**Correct Answer is.** when the user breathes in.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 14-10.

**Question Number.** 3. To measure moisture in an oxygen system use.

**Option A.** a glass plate.

**Option B.** litmus paper.

**Option C.** a hygrometer using the dew point method.

**Correct Answer is.** a hygrometer using the dew point method.

**Explanation.** CAIPs AL/3-25 Para 6.4.

**Question Number.** 4. Oxygen cylinder test dates.

**Option A.** are painted in white on the cylinder.

**Option B.** are variable depending on discharge.

**Option C.** may be stencilled on the neck of the cylinder.

**Correct Answer is.** are painted in white on the cylinder.

**Explanation.** CAIPs AL/3-25 para 4.2.2.

**Question Number. 5.** O2 system pressure has leaked away after charging. What is the most probable cause?

**Option A.** Supernumerator regular.

**Option B.** Temperature compensator.

**Option C.** Breathing regulator.

**Correct Answer is.** Breathing regulator.

**Explanation.** NIL.

**Question Number. 6.** If an O2 system is leaking, where would you most likely find the cause?

**Option A.** Thermal Relief Valve.

**Option B.** Loose connection.

**Option C.** Breathing mask.

**Correct Answer is.** Loose connection.

**Explanation.** No TRV on O2 system. Breathing mask will only leak if system is turned on.

**Question Number. 7.** As the cabin altitude reaches 3042 meters.

**Option A.** the O2 masks deploy automatically and the crew activates the system from the emergency panel.

**Option B.** the O2 masks deploy automatically and hang half way extended.

**Option C.** the O2 masks deploy automatically and the crew must activate the system from the cockpit.

**Correct Answer is.** the O2 masks deploy automatically and hang half way extended.

**Explanation.**

**Question Number. 8.** Oxygen cylinders are normally fitted with.

**Option A.** pressure and quantity gauges.

**Option B.** oxygen purity gauge.

**Option C.** temperature gauge.

**Correct Answer is.** pressure and quantity gauges.

**Explanation.** CAAIPs Leaflet 5-9 p9 para 4.9.

**Question Number. 9.** A demand regulator in a portable oxygen bottle opens.

**Option A.** all the time.

**Option B.** when breathing.

**Option C.** when 100% selected.

**Correct Answer is.** when breathing.

**Explanation.** A&P Technician Airframe Textbook 14-9.

**Question Number.** 10. Portable oxygen bottles are fitted with.

**Option A.** a demand regulator.

**Option B.** an overpressure indicator.

**Option C.** an over temperature indicator.

**Correct Answer is.** a demand regulator.

**Explanation.** NIL.

**Question Number.** 11. American made crew oxygen cylinders are.

**Option A.** black in color with a RH thread.

**Option B.** green in color with a LH thread.

**Option C.** green in color with a RH thread.

**Correct Answer is.** green in color with a RH thread.

**Explanation.** CAAIP's Leaflet 5-9 p7 para 4.2.3 states green for cylinders for American origin. (l/h threads are for charging points).

**Question Number.** 12. Which connector has a left hand thread?

**Option A.** N2.

**Option B.** Freon.

**Option C.** O2.

**Correct Answer is.** O2.

**Explanation.** CAAIP Leaflet 5-9 para 5.13.3(e).

**Question Number.** 13. What is the principle of an O2 generator?

**Option A.** Sodium chlorate and iron mixed by an electronic detonator.

**Option B.** Sodium chlorate and iron using a mechanical detonator producing O2 when mixed with air.

**Option C.** Sodium chloride and iron mixed by an electronic detonator.

**Correct Answer is.** Sodium chlorate and iron mixed by an electronic detonator.

**Explanation.** CAIPs AL/3-25 3.5.1.

**Question Number.** 14. What pressure are oxygen cylinders usually pressurized to?

**Option A.** 300 PSI.

**Option B.** 1800 PSI.

**Option C.** 3000 PSI.

**Correct Answer is.** 1800 PSI.

**Explanation.** AL/3-25 4.2, and CAAIPs Leaflet 5-9 3.3.1 and A&P Technician Airframe Textbook 14-8.

**Question Number.** 15. Oxygen storage cylinders, once charged should be.

**Option A.** turned on by crew.

**Option B.** turned off.

**Option C.** turned on and safety wire-locked.

**Correct Answer is.** turned on and safety wire-locked.

**Explanation.** NIL.

**Question Number.** 16. A thermal compensator is used in.

**Option A.** a fuel system.

**Option B.** an oxygen system.

**Option C.** an hydraulic system.

**Correct Answer is.** an oxygen system.

**Explanation.** CAIPs AL/3-25 4.12.

**Question Number.** 17. When charging an oxygen bottle with gaseous oxygen, the oxygen is.

**Option A.** passed into the bottle slowly to keep the temperature at approximately ambient.

**Option B.** passed into the bottle at any rate as this does not affect temperature.

**Option C.** passed into the bottle as quickly as possible to keep the temperature down.

**Correct Answer is.** passed into the bottle slowly to keep the temperature at approximately ambient.

**Explanation.** A&P Mechanic Airframe Handbook Page 598.

**Question Number.** 18. Where are the left handed threads found in an oxygen system?

**Option A.** Line valve.

**Option B.** Shut-off valve.

**Option C.** Charging connection.

**Correct Answer is.** Charging connection.

**Explanation.** CAAIP Leaflet 5-9 para 5.13.3(e).

**Question Number.** 19. Portable O<sub>2</sub> diluter demand valve works when.

**Option A.** the user breathes in.

**Option B.** 100% is selected.

**Option C.** less than 500 psi is in bottle.

**Correct Answer is.** the user breathes in.

**Explanation.** A&P Technician Airframe Textbook 14-9.

**Question Number.** 20. A double headed oxygen pressure regulator is used for.

**Option A.** additional flight crew.

**Option B.** changes in altitude.

**Option C.** extra supply in case of emergency.

**Correct Answer is.** additional flight crew.

**Explanation.** NIL.

**Question Number.** 21. If an aircraft suddenly drops pressure at 14,000 ft.

**Option A.** passenger must get mask from overhead stowage.

**Option B.** masks drop automatically.

**Option C.** attendant must drop masks.

**Correct Answer is.** masks drop automatically.

**Explanation.** Transport Category Aircraft Systems 8-8.

**Question Number.** 22. How do oxygen cylinders show over pressure?

**Option A.** Green rupturing disc.

**Option B.** Audible warning.

**Option C.** Red rupturing disc.

**Correct Answer is.** Green rupturing disc.

**Explanation.** AL/3-25 4.13.

**Question Number.** 23. The life of an aircraft oxygen cylinder is.

**Option A.** 2 years.

**Option B.** 10 years.

**Option C.** 5 years.

**Correct Answer is.** 5 years.

**Explanation.** Jeppesen A & P Technician Airframe Textbook page 14-8 or CAAIP's Leaflet 59 p16.

**Question Number.** 24. A discharged chemical generator is indicated by.

**Option A.** a protruding pin.

**Option B.** a change in color.

**Option C.** a broken tell-tale wire.

**Correct Answer is.** a change in color.

**Explanation.** AL/3-25.

**Question Number. 25.** A chemical oxygen generator has a supply duration of at least.

**Option A.** 15 minutes.

**Option B.** 30 minutes.

**Option C.** 5 minutes.

**Correct Answer is.** 15 minutes.

**Explanation.** AL/3-25, and A&P Technician Airframe Textbook 14-8 and CAAIPs Leaflet 5-9 3.6.3 and JAR 25.1439.

**Question Number. 26.** The oxygen line service valve must be.

**Option A.** wire locked open.

**Option B.** wire locked closed.

**Option C.** only be wire locked with telltale wire.

**Correct Answer is.** wire locked open.

**Explanation.** AL/3-25.

**Question Number. 27.** Oxygen equipment must be carried by aircraft capable of flying above.

**Option A.** 4,000 ft.

**Option B.** 10,000ft.

**Option C.** 8,000ft.

**Correct Answer is.** 10,000ft.

**Explanation.** AL/3-25 3.1.

**Question Number. 28.** The critical altitude for oxygen requirement is approximately.

**Option A.** 38,000 ft.

**Option B.** 25,000 ft.

**Option C.** 4,000 ft.

**Correct Answer is.** 25,000 ft.

**Explanation.** AL/3-25 Table 1.

**Question Number. 29.** If oxygen is not being supplied in normal flight conditions, the cabin altitude must be.

**Option A.** at a maximum of 12,000 ft.

**Option B.** at or below 8,000 ft.

**Option C.** below 10,000 ft.

**Correct Answer is.** at or below 8,000 ft.

**Explanation.** CAIPs AL/3-23.

**Question Number.** 30. Pressure breathing systems must be used at altitudes.

**Option A.** above 40,000 ft.

**Option B.** below 40,000 ft.

**Option C.** above 30,000 ft.

**Correct Answer is.** above 40,000 ft.

**Explanation.** AL/3-25 table 1.

**Question Number.** 31. In a diluter demand oxygen system.

**Option A.** oxygen is supplied with a continuous pressure flow.

**Option B.** each member of the crew has a continuous oxygen supply.

**Option C.** each member of the crew has a regulator.

**Correct Answer is.** each member of the crew has a regulator.

**Explanation.** AL/3-25 fig 3.

**Question Number.** 32. In a continuous flow oxygen system, oxygen is supplied.

**Option A.** only when the supply has been regulated by the pilot.

**Option B.** on passenger inhaling into the mask.

**Option C.** when the mask is plugged into the socket.

**Correct Answer is.** only when the supply has been regulated by the pilot.

**Explanation.** NIL.

**Question Number.** 33. In the diluter demand oxygen system, selection of emergency on this regulator will result in.

**Option A.** 100% oxygen at positive pressure.

**Option B.** 100% oxygen continuous flow at positive pressure.

**Option C.** 100% oxygen supply as the user inhales.

**Correct Answer is.** 100% oxygen continuous flow at positive pressure.

**Explanation.** CAAIP's Leaflet 5-9 p8 para 4.7 ©.

**Question Number.** 34. The cylinder of a portable oxygen set is made of.

**Option A.** aluminum.

**Option B.** stainless steel.

**Option C.** alloy steel.

**Correct Answer is.** alloy steel.

**Explanation.** AL/3-25 3.6.

**Question Number.** 35. Portable oxygen cylinders are normally charged to.

**Option A.** 1,800 p.s.i.

**Option B.** 2,000 p.s.i.

**Option C.** 1,200 p.s.i.

**Correct Answer is.** 1,800 p.s.i.

**Explanation.** AL/3-25 3.6.

**Question Number.** 36. Rate of flow of oxygen is given in.

**Option A.** pounds/minute.

**Option B.** Liters/pounds.

**Option C.** Liters/minute.

**Correct Answer is.** litres/minute.

**Explanation.** NIL.

**Question Number.** 37. Oxygen cylinders are removed for overhaul and tested.

**Option A.** every 3 years.

**Option B.** every 6 years.

**Option C.** every 4 years.

**Correct Answer is.** every 4 years.

**Explanation.** AL/3-25 5.8.

**Question Number.** 38. Oxygen bottle capacity varies between.

**Option A.** 80 2250 liters.

**Option B.** 100 3200 liters.

**Option C.** 200 2250 liters.

**Correct Answer is.** 80 2250 liters.

**Explanation.** AL/3-25 4.2.

**Question Number.** 39. Oxygen bottle test and working pressures can be found.

**Option A.** stamped on a metal label.

**Option B.** stenciled on the bottle.

**Option C.** stamped on the neck ring.

**Correct Answer is.** stamped on the neck ring.

**Explanation.** AL/3-25 4.2.2 and Leaflet 5-9 5.9.

**Question Number.** 40. After installation, the oxygen bottle on/off valve is.

**Option A.** left in the 'on' position.

**Option B.** left in the 'off' position until required.

**Option C.** wire locked in the 'on'.

**Correct Answer is.** wire locked in the 'on'.

**Explanation.** CAAIP\'s Leaflet 5-9 para 5.6.2 (h).

**Question Number.** 41. Dangerous pressure rise in oxygen cylinders.

**Option A.** is relieved by a bursting disc.

**Option B.** is relieved by a thermostat.

**Option C.** is relieved by under pressurizing the bottle.

**Correct Answer is.** is relieved by a bursting disc.

**Explanation.** AL/3-25 4.13.

**Question Number.**42. To avoid condensation forming in an oxygen cylinder.

**Option A.** cylinder pressure is left at 300/400 p.s.i.

**Option B.** cylinder pressure is left at 100/200 p.s.i.

**Option C.** cylinder pressure is left at 200/300 p.s.i.

**Correct Answer is.** cylinder pressure is left at 200/300 p.s.i.

**Explanation.** AL/3-25 5.5.1 ii).

**Question Number.** 43. What determines the material used for oxygen pipe lines?

**Option A.** The whims of the aircraft designer.

**Option B.** The length of the pipe runs.

**Option C.** The pressure used in the system.

**Correct Answer is.** The pressure used in the system.

**Explanation.** AL/3-25 4.3.

**Question Number.** 44. The direction of flow in an oxygen non return valve is indicated.

**Option A.** by visual inspection.

**Option B.** by color coding.

**Option C.** by an arrow.

**Correct Answer is.** by an arrow.

**Explanation.** AL/3-25 Page 8.

**Question Number.** 45. Oxygen filters are made of.

**Option A.** carbon fibers.

**Option B.** steel wool.

**Option C.** sintered bronze.

**Correct Answer is.** sintered bronze.

**Explanation.** AL/3-25 Page 8.

**Question Number.** 46. Satisfactory operation of the oxygen systems is indicated by.

**Option A.** flow indicators.

**Option B.** pressure indicators.

**Option C.** lack of Anoxia.

**Correct Answer is.** flow indicators.

**Explanation.** CAAIP's Leaflet 5-9 p9 para 4.11.

**Question Number.** 47. If a binding thread needs attention on an oxygen system.

**Option A.** Teflon tape may be used.

**Option B.** distilled water may be used sparingly.

**Option C.** no lubricant may be used whatsoever.

**Correct Answer is.** Teflon tape may be used.

**Explanation.** NIL.

**Question Number.** 48. The international marking for a breathing oxygen pipeline is a series of.

**Option A.** diamonds.

**Option B.** dots.

**Option C.** rectangles.

**Correct Answer is.** rectangles.

**Explanation.** NIL.

**Question Number.** 49. Cylinders containing purified oxygen for breathing are painted.

**Option A.** black with a white collar.

**Option B.** black.

**Option C.** white with a black collar.

**Correct Answer is.** black with a white collar.

**Explanation.** ZAL/3-25 4.2.2.

**Question Number.** 50. A suitable leak detecting solution for use on oxygen systems is.

**Option A.** leak testing solution to Spec. MIL-L-25567B.

**Option B.** soapy water.

**Option C.** grease free medical soap.

**Correct Answer is.** leak testing solution to Spec. MIL-L-25567B.

**Explanation.** AL/3-25 5.7.1, AL/3-21 3.

<http://www.chemsol.com/chemsol/lubricants.html>

**Question Number.** 51. When charging an oxygen bottle with gaseous oxygen, the oxygen is.

**Option A.** passed into the bottle as quickly as possible to keep the temperature down.

**Option B.** passed into the bottle slowly to keep temperature at approximately ambient.

**Option C.** passed into the bottle at any rate as this does not affect temperature.

**Correct Answer is.** passed into the bottle slowly to keep temperature at approximately ambient.

**Explanation.** AL/3-25 5.12.2 (vi).

**Question Number.** 52. In areas closely associated with oxygen systems, particular care must be taken to avoid leaving.

**Option A.** traces of oils or greases.

**Option B.** acrylic based plastic materials.

**Option C.** magnesium particles.

**Correct Answer is.** traces of oils or greases.

**Explanation.** A&P Technician Airframe Textbook Chapter 14-19 rh column 2nd para.

**Question Number.** 53. When working in the vicinity of an oxygen system.

**Option A.** the area must be well ventilated.

**Option B.** no electrical power must be used.

**Option C.** oil must not come into contact with the system.

**Correct Answer is.** oil must not come into contact with the system.

**Explanation.** NIL.

**Question Number.** 54. A chemical oxygen generator operates at.

**Option A.** 45°C at 10 psi for 15 minutes.

**Option B.** 45°F at 10 psi for 15 minutes.

**Option C.** 45°K at 10 psi for 15 minutes.

**Correct Answer is.** 45°C at 10 psi for 15 minutes.

**Explanation.** AL/3-25 3.5.2.

**Question Number.** 55. When charging an oxygen bottle in situ.

**Option A.** charge in accordance with the temperature/pressure graph.

**Option B.** charge slowly through a water trap.

**Option C.** slacken off the retaining straps first.

**Correct Answer is.** charge in accordance with the temperature/pressure graph.

**Explanation.** AL/3-25 5.12.2 (vi) (a).

**Question Number.** 56. The gauge fitted to an oxygen bottle indicates.

**Option A.** pressure.

**Option B.** temperature.

**Option C.** purity.

**Correct Answer is.** pressure.

**Explanation.** AL/3-25 4.2.

**Question Number.** 57. The application of thread lubrication tape in an oxygen system should be.

**Option A.** applied to all except the first two threads and not more than 3 complete wraps of tape.

**Option B.** applied to all except the first two threads and not more than one complete wrap of tape.

**Option C.** applied to all the threads and not more than one complete wrap of tape.

**Correct Answer is.** applied to all except the first two threads and not more than 3 complete wraps of tape.

**Explanation.** CAAIPs Leaflet 5-9 Para 5.7.

**Question Number.** 58. High pressure lines in oxygen systems are made of.

**Option A.** stainless steel.

**Option B.** aluminum alloy.

**Option C.** titanium.

**Correct Answer is.** stainless steel.

**Explanation.** CAAIPs Leaflet 5-9 p8 para 4.3.1.

**Question Number.** 59. Lubricate oxygen connector threads using.

**Option A.** hellereene.

**Option B.** Teflon tape.

**Option C.** WD40.

**Correct Answer is.** Teflon tape.

**Explanation.** NIL.

**Question Number.** 60. How is an expended chemical oxygen generator indicated?

**Option A.** A pressure seal would be broken.

**Option B.** By a change in color of heat sensitive paint.

**Option C.** The indicator pin would be protruding.

**Correct Answer is.** By a change in color of heat sensitive paint.

**Explanation.** NIL.

**Question Number.** 61. Oxygen purging is a process of.

**Option A.** Pressure testing the system.

**Option B.** Measuring the flow rate from the regulator.

**Option C.** Removing moisture from the system.

**Correct Answer is.** Removing moisture from the system.

**Explanation.** CAAIPs Leaflet 5-9 p19 para 6.

**Question Number.** 62. To check an oxygen system for moisture.

**Option A.** a sniff test is used.

**Option B.** a hygrometer is used.

**Option C.** pass 72 liters/min through a filter paper in a clean glass.

**Correct Answer is.** a hygrometer is used.

**Explanation.** CAAIP's Leaflet 6.4.1.

11.16. Pneumatic/Vacuum (ATA 36).

**Question Number.** 1. When the moisture separator is purged in a pneumatic system, it dumps.

**Option A.** just the moisture trap.

**Option B.** the whole system.

**Option C.** the system between compressor and regulator valve.

**Correct Answer is.** just the moisture trap.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 8-54. CAIPs AL/3-22.

**Question Number.** 2. The pneumatic system pump is a.

**Option A.** centrifugal type.

**Option B.** rotor vane type.

**Option C.** piston type.

**Correct Answer is.** piston type.

**Explanation.** Jeppesen A&P Technician Airframe Textbook Page 8-56, although smaller systems may have a vane type.

**Question Number. 3.** In a pneumatic system, the maintainer valve will be fitted in supply lines to.

**Option A.** essential equipment.

**Option B.** all equipment.

**Option C.** non-essential equipment.

**Correct Answer is.** non-essential equipment.

**Explanation.** CAIPs AL/3-22. Maintainer valves work in same way as those in hydraulic systems (hence the reference). Although they protect the flow to the essential systems, they do so by being situated in the non-essential lines, and closing off if the pressure drops.

**Question Number. 4.** High pressure pneumatic source is a.

**Option A.** Reciprocating pump.

**Option B.** centrifugal Compressor.

**Option C.** butterfly pump.

**Correct Answer is.** Reciprocating pump.

**Explanation.** CAIPs AL/3-23 4.1.

**Question Number. 5.** High pressure pneumatic pump is a.

**Option A.** reciprocating pump.

**Option B.** spur gear.

**Option C.** butterfly pump.

**Correct Answer is.** reciprocating pump.

**Explanation.** CAIPs AL/3-23 4.1.

**Question Number. 6.** If the pneumatic water drain trap is left open for a long time it will drain.

**Option A.** between the compressor and the PRV.

**Option B.** just the moisture trap.

**Option C.** all the system.

**Correct Answer is.** between the compressor and the PRV.

**Explanation.** CAIPs AL/3-22 Fig 1.

**Question Number. 7.** On a high pressure pneumatic system, if the drain plug for oil and water is left open for long periods of time, the system would.

**Option A.** lose pressure from the compressor side only.

**Option B.** lose pneumatic pressure partially.

**Option C.** lose all pressure.

**Correct Answer is.** lose pressure from the compressor side only.

**Explanation.** AL/3-22 figure 1.

**Question Number.** 8. Two compressors driven by separate engines use.

**Option A.** Interconnected to share loads.

**Option B.** NRVs to prevent compressors driving each other.

**Option C.** PRVs.

**Correct Answer is.** NRVs to prevent compressors driving each other.

**Explanation.** NIL.

**Question Number.** 9. What is important about the air entering a dry air pump?

**Option A.** It must be filtered.

**Option B.** It must be pressure controlled.

**Option C.** It must be temperature controlled.

**Correct Answer is.** It must be filtered.

**Explanation.** NIL. <http://www.avweb.com/news/maint/182905-1.html>

**Question Number.** 10. What type of compressor is used on a pneumatic system?

**Option A.** Rotary vane type.

**Option B.** Spur gear type.

**Option C.** Positive displacement type.

**Correct Answer is.** Positive displacement type.

**Explanation.** NIL.

11.17. Water/Waste (ATA 38).

**Question Number.** 1. Toilet flush motor is protected from overheat by.

**Option A.** thermal protection.

**Option B.** water cooling.

**Option C.** cooling fan on timer switch.

**Correct Answer is.** thermal protection.

**Explanation.** AWN 57.

**Question Number.** 2. What is the purpose of thermal protection on electric toilet motor?

**Option A.** Prevent motor overheating and become fire hazard.

**Option B.** Prevent toilet freezing.

**Option C.** Stop motor running beyond 10 seconds if timer become unserviceable.

**Correct Answer is.** Prevent motor overheating and become fire hazard.

**Explanation.** Awn 57 Para.2.3.

**Question Number.** 3. Waste water drain masts.

**Option A.** are not heated.

**Option B.** are heated using low amperage in the Air and on ground.

**Option C.** are heated using low amperage with the aircraft on ground only.

**Correct Answer is.** are heated using low amperage with the aircraft on ground only.

**Explanation.** 737 AMM ch. 30-71 28VAC on ground and 115VAC in air.

**Question Number.** 4. the seal of the valve is replaceable without draining the tanks.

**Option A.** the seal of the valve is replaceable without draining the tanks.

**Option B.** the tank must be de-fuelled.

**Option C.** the seal is not replaceable, the whole drain assembly must be replaced.

**Correct Answer is.** the seal of the valve is replaceable without draining the tanks.

**Explanation.** NIL.

**Question Number.** 5. Drinking water pipes are prevented from freezing by.

**Option A.** installation of neoprene foam insulation.

**Option B.** wrapping the pipes with heated tapes or ribbons.

**Option C.** placing the pipes adjacent to hot water piping.

**Correct Answer is.** wrapping the pipes with heated tapes or ribbons.

**Explanation.** NIL.

**Question Number.** 6. Toilets are the subject of.

**Option A.** Awn 83.

**Option B.** Awn 79.

**Option C.** Awn 80.

**Correct Answer is.** Awn 83.

**Explanation.** All the Awns listed have now been removed. Download an old copy from the Forum.

**Question Number.** 7. Toilet waste valves are.

**Option A.** not spring loaded.

**Option B.** spring loaded open.

**Option C.** spring loaded closed.

**Correct Answer is.** spring loaded closed.

**Explanation.** NIL.

**Question Number.** 8. The heater used on a drain mast would be a.

**Option A.** induction heater.

**Option B.** hot air blower.

**Option C.** ribbon heater.

**Correct Answer is.** ribbon heater.

**Explanation.** NIL.

**Question Number.** 9. A toilet recirculation fan is unserviceable in flight.

**Option A.** Close toilet until landing.

**Option B.** You can use the toilet as the toxic chemical toilet.

**Option C.** It can be overcome by thermal compensating device.

**Correct Answer is.** Close toilet until landing.

**Explanation.** IAW B737-400 mmel/ddg item 38-2, the associated lavatory system may be inop. With lav door secured closed and placard 'INOPERATIVE- DO NOT ENTER'. Toilet recirc fan is part of the lav system.

11.18. On Board Maintenance Systems.

**Question Number.** 1. The real time on a CMC is when.

**Option A.** existing faults page is selected on the CDU.

**Option B.** ground test page is selected on the CDU.

**Option C.** fault history page is selected on the CDU.

**Correct Answer is.** existing faults page is selected on the CDU.

**Explanation.** Aircraft Electricity and Avionics (5th Edition) Eismann Page 271.

**Question Number.** 2. One of the inputs in a CMC is autopilot controls. The data will be stored in.

**Option A.** erased only after end of sector.

**Option B.** non-volatile memory.

**Option C.** volatile memory.

**Correct Answer is.** non-volatile memory.

**Explanation.** Aircraft Electricity and Avionics (5th Edition) Eismann Page 271.

**Question Number.** 3. In an auto land aircraft fitted with a CMC.

**Option A.** all faults are recorded in Volatile memory.

**Option B.** all faults are recorded in Non-Volatile memory.

**Option C.** only Primary Faults are recorded.

**Correct Answer is.** all faults are recorded in Non-Volatile memory.

**Explanation.** Aircraft Electricity and Avionics (5th Edition) Eismin Page 271.

**Question Number.** 4. In a CMC system, where would you find a 'real time' fault?

**Option A.** In Test.

**Option B.** In Fault History.

**Option C.** In Fault.

**Correct Answer is.** In Fault.

**Explanation.** Aircraft Electricity and Electronics, Eismin, page 270-273. 'Real time' means reporting of a fault as it occurs, not in Fault History or Test.

**Question Number.** 5. A modern aircraft CMC uses.

**Option A.** an LED display.

**Option B.** a magnetic fault indicator.

**Option C.** a CRT screen.

**Correct Answer is.** a CRT screen.

**Explanation.** NIL.

**Question Number.** 6. A Flight Data Recorder is activated when.

**Option A.** when power is applied to the helicopter.

**Option B.** the helicopters engines are started.

**Option C.** the helicopter takes off.

**Correct Answer is.** the helicopters engines are started.

**Explanation.** JAR Ops-3.

**Question Number.** 7. In a CMC, warning signals are generated by.

**Option A.** FMC.

**Option B.** CMC.

**Option C.** Warning computer.

**Correct Answer is.** Warning computer.

**Explanation.** Transport Category Aircraft Systems 11-5.

**Question Number.** 8. An aircraft condition monitoring system.

**Option A.** detects the source of a fault.

**Option B.** sends information to the central maintenance cell.

**Option C.** stores information for long term error analysis.

**Correct Answer is.** stores information for long term error analysis.

**Explanation.** NIL.

**Question Number.** 9. With a ACMS quick access recorder.

**Option A.** the tape must not have been used before.

**Option B.** the tape can have been used previously if it is first bulk erased.

**Option C.** you must use digital tape.

**Correct Answer is.** the tape can have been used previously if it is first bulk erased.

**Explanation.** NIL.

11.18.

**Question Number.** 1. Primary Radar is.

**Option A.** for ground use only.

**Option B.** reflected signal from aircraft's own radar.

**Option C.** interrogation of aircraft's transponder.

**Correct Answer is.** for ground use only.

**Explanation.** NIL.

**Question Number.** 2. A battery in situ on an aircraft charges at a fairly constant rate because generator voltage remains constant.

**Option A.** may charge slowly if initial battery voltage is low.

**Option B.** may charge at an excessive rate if initial battery voltage is low.

**Option C.**

**Correct Answer is.** may charge at an excessive rate if initial battery voltage is low.

**Explanation.** NIL.

**Question Number.** 3. To parallel an alternating current generator with one or more other generators, phase A must be.

**Option A.** in-phase with other generators and CBA only.

**Option B.** 90 degrees out-of-phase and ABC.

**Option C.** in-phase with other generators and ABC.

**Correct Answer is.** in-phase with other generators and CBA only.

**Explanation.** NIL.

**Question Number.** 4. On an unparallelled twin generator alternating current system, the phase of the second generator to be brought on line.

**Option A.** must be in-phase prior to paralleling.

**Option B.** is important if the first generator fails.

**Option C.** is unimportant.

**Correct Answer is.** must be in-phase prior to paralleling.

**Explanation.** NIL.

**Question Number.** 5. When an autopilot is Fail Passive,.

**Option A.** the aircraft reverts to fail operational autopilot.

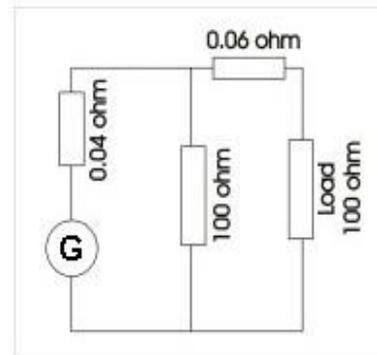
**Option B.** the pilot must resume control and land the aircraft.

**Option C.** the auto land can continue.

**Correct Answer is.** the pilot must resume control and land the aircraft.

**Explanation.** Pallett Automatic Flight Control p211.

**Question Number.** 6. On the direct current short shunt generator circuit shown, output voltage at the load is 200V. What is the voltage across the shunt winding?



**Option A.** 200V.

**Option B.** 206V.

**Option C.** 212V.

**Correct Answer is.** 200V.

**Explanation.** The 10 ohm shunt, 0.06 ohm and the 0.04 ohm are the field windings. The generator output is split between the 0.06 ohm and the 100 ohm load, but only by  $0.06/100 \times 200V = 0.12V$  (across the 0.06 ohm). So the voltage across the shunt winding is closer to 200V than the other two answers.

**Question Number.** 7. On a direct current circuit, current limiters.

**Option A.** prevent excessive current to the field circuit.

**Option B.** allow excessive current to the load circuit.

**Option C.** prevent excessive current to the load circuit.

**Correct Answer is.** prevent excessive current to the load circuit.

**Explanation.** NIL.

**Question Number.** 8. On a direct current twin generator system, the paralleling relay contacts close when the oncoming generators voltage is.

**Option A.** above bus voltage.

**Option B.** below bus voltage.

**Option C.** the same as bus voltage.

**Correct Answer is.** above bus voltage.

**Explanation.** NIL.

**Question Number.** 9. On an aircraft's navigation displays, distance measuring equipment gives.

**Option A.** height and range to beacon.

**Option B.** ground range to beacon.

**Option C.** slant range to beacon.

**Correct Answer is.** slant range to beacon.

**Explanation.** NIL.

**Question Number.** 10. On a modern aircraft flight instrument display system, Radio deviation is shown on.

**Option A.** EADI.

**Option B.** EHSI & EADI.

**Option C.** EHSI.

**Correct Answer is.** EHSI & EADI.

**Explanation.** Radio deviation is VOR or ILS. The deviation indicator is duplicated. It is on the EHSI and EADI.

**Question Number.** 11. On a flight management system, the database is updated every.

**Option A.** 2 Months.

**Option B.** 3 Months.

**Option C.** 1 Month.

**Correct Answer is.** 1 Month.

**Explanation.** NIL.

**Question Number.** 12. The decision height light will illuminate when.

**Option A.** the decision height is selected.

**Option B.** the aircraft's indicated altitude is above decision height.

**Option C.** the aircraft's indicated altitude is below decision height.

**Correct Answer is.** the aircraft's indicated altitude is above decision height.

**Explanation.** NIL.

**Question Number.** 13. In a Central Air Data Computer (CADC) system, Mach information is derived from.

**Option A.** indicated airspeed and altitude.

**Option B.** pitot and static pressures.

**Option C.** indicated air speed and total air temperature.

**Correct Answer is.** indicated airspeed and altitude.

**Explanation.** NIL.

**Question Number.** 14. In a Central Air Data Computer (ADC), the rate of climb of an aircraft is produced in the.

**Option A.** Indicated Airspeed Module.

**Option B.** Mach Module.

**Option C.** Altitude Module.

**Correct Answer is.** Altitude Module.

**Explanation.** NIL.

**Question Number.** 15. In a Central Air Data Computer, altitude is produced from.

**Option A.** static air pressure.

**Option B.** pitot air pressure.

**Option C.** pitot air pressure and total air temperature.

**Correct Answer is.** static air pressure.

**Explanation.** NIL.

**Question Number.** 16. In a Central Air Data Computer (ADC), Indicated Air Speed (IAS) is produced from.

**Option A.** pitot pressure only.

**Option B.** pitot and static air pressure.

**Option C.** static pressure only.

**Correct Answer is.** pitot and static air pressure.

**Explanation.** NIL.

**Question Number.** 17. In a Central Air Data Computer (CADC) system, True Air Speed (TAS) is derived from the Mach information and.

**Option A.** Static Air Pressure.

**Option B.** Pitot Air Pressure.

**Option C.** Total Air Temperature.

**Correct Answer is.** Total Air Temperature.

**Explanation.** NIL.

**Question Number.** 1. to purge and unpleasant odour/ moisture from an oxygen system you must.

**Option A.** completely empty and fill the system with oxygen at least 3 times.

**Option B.** completely empty and fill the system with nitrogen at least 3 times.

**Option C.** completely empty and fill the system with air at least 3 times.

**Correct Answer is.** completely empty and fill the system with nitrogen at least 3 times.

**Explanation.** NIL.

**Question Number.** 2. Slat asymmetry may be monitored by using.

**Option A.** torque sensors.

**Option B.** position pick-offs.

**Option C.** spring actuators.

**Correct Answer is.** position pick-offs.

**Explanation.** AMM 767 27-88-00.

**Question Number.** 3. In large air conditioning systems, the main fan is activated to.

**Option A.** ensure positive duct pressure is maintained.

**Option B.** ensure conditioned air is distributed.

**Option C.** ensure conditioned air is distributed and maintain positive duct pressure.

**Correct Answer is.** ensure conditioned air is distributed and maintain positive duct pressure.

**Explanation.** NIL.

**Question Number.** 4. If a reduction in pack outlet temp is demanded the temperature of the air at the outlet of the ACM compressor will.

**Option A.** remain the same.

**Option B.** rise.

**Option C.** fall.

**Correct Answer is.** remain the same.

**Explanation.** Pack outlet temperature is determined by bypassing engine bleed air around the ACM (trim air).The ACM is unaffected.

**Question Number.** 5. The rigging of a nonmagnetic proximity sensor requires.

**Option A.** checking the target clearance in the FAR position against reference figures.

**Option B.** checking the target clearance in the NEAR position against reference figures.

**Option C.** ensuring the target contacts the sensor.

**Correct Answer is.** checking the target clearance in the NEAR position against reference figures.

**Explanation.** NIL.

**Question Number.** 6. In a constant column hydraulic EDP the short shaft which engages with the engine gearbox would have.

**Option A.** 2 female splined portions separated by a wasted section.

**Option B.** 2 male spline portions separated by a wasted section designed to shear should the pump seize.

**Option C.** an inner female splined portion and an outer male splined portion.

**Correct Answer is.** 2 male spline portions separated by a wasted section designed to shear should the pump seize.

**Explanation.** NIL.

**Question Number.** 7. Pressurization system operation may be inhibited by.

**Option A.** flap micro switches.

**Option B.** air/ground micro switches.

**Option C.** throttle micro switches.

**Correct Answer is.** throttle micro switches.

**Explanation.** AMM 767 21-31-00.

**Question Number.** 8. Hi-lok fastener installation requires that.

**Option A.** the fastener is accurately torqued.

**Option B.** the shank is lubricated.

**Option C.** an interference fit hole is drilled.

**Correct Answer is.** an interference fit hole is drilled.

**Explanation.** Hiloks are pre-lubricated. Hole is drilled 0.0015 inch interference. Hi-lok/Hi-tique installation guide can be download from Tutorial Support Section.

**Question Number.** 9. Large aircraft air conditioning systems cabin temperature control.

**Option A.** is selectable for each zone individually from the flight station.

**Option B.** all zone temperatures are controlled from one master switch.

**Option C.** involves modulating the pack valve.

**Correct Answer is.** is selectable for each zone individually from the flight station.

**Explanation.** AMM 767 21-61-00.

**Question Number.**10. Information on Galley equipment can be found in.

**Option A.** CAAIPS.

**Option B.** BCAR Section L.

**Option C.** Airworthiness Notice 99.

**Correct Answer is.** Airworthiness Notice 99.

**Explanation.** Now removed and included in CAP 747, but is still asked on the exam.

**Question Number.** 11. A pressure operated ice detector would.

**Option A.** have a buildup of ice that causes a torque switch to illuminate a flight deck annunciator.

**Option B.** be completely covered in ice before causing an alarm to sound on the flight deck.

**Option C.** have a buildup of ice on the leading edge that causes a warning light to illuminate on the flight deck.

**Correct Answer is.** be completely covered in ice before causing an alarm to sound on the flight deck. OR have a buildup of ice on the leading edge that causes a warning light to illuminate on the flight deck.

**Explanation.** NIL.

**Question Number.** 12. A tire valve cap is used to.

**Option A.** prevent a leak.

**Option B.** Secure the valve by screwing up to the valve base.

**Option C.** Secure the valve by screwing up to the shoulder of the wheel.

**Correct Answer is.** Secure the valve by screwing up to the shoulder of the wheel. OR prevent a leak.

**Explanation.** NIL.