Question block created by wizard

This exam contains 84 questions.

1. What is the main purpose of a Frise aileron?

a. Increase drag on the up going wing.
b. Help pilot overcome aerodynamic loads.
c. Increase drag on the downgoing wing.

2. The purpose of a spring tab is to....

a. provide feel back in a control system.
b. provide a reduction in the pilot's effort to move the controls against high air loads.
c. provide a constant load resistance to surface deflection at all speeds.

3. When an aircraft fitted with spoilers is rolled to the left, what is the movement of the spoilers?

a. left upper spoiler up and left lower spoiler down.
b. left spoiler is deflected up.
c. left spoiler is deflected up and the right down.

4. Aerodynamic speeds vary all the way from low subsonic to hypersonic. The limits of transonic speed range are

a. 1.2 to 5 M
b. 0.3 to 0.8 M
c. 0.8 to 1.2 M

5. Aerodynamic speeds vary all the way from low subsonic to hypersonic. The limits of supersonic speed range are

a. 0.8 to 1.2 M
b. 1.2 to 5 M
c. 0.3 to 0.8 M

6. To increase critical Mach number

a. elevons are fitted.
b. the wings are swept.
c. tailerons are fitted.

7. How does a rotor generate lift?

a. high pressure above the blade.
b. low pressure above the blade.
c. down-wash below the blade.

8. Where is the helicopter throttle hand grip located?

a. throttle box.
b. cyclic stick.
c. collective lever.

9. What is the benefit of using a semi-monocoque construction?

a. does not require rivetting.
b. no safety factor is required
c. provides a stronger construction than a monocoque.

10. What are the main longitudinal members in a fuselage called?

a. frames.
b. longerons.
c. spars.

11. Water Lines (WLs) are measured points on a

a. horizontal line.
b. vertical line.
c. wing line.

12. What types of nuts must be used for bonding connections?

a. Nylon self locking nuts.
b. Nuts must not be used for bonding.
c. Self locking nuts of all metal construction.

13. What is used to protect the nose radome from lightning strikes?

a. Bonding wire.
b. The radome is composite material and does not require a special lightning protection.
c. Lightning diverter strips.

14. The bending of a radio wave because of a change in its velocity through a medium is known as....

a. refraction.
b. diffraction.
c. reflection.

15. What will be the effect on the wavelength of radio wave if the frequency increases?

The wavelength....

a. is not influenced.
b. will decrease.
c. will increase.

16. Skin effect is most likely to occur:

a. at the higher frequencies i.e. VHF and above.
b. in radar systems fed by rectangular waveguides.
c. at high power levels up to VHF.

17. Compared to the other ionospheric layers at higher altitudes, the ionization density of the D layer is

a. about the same.
b. relatively low.
c. relatively high.

18. The mode of operation of the VHF comms transceiver is

a. single channel duplex.
b. double channel duplex.
c. single channel simplex.

19. The HF (high frequency) range of the radio spectrum is the band extending from

a. 30 MHz to 300 MHz.
b. 2 - 30 MHz
c. 300 MHz to 3 GHz

20. The HF …….matches the antenna impedance to the transceiver output over the HF frequency range.

a. antenna coupler

b. transceiver
c. FDAU (Flight data acquisition unit)

21. The Selcal (Selective Calling) can be used by....

a. VHF and HF systems.
b. HF system only.
c. VHF system only.

22. Operation of an ELT....
1. is automatic on impact by a "G" force switch in the transmitter.
2. can be done through a remote switch in the cockpit.
3. can be done by a switch on the unit itself.
4. can be turned off with the switch on the case.

a. 1, 2 and 4.
b. 1, 2, 3 and 4.
c. 2, 3 and 4.

23. When activated, the ELT transmits :
1. a standard swept tone on 121.5 MHz.
2. a standard swept tone on 243.0 MHz.
3. a 5 watt encoded digital message to the COSPAS/SARSAT satellite system.
4. a 24 bit address through the Mode S transponder.

a. 1, 2 and 3.
b. 1 and 4.
c. 1, 2 and 4.

24. Emergency locator transmitters are self-contained, self-powered radio transmitters, designed to transmit a signal on the international distress bands of ……. (civilian) and …….. (military).

a. 30 MHz - 300 MHz
b. 108.10 MHz - 112 MHz
c. 121.5 MHz - 243 MHz

25. Bearing information in an ADF system is....

a. received by the antenna.
b. measured and calculated by the ADF system.
c. provided by the flight management system.

26. What is the colour sequence when passing over an Outer, Middle and Inner Marker beacon?

a. blue - green - white
b. blue - amber(yellow) - white
c. amber(yellow) - white - green

27. The MIDDLE MARKER of an Instrument Landing System (ILS) facility is identified audibly and visually by a series of:

a. alternate dots and dashes and an amber/yellow light flashing.
b. dashes and an amber light flashing.
c. dots and a white light flashing.

28. ILS is subject to false glide paths resulting from:

a. false signals reflected by nearby obstacles.
b. multiple lobes of radiation patterns in the vertical plane.
c. ground returns ahead of the antennas.

29. What is the required accuracy of a precision area navigation system?

a. 5 nautical miles.
b. 10 nautical miles.
c. 1 nautical mile.

30. The sequence of entering information in a MCDU is....

a. IDENT - RTE - POS INIT
b. IDENT - POS INIT - RTE
c. POS INIT - IDENT - RTE

31. What are the primary navigation inputs used by RNAV system?

a. Nav Aids, INS, FMC.
b. Nav Aids, Mapping Radar, FMC.
c. INS, Nav Aids, TAS and Drift.

32. All the last generation aircraft use flight control systems. The FMS is the most advanced system.

It can be defined as a....

a. management system optimized in the horizontal plane.
b. 3-axis Flight Management System.
c. 2-axis Flight Management System.

33. If one FMS fails in a dual system

a. FMS CDU on fail side goes blank.
b. system operation will not be affected.
c. FMS display transfers data automatically from serviceable computer.

34. To carry out FMS database update on FMS

a. insert new EPROM.
b. use database loader.
c. insert new data on CDU.

35. GPS sends different codes, what are these codes?

a. C/A code and P (precision) code.
b. C/A (coarse/acquisition) code only.
c. P code only.

36. What is the minimum number of satellites required for a Satellite-Assisted Navigation System (GNSS/GPS)?

a. 2
b. 4
c. 3

37. How many satellites are required for GNSS?

a. 4
b. 8
c. 6 (90° apart)

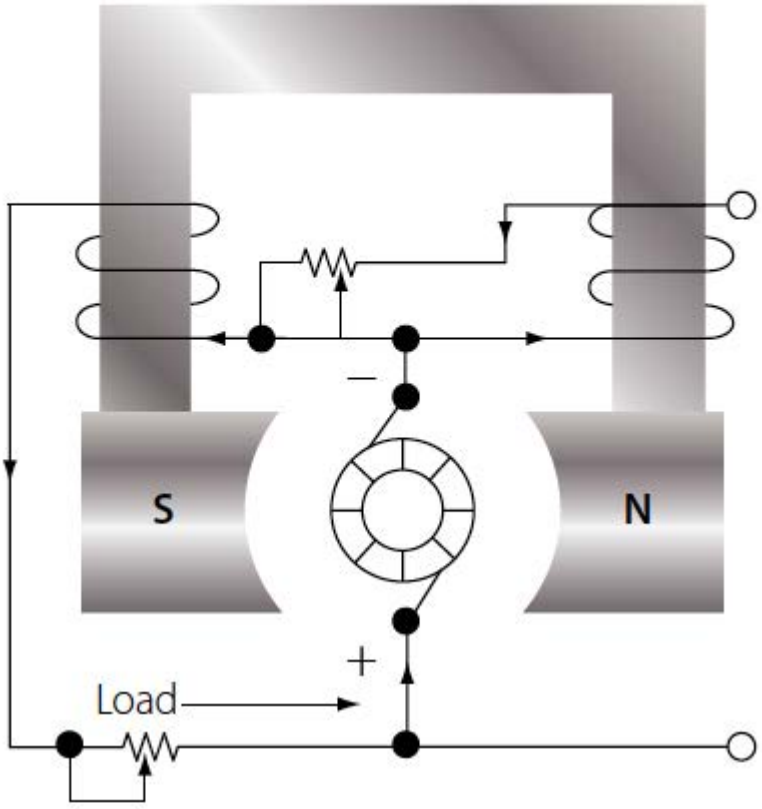
38. What is the nominal voltage of a NiCad battery cell?

a. 24 volts.
b. 1.2 volts.
c. 2 volts.

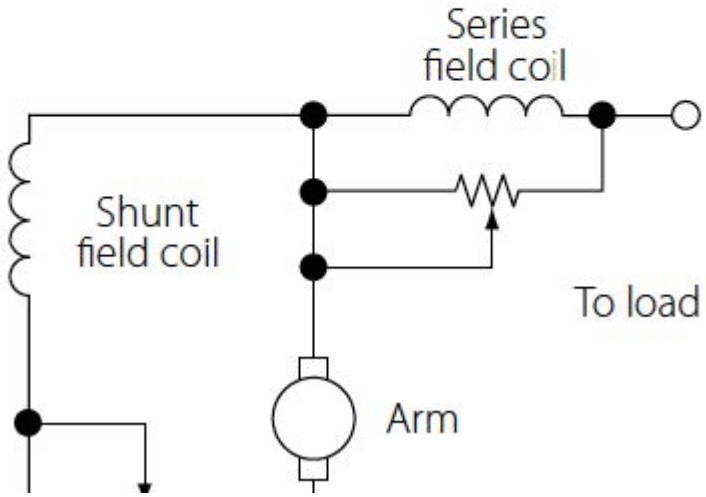
39. What is the purpose of a rectifier?

a. Convert the DC output into AC.
b. Control the output voltage of a parallel wound generator.
c. Convert the AC output to DC.

40. What type of voltage regulator is shown in the figure below?



(A)



a. Series wound generator.
b. Parallel wound generator.
c. Compound wound generator.

41. Which of the following systems does not use a constant speed drive?

a. Engine driven alternator.
b. Integrated drive generator (IDG)
c. APU alternator.

42. In which type of unit can a permanent magnet generator (PMG) be found?

a. DC alternator.
b. Brushless AC alternator.
c. DC generator.

43. In a constant speed motor generator, what powers the generator?

a. An electric motor powered by the RAT generator.
b. An electric motor powered by the battery.
c. A hydraulic motor powered by a hydraulic pump driven by the RAT.

44. How is voltage regulation achieved on DC generators?

By changing the....

a. field current.
b. field voltage.
c. generator speed.

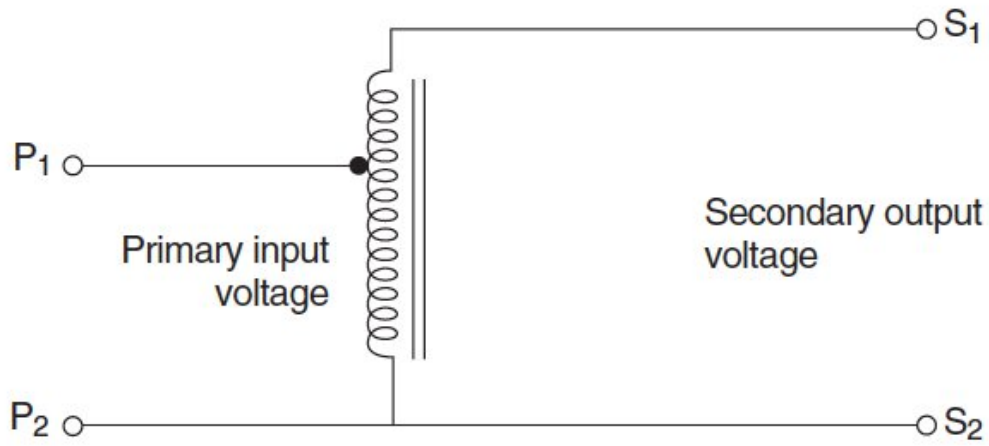
45. In a parallel bus configuration the generators will:

a. Each supply their own AC bus.
b. Share the load equally among them.
c. Divide the load, with the strongest generators taking the biggest load.

46. Which of the following statements about current transformers is true?

a. The primary winding should never be left open when in operation.
b. Current transformers always have a square transformer core.
c. The secondary winding should never be left open when in operation.

47. What type of transformer is shown in the figure below?



a. Transformer rectifier.
b. Autotransformer
c. Current transformer

48. Which of the following circuit breakers CANNOT be reset while the fault exists?

a. Automatic reset circuit breaker.
b. Trip free circuit breaker.
c. Electromagnetic circuit breakers.

49. On a large commercial aircraft, which bus will be powered as soon as external power is connected?

a. The external power bus.
b. Battery bus.
c. The ground handling bus.

50. Which lights can be used to detect ice build-up?

a. Position lights.
b. Wing scan lights.
c. Runway turn-off lights.

51. What kind of light is used as cabin flood lighting?

a. Spot lights
b. Incandescent lightbulbs.
c. Fluorescent tubes.

52. Which statement is true?

a. Operating the internal emergency light switch only turns on the internal emergency lights.
b. When operating the external emergency light switch both internal and external lights come on.
c. When the internal emergency light switch is used both internal and external emergency light come on.

53. During normal stages of flight, the engine bleed air source comes from:

a. Ram air.
b. The high pressure stage of the compressor.
c. The low pressure stage of the compressor.

54. An air-to-air heat exchanger is provided to....

a. reduce the air supply temperature.
b. increase the air supply temperature.
c. provide an emergency ram air supply.

55. When the ram air passes through the primary heat exchanger, where does the ram air in a turbo-fan cold air system flows to?

a. Inter cooler or secondary heat exchanger.
b. Turbine.
c. Via large fan to ram air outlet.

56. The heat exchanger in a turbo-fan system is cooled by …

a. engine bleed air or blower air.
b. air bled from the main cabin supply duct.
c. ambient ram air.

57. What is the benefit of injecting water in the ram air duct?

a. Make the cabin air less dry.
b. Improve the efficiency of the heat exchanger.
c. Cool the air cycle machine.

58. Temperature control of cabin air is achieved by....

a. varying the ambient airflow to the heat exchanger.

b. controlling the speed of the air cycle machine.
c. regulating the amount of hot air added to the conditioned air.

59. The outflow valve of a pressurized cabin system opens when the cabin pressure is....

a. too low.
b. too high.
c. too low or too high.

60. During take-off the outflow valve is selected to ....

a. fully open.
b. fully closed.
c. modulating mode.

61. What places the pressure controller in the depressurisation mode after landing?

a. Engines at idle.
b. Engines at idle and the landing gear compressed.
c. Landing gear compression.

62. How is the emergency pressure control valve operated if the automatic control system fails?

a. Manually
b. Hydraulically
c. Electrically

63. The emergency pressure control valve....

a. is fitted to all pressurized aircraft.
b. is not a very refined way of controlling.
c. is electrically controlled.

64. In a pneumatic fire sensor, what triggers the fire warning?

a. The difference pressure between static air pressure and expended air pressure.
b. The temperature of the gas inside the steel tubing acting on a temperature switch.
c. The pressure increase caused by the release of gas from the absorption material acting on a pressure switch.

65. Why is there a strainer installed in the fire bottle discharge valve?

a. To catch any fragment from the bottle.
b. To catch the yellow disk as an indication that the fire bottle is used.
c. To catch any fragment from the frangible disk.

66. What kind of data do we find on the labels of a portable fire extinguisher?

a. The manufacturer name. P/N & S/N. The colour will say the type (green=water, red=halon). The press indicator will show if the bottle is filled to level.
b. The manufacturer name and P/N & S/N. Approval date and instructions to use. Extinguisher type, weight details and last check or expire date. In the bottle usually the manufacturers date is engraved.
c. The manufacturer and approval date and instructions to use.

67. Cross feed valves permit fuel transfer from ...

a. tank to tank.
b. left tank to right tank.
c. any tank to any engine.

68. How is the fuel quantity measured in the manual way?

a. With dipstick.
b. From the top of the wing visual.
c. The electrical resistance between two points.

69. Pressure refuelling is carried out at ….

a. 20 PSI.
b. 40 PSI.
c. 100 PSI.

70. Accumulators as fitted to aircraft hydraulic systems …

a. store fluid under pressure.
b. provide additional fluid if leaks occur.
c. are only ever used in an emergency.

71. A constant volume hydraulic system uses a(n).... to relieve pressure in the system when no services are being used?

a. Pressure relief valve.

b. return line back to pump.
c. ACOV (Automatic Cut Out Valve).

72. What is the purpose of a mechanical sequence valve?

a. ensure the correct function of safety switches.
b. ensure the correct sequence of landing gears and doors.
c. ensure the correct operation of brake anti-skid units.

73. A serrated rotor ice detector provides warning of ice by …

a. decreased torque caused by ice formation slowing the rotating wheel and illuminating a warning light in the cockpit.
b. ice formation stopping the rotation of a rotary knife edge and illuminating a warning light in the cockpit.
c. increased torque caused by ice formation slowing the rotating wheel and illuminating a warning light in the cockpit.

74. What is the source of air for the windscreen pneumatic rain removal system?

a. a dedicated pneumatic motor to drive windscreen wipers.
b. the venturi windscreen duct.
c. engine bleed air.

75. What is the function of a fusible plug in an aircraft wheel rim?

a. To deflate the tyre before removal.
b. As overtemperature protection.
c. As overpressure protection.

76. In a hydraulic landing gear system, of which component does a sequence valve ensure proper timing?

a. main gear safety switches (proximity switches).
b. main gear down locks.
c. landing gear doors.

77. 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 …

a. the brake temperature is too high.
b. the wheelspeed is too high.
c. the landing gear is not locked down.

78. Which of the following are characteristics of a carbon brake?

a. have less weight than normal brake units and have increased efficiency at high temperatures.
b. weigh the same as normal brake units and fade away at high temperatures.
c. have less weight than normal brake units but fade away at high temperatures.

79. Why is a hydraulic damper fitted to a nose wheel steering system?

a. to centralise the nose wheel during an up selection.
b. to reduce vibration and shimmy.
c. To centralise the nose leg assembly during an up selection.

80. On aircraft with bogie beams (trucks), what is used to detect air/ground?

a. Weight-on-wheel switches.
b. Squat switches.
c. Truck tilt switches.

81. Cabin chemical oxygen generators are located in?

a. The passenger service units.
b. The overhead bins.
c. The cargo hold.

82. What is the chemical used in chemical oxygen generators?

a. Sodium hydroxide
b. Ozone
c. Sodium chlorate and iron

83. What type of air pump is commonly used in low pressure pneumatic systems?

a. Centrifugal pump.
b. Vane pump.
c. Piston pump.

84. What happens if the pneumatic system bleed air is OFF, purposely or by failure?

a. a caution appears on the ECAM or EICAS screen.
b. the OFF light in the control switch illuminates and a memo appears on the ECAM or EICAS screen.

c. the OFF light in the control switch illuminates and a warning appears on the ECAM or EICAS screen.