## PAPER -1( Aircraft Rules & Regulations)

- 1. "Temporary Aerodrome" means an aerodrome intended to be used for
  - 1. a period not exceeding three months
  - 2. a period not exceeding six months
  - 3. a period as specified by DGCA
  - 4. a period as specified by Airports Authority of India

Ans: 2

- 2. Temporary certificate of Registration is issued
  - 1. For importing an aircraft by air
  - 2. As in (1) and it is valid only Upto the period approved by the country of export
  - 3. When lease period of aircraft lapsed
  - 4. As in (1) and shall be valid only until the first landing of the aircraft at a custom aerodrome in India

Ans: 4

- 3. Which of the following defines human factors?
  - 1. It is the study of how people interact with their environment
  - 2. These are elements that affect our behavior and performance, especially those that may cause us to make errors
  - 3. It is concerned with optimizing performance including reducing errors so that the highest level of safety is achieved and maintained
  - 4. All the above

Ans: 4

- 4. DGCA may permit import of unpressurised aircraft of more than 20 years of age for the purpose of flying training operations, subject to the condition
  - 1. The aircraft will be imported with new or overhauled components including engines
  - 2. The aircraft will has been operated less than 20,000 hours prior to import
  - 3. The aircraft will have a valid certificate of Airworthiness and all components of the aircraft will be within their stipulated overhaul life
  - 4. All the above are correct

- 5. Mark the correct statement related to CAR -21
  - 1. It prescribe procedural requirements for issue of type certificate issue of C of A, issue of noise certificate and issue of Export C of A
  - 2. It covers matters related to design, manufacture and all other issues related to Airworthiness including continued airworthiness, repairs etc
  - 3. It contains requirements for approval of design and production organisation as per the provision of Aircraft Rule 133B
  - 4 All the above are correct

Ans: 4

- 6. Mark the correct statement related to classification of Group for supplemental type certificate (STC) cases under CAR 21
  - 1. Conversion to tail wheel configuration is the kind of STC which comes under group 1
  - 2. Fairings, nacelle, landing Gear the kind of STC which comes under group 2
  - 3. Gap seals, aileron, flap, empennage, doors are the kind of STC which come under group 2
  - 4. All the above are correct

Ans: 4

- 7. Under CAR 145, the Accountable Manager of the organization shall appoint
  - 1. Maintenance Manager
  - 2. Certifying Staff
  - 3. Person with responsibility for monitoring the quality system
  - 4. All the above are correct

Ans: 3

- 8. An application for the issue or variation of an approval under CAR -145, shall be made to DGCA in a form prescribed is
  - 1. CA Form 1
  - 2. CA Form 2
  - 3. CA Form 3
  - 4. CA Form 4

- 9. Approval procedure for continuous Airworthiness Management Organization covered in
  - 1. CAR M, Sub Part 'G'
  - 2. CAR M, Sub Part 'l'
  - 3. CAR 21, Sub Part 'G'
  - 4. CAR Section 2 Series 'E'

Ans: 1

- 10. The maintenance of the aircraft is required to be performed in accordance with the approved Maintenance Programme. Who is accountable for such activity?
  - 1. The owner of the aircraft
  - 2. The Lessee in case of leased aircraft and detailed in the Leasing contract
  - 3. The owner / operator of the aircraft
  - 4. All the above

Ans: 4

# Paper - 2 (General Engineering & Maintenance Practices)

- 11. A cylindrical wire, 1 m in length has a resistance of 100 ohms. What would be the resistance of the wire made from same material if both the length and the cross sectional area are doubled
  - 1. 200 ohms
  - 2. 400 ohms
  - 3. 100 ohms
  - 4. 50 ohms

Ans: 3

- 12. What type of flap system increases the wing area and changes the wing camber:
  - 1. Fowler Flap
  - 2. Slotted Flap
  - 3. Split Flap
  - 4. Plain Flap

- 13. Aircraft bolts with a asterisk marked on the bolt head are -
  - 1. Made of aluminum alloy
  - 2. Close tolerance bolts
  - 3. AN Standard steel bolts
  - 4. Low strength material bolts

Ans: 3

- 14. The process of adding impurities to a pure semiconductor is called:
  - 1. Mixing
  - 2. Doping
  - 3. Defusing
  - 4. Refining

Ans: 2

- 15. The unit of Electric Intensity is:
  - 1. Joule/Coulomb
  - 2. Newton/Coulomb
  - 3. Volt/metre
  - 4. Both (2) and (3) are correct

Ans: 4

- 16. Fretting corrosion is most likely to occur-
  - 1. When two surfaces fit together but can move relative to one another
  - 2. Only when two dissimilar metals are in contact
  - 3. When two surfaces fit loosely together and can move relative to one another
  - 4. All the above are correct

Ans: 1

- 17. Which tool is used to find the center of a shaft or other cylindrical work -
  - 1. Combination set
  - 2. Dial indicator
  - 3. Micrometer caliper
  - 4. All are correct

- 18. While jacking one wheel of an aircraft
  - 1. Tripod-type jack is used
  - 2. Aircraft should be raised 6" to 8" above the ground
  - 3. The remaining wheel should be chocked properly
  - 4. All are correct

Ans: 3

- 19. Oxygen and acetylene cylinders are made of :
  - 1. Heat treated seamless copper
  - 2. Seamless Aluminum
  - 3. Steel
  - 4. Bronze

Ans: 3

- 20. The only function of a NOT gate is to
  - 1. Stop a signal
  - 2. Re-complement a signal
  - 3. Invert an input signal
  - 4. Act as a universal gate
  - Ans: 3

## Paper – 3 CT ( Turbine Engine)

- 21. The function of the nozzle diaphragm in a turbine engine is to -
  - 1. Decrease the velocity of exhaust gases
  - 2. Center the fuel spray in the combustion chamber
  - 3. Swirl and collect and exhaust gases into a single exhaust jet
  - 4. Direct the flow of gases to strike the turbine blades at a desired angle

Ans: 4

- 22. Where is the highest gas pressure in a turbojet engine -
  - 1. At the outlet of the tailpipe section
  - 2. At the entrance of the turbine section
  - 3. In the entrance of the burner section
  - 4. At the inlet of the tailpipe section

- 23. An advantage of the axial flow compressor is its-
  - 1. Low starting power requirement
  - 2. Less vibration on the engine
  - 3. Low weight
  - 4. High peak efficiency

Ans: 4

- 24. Which of the following are used in turbine engines to aid in stabilization of compressor airflow during operation:-
  - 1. Stator vanes
  - 2. Variable guide vanes and / or compressor bleed valves
  - 3. Pressurization and dump valves
  - 4. Rotor vanes

Ans: 2

- 25. Engine pressure ratio is determined by-
  - 1. Multiplying engine inlet total pressure by turbine outlet total pressure
  - 2. Dividing turbine outlet total pressure by engine inlet total pressure
  - 3. Dividing engine inlet total pressure by turbine outlet total pressure
  - 4. Multiplying engine outlet total pressure by turbine inlet total pressure

Ans: 2

- 26. The velocity of subsonic air as it flows through a convergent nozzle:-
  - 1. Increases
  - 2. Decreases
  - 3. Remains constant

Ans: 1

- 27. When starting turbine engine, a hung start is indicated if the engine:-
  - 1. Exhaust gas temperature exceeds specified limits
  - 2. Fails to reach idle RPM
  - 3. RPM exceeds specified operating speed
  - 4. Oil temperature exceeds specified limit

- 28. Jet engine thermocouples are usually constructed of:
  - 1. Chromel Alumel
  - 2. Iron constantan
  - 3. Alumel constantan
  - 4. Chromel Constantan

Ans: 1

- 29. In what units are turbine engine tachometers calibrated?
  - 1. Percent of engine RPM
  - 2. Actual engine RPM
  - 3. Percent of engine pressure ratio

Ans: 1

- 30. Severe rubbing of turbine engine compressor blades will usually cause:-
  - 1. Bowing
  - 2. Cracking
  - 3. Galling
  - 4. (1) and (3) are correct

Ans: 3

# Paper – 3 CP (Piston Engine)

- 31. Some cylinder barrels are hardened by :
  - 1. Nitriding
  - 2. Shot peening
  - 3. Tempering
  - 4. Carburizing

- 32. The purpose of two or more valve springs in aircraft piston engines is to:
  - 1. Equalize side pressure on the valve stems
  - 2. Eliminate valve spring surge
  - 3. Equalize valve face loading
  - 4. All are correct

Ans: 2

- 33. Which of the following bearing types must be continuously lubricated by pressure oil?
  - 1. Ball
  - 2. Roller
  - 3. Plain
  - 4. (1) and (2) are correct

Ans: 3

- 34. A piston engine designated as LYC O-235 -X. What does 235 indicates?
  - 1. The total piston displacement of the engine
  - 2. The piston will pump a maximum of 235 cubic inches of air per crank shaft revolution
  - 3. The total piston displacement of one cylinder

Ans: 1

- 35. The horsepower developed in the cylinders of a reciprocating engine is known as the:
  - 1. Shaft horsepower
  - 2. Indicated horsepower
  - 3. Brake horsepower

Ans: 2

- 36. Which of the following results in a decrease in volumetric efficiency?
  - 1. Cylinder head temperature too low
  - 2. Part- throttle operation
  - 3. Short intake pipes of large diameter

- 37. What is the purpose of power check on a reciprocating engine?
  - 1. To determine satisfactory performance
  - 2. To check magneto drop
  - 3. To determine if the fuel /air mixture is adequate
  - 4. To check valve timing

Ans: 1

- 38. Excessive valve clearance results in the valves opening:
  - 1. Late and closing early
  - 2. Early and closing late
  - 3. Late and closing late
  - 4. Early and closing early

Ans: 1

- 39. Engine oil temperature gauges indicate the temperature of the oil:
  - 1. Entering the oil cooler
  - 2. Entering the engine
  - 3. in the oil storage tank
  - 4. After passing oil cooler
  - Ans: 2
- 40. Engine operating flexibility is the ability of the engine to:
  - 1. Deliver maximum horsepower at specific altitude
  - 2. Meet exacting requirements of efficiency and low weight per horsepower ratio
  - 3. Run smoothly and give the desired performance at all speeds
  - 4. All the above are correct

## Paper – 3 AHC (Rotory Aircraft)

- 41. The vertical flight of a helicopter is controlled by:
  - 1. Collective pitch changes
  - 2. Cyclic pitch changes
  - 3. Increasing or decreasing the RPM of the main rotor

Ans: 1

- 42. The purpose in checking main rotor blade tracking is to determine the:
  - 1. Relative position of the blades during rotation
  - 2. Flight path of the blades during rotation
  - 3. Extent of an out of balance condition during rotation

Ans: 1

- 43. One purpose of the freewheeling unit required between the engine and the helicopter transmission is to:
  - 1. Automatically disengage the rotor from the engine in case of an engine failure
  - 2. Disconnect the rotor from the engine to relieve the starter load
  - 3. Permit practice of autorotation landings

Ans: 1

- 44. When inspecting a control cable turnbuckle for proper installation, determine that:
  - 1. No more than four threads are exposed on either side of the turnbuckle barrel
  - 2. The terminal end threads are visible through the safety hole in the barrel
  - 3. The safety wireends are wrapped a minimum of four turns around the terminalend shanks

Ans: 3

- 45. The blade alignment of an helicopter is referred as:
  - 1. Chord wise balance
  - 2. Static balance
  - 3. Dynamic balance

- 46. An O-ring intended for use in a hydraulic system using MIL-H-5606 (mineral base) fluid will be marked with
  - 1. A blue stripe or dot
  - 2. One or more white dots
  - 3. A white and yellow stripe

Ans: 1

- 47. An aircraft instrument panel is electrically bonded to the aircraft structure to
  - 1. Act as a restraint strap
  - 2. Provide current return paths
  - 3. Aid in the panel installation

Ans: 2

- 48. During inspection of the terminal strips of an aircraft electrical system, it should be determined that:
  - 1. Only locknuts have been used for terminal attachment to the studs
  - 2. The terminal studs are anchored against rotation
  - 3. Only plain nuts and lockwashers have been used for terminal attachment to the studs

Ans: 2

- 49. A voltage regulator controls generator voltage by changing the:
  - 1. Resistance in the generator output circuit
  - 2. Current in the generator output circuit
  - 3. Resistance of the generator field circuit

Ans: 3

- 50. Movement about the longitudinal axis (roll) in a helicopter is effected by movement of :
  - 1. The drag hinge damper control
  - 2. The collective pitch control
  - 3. The cyclic pitch control
  - 4. The tail rotor pitch control

#### Paper – 3 LA (Light aeroplane)

- 51. An aeroplane wing is designed to produce lift resulting from relatively:
  - 1. Positive air pressure below and above the wings surface
  - 2. Negative air pressure below the wings surface and positive air pressure above the wing surface
  - 3. Positive air pressure below the wings surface and negative air pressure above the wing surface
  - 4. Angle of attack and wind velocity

Ans: 3

- 52. What is the minimum spacing for a single row of aircraft rivets?
  - 1. Two times the diameter of the rivet shank
  - 2. Three times the length of the rivet shank
  - 3. Three times the diameter of the rivet shank

Ans: 3

- 53. What type of loads cause the most rivet failures?
  - 1. Shear
  - 2. Bearing
  - 3. Head

Ans: 1

- 54. In gas welding, the amount of heat applied to the material being welded is controlled by the: 1. Amount of gas pressure used
  - 2. Size of the tip opening
  - 3. Distance the tip is held from the work

Ans: 2

- 55. In a gear-type hydraulic pump, a mechanical safety device incorporated to protect the pump from overload is the:
  - 1. Bypass valve
  - 2. Check valve
  - 3. Shear pin

- 56. A turn coordinator instrument indicates:
  - 1. The longitudinal attitude of the aircraft during climb and descent
  - 2. The need for corrections in pitch and bank
  - 3. Both roll and yaw

Ans: 3

- 57. An aircraft's integral fuel tank is:
  - 1. Usually located in the bottom of the fuselage
  - 2. A part of the aircraft structure
  - 3. A self-sealing tank

Ans: 2

- 58. Where is the buttock line or buttline of an aircraft?
  - 1. A height measurement left or right of, and perpendicular to the horizontal centerline
  - 2. A width measurement left of, and perpendicular to the vertical centerline
  - 3. A width measurement left or right of, and parallel to the vertical centerline

Ans: 3

- 59. Movement of an airplane along its lateral axis (roll) is also movement:
  - 1. Around or about the longitudinal axis controlled by the elevator
  - 2. Around or about the lateral axis controlled by the ailerons
  - 3. Around or about the longitudinal axis controlled by the ailerons

Ans: 3

- 60. The rust or corrosion that occurs with most metals is the result of:
  - 1. A tendency for them to return to their natural state
  - 2. Blocking the flow of electrons in homogenous metal, or between dissimilar metals
  - 3. Electron flow in or between metals from cathodic to anodic areas

## Paper – 3 HA (Heavy Aeroplane)

- 61. Which of the following describe the effects of annealing steel and aluminum alloys?
  - A. Decrease in internal stress
  - B. Softening of the metal
  - C. Improved corrosion resistance
  - 1. A and B
  - 2. A and C
  - 3. B and C

Ans: 1

- 62. Which material cannot be heat treated repeatedly without harmful effects?
  - 1. Unclad aluminum alloy in sheet form
  - 2. 6061-T9 stainless steel
  - 3. Clad aluminum alloy

Ans: 3

- 63. The vast majority of aircraft control cables are terminated with swaged terminals that must be
  - 1. Corrosion treated to show compliance with the manufacturer's requirements after the swaging operation
  - 2. Pull tested to show compliance with the manufacturer's requirements after the swaging operation
  - 3. Checked with a go-no-go gauge before and after, to show compliance with the manufacturer's requirements after the swaging operation

Ans: 3

- 64. Internal leakage in a brake master cylinder unit can cause
  - 1. Fading brakes
  - 2. Slow release of brakes
  - 3. The pedal to slowly creep down while pedal pressure is applied

- 65. Exposure of honeycomb structures to sonic vibrations usually causes:
  - 1. Delaminations
  - 2. Radiographic corrosion
  - 3. Aerodynamic smoothness
  - 4. Punctures

Ans: 1

- 66. An airplane which has good longitudinal stability should have a minimum tendency to:
  - 1. Roll
  - 2. Pitch
  - 3. Yaw
  - 4. Stall

Ans: 2

- 67. Which statement regarding an aircraft instrument vacuum system is true?
  - 1. Dry-type vacuum pumps with carbon vanes are very susceptible to damage from solid airborne particles and must take in only filtered air
  - 2. Vacuum systems are generally more effective at high altitudes than positive pressure systems
  - 3. A restrictor valve is generally installed in the air-inlet line of the attitude indicator (artificial horizon)
  - 4. If the air inlet to each vacuum instrument is connected to a common atmospheric pressure manifold, the system generally will be equipped with individual instrument filters only

Ans: 1

- 68. What unit is generally used to actuate the fuel pressure warning system?
  - 1. Fuel flowmeter
  - 2. Pressure-sensitive mechanism
  - 3. Engine fuel pump bypass valve
  - 4. Fuel pressure gauge

- 69. Smoke in the cargo and/or baggage compartment of an aircraft is commonly detected by which instrument?
  - 1. Visual scanner
  - 2. Chemical reactor
  - 3. Photoelectric cell
  - 4. Sniffer

Ans: 3

- 70. In the diluter-demand oxygen regulator, when does the demand valve operate?
  - 1. When the diluter control is set at normal
  - 2. When the user demands 100 percent oxygen
  - 3. When the user breathes
  - 4. When the cylinder pressure is over 500 PSI

Ans: 3

# Paper – 3 RN (Radio Navigation Systems)

- 71. ELT frequencies are
  - 1. 121.5 MHz, 243.5 MHz
  - 2. 121.0 MHz, 242.00 MHz and 408 MHz
  - 3. 121.5 MHz, 243.00 MHz
  - 4. 121.0 MHz, 243.5 MHz and 407.5 MHz

Ans: 3

- 72. Microphone is essentially an:
  - 1. Energy converter
  - 2. Power converter
  - 3. Energy converter changes sound energy into corresponding electrical energy

- 73. Transmitters of a high frequency communication system have:
  - 1. Higher power outputs
  - 2. Lower power outputs
  - 3. Intermediate power outputs
  - 4. None of the above is correct

Ans: 1

- 74. Doppler navigational radar displays:
  - 1. Wide beam of energy
  - 2. Drift angle of an aircraft in flight
  - 3. Ground speed
  - 4. Both (2) and (3) are correct

Ans: 4

- 75. Long Range Navigation (LORAN) systems determine aircraft location by :
  - 1. Measuring the inertial forces acting on the aircraft
  - 2. Means of pulsed signals transmitted from ground stations
  - 3. Means of signals transmitted to and from navigational satellites
  - Ans: 2
- 76. Radio Altimeter system is used to measure:
  - 1. Vertical distance or altitude of aircraft from ground to any range
  - 2. Slant distance of aircraft from ground
  - 3. Height of aircraft from the ground
  - 4. Height of aircraft from the ground to Max range of 1000 feet

Ans: 3

- 77. Part of ADF system used on aircraft includes
  - 1. Sense and loop antennas
  - 2. RMI Indicator antenna
  - 3. Marker beacon antenna
  - 4. None of above is correct

- 78. Marker beacon transmitter operates on frequency of :
  - 1. 175 MHz
  - 2. 75 MHz
  - 3. 75 kHz
  - 4. 175 kHz

Ans: 2

- 79. Receiving frequencies of DME (Distance Measuring Equipment) is in frequency range of:
  - 1. 960 1213 MHz
  - 2. 1025 1149 MHz
  - 3. 962 1160 MHz
  - 4. 1020 1213 MHz

Ans: 2

- 80. VHF radio signals are commonly used in
  - 1. Both VOR Navigation and ATC communications
  - 2. ATC communications only
  - 3. VOR Navigation only

Ans: 1

# Paper – 3 IS (Instrument Systems)

- 81. Altimeter will read 'altitude', above sea level on landing and takeoff when ever its pressure scale setting is set at:
  - 1. QFE
  - 2. QNH
  - 3. QNE
  - 4. All the above are correct

- 82. The horizontal angle contained between the true and the magnetic meridian at any place is known as
  - 1. Deviation
  - 2. Magnetic dip
  - 3. Magnetic variation
  - 4. All the above are correct

Ans: 3

- 83. Mark the correct possible modes of displaying information of EICAS display
  - 1. Operational
  - 2. Status
  - 3. Maintenance
  - 4. All the above are correct

Ans: 4

- 84. In which control element of an autopilot system is an attitude indicator?
  - 1. Command
  - 2. Sensing
  - 3. Computer
  - 4. Input

Ans: 2

- 85. The liquid in the compass bowl:
  - 1. Reinforces the magnetic field of the bar magnet
  - 2. Dampens the oscillations of the float
  - 3. Helps in uniform light distribution throughout the compass dial
  - 4. Renders stability to the bar magnets

- 86. The cold junction compensation of thermocouple is performed by
  - 1. Bi-metallic spring connected to the indicator mechanism
  - 2. Thermistors used in transmitters
  - 3. Magnetic strip clamped across permanent magnet of transmitter
  - 4. All the above are correct

Ans: 1

- 87. In a gyro horizon, the erection errors are compensated by
  - 1. Inclined spin axis
  - 2. Erection cut out
  - 3. Pitch bank erection
  - 4. All the above are correct

Ans: 4

- 88. Aircraft Instruments should be marked and graduated in accordance with:
  - 1. The instrument manufacturer's specifications
  - 2. The specific engine manufacturer's specifications
  - 3. Both the aircraft and engine manufacturer's specifications
  - 4. The specific aircraft maintenance or flight manual

Ans: 4

- 89. Chemical oxygen generator
  - 1. Does not operate with actual flame
  - 2. The surface on which the reaction occurs operate at high temperature
  - 3. Supply will not deplete until used
  - 4. All the above are correct

Ans: 4

- 90. Fuel flow transmitters are designed to transmit data:
  - 1. Mechanically
  - 2. Electrically
  - 3. Utilizing fluid power

## Paper – 3 ES (Electrical Systems)

- 91. The capacity of a battery (Ni-Cd)
  - 1. Is measured in Kilovolt amperes
  - 2. Is measured in ampere hours
  - 3. Is based on minimum current which it delivers for a known period
  - 4. Both (1) and (3) are correct

Ans: 2

- 92. The frequency of voltage generated by an alternator having 4 poles and rotating at 1800 rpm is:
  - 1. 60 hertz
  - 2. 7200 hertz
  - 3. 120 hertz
  - 4. 450 hertz

Ans: 1

- 93. An auto transformer is essentially a transformer
  - 1. Where primary and secondary are not electrically isolated
  - 2. Which is Current Transformer
  - 3. Has Single winding
  - 4. Both (1) and (3) are correct

Ans: 4

- 94. The period during which current and voltage changes take place in a circuit is called:
  - 1. Varying
  - 2. Permanent
  - 3. Transient
  - 4. Steady

- 95. Mark the correct statement for shaded pole Induction Motor
  - 1. Rotor rotates from shaded part to unshaded part
  - 2. Rotor rotates from unshaded part to shaded part
  - 3. As in (1) and has low starting torque
  - 4. As in (2) and has high starting torque

Ans: 2

- 96. Advantage of photo diode over photo transistor is
  - 1. Greater sensitivity
  - 2. Faster switching
  - 3. High current capacity
  - 4. All the above are correct

Ans: 2

- 97. In an AC circuit, the effective voltage is:
  - 1. Equal to the maximum instantaneous voltage
  - 2. Greater than the maximum instantaneous voltage
  - 3. Less than the maximum instantaneous voltage

Ans: 3

- 98. Gross mechanical power developed by the motor is maximum when
  - 1. Back EMF is maximum
  - 2. Back EMF is half of the applied voltage
  - 3. Back EMF is equal to applied voltage
  - 4. None of the above is correct

- 99. Maximum torque developed by an induction motor:
  - 1. Is Independent of rotor resistance
  - 2. Varies inversely with square of applied voltage
  - 3. Varies directly with stand still reactance
  - 4. All the above are correct

Ans: 1

- 100. What is the operating resistance of a 30 watt light bulb designed for a 28 volt system?
  - 1. 1.07 ohms
  - 2. 26 ohms
  - 3. 0.93 ohms
  - 4. 62 ohms

Ans: 2

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