

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. $(12 \times 5 = 60)$

- Q.21 Describe a on board fire extinguishing system.
- Q.22 How does indication system work?
- Q.23 What is the design principle involved in landing gears?
- Q.24 What is the function of cleaning agents?
- Q.25 Describe the properties of lubricants and their applications.
- Q.26 What are the principles of automatic control?
- Q.27 How does Seat safety system work?
- Q.28 What is the role of plumbing in fuel system?
- Q.29 Explain retracting mechanism.
- Q.30 What is the role of indications in landing gear? How do they work?
- Q.31 What are the different types of fire protection systems?
- Q.32 What are the disadvantages of Pneumatic systems?
- Q.33 How does steering system work in landing gears?
- Q.34 What is a flow integrators and its application?
- Q.35 How does a anti-icing system work?

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. $(2 \times 10 = 20)$

- Q.36 Draw and explain a typical hydraulic system in detail.
- Q.37 Write a brief about capsules, bellows and force feedback.
- Q.38 How are windows and emergency exits designed in accordance with Seat Safety instruments? How the shape of windows is determined?

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5th Sem. / AME

Subject:- Aircraft Systems

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory $(10 \times 1 = 10)$

- Q.1 What is the primary function of accumulators in hydraulic systems?
 - a) To regulate fluid flow
 - b) To store energy and maintain pressure
 - c) To filter contaminants from the fluid
 - d) To control the direction of fluid flow
- Q.2 Which of the following is the body's most common response to hypoxia?
 - a) Hyperventilation
 - b) Hypoxia
 - c) Barotrauma
 - d) Sinus
- Q.3 What is the primary purpose of contamination control filters in hydraulic systems?
 - a) To regulate fluid flow rate
 - b) To prevent fluid leakage
 - c) To remove impurities and particles from the fluid
 - d) To control the direction of fluid flow

- Q.4 What is the primary purpose of a position feedback system in a servo-control system?
- a) To regulate fluid flow
 - b) To provide stability and response
 - c) To convert electrical signals to hydraulic signals
 - d) To provide information about the actual position of the controlled mechanism
- Q.5 In an electro-hydraulic servo system, what component is responsible for converting electrical signals into hydraulic power?
- a) Pump
 - b) Actuator
 - c) Servo valve
 - d) Reservoir
- Q.6 What is the disadvantage of bladder fuel tank?
- a) Loss of available fuel volume
 - b) Self sealing
 - c) No loss in fuel volume
 - d) Thrust loading
- Q.7 Which characteristic of a servo-control system determines its ability to accurately follow rapid changes in input signals?
- a) Stability
 - b) Frequency response
 - c) Position feedback
 - d) Force feedback
- Q.8 Which component of a pneumatic system is responsible for removing moisture and contaminants from the air before it enters the system?
- a) Valves
 - b) Filters
 - c) Capsules
 - d) Bellow

- Q.9 What is the primary function of oxygen regulators in oxygen systems?
- a) To store oxygen for emergency use
 - b) To convert liquid oxygen to gaseous oxygen
 - c) To regulate the flow of oxygen to the user
 - d) To indicate the oxygen level in the system
- Q.10 Which retracting mechanism is commonly used in modern commercial aircraft, where the landing gear folds into the fuselage during flight?
- a) Screw-jack mechanism
 - b) Hydraulic actuator mechanism
 - c) Rotary actuator mechanism
 - d) Lever-operated mechanism

SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 What are the major components of a hydraulic system?
 - Q.12 What are the types of fire detection system?
 - Q.13 What is a servo response?
 - Q.14 What is the principle of automatic control?
 - Q.15 What are the different warning lights in fuel system?
 - Q.16 What are the cold air units?
 - Q.17 What do you mean by a survival pack?
 - Q.18 Where anti-skid system is installed?
 - Q.19 What is flame proofing?
 - Q.20 What is a life raft?