

- Q.23 Describe the concept of safe-life.
- Q.24 How can controls be rigged?
- Q.25 Describe briefly the wing construction process.
- Q.26 Draw an aircraft monocoque construction.
- Q.27 What are the different loads acting on aircraft while climbing?
- Q.28 Describe the different aircraft components.
- Q.29 What is the benefit of using stressed construction in aircraft?
- Q.30 What are the factors responsible undercarriage performance?
- Q.31 Explain the use of sealants in fuel tanks.
- Q.32 Explain Brake system.
- Q.33 What is the use of APU?
- Q.34 Describe working of a shock absorber?
- Q.35 What is the importance of duplicate inspection?

Section-D

Note: Long answer questions. Attempt any two question out of three Questions. (2x10=20)

- Q.36 Explain the classifications of aircrafts along with structural details.
- Q.37 Describe the primary, secondary and auxiliary control systems of an aircraft.
- Q.38 Explain the minor and major defects/damages in aircrafts. Explain rigging and inspection also.

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SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

- Q.1 What type of aircraft is primarily designed for transporting passengers over long distances?
 - a) Fighter jet b) Cargo plane
 - c) Commercial airliner d) Helicopter
- Q.2 What is the main purpose of emergency exits in an aircraft?
 - a) To allow passengers to board the aircraft
 - b) To provide additional ventilation during flight
 - c) To facilitate repaid evacuation in case of an emergency
 - d) To allow crew members to enter and exit the aircraft.
- Q.3 Which construction approach involves forming the entire structure of an aircraft as a single shell, providing strength and rigidity without internal framework?
 - a) Semi-monocoque construction
 - b) Stressed construction
 - c) Composite construction
 - d) Monocoque construction

- Q.4 Which type of fuselage construction method utilizes welded steel tubes to form the framework of the structure?
- Light metal construction
 - Fabric construction
 - Steel tubular structure
 - Plywood and metal coverage
- Q.5 What type of wing design features a single main spar and no external bracing or support structures?
- Monocoque wing
 - Truss wing
 - Cantilever wing
 - Semi-monocoque wing
- Q.6 Which type of engine is commonly used in commercial jet aircraft?
- Turboprop
 - Turbofan
 - Piston
 - Ramjet
- Q.7 What purpose do tubes serve in aircraft tires?
- To provide additional traction
 - To maintain tire pressure
 - To reduce friction during landing
 - To absorb shock
- Q.8 Which type of fuel tank is commonly used in small aircraft and consists of flexible bladder - like containers?
- Integral fuel tank
 - Wet wing fuel tank
 - Rigid fuel tank
 - Rubberized fuel tank
- Q.9 Which of the following is a method of rectification for minor defect in aircraft rigging?
- Welding
 - Riveting
 - Sealant application
 - Adjustment of control surfaces

- Q.10 What precaution should be taken when conducting structural repairs on composite aircraft?
- Avoid using adhesives
 - Use heat extensively during repairs
 - Follow manufacturer-recommended repair procedures
 - Use metal fasteners instead of composite materials

Section-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 What is the shape of aircraft windows?
- Q.12 What is the purpose of emergency exits?
- Q.13 What is the type of airliners structure?
- Q.14 Where the fuel is stored in airplanes?
- Q.15 What type of wings are used in commercial airplanes?
- Q.16 Name the primary controls on aircraft?
- Q.17 Name a few minor defect in aircraft?
- Q.18 Where are sealants used?
- Q.19 How is stressed construction done?
- Q.20 What is rigging?

Section-C

Note: Short answer type Question. Attempt any twelve questions out of fifteen Questions. (12x5=60)

- Q.21 Describe the most important criterion for aircraft design.
- Q.22 Explain the types of aircraft constructions?