

- Q.23 Describe the concept of safe-life.  
 Q.24 How can controls be rigger?  
 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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**4th Sem. / Branch : Aircraft Maintenance  
Subject : General Airframe & Aero Modelling**

Time : 3 Hrs. M.M. : 100

#### **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 rapid 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.  $(10 \times 1 = 10)$

- What is the shape of aircraft windows?
- What is the purpose of emergency exits?
- What is the type of airliners structure?
- Where the fuel is stored in airplanes?
- What type of wings are used in commercial airplanes?
- Name the primary controls on aircraft?
- Name a few minor defect in aircraft?
- Where are sealants used?
- How is stressed construction done?
- What is rigging?

### Section-C

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

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