

SECTION-C

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

- Q.21 Describe primary controls of an aircraft?
- Q.22 Explain the working of Ramjet engine.
- Q.23 Classify heavier than air aircrafts.
- Q.24 Draw pressure distribution curve over an airfoil.
- Q.25 What are the different air safety requirements?
- Q.26 Draw shear force diagram of a rectangular wing?
- Q.27 Describe an example of hydraulic system used in aircraft?
- Q.28 Discuss the statement "Every gram counts".
- Q.29 Discuss V-n diagram.
- Q.30 Draw equilibrium of forces on wing and tail.
- Q.31 Describe the function of an Aileron?
- Q.32 Enumerate the aerodynamic forces acting on aircraft.
- Q.33 Explain prop fan engine working.
- Q.34 Explain about the basic components of Piston Engine
- Q.35 Explain in detail the thermodynamic cycle of gas turbine engine.

SECTION-D

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

- Q.36 Describe the working of rate of climb indicator. What are the other pitot based instrument used?
- Q.37 Explain the detailed functioning of aircraft electric system and autopilot.
- Q.38 Discuss icing and deicing system of an aircraft. Write the basic steps in aircraft design.

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3rd Sem./Branch : Aircraft Maintenance Engg

Subject:- Introduction to Aeronautics

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Which aircraft type is typically used for military combat mission ?
 - a) Cargo plane b) Helicopter
 - c) Fighter jet d) Commercial airline
- Q.2 Which component of a hydraulic system is responsible for converting hydraulic energy into mechanical motion?
 - a) Accumulator b) Actuator
 - c) Reservoir d) Filter
- Q.3 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.4 What is the primary function of the cooling system in a piston engine?
- To increase engine speed
 - To reduce friction between moving parts
 - To maintain an optimal operating temperature and prevent overheating
 - To enhance fuel efficiency
- Q.5 Why are nickel-based superalloys preferred for high-temperature components in gas turbine engines?
- They are lightweight
 - They have high thermal conductivity
 - They exhibit excellent strength at high temperatures
 - They are inexpensive
- Q.6 Which construction approach involves forming the entire structure of an aircraft as a single shell, providing strength and rigidity without internal framework?
- Semi-monocoque construction
 - Stressed construction
 - Composite construction
 - Monocoque construction
- Q.7 If an airfoil is operating at Mach 1.1, then it is working in _____
- Transonic range
 - Supersonic range
 - Subsonic range
 - Hypersonic range

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- Q.8 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.9 The pitot tube is used to measure
- Velocity at stagnation point
 - Stagnation pressure
 - Static pressure
 - Dynamic pressure
- Q.10 Which regulatory body issues Civil Airworthiness Requirements (CAR) in India?
- Federal Aviation Administration (FAA)
 - European Aviation Safety Agency (EASA)
 - Directorate General of Civil Aviation (DGCA)
 - International Civil Aviation Organization (ICAO)

SECTION-B

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

- Q.11 What do you mean by air worthiness?
- Q.12 How de-icing s done?
- Q.13 What is a Hovercraft?
- Q.14 Name one pneumatic system task in an aircraft.
- Q.15 What is the purpose of gyro?
- Q.16 What is the purpose of leading edge flap?
- Q.17 What is special about Aerodynamic Centre
- Q.18 What is the first estimation taken for aircraft design?
- Q.19 Name fuselage components.
- Q.20 What are various engines used in aircrafts?

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