

- Q.27 Write in brief about three engine performance measuring instruments.
- Q.28 Where is rain protection system located in an aircraft? How does it work?
- Q.29 What are Air worthiness requirements?
- Q.30 Describe Fuselage components.
- Q.31 How does hydroelectric flight control system work?
- Q.32 What is the use of hydraulic system in aircraft?
- Q.33 Describe vertical speed indicator?
- Q.34 Write short notes Assisted Take-Off
- Q.35 Briefly describe about the various types of drags and drag polar.

SECTION-D

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

- Q.36 What are the various structural components in an aircraft? Differentiate Truss type and Semi-Monocoque type of fuselage construction
- Q.37 Describe the basic steps in aircraft design process. How do you design the tail part?
- Q.38 Explain in detail the aircraft Stability in static and dynamic mode. How do you compare elevator and canard?

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**3rd Sem / 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 What is the function of excess thrust in longitudinal equations of motion?
- a) Decrease the potential energy and kinetic energy
 - b) Increase the potential energy and kinetic energy
 - c) Decrease the potential energy and increase kinetic energy
 - d) Increase the potential energy and decrease kinetic energy
- Q.2 In which of the flight following the angle of attack is maximum?
- a) Landing
 - b) Takeoff
 - c) Cruise
 - d) Climbing
- Q.3 Power is defined as _____
- a) Product of force and acceleration
 - b) ability to do work
 - c) rate of doing work
 - d) capacity to do work

- Q.4 In which of the following L/D is maximum?
 a) Glider b) Airliner
 c) Fighter d) Trainer
- Q.5 Why the airfoil is cambered?
 a) to increase drag b) to increase lift
 c) to decrease lift d) to decrease drag
- Q.6 What is the graph that is represented in the airfoil section?
 a) Lift-moment ratio
 b) Coefficient of lift-coefficient of drag ratio
 c) Angle of attack-drag ratio
 d) Lift-angle of attack ratio
- Q.7 Induced drag is increased when?
 a) Lift is increased b) Lift is decreased
 c) Span is increased d) None of the above
- Q.8 What is a chord?
 a) Distance between leading edge and chord
 b) Distance between chord and chamber
 c) Distance between leading edge and trailing edge
 d) Distance between trailing edge and chord
- Q.9 What is leading edge flap?
 a) A control surface for roll
 b) A control surface for pitch
 c) A high lift device
 d) A surface to save leading edge

- Q.10 Which engine has the highest efficiency?
 a) Turbo Jet Engine b) Turbo Fan Engine
 c) Rocket Engine d) Turbo Shaft Engine

SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 What are primary control surfaces?
 Q.12 Name the aerodynamic forces acting on aircraft.
 Q.13 What is center of pressure?
 Q.14 What is drag divergence?
 Q.15 Can Ramjet Engine aircraft take off?
 Q.16 Write expression for induced drag
 Q.17 What is a tail boom?
 Q.18 How does Turbojet differ from Turbo Fan engine?
 Q.19 What is DGCA?
 Q.20 Name one 5 series NACA airfoil.

SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Discuss primary controls of an aircraft?
 Q.22 State the historic developments of flying before 20th century.
 Q.23 How the axes in aircraft are defined?
 Q.24 Briefly describe the thermodynamics cycle of turbine engine.
 Q.25 Name the various wing planforms.
 Q.26 Draw a typical stress strain diagram.