

- Q.27 Describe different structural components of a fuselage?
- Q.28 What is a spoiler and its use?
- Q.29 Write a brief note on helicopter controls.
- Q.30 What is short term longitudinal oscillation mode?
- Q.31 How the area of the wing taken care of?
- Q.32 Explain 6 series NACA airfoils.
- Q.33 What is buffeting?
- Q.34 Mention different types of drags?
- Q.35 What is a vortex generator?

SECTION-D

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

- Q.36 What do you mean by adverse pressure gradient? How does it develop Boundary Layer? How can it be controlled?
- Q.37 What is stability for an airplane, explain with example? What are various types of stabilities? Describe the contribution of the parts involved in it.
- Q.38 Draw the forces acting on airplane during Takeoff, Landing, Cruise, circular motion and stall condition.

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3rd Sem.

Branch : Aircraft Maintenance Engg.

Sub.: Theory of Flight

Time : 3 Hrs.

M.M. : 100

SECTION-A

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

- Q.1 Which of the following is best related to Aerodynamics?
- Moving Air
 - Still air
 - Moving air interaction with solid boundaries
 - Moving water
- Q.2 What is called aircraft stability?
- The aircraft changes the route in level flight.
 - The aircraft follows its specified path
 - The aircraft return to its original attitude after being disturbed.
 - None of the above
- Q.3 Which of the following is direction of drag?
- Perpendicular to flight direction
 - Along the flight direction
 - Opposite to the flight direction
 - Horizontal Backward

- Q.4 Which of the following does not apply Bernoulli's equation?
- a) Nozzle b) Venturi meter
- c) Pitot static tube d) Pitot tube
- Q.5 Vortex flow occurs at _____ part of the wing.
- a) Leading edge b) Trailing edge
- c) Tips d) Roots
- Q.6 Induced drag will increase if.
- a) Angle of Attack is increased.
- b) Aspect ratio is decreased
- c) Speed is reduced in a level flight.
- d) All of the above
- Q.7 The following is not a secondary control surface
- a) Elevator b) Trim Tab control
- c) Flap d) Leading edge slats
- Q.8 Lift to drag ratio is maximum?
- a) Short Wing Airplane b) Fighter Plane
- c) Large span airplanes d) Swept back wings
- Q.9 The temperature in Troposphere _____
- a) Decreases with Altitude b) Increases with Altitude
- c) Remains constant d) Cannot say
- Q.10 The Drag Divergence Mach number is _____ than critical Mach number
- a) Less b) More
- c) Same
- d) Depends upon the altitude

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SECTION-B

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

- Q.11 What do you mean by a stream line?
- Q.12 What is a trim tab control?
- Q.13 How the induced drag is affected?
- Q.14 What is super-cruise?
- Q.15 What is a venturi tube?
- Q.16 What is the effect of aspect ratio on lift and drag?
- Q.17 Draw a supersonic airfoil?
- Q.18 What is Standard Atmosphere?
- Q.19 What is a load factor?
- Q.20 What is drag divergence Mach number?

SECTION-C

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

- Q.21 What are supercritical airfoils?
- Q.22 List the various Aerodynamic forces in aircrafts in descending attitude.
- Q.23 Describe critical Mach number.
- Q.24 What is boundary layer?
- Q.25 Name the secondary controls and their functions?
- Q.26 Describe the use of leading edge flaps.

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