

Printed Pages : 3



EAE-501

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 148501

Roll No.

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B. Tech.(SEM. V) (ODD SEM.) THEORY
EXAMINATION, 2014-15**INTRODUCTION TO AERONAUTICAL ENGINEERING**

Time : 2 Hours]

[Total Marks : 50

Note : Attempt all five questions.

(Marks and choice are given below)

- 1 Attempt all **ten** parts : **(10×1=10)**
- (a) Write down the formula for (C_d) coefft. of drag.
 - (b) State Bernoulli's equation.
 - (c) Define viscosity.
 - (d) What is the use of elevator ?
 - (e) Write down the formula for Aspect Ratio.
 - (f) What are high lift devices ?
 - (g) With a sketch show the forces on airplane in level flight.
 - (h) What is difference between laminar and turbulent flow ?
 - (i) Fuselage is situated in which portion of the aircraft ?
 - (j) What is the necessity of tail plane ?

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[Contd...

- 2 Attempt any **two** parts of the following : **(2×5=10)**
- (a) Discuss the kind of people who contributed in the development of an aircraft to fly.
 - (b) What is the importance of weight in aeronautics and aerospace applications.
 - (c) Write short notes on any two of the following :
 - (i) Materials for space vehicles
 - (ii) Reynolds No.
 - (iii) Mach No.
- 3 Attempt any **two** parts of the following : **(2×5=10)**
- (a) Describe the landing gear system of an aircraft.
 - (b) What do you understand about stability ? What are the various degrees of freedom ? Show with a sketch.
 - (c) Write short notes on any two of the following :
 - (i) Bernoulli's theorem
 - (ii) Aircraft air conditioning systems
 - (iii) Structural layout for fuselage.
- 4 Attempt any **two** parts of the following : **(2×5=10)**
- (a) What are the various aircraft production methods ? What is the importance of inspection in aeronautical production.
 - (b) Describe the various systems used on aircraft. Explain about hydraulic and pneumatic systems.
 - (c) Write short note on any two of the following :
 - (i) Rocket engines
 - (ii) Use of propellers
 - (iii) Airworthiness certificate.

- 5 Attempt any **two** parts of the following : (2×5=10)
- (a) What are the various forces acting on an aircraft ?
Explain with the help of a sketch.
 - (b) What are the various steps in airplane design ?
What is the importance of prototype development ?
 - (c) Write short notes on any two of the following :
 - (i) Role of DGCA in air safety
 - (ii) Aircraft Materials
 - (iii) Rocket Engines.
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