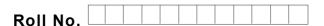


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Total No. of Pages : 02

Total No. of Questions : 09

# B.Tech. (Aerospace Engg.) (2012 Onwards) (Sem.-3) INTRODUCTION TO AEROSPACE ENGINEERING Subject Code : ASPE-202 M.Code : 70904

Time: 3 Hrs.

Max. Marks : 60

## **INSTRUCTIONS TO CANDIDATES :**

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

#### SECTION-A

- 1. Answer briefly :
  - (a) List various layers of Earth's atmosphere.
  - (b) What do you mean by 'Biplanes'? In which type of aircraft are they used?
  - (c) What do you mean by reusable space vehicles? Give example.
  - (d) Define geometric angle of attack and absolute angle of attack using sketches.
  - (e) What do you mean by navigation? Give four examples.
  - (f) What are primary control surfaces and about which axis the motion is produced when these control surfaces are deflected?
  - (g) Classify aircraft based on wing configuration.
  - (h) Explain the salient features of Wright Flyer.
  - (i) What do you mean by 'monocoque' construction? Which is the main load bearing component in case of monocoque construction?
  - (j) Explain the functions of stringers and longirons.



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## **SECTION-B**

2.	Define lift and drag. Explain the significance of L/D ratio with the help of sketch.	. (3, 2)
3.	What do you mean by advanced propulsion? List various applications.	(2, 3)
4.	Define chord line, camber, camber line and zero lift line of an unsymmetrical air the help of a neat and labeled diagram.	foil with (5)
5.	Give a brief historical review of space flights.	(5)
6.	Define composites. Distinguish composites from metallic materials.	(2, 3)

#### **SECTION-C**

7.	a) Classify and discuss essential features of propulsion systems for aviation.	(6)
	b) Write a short note on 'Honeycomb Structures'.	(4)
8.	Write notes on the following :	
	a) V- n diagram with the help of a neat & labeled sketch.	(5)
	b) Bluff bodies $v/s$ Stream-lined body.	(5)
9.	What do you mean by navigation and guidance? Explain the requirements for planetary and atmospheric entry missions.	r orbital, (4, 6)

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.