

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ANE) (Sem.-4)

**AIRCRAFT MATERIALS AND PROCESSES**

Subject Code : ANE-207

M.Code : 60515

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****Q1. Answer briefly :**

- a) Define Fusibility.
- b) Define Annealing
- c) What is the percentage of carbon in medium carbon steel?
- d) Define 'hot short' with reference to steel.
- e) Define Austenite.
- f) Define Shop Annealing.
- g) Define Austempering.
- h) Define matrix with reference to composite materials.
- i) What are nimonic alloys?
- j) Define Sizing.

### SECTION-B

- Q2. Discuss the importance of temperature variations, in flight vehicle materials. Discuss the properties of materials used in turbine blades.
- Q3. Write the effect of following alloying elements on the property of steel :
- a) carbon
  - b) chromium
- Q4. Discuss the following steels :
- a) SAE = 1025
  - b) SAE = 4140
- Q5. Classify Wrought aluminium alloys. Discuss any one in details.
- Q6. Discuss refractory materials and ceramics.

### SECTION-C

- Q7. Write any two shop fabrication processes in details with reference to magnesium alloys. How magnesium is manufactured?
- Q8. Write the theory of heat treatment for steels with the help of iron-carbon diagram.
- Q9. Discuss particulate composites in detail.

**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.**