

Roll No.

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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (AE) (2011 Onwards) (Sem.-3)

AUTOMOTIVE MATERIALS

Subject Code : BTAE-305

M.Code : 54113

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. What is vulcanisation of rubber?
- b. Give two examples of applications where composites are used for non-structural application.
- c. What are some of the typical characteristic of ceramic materials?
- d. What is the difference between GRP and FRP?
- e. What is the working principle of hot isostatic pressing?
- f. Which heat treatment process would you suggest so as to increase the machining characteristics of steels having large concentration of Fe_3C ?
- g. What is Anodizing?
- h. Name the two processes used for depositing thin film coatings
- i. What is polymerization?
- j. Name the process of heat treatment of gears.

SECTION-B

2. How recrystallization temperature effect the properties of material? Discuss.
3. Explain the following terms :
 - a) Normalizing
 - b) Quenching
 - c) Tempering
4. What are the various alloying elements added to steel and how they affect the various mechanical properties?
5. Distinguish between thermoplastic and thermosetting polymers with suitable example.
6. Write a note on thermal spraying with its sketch.

SECTION-C

7.
 - a) Write down the advantages and disadvantages of carbon matrix.
 - b) How glass is fractured? Describe its procedure in brief.
8. What are Metal Matrix Composites? Describe any one method for fabricating polymer matrix composite.
9. Discuss the properties of alloys of copper and nickel with their applications.

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.