

**Roll No.**

**Total No. of Pages : 02**

**Total No. of Questions : 09**

**B.Tech. (AE) (2012 to 2017) (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 :**

- State **any four** properties on the basis of which materials are classified?
- What is effect of alloying chromium to carbon Steel?
- What is the composition of glass?
- What are the uses of glass in automobile industry?
- What do you mean by vulcanization of rubber?
- What is fatigue?
- What do you mean by metal matrix composite?
- Name the materials used for manufacturing camshafts.
- Why Electroplating is needed?
- What are the limitations of carbon matrix?

## **SECTION-B**

2. Describe the nature of ceramic material.
3. What is recrystallization? How is it different from recovery?
4. Classify and describe the different types of elastomers.
5. Explain the criteria to be taken care of while selecting the material for piston & piston ring.
6. Write a short note on Reinforcement fibers.

## **SECTION-C**

7. State and explain the applications of composites in automobiles.
8. How is heat treatment of steel done? Describe various types of heat treatment processes.
9. Write short notes on :
  - a. Anodizing
  - b. Alloys of Mg

**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.**