

Roll No. 

Total No. of Pages : 2

Total No. of Questions : 09

B.Tech. (AE) (Sem.-3rd)

**AUTOMOTIVE MATERIALS**

Subject Code : BTAE-305 (2011 Batch)

Paper ID : [A1155]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION 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 has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

**SECTION-A**

1. Write briefly :

- (a) What is malleability?
- (b) Define recrystallization temperature.
- (c) What are the applications of ceramic materials?
- (d) Name the three plastic alloys.
- (e) Define composites.
- (f) Define annealing.
- (g) Name the material for radiator of automobile.
- (h) Name the types of rubber.
- (i) Name the process of heat treatment of gears.
- (j) Define Hot Pressing.

### SECTION-B

2. Differentiate between thermosetting and thermo plastics.
3. What are reinforcement fibers? Discuss its types in brief.
4. How glass is fractured? Describe its procedure in brief.
5. What is heat treatment of steel? Discuss the induction hardening process.
6. Describe the various factors affecting the selection of materials.

### SECTION-C

- 7 (a) Describe the vulcanization of rubber.  
(b) Explain various applications of composite materials?
- 8 What are Metal Matrix Composites? Explain their types along with their applications, advantages and limitations.
- 9 Write short note on any two of the following :
  - (a) Phospating
  - (b) Sintering
  - (c) Alloys of Al