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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

Paper ID : [A1155]

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. Write briefly :**

- a) List down the uses of ceramics in Automotives.
- b) Give the classifications of engineering materials used in Automotives.
- c) Give the basic classification of the Glass.
- d) Discuss basic characteristics of rubber.
- e) Give difference between thermoplastic and thermosetting resin.
- f) Explain what polymer matrix resin is.
- g) What is glass fibre reinforced plastics?
- h) What are the limitations of Monolithic ceramics?
- i) What is Electroplating?
- j) What is Carbon Matrix?

SECTION-B

2. Explain the need for CMC in automotive industries.
3. What is Vulcanization of rubber? And why it is done.
4. Discuss the application of various types of engineering materials in automotives.
5. Explain the advantages and limitations of Carbon Matrix.
6. Discuss in detail what cryogenic wear is.

SECTION-C

7. Write short notes on :
 - a) Cold isostatic pressing.
 - b) Hot isostatic pressing.
8. Discuss the need for heat treatment and surface treatment of automotive components.
9. Discuss the factors affecting the selection of materials for automotive components.