

T.E / Sem VI / CBCGS / Auto / M-J-2019

03/06/2019

Time: 3 Hours

Marks: 80

- NB: A] Q.1 is compulsory.
B] Attempt any 3 from the remaining
C] Marks are indicated on the right.
D] Illustrate answers with neat sketches wherever required.

Q.1 Answer any four from the following:

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- What are composites? What types of composites are used in automobiles?
- What are the functions of coatings?
- Discuss the relevance of Ashby Charts.
- How are the engines blocks produced and why?
- What are the advantages and disadvantages of Carbon fibre reinforced composites?

Q.2 a. What are the requirements from materials for automotive design?

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b. Which are the high-performance plastics used in Automobiles and why?

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Q.3 a. What are the properties expected from Brake pad materials? Also discuss the components of the brake pad materials.

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b. Briefly describe the risks involved in shifting to new material alternatives.

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Q.4 a. What is the purpose of airbag? Why is Nylon6, 6 preferred for manufacturing of airbags?

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b. What are the automotive glasses? How are they classified?

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Q.5 a. What are the considerations made in car seat design? What are the materials used therein?

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b. How would you select a material for a Light and Strong Tie-Rod?

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Q.6 Write short notes on (Any four):

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- Developments in engine materials
- Automotive paints
- Sheet metal forming technology for car bodies
- Processes used in making car body parts in composites
- Smart materials in automobiles

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