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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(AE) (2011 Onwards) (Sem.-5)

**VEHICLE BODY ENGINEERING**

Subject Code : BTAE-501

Paper ID : [A2061]

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 are A, B and C pillars?
- (b) What do you mean by monocoque construction?
- (c) What are the primary factors which affect the floor height of a bus?
- (d) What are the advantages of using box-section members in place of solid rigid members in body construction?
- (e) What do you understand by SSS? Explain with the help of a sketch.
- (f) What is uni-body construction?
- (g) What are the expectations of safety from vehicle bumpers?
- (h) What are the chassis requirements for a concrete mixer transport vehicle?
- (i) Which body members are used to protect the passengers from side impact?
- (j) Draw any three road safety symbols.

**SECTION - B**

2. Write short note on 'Impact Absorbing Materials'.
3. Describe the pure torsion load case and its significance in vehicle body loading.
4. Which methods are employed for anti corrosion treatment of a vehicle body?
5. How new age advanced material are helpful in increasing the internal cabin space of passenger cars?
6. Describe any six points of the 'Motor Vehicle Act 1988'.

**SECTION - C**

7. How integration of different materials help in improving the performance of vehicles? Describe the usage of different alternate material for specific advantage over conventional body and trim material. (10)
8. (a) What is the importance of Motor Insurance in Indian constitution? (5)  
(b) What is NCAP rating? (5)
9. (a) Differentiate between conventional and integral body construction of bus body structure. (6)  
(b) What are the important design aspects required to design :
  - (i) Tankers
  - (ii) Ladder vehicles (4)