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10AU72

Seventh Semester B.E. Degree Examination, Dec.2015/Jan.2016
Vehicle Body Engineering and Safety

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting
atleast TWO questions from each part.**

PART – A

- 1 a. Explain with neat sketches the layouts of bus and coach bodies. (10 Marks)
b. Explain the various methods of vehicle body construction. (10 Marks)
- 2 a. Explain the use of steel and its alloys. (06 Marks)
b. Explain the types of plastics with their properties used in vehicles body construction. (08 Marks)
c. Explain the use of glass in vehicle body construction. (06 Marks)
- 3 a. With the help of neat sketch, explain the aerodynamic forces and moments acting on a car body and their effects. (10 Marks)
b. Explain the methods of reducing the drag in a vehicle. (10 Marks)
- 4 a. With the help of suitable sketches, describe the longitudinal loads and side loads acting on vehicle body. (10 Marks)
b. Explain in detail, the different loads acting on vehicle body. (10 Marks)

PART – B

- 5 a. Explain with neat sketch, the concept of visibility of a driver for both front and rear. (10 Marks)
b. Explain with neat sketch the design considerations for driver's seat of a car. (10 Marks)
- 6 a. Explain the different types of vehicle stability. (10 Marks)
b. Explain the affect of engine location on stability. (10 Marks)
- 7 a. Explain the various sources of noise in a vehicle. (10 Marks)
b. Explain the effect of rubber on isolation of noise and vibration. (10 Marks)
- 8 a. Explain the various safety devices used in a car. (10 Marks)
b. Explain the salient features of impact protection devices used in a vehicle body with the help of suitable graph. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.