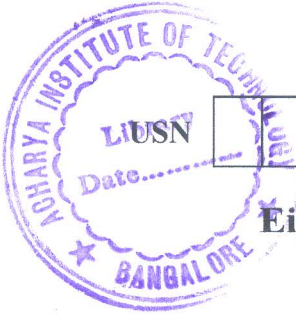


CBGS SCHEME



15AU81

Eighth Semester B.E. Degree Examination, July/August 2021 Vehicle Body Engineering and Safety

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. Draw the layouts of bus and coach bodies and explain. (08 Marks)
b. Explain the following terms used in body building construction:
(i) Wheel arch (ii) Seat rail
(iii) Cant rail. (iv) Angle of approach. (08 Marks)
- 2 a. What are the different methods of construction of vehicle body? Explain. (08 Marks)
b. Discuss the classification of Car bodies with neat sketches and mention their features. (08 Marks)
- 3 a. Discuss the salient features of following materials used for body work of an automobile:
(i) Aluminium alloy (ii) Alloy steel (iii) Timber (iv) Plywood (08 Marks)
b. What are the different types of glasses and rubbers used in vehicle body construction? Explain. (08 Marks)
- 4 a. What are the salient features of glass reinforced plastics? Discuss. (08 Marks)
b. Briefly explain the types of corrosion and their prevention methods. (08 Marks)
- 5 a. Explain with a suitable sketch, aerodynamic forces and moments acting on vehicle body and their effects. (08 Marks)
b. Explain the various methods of reducing aerodynamic drag in a vehicle. (08 Marks)
- 6 a. With a neat sketch, explain the construction and working of wind tunnel used to determine drag co-efficient of a vehicle. (08 Marks)
b. Describe the longitudinal loads and side loads acting on a vehicle body with suitable sketches. (08 Marks)
- 7 a. Explain the complete design considerations for drive seat of a car, with a neat sketch. (08 Marks)
b. With a neat sketch, explain the construction and working of window winding mechanism. (08 Marks)
- 8 a. Sketch and explain the concept of visibility of a driver for both front and rear. (08 Marks)
b. Briefly explain longitudinal and lateral stability. (08 Marks)
- 9 a. What are various sources of noise in a vehicle? Explain. (08 Marks)
b. Discuss the various methods used for controlling noise and vibration in a vehicle. (08 Marks)
- 10 a. What are the necessary features of safe vehicle body? (06 Marks)
b. Discuss the safety aspects of a bumper design and also explain the different types of bumper. (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.