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21AU741

Seventh Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Safety of Electric Vehicles

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1   a. State the importance of design of vehicle body for safety. Identify necessary features of a safe vehicle body. **(10 Marks)**

   b. Explain the influence of engine placement on safety features of a vehicle. **(10 Marks)**

OR

2   a. Conclude the deceleration of vehicle, impact with movable obstacle. **(10 Marks)**

   b. Write notes on the following:
   (i) Crumble zone   (ii) Safety sandwich construction **(10 Marks)**

Module-2

3   a. Describe Driving Safety and Operating Safety in Active Safety systems. **(10 Marks)**

   b. Discuss the safety concepts and why it is important. **(10 Marks)**

OR

4   a. Compare exterior safety with interior safety. **(10 Marks)**

   b. Summarize deformation behaviour of vehicle body. **(10 Marks)**

Module-3

5   a. Highlight the cruise control system with a neat sketch. **(10 Marks)**

   b. Illustrate the Tire pressure monitoring system with a block diagram. **(10 Marks)**

OR

6   a. Discuss the seat belt and components. State its regulations. **(10 Marks)**

   b. Demonstrate the working of airbag and its components. **(10 Marks)**

Module-4

7   a. Explain the components of a collision warning system. **(10 Marks)**

   b. Highlight the rear vehicle object detection system. **(10 Marks)**

OR

8   a. Analyze the working of central locking system. **(10 Marks)**

   b. Conclude the working of rain sensor with suitable sketch. **(10 Marks)**

Module-5

9   a. Identify the steps involved in maintenance of cooling and lubrication systems. **(10 Marks)**

   b. Provide the details of engine management service and fault diagnosis. **(10 Marks)**

OR

10   a. Explore the general checks, adjustment fault diagnosis of steering system. **(10 Marks)**

    b. Illustrate inspection, maintenance and service of hydraulic brakes. **(10 Marks)**

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