CBCS SCHEME

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18MT81

Eighth Semester B.E. Degree Examination, Dec.2023/Jan.2024
Automotive Electronics and Hybrid Vehicles

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. With a schematic circuit and primary current waveform. Explain the generation of spark pulse in a conventional automobile system. **(10 Marks)**

b. Briefly explain the construction and working of spark plug. **(10 Marks)**

OR

2 a. With a neat sketch, describe the four stroke cycle of an IC engine with neat diagram. **(10 Marks)**

b. Explain the working of disc brake system with a neat diagram. **(10 Marks)**

Module-2

3 a. What are the desirable characteristics of EGO sensors? Draw and explain the switching characteristics of typical EGO sensors. **(10 Marks)**

b. With a neat diagram, explain evaporative emission system. **(10 Marks)**

OR

4 a. With a neat sketch, explain EGR actuator. **(10 Marks)**

b. Explain the working of fuel injector and pulse model fuel control signal with relevant diagram and waveform. **(10 Marks)**

Module-3

5 a. Illustrate the concept of automotive instrumentation in fuel quality measurement with neat sketch. **(10 Marks)**

b. Explain airbag deployment system using switches. **(10 Marks)**

OR

6 a. With a neat block diagram, explain remote keyless entry system in vehicles. **(10 Marks)**

b. With a neat diagram, explain oil pressure in automotive instrumentation system. **(10 Marks)**

Module-4

7 a. Explain low tire pressure warning system along with its diagram. **(10 Marks)**

b. With a neat diagram, explain antilock brake system. **(10 Marks)**

OR

8 a. Explain cruise control system along with its configuration in detail. **(10 Marks)**

b. Explain traction control system along with its working. **(10 Marks)**

Module-5

9 a. Explain fundamentals and characteristics of plug in hybrid vehicles. **(10 Marks)**

b. Explain vehicle simulation with different driving cycles. **(10 Marks)**

OR

10 a. Define hybrid vehicles and list out electric and hybrid vehicle components. **(10 Marks)**

b. Explain the different types of power train components. **(10 Marks)**

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