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Fifth Semester B.E. Degree Examination, Feb./Mar. 2022 Automotive Electronics

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Explain spark plug configuration, spark plug generation and Ignition timing with relevant diagrams. (08 Marks)
b. Explain the effect of Air/Fuel ratio on performance with relevant diagram. (08 Marks)

OR

- 2 a. What is use of Driveshaft, Differential and suspension system? Explain the shock absorber assembly with neat diagram. (08 Marks)
b. What are major controller inputs and outputs from/to engine. Show the connection between engine and controller. (08 Marks)

Module-2

- 3 a. Explain the working AIR flow rate sensor with relevant diagrams. (08 Marks)
b. What is actuator? Give the examples of actuators. Explain the Ignition system with relevant diagram. (08 Marks)

OR

- 4 a. With neat diagrams, explain EGO sensor with its desirable and switching characteristics. (08 Marks)
b. Explain the working fuel injector and pulse mode fuel control signal with relevant diagram and waveforms. (08 Marks)

Module-3

- 5 a. What are the different engine-operating modes? Explain with neat block diagram, the digital engine control system. (08 Marks)
b. Explain the EGR control system with block diagram. (08 Marks)

OR

- 6 a. Explain with relevant figures, spark advance correction scheme. (08 Marks)
b. What is use of secondary air? With the help of a diagram, explain how the secondary air is controlled? (08 Marks)

Module-4

- 7 a. Give examples for CAN and LIN applications. Write a note on diagnostic interfaces. (08 Marks)
b. Explain the typical cruise control system with its configuration and relevant diagrams. (08 Marks)

OR

- 8 a. Explain the digital cruise control configuration with neat block diagram. (08 Marks)
b. Explain the antilock braking system with relevant diagrams. (08 Marks)

Module-5

- 9 a. What is timing light? Explain timing light with relevant diagrams. (08 Marks)
b. Explain low time pressure warning system with relevant diagrams. (08 Marks)

OR

- 10 a. What is occupant protection system? Explain accelerometer based airbag system with relevant diagram. (08 Marks)
b. Explain the dead reckoning navigation with relevant diagrams. (08 Marks)
