

CBCS SCHEME

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18EC742

Seventh Semester B.E. Degree Examination, July/August 2022 Automotive Electronics

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. With necessary diagrams, explain the working of four stroke cycles of an SI engine. (10 Marks)
- b. Explain the automobile physical configuration with a neat diagram. (10 Marks)

OR

- 2 a. Explain the working of a disk break system with neat diagram. (10 Marks)
- b. Explain the working of a electronic ignition control with neat diagram. (10 Marks)

Module-2

- 3 a. With relevant diagrams, explain the working of magnetic reluctance position sensor. (10 Marks)
- b. Explain Throttle Angle Sensor (TAS) with necessary diagrams. (05 Marks)
- c. With neat diagram, explain Engine Coolant Temperature (ECT) sensor. (05 Marks)

OR

- 4 a. Explain EGR actuator with relevant diagram. (10 Marks)
- b. With relevant diagrams and waveforms, explain the working principle of fuel injector and pulse mode fuel control signal. (10 Marks)

Module-3

- 5 a. What are the seven modes of fuel control? Explain digital engine control system with neat diagram. (10 Marks)
- b. Explain EGR control, with a neat block diagram. (10 Marks)

OR

- 6 a. With a relevant block diagram, explain the working of idle air control. (10 Marks)
- b. What is the use of secondary air? Explain how the secondary air is controlled with the help of a necessary diagram. (10 Marks)

Module-4

- 7 a. Briefly explain the followings: (i) LIN Bus (ii) MOST Bus (10 Marks)
- b. Briefly explain the followings: (i) Bluetooth (ii) Flex ray (10 Marks)

OR

- 8 a. With relevant diagrams, explain Antilock braking system. (10 Marks)
- b. Explain the concept of digital cruise control system with relevant diagrams. (10 Marks)

Module-5

- 9 a. Explain with neat diagram, Radio Navigation System. (10 Marks)
- b. Explain Collision Avoidance Radar Warning system with relevant diagrams. (10 Marks)

OR

- 10 a. Explain the automatic driving control systems with relevant diagram. (10 Marks)
- b. With relevant diagrams, explain Accelerometer based Airbag system. (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.