

CBCS SCHEME

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15EC561

Fifth Semester B.E. Degree Examination, June/July 2018 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. Briefly explain the four stroke cycle of an IC engine with neat diagrams. (08 Marks)
b. Explain the working of a disk break system with neat diagram. (08 Marks)

OR

- 2 a. Define engine performance terms power, BSFC, torque and thermal efficiency with relevant formulae and their units. (08 Marks)
b. Explain the working of a electronic ignition control with a neat diagram. (08 Marks)

Module-2

- 3 a. Explain the working of the MAF sensor with neat diagram. (08 Marks)
b. Explain the working of a EGO sensor with neat diagram. Also draw the ideal EGO switching characteristics and explain. (08 Marks)

OR

- 4 a. Explain the working of a magnetic reluctance position sensor with relevant diagram. (08 Marks)
b. Explain the working of a fuel injector and pulse mode fuel control signal with relevant diagrams and waveforms. (08 Marks)

Module-3

- 5 a. What are the seven modes of fuel control? Explain engine warm-up with relevant equations. (08 Marks)
b. Explain the working of a idle air control with relevant diagrams. (08 Marks)

OR

- 6 a. Explain the closed loop ignition timing with relevant diagrams. (08 Marks)
b. What are the various modules of control unit software? Explain them briefly. (08 Marks)

Module-4

- 7 a. What are the CAN protocol layers? What are the four different frames? Write the message format. (08 Marks)
b. Briefly explain the following : i) LIN BUS ii) MOST BUS. (08 Marks)

OR

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

Module-5

- 9 a. Write a brief notes on on-board and off-board diagnostics. (08 Marks)
b. Explain accelerometers-based airbag system. (08 Marks)

OR

- 10 a. Explain collision avoidance radar warning system with relevant diagrams. (08 Marks)
b. Explain the automatic driving control system with relevant diagram. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. For questions in this paper, 17-8-50 will be treated as malpractice.