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.

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.

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 CAM protocol layers? What are the four different frames? Write the message format. **(08 Marks)**

b. Briefly explain the following : i) LIM 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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