

CBCS SCHEME

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15EC561

Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019 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 with necessary diagrams, working of a four stroke IC engine. (08 Marks)
b. Explain the operating principle of starter battery. (08 Marks)

OR

- 2 a. Define air fuel ratio. Explain the performance of an engine with respect to air-fuel ratio. (08 Marks)
b. What are the major controller inputs and outputs from/to engine? Show how they are connected between engine and controller. (08 Marks)

Module-2

- 3 a. With necessary diagrams, explain the working principle of MAP sensor. (08 Marks)
b. With neat diagram, explain optical crankshaft position sensor. (08 Marks)

OR

- 4 a. Explain magnetic reluctance position sensor with relevant diagrams. (08 Marks)
b. Explain hall effect sensor. (08 Marks)

Module-3

- 5 What are the seven modes of fuel control? Explain them in detail. (16 Marks)

OR

- 6 a. Explain with a neat diagram how the secondary air is controlled/ (08 Marks)
b. Explain in detail system diagnostics. (08 Marks)

Module-4

- 7 a. What are the CAN protocol layers? Explain. (06 Marks)
b. Explain LIN Bus and MOST Bus. (10 Marks)

OR

- 8 a. Explain with neat diagram : ABS (Anti Braking System) (08 Marks)
b. Explain digital speed sensor. (08 Marks)

Module-5

- 9 a. Explain in detail ON-board diagnostics performed in car. (08 Marks)
b. Explain low tire-pressure warning system with relevant diagrams. (08 Marks)

OR

- 10 a. Explain with necessary diagrams generic automatic navigation system. (08 Marks)
b. Write a note on advanced cruise control. (04 Marks)
c. Write explanatory notes on electric and hybrid vehicles. (04 Marks)

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.