

--	--	--	--	--	--	--	--	--	--

Model Question Paper
Seventh Semester B.E. Degree (CBCS)
Automotive Electronics

Time: 3 hrs.

Max. Marks: 80

Note: 1. Answer any FIVE full questions, choosing one full question from each module.

MODULE – I

- 1 a. What are gear trains? With schematic explain the planetary gear system. (08 Marks)
 b. Define the Engine performance terms Power, BSFC, Torque and Volumetric Efficiency with relevant formulae and their units. (08 Marks)

OR

- 2 a. Explain Spark Plug configuration, spark pulse generation and Ignition Timing with relevant diagrams (08 Marks)
 b. What are the major controller inputs and outputs from/to Engine? Show their connection between Engine and Controller. (08 Marks)

MODULE – II

- 3 a. What is hall effect? Explain a position sensor using principle of hall effect. Compare it with magnetic reluctance position sensor (08 Marks)
 b. Explain the working of Mass Flow Sensor with relevant diagram. (08 Marks)

OR

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

MODULE – III

- 5 a. What are the seven modes of fuel control? Explain Idle Air Control with relevant diagrams. (08 Marks)
 b. What are the various digital modules in the Control Unit? Write a Block diagram depicting those modules. (08 Marks)

OR

- 6 a. What is the use of Secondary Air? With the help of a diagram explain how the secondary air is controlled. (08 Marks)
 b. Explain the closed loop ignition timing with relevant diagrams (08 Marks)

MODULE – IV

- 7 a. What are the CAN protocol layers? What are the four different frames? write the message format (08 Marks)
 b. Explain Digital Cruise control system with the help of a relevant diagram. (08 Marks)

OR

- 8 a. Give examples for each of CAN and LIN applications. Write a note on Diagnostic interfaces. (08 Marks)
 b. Explain Antilock Braking System with relevant diagrams. (08 Marks)

MODULE – V

- 9 a. Write brief notes on On-Board-Diagnostics and Off-Board-Diagnostics (08 Marks)
 b. Explain accelerometer 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)

* * * * *