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10AU64

Sixth Semester B.E. Degree Examination, Dec.2015/Jan.2016
Auto Electrical and Electronic System

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART - A

- 1 a. With a neat sketch, explain the construction and working of a lead acid battery. (08 Marks)
b. Explain how specific gravity of electrolyte is a direct indication of the state of charge of the battery. (04 Marks)
c. Write down a trouble shooting chart of Automotive lead acid batteries with Defects, Causes and Remedies. (08 Marks)
- 2 a. Explain with circuit diagram, series, shunt and compound wound generators. (09 Marks)
b. With a circuit diagram, explain the need for third brush regulation in generators. (06 Marks)
c. What are the advantages of Alternators over DC generators? (05 Marks)
- 3 a. What are the requirements of a cranking system for starting an engine? (04 Marks)
b. Explain the terms :
i) Engine breakaway Torque ii) Engine resisting Torque iii) Motor loaded Torque
iv) Motor driving Torque. (06 Marks)
c. Show with a neat sketch, the difference in the operational principle of Inertia type and pre engaged type cranking motor. (10 Marks)
- 4 a. Explain with a neat sketch conventional battery Ignition system. (08 Marks)
b. With a block diagram, explain Distribution Ignition System. (06 Marks)
c. What are the advantages of programmed Ignition system over conventional Ignition system? (06 Marks)

PART - B

- 5 a. Explain Balancing coil type fuel gauge, with the help of a wiring diagram. (07 Marks)
b. Write a short note on Fuses and Circuit breakers. (04 Marks)
c. What are the advantages of Electric fuel pump? Draw a neat sketch of an Electric fuel pump naming all its components. (09 Marks)
- 6 a. What are the functional requirements of a typical heating and ventilation system? (05 Marks)
b. Explain with a neat sketch, how heating and ventilation is accomplished in a car. (08 Marks)
c. What are the requirements of seat heaters? Discuss an view of the passenger comfort. (07 Marks)
- 7 a. Explain various Engine design parameters for exhaust emission control. (10 Marks)
b. What is Artificial Intelligence? Explain with relevance to Automotive Engineering taking Adaptive Ignition system as an example. (10 Marks)
- 8 a. What are the benefits of ABS? Explain the function of each component with a neat sketch of ABS. (08 Marks)
b. Draw a block diagram of an Active Suspension System. (05 Marks)
c. With a block diagram, explain the working of Traction Control System. (07 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.