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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Eighth Semester, B.E. - Automobile Engineering

Semester End Examination; June/July - 2015

Automotive Electrical and Electronic System

Time: 3 hrs

Max. Marks: 100

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

PART - A

1. a. With the help of suitable sketches, explain the construction and working of lead-acid battery 10
 - b. Describe in detail the method of battery charging. 6
 - c. What are the battery troubles experienced in an automotive battery? 4
- 2 a. What are the main requirements of the vehicle charging system? 5
 - b. What is the necessity of generator output control? Discuss the various methods of achieving the same. 10
 - c. Compare the alternator with D.C. Generator with suitable diagram. 5
- 3 a. Name the different types of D.C. motors. 5
 - b. Name the different types of starting drives? With neat sketch explain any one of them. 10
 - c. Name the various types of starter motor switches? With suitable diagram explain any one of them. 5
- 4 a. Discuss in detail the requirements and function of ignition system of an I.C. engine. 6
 - b. What are the advantages of Electronic ignition system compared to the conventional ignition system? 4
 - c. Name the different types of electronic ignition system used in present day vehicle with neat sketch explain any one of them. 10

PART - B

- 5 a. Explain the following: (i) Earth return and Insulated system 12
 - (ii) Wind shield washer and wiper
- b. Draw a simple wiring diagram of the electrical system. 8
6. a Explain with suitable sketches: Ventilation system and Automotive heating system. 10
 - b. With block diagram explain the air conditioning system used in Automotive vehicles. 10
- 7 a. With neat sketch explain the fuel management system and exhaust emission control. 10
 - b. Explain the following: i) Hybrid vehicle ii) Fuel cells 10
- 8 Answer any four of the following: i) Active suspension ii) Electronic control of transmission 20
 - iii) Air bags iv) Antilock brake system
 - v) Traction control