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Sixth Semester B.E. Degree Examination, Dec.2017/Jan.2018
Automotive Electrical and Electronic Systems

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. With neat suitable sketches, explain the construction and working of a lead acid battery. (10 Marks)
b. Write a note on : (i) Battery rating (ii) battery efficiency (iii) Storage of batteries (iv) Sulphation. (10 Marks)
- 2 a. Explain the construction and working principle of a generator, with a neat sketch. (10 Marks)
b. Write short notes on armature reaction and third brush regulation in a DC generator. (10 Marks)
- 3 a. Explain the principle of working of starting motor with a neat sketch. (10 Marks)
b. What are the types of D.C. motor drives used in starting system of an automobile? Explain with a neat sketch the working of Bendix drive. (10 Marks)
- 4 a. What are the main components of an ignition system? Discuss in detail with the help of a neat sketch, the ignition system of 4-cylinder SI engine. (10 Marks)
b. Write note on:
(i) Ignition coil (ii) Spark plug (iii) Distributor (10 Marks)

PART – B

- 5 a. What are the various lights used in a modern automobile? Explain the construction and working of (i) Sealed beam lamp (ii) Wind screen wiper. (10 Marks)
b. Explain the working principle of :
(i) Electric horn (ii) Electrical fuel pump (10 Marks)
- 6 a. Explain basic air conditioning cycle with neat sketch. Explain functions of all the components of the system. (10 Marks)
b. Write short notes on :
(i) Heating and ventilation (ii) Seat heaters (10 Marks)
- 7 a. Explain with a block diagram combined ignition and fuel control system. (10 Marks)
b. Explain with a block diagram a complete vehicle control system. (10 Marks)
- 8 a. Why ABS is required in vehicles? Explain working principle of ABS. (07 Marks)
b. What is the necessity of central locking, air tags and seat belt tensioners? (09 Marks)
c. Explain traction control system. (04 Marks)

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