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Seventh Semester B.E. Degree Examination, Feb./Mar. 2022
Automotive Electrical and Electronic Systems

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Explain the construction and working of lead-acid battery. (08 Marks)
b. List out the different battery characteristics and explain any 4 characteristics of battery. (08 Marks)

OR

- 2 a. Explain with diagram, the different symbols used in Automobile electric system. (08 Marks)
b. What do you mean by battery ratings? Explain different battery ratings. (08 Marks)

Module-2

- 3 a. With neat sketch, explain the working of DC generator. (08 Marks)
b. Write a short note on "cutout relay". (04 Marks)
c. What are the advantages of Alternator over DC generator? (04 Marks)

OR

- 4 a. Explain with neat sketch, a standard bendix drive. (08 Marks)
b. What are the requirements of starting system? (04 Marks)
c. Explain Terms: i) Engine brake away torque ii) Motor driving torque. (04 Marks)

Module-3

- 5 a. With neat sketch, explain battery coil ignite system of a 4-cylinder SI engine. (08 Marks)
b. What are the requirements of good spark plug? Sketch and explain the construction details of spark plug. (08 Marks)

OR

- 6 a. Explain the working of i) Wind screen wipers ii) Speedometer. (08 Marks)
b. What is Head light dazzle? List the reasons and remedies. (08 Marks)

Module-4

- 7 a. Explain combined ignition and fuel management system with a block diagram. (08 Marks)
b. Write a short note on Hybrid vehicles. (04 Marks)
c. Write a short note on fuel cells. (04 Marks)

OR

- 8 a. Explain the working of Antilock braking system with a block diagram. (08 Marks)
b. Write a short note on : i) Air bags ii) Seat belt tensioners. (08 Marks)

Module-5

- 9 a. With neat block diagram, explain different components of Electric vehicles. (08 Marks)
b. Write the advantages and limitations of Hybrid electric vehicles. (08 Marks)

OR

- 10 a. Broadly classify the sensors and explain the working of any 3 sensors. (08 Marks)
b. What are the different characteristics of Transducers? Explain. (08 Marks)

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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.