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Seventh Semester B.E. Degree Examination, July/August 2022 Automotive Electrical and Electronics System

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain Earthed and Insulated return system with a sketch. (10 Marks)
b. Explain the construction and working of lead acid battery. (10 Marks)

OR

- 2 a. Write a note on the different battery charging methods. (10 Marks)
b. Compare lead acid batteries with alkaline batteries. (10 Marks)

Module-2

- 3 a. Describe with the help of illustrations the principle of a direct current generator of an automobile. (10 Marks)
b. What is an Alternator? Compare it with a generator. Which will you prefer? Give reasons in support of your answer. (10 Marks)

OR

- 4 a. Explain "the operation of a starter motor". (10 Marks)
b. List the various drives of a starter motor and explain any two with neat sketch. (10 Marks)

Module-3

- 5 a. Discuss with the help of a neat sketch the ignition system (distributor type) of the cylinder spark ignition engine. (10 Marks)
b. Explain spark timing control with a neat block diagram. (10 Marks)

OR

- 6 a. With a neat sketch, explain flashing type direction indicator mechanism with motor. (10 Marks)
b. With a block diagram, explain fuel gauge instrumentation system. (10 Marks)

Module-4

- 7 a. Explain the process of calculating fuel and ignition settings. (10 Marks)
b. With a neat block diagram, explain engine management system. (10 Marks)

OR

- 8 a. Explain active suspension system with a neat block diagram. (10 Marks)
b. Explain working of a seat belt tensioners. (10 Marks)

Module-5

- 9 a. Briefly explain the types of drive motors of a EV. (10 Marks)
b. Explain the three types of hybrid vehicles with a neat sketch. (10 Marks)

OR

- 10 a. With a neat sketch, explain inductive type and capacitive type proximity sensor. (10 Marks)
b. Explain the principle and working of a hall effect sensor. (10 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.