CBCS SCHEME

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17AU71

Seventh Semester B.E. Degree Examination, Jan./Feb. 2023
Automotive Electrical and Electronic Systems

Time: 3 hrs. Max. Marks: 100

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

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.

Module-1

1 a. What do you understand by the term cable color codes? Explain them briefly. **(10 Marks)**

b. Explain earth return and insulated systems. **(10 Marks)**

OR

2 a. What are the requirements of a good battery? Classify the batteries in detail. **(08 Marks)**

b. Discuss with neat sketch the principle of operation of lead acid battery (with equation). **(12 Marks)**

Module-2

3 a. Explain the construction and working principle of D.C. generator. **(10 Marks)**

b. Explain the working principle of cutout relay with a neat sketch. **(10 Marks)**

OR

4 a. With a neat sketch, explain the construction and working of a series motor in brief. **(10 Marks)**

b. Enlist different types of starting motor drives. Explain any one of them with a neat sketch. **(10 Marks)**

Module-3

5 a. What are the types of Ignition systems? With a block diagram, explain capacitor discharge ignition system. **(10 Marks)**

b. Write notes on: (i) Spark plug (ii) Ballast resistance **(10 Marks)**

OR

6 a. Describe with a neat sketch, construction and working of :
(i) Sealed beam lamp (ii) Wind screen wiper **(12 Marks)**

b. With a neat sketch, explain the working of electric fuel pump. **(08 Marks)**

Module-4

7 a. Discuss about engine management in detail. **(10 Marks)**

b. Explain the various engine design parameters for exhaust emission control. **(10 Marks)**

OR

8 Write short notes on:
a. Antilock Brakes (ABS) b. Traction Control System
c. Central locking d. Air bags **(20 Marks)**

Module-5

9 a. What are the different components of an electrical vehicle? Explain in brief. **(12 Marks)**

b. What are the advantages and disadvantages of Electrical Vehicles (EVs)? **(08 Marks)**

OR

10 a. Define a transducer. Explain the working principle and applications of :
(i) Proximity sensor (ii) Hall effect sensor **(10 Marks)**

b. Explain the working principle of a light sensor and mention their applications. **(10 Marks)**

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