

USN

--	--	--	--	--	--	--	--	--	--

17AU71

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Sketch the diagram of typical wiring system and discuss the symbols used in automobile electrical systems. (10 Marks)
- b. Discuss various methods of battery rating. (06 Marks)
- c. Analyze the effect of temperature on specific gravity of electrolyte. (04 Marks)

OR

- 2 a. Sketch and explain the working of lead acid battery. (10 Marks)
- b. Illustrate the defects and remedies of batteries. (06 Marks)
- c. List the advantages of Lithium Ion battery. (04 Marks)

Module-2

- 3 a. Explain the construction and working of alternator with the help of sketch. (10 Marks)
- b. Discuss the construction and working of cutout relay with sketch. (10 Marks)

OR

- 4 a. List and explain the different drives of starting motor. (10 Marks)
- b. Illustrate the working of series motor and its characteristics. (10 Marks)

Module-3

- 5 a. With the help of circuit diagram explain the working of battery coil ignition system. (10 Marks)
- b. Highlight the significance of ignition advance and explain the different types of ignition advance mechanism. (10 Marks)

OR

- 6 a. Explain the construction of head lamp mounting. (10 Marks)
- b. Sketch and explain the construction of balancing coil type oil pressure gauge. (10 Marks)

Module-4

- 7 a. Illustrate the significance of ECU and discuss how can ECU works. (10 Marks)
- b. List and discuss the different methods of exhaust emission control. (10 Marks)

OR

- 8 a. What is the importance of ABS? List the elements of ABS and the discuss the working of ABS. (10 Marks)
- b. Illustrate the working of traction control system. (06 Marks)
- c. Write a short note on Air bags. (04 Marks)

Module-5

- 9 a. Illustrate the components of EV and discuss its advantages and disadvantages. (10 Marks)
- b. Discuss the significance of hybrid vehicles. (04 Marks)
- c. Write a brief note on mild hybrid and full hybrid. (06 Marks)

OR

- 10 a. Explain the importance working and application of oxygen sensor. (10 Marks)
- b. How are sensors classifications? (05 Marks)
- c. What are hall effect and its uses? (05 Marks)

* * * * *

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.