

CBCS SCHEME

USN

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

15AU71

Seventh Semester B.E. Degree Examination, Dec.2019/Jan.2020 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 earthed and insulated return systems. Write the advantages of earth return system. (08 Marks)
b. Draw the wiring diagram of the electrical system of a vehicle and explain in brief. (08 Marks)

OR

- 2 a. Discuss the principle of operation of a lead acid battery with a neat sketch. (08 Marks)
b. With a neat sketch, explain the construction and working principle of zinc – air battery. Also state its advantages. (08 Marks)

Module-2

- 3 a. Describe third brush regulation with the help of a wiring diagram. (08 Marks)
b. With the help of a wiring diagram, explain the construction and working of cutout relay. (08 Marks)

OR

- 4 a. Describe the construction and working of starter motor with the help of a schematic diagram. (08 Marks)
b. With a neat sketch, explain the construction and working of standard Bendix Drive. (08 Marks)

Module-3

- 5 a. Discuss with the help of a neat sketch the battery ignition system of the four cylinder S.I. engine. (08 Marks)
b. Explain the principle of an electronic ignition system with the help of a simplified diagram. Discuss in detail the pulse generator type of timers used in this system. (08 Marks)

OR

- 6 a. What are sealed beam headlights? Explain the method of adjusting sealed beam headlights, with a neat sketch. Also state their advantages. (08 Marks)
b. Explain the construction and working of a balancing coil type of fuel gauge with the help of a neat diagram. (08 Marks)

Module-4

- 7 a. What is ignition timing? Explain the various timing devices used to adjust the timing of an engine. (08 Marks)
b. Explain series system and parallel systems of hybrid vehicle systems with the help of a block diagrams. Also state their advantages. (08 Marks)

OR

- 8 a. With the help of a circuit diagram, explain central door locking. (08 Marks)
b. Describe the construction and working of air bag. What are the disadvantages associated with air bags. (08 Marks)

Module-5

- 9 a. With a neat sketch, explain the construction and working principle of sodium sulphur battery for electric vehicles. (08 Marks)
b. What are the advantages and disadvantages of electric vehicles? (08 Marks)

OR

- 10 a. Explain the working principle of proximity sensor with a neat sketch. (08 Marks)
b. With a neat sketch, explain the working principle of Hall effect sensor. (08 Marks)
