

CBCS SCHEME

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Seventh Semester B.E. Degree Examination, June/July 2024 Automotive Electrical and Electronic 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 with neat sketch the construction and working of lead acid battery. (10 Marks)
b. Briefly explain typical wiring system and symbols used in automobile electrical and electronic system with diagram. (10 Marks)

OR

- 2 a. Explain in brief different defects, causes and remedies for battery. (10 Marks)
b. Explain with a neat sketch different lead acid battery testing methods. (10 Marks)

Module-2

- 3 a. Explain with a neat sketch the construction and working of an alternator. (10 Marks)
b. Explain with a neat sketch the construction and working of battery motor starting system. (10 Marks)

OR

- 4 a. Describe the construction and working of cutout relay. (07 Marks)
b. Explain with a neat sketch the construction and working of standard Bendix drive. (08 Marks)
c. Explain any five advantages of alternator over DC-generator. (05 Marks)

Module-3

- 5 a. With a neat sketch explain construction and working of magneto ignition system. (10 Marks)
b. Explain with a neat sketch the construction and working of battery ignition system. (10 Marks)

OR

- 6 a. Explain the head light aiming and leveling with necessary sketches. (08 Marks)
b. With a neat sketch explain the following :
i) Electric horn
ii) Electrical fuel pump
iii) Single thermostatic blade type fuel gauge. (12 Marks)

Module-4

- 7 a. Briefly explain factors to be considered for exhaust emission control. (10 Marks)
b. Write short notes on :
i) Dwell angle
ii) Fuel cells
iii) Hybrid vehicles. (10 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.

OR

- 8 a. Explain with a neat sketch construction and working of :
i) Antilock brakes (ABS)
ii) Airbags. (10 Marks)
- b. Explain the following with a neat sketch :
i) Seat heaters
ii) Seat belt tensioners
iii) Traction control. (10 Marks)

Module-5

- 9 a. Mention the components of electrical vehicle. Explain briefly. (08 Marks)
b. Compare battery operated electric vehicle and hybrid electric vehicle. (06 Marks)
c. Write short notes on EV Concept, Key technologies. (06 Marks)

OR

- 10 a. Define transducer. Explain the working principle of transducer used in automobile vehicle. (08 Marks)
- b. Discuss the following in detail :
i) Proximity sensor
ii) Light sensor
iii) Hall effect sensor
iv) Zinc air battery. (12 Marks)

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