

# CBCS SCHEME

15AU71



## Seventh Semester B.E. Degree Examination, July/August 2021 Automotive Electrical and Electronic Systems

Time: 3 hrs.

Max. Marks: 80

*Note: Answer any FIVE full questions.*

- 1 a. Explain Earthed and Insulated Return systems. What are the advantages of Earth Return System? (08 Marks)  
b. Illustrate the working of a electrical system of vehicle with the help of a single schematic wiring diagram. (08 Marks)
- 2 a. Explain the effect of temperature on specific gravity of electrolyte. (04 Marks)  
b. Define and explain the following terms in brief: (04 Marks)  
(i) Battery capacity (ii) Battery efficiency (08 Marks)  
c. Illustrate the construction and working of a zinc-air battery with neat sketch. (08 Marks)
- 3 a. Describe the action of third brush generator with the help of a wiring circuit. (08 Marks)  
b. Illustrate the construction and working of alternator with the help of a general circuit diagram. (08 Marks)
- 4 a. Illustrate the construction and working principle of 4-pole starting motor with a neat sketch. (08 Marks)  
b. Describe the construction and working principle of over running clutch type starting drive with a neat sketch. (08 Marks)
- 5 a. Compare battery ignition system with magneto ignition system. (08 Marks)  
b. Draw a wiring diagram of the ignition system having a magnetic pulse distributor and transistor control unit. Discuss the working of the various components. (08 Marks)
- 6 a. What is headlight dazzle? Discuss the various causes and methods of preventing dazzle. (08 Marks)  
b. Illustrate the working principle of electric fuel pump with a neat sketch. Also state its advantages. (08 Marks)
- 7 a. Define ignition timing. Discuss the various timing devices used to adjust the timing of an engine. (08 Marks)  
b. Write a brief note on hybrid vehicles and fuel cells. (08 Marks)
- 8 a. Illustrate the working principle of a anticlock braking system with a suitable sketch. (08 Marks)  
b. Draw the layout of a central door locking circuit. Explain the working principle. (08 Marks)
- 9 a. Explain the construction and working principle of sodium sulphur battery with a neat sketch. (08 Marks)  
b. What are the advantages and disadvantages of electric vehicles? (08 Marks)
- 10 Write short notes on the following:  
a. Light sensors b. Proximity sensors (16 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.