

(3 Hours)

[Total Marks: 80]

- N.B: 1. Question No. 1 is compulsory.
2. Attempt any Three from remaining questions.
3. Draw neat sketches wherever necessary.

- Q.1 a) Sketch and explain the construction and working of Lead acid battery. Also write about its maintenance. 10
b) Mention the function of various lamps used in Automotive vehicle and also describe the construction and working of head lamp system. 10
- Q.2 a) Define and Explain with neat sketches: (i) Air management system and (ii) Rectification from AC to DC. 10
b) Describe in detail CDI and Distributorless Ignition System with proper diagrams. 10
- Q.3 a) Describe the working of AFC (Alkaline fuel cells) in brief with suitable sketches, reactions, Applications and limitations. 10
b) Explain the various Cables, their sizes, color codes and wiring harness systems used in Automotive Vehicles. 10
- Q.4 a) What is the need of 42 volt automotive electrical system? Explain transition from 12 volt to 42 volt system with its advantages and disadvantages. 10
b) Discuss with suitable sketches the functioning of any three types of Automotive Sensors. 10
- Q.5 a) Describe the working of any two Intelligent Vehicle systems with suitable schematic diagrams and also mention their applications. 10
b) Discuss with suitable sketches the functioning of any three types of Automotive Actuators. 10
- Q.6 Write short-notes on any four of the following: 20
a) Standard Bendix drive
b) Reformers in fuel cells
c) Power operated windows
d) Classification of Starter motor drives and Torque terms used
e) Automotive embedded systems