



CBCS SCHEME

21ME654

Sixth Semester B.E. Degree Examination, June/July 2024

Modern Mobility

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Classify different types of Automobile. (10 Marks)
- b. Describe the working principle of 4 stroke petrol engine. (10 Marks)

OR

- 2 a. Analyze the fuel supply system in spark ignition engine. (10 Marks)
- b. Compare the water cooling system and air cooling system in IC engines with neat sketches. (10 Marks)

Module-2

- 3 a. Compare the centrifugal clutch and fluid fly-wheel with neat sketches. (10 Marks)
- b. With neat sketch, explain synchromesh gearbox. (10 Marks)

OR

- 4 a. Compare the friction clutch and cone clutch with neat sketches. (10 Marks)
- b. With neat sketch, explain conventional (Inner Tube) tyre and tubeless tyre. (10 Marks)

Module-3

- 5 a. Classify types of steering linkages and explain rack and pinion type. (10 Marks)
- b. With neat sketch, explain drum and disc brake. (10 Marks)

OR

- 6 a. With neat sketch, explain the working and construction of power steering. (10 Marks)
- b. Analyze with the layout the working of air suspension system. (10 Marks)

Module-4

- 7 a. Illustrate the different types of pollutants form in automobile and explain photochemical smog and its causes. (10 Marks)
- b. List the types of IC engine fuels and explain CNG. (10 Marks)

OR

- 8 a. Explain with neat sketch IC engine/electric hybrid vehicle and list advantages and disadvantages. (10 Marks)
- b. Explain with a neat sketch hydrogen fuel cell vehicle. (10 Marks)

Module-5

- 9 a. On what parameters the motors are selected in EVs, with neat sketch explain BLDC. (10 Marks)
- b. With a neat sketch, explain control system in electrical vehicles. (10 Marks)

OR

- 10 a. Conclude the importance of battery cooling in EVS, explain briefly. (10 Marks)
- b. List out the various types of batteries used in EVS and explain the working of lithium batteries. (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.