

CBCS SCHEME

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21ME654

Sixth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 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. Explain the classification of automobiles with respect to usage. (10 Marks)
- b. Explain with neat sketch, components of IC engine and their functions. (10 Marks)

OR

- 2 a. Explain with neat sketches of cooling system in IC engines. (10 Marks)
- b. Explain with neat sketches of Ignition system. (10 Marks)

Module-2

- 3 a. Explain with neat sketch of Multiplate clutch. (10 Marks)
- b. Explain with neat sketches Sliding mesh gear box and Synchromesh gear box. (10 Marks)

OR

- 4 a. Explain with neat sketch, torque convertor. (10 Marks)
- b. Explain different types of tyres with neat sketches. (10 Marks)

Module-3

- 5 a. What is Steering Geometry? Define :
i) Camber ii) Caster
iii) King Pin Inclination iv) Toe – in , Toe - Out. (10 Marks)
- b. Explain with neat sketch the working of Leaf spring and Coil spring in suspension system. (10 Marks)

OR

- 6 a. Explain with sketches hydraulic and pneumatic braking system. (10 Marks)
- b. Explain with neat sketches, Antilock Braking System (ABS). (10 Marks)

Module-4

- 7 a. Explain exhaust gas pollutants and their effects on environment. (10 Marks)
- b. What are the different alternatives fuels used in IC engine and its advantages and disadvantages? (10 Marks)

OR

- 8 a. What is CNG Vehicles? Explain its operation , advantages and disadvantages. (10 Marks)
- b. With the layout of Electric hybrid vehicles , explain operation and function of transmission and control system. (10 Marks)

Module-5

- 9 a. Explain Electric vehicles principal and its components. (10 Marks)
b. What is Motor? Explain different types of Motor and construction and working of DC motor. (10 Marks)

OR

- 10 a. Explain Battery charging types and requirements. (10 Marks)
b. Explain with sketch, working principles of Lead – acid and Nickel – based batteries. (10 Marks)
