



Sixth Semester B.E. Degree Examination, Feb./Mar. 2022
Automobile Engineering

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain wet and dry liners with the help of diagrams. (06 Marks)
- b. What are the function of piston rings? Explain with neat sketch the operation of piston rings. (08 Marks)
- c. What is air swirl? What are methods of swirl generation in compression ignition engine? (06 Marks)

OR

- 2 a. Draw the valve timing diagram for a four stroke petrol engine indicating clearly the position of following and briefly explain them:
i) IVO ii) IVC iii) Ignition iv) EVO v) EVC. (08 Marks)
- b. Explain with neat sketch:
i) Thermo siphon cooling system
ii) Pump circulation cooling system. (08 Marks)
- c. Explain the splash lubrication, with neat sketch. (04 Marks)

Module-2

- 3 a. Explain the construction and working principle of multiplate clutch. (10 Marks)
- b. With neat sketch, explain Hotch Kiss Drive and also compare with torque tube drive. (10 Marks)

OR

- 4 a. Describe the construction and operation of disc brake. (08 Marks)
- b. With neat sketch, explain working of master cylinder of braking system. (10 Marks)
- c. What is Anti-lock Braking System (ABS)? (02 Marks)

Module-3

- 5 a. Define the following terms:
i) Camber ii) Castor iii) King pin inclination iv) Toe in and toe out v) Included angle. (10 Marks)
- b. Sketch and explain the following suspension system:
i) Torsion bar ii) Leaf spring. (10 Marks)

OR

- 6 a. Explain battery coil ignition system, what are its advantages and disadvantages? (10 Marks)
- b. Explain with neat sketch working of Air suspension system. (06 Marks)
- c. Compare Battery and Electronic ignition system. (04 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.

Module-4

- 7 a. What is supercharging? List out the advantages and disadvantage of super charging. (06 Marks)
b. Explain with sketches of various types of super chargers. (12 Marks)
c. What is turbo lag in turbo charging? (02 Marks)

OR

- 8 a. What is octane and cetane ratings for petrol and diesel fuel? (04 Marks)
b. Explain with neat sketch, the working of fuel injector. (08 Marks)
c. Explain with neat sketch working of carter carburetor. (08 Marks)

Module-5

- 9 a. Explain with diagram the Exhaust Gas Recirculation (EGR) system. (08 Marks)
b. How the air injection helps in reducing overall Emission effect? (06 Marks)
c. What are catalytic converters? How they are helpful in reducing HC, Co and NO_x in the exhaust gases? (06 Marks)

OR

- 10 a. Write short notes on Emission standards. (06 Marks)
b. Explain the working of catalytic converter with a help of neat sketch. (08 Marks)
c. Give a brief account of emission standards opted in India. (06 Marks)
