

Note: Answer any one full questions from each module

Module - 1

COs M BL
CO1 10 L2

- 1a What is greenhouse effect? List the greenhouse gases and Discuss the pros and cons of greenhouse gases on environment.
- b Briefly explain the role of mechanical engineering in society and energy sector.
- c Explain the different types of fossil fuels.

CO1 06 L2
CO1 04 L2

OR

- 2a With a neat sketch explain the construction and working of solar pond.
- b With neat sketch explain the construction and working of hydel power plant.
- c Define Energy. List the different sources and forms of energy.

CO1 10 L2
CO1 06 L2
CO1 04 L2

Module - 2

- 3a Explain with a neat sketch i) Drilling ii) Reaming and iii) Boring operations.
- b Differentiate between up milling and down milling with a neat sketch.
- c Write the applications of CNC machines.

CO2 10 L2
CO2 06 L2
CO2 04 L2

OR

- 4a With block diagram explain the steps involved in 3D printing process.
- b Write the advantages and disadvantages of CNC machines.
- c Define machine tool. List the different machine tools used in manufacturing industries.

CO2 10 L2
CO2 06 L2
CO2 04 L2

Module - 3

- 5a What do you mean by hybrid cars? Briefly explain the various components of a hybrid car.
- b Write the advantages and disadvantages of Electric vehicles.
- c Explain the functions of connecting rod and flywheel in I.C. Engine.

CO3 10 L2
CO3 06 L2
CO3 04 L2

OR

- 6a With a neat sketch explain the working of 4-Stroke Diesel Engine. Draw the P-V diagram.
- b The average piston speed of a 4-stroke petrol engine having piston diameter of 200 mm is 4 m/sec. The mean effective pressure acting on the piston is 0.786 MPa. Determine the power developed inside the engine cylinder.
- c Write the differences between S.I and C.I engine.

CO3 10 L2
CO3 06 L3
CO3 04 L2

Module - 4

- 7a Briefly explain different types of Non Ferrous Metals and Non Ferrous alloys.
- b Explain the various components of composite materials.
- c Explain any four mechanical properties of Engineering materials.

CO4 10 L2
CO4 06 L2
CO4 04 L2

OR

- 8a Define welding. With a neat sketch explain the construction and working of A C Arc Welding.
- b What is Solder? With neat sketch explain the method of soldering by Soldering Iron Method.
- c Differentiate between hard solder and soft solder.

CO4 10 L2
CO4 06 L2
CO4 04 L2

Module - 5

- 9a Classify and Explain robots based on the configuration.
- b With a block diagram explain any one closed loop control system used in real life

CO5 10 L2
CO5 06 L2

application.

- c Briefly explain the various components of robot.

CO5 04 L2

OR

- 10a Write the differences between fixed automation and flexible automation with suitable examples.

CO5 10 L2

- b Explain with block diagram any one closed loop control system.

CO5 06 L2

- c Define Actuator. Explain any one.

CO5 04 L2