

First Semester B.E./B.Tech. Degree Examination, June/July 2025
Introduction to Mechanical Engineering

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.
M : Marks , L: Bloom's level , C: Course outcomes.

Module - 1			
Q.1	a.	M	L
	Explain briefly the emerging trends of mechanical engineering in Automobile and Energy Sectors.	10	L2
	b.		C
	Discuss on the roles of mechanical engineers in different sectors.	10	L2
			CO1
OR			
Q.2	a.	M	L
	Describe the construction and working of hydel power plant with a schematic diagram.	10	L2
	b.		C
	Brief on the following environmental issues (causes and remedies) i) Global warming ii) Ozone layer depletion.	10	L2
			CO1
Module - 2			
Q.3	a.	M	L
	Explain the working principal of drilling with schematic diagram.	8	L2
	b.		C
	Illustrate the following operations of Milling with sketches. i) Plane milling ii) Slot milling.	6	L3
			CO2
	c.		C
	Explain the following operations of lathe i) Turning ii) Knurling.	6	L2
			CO2
OR			
Q.4	a.	M	L
	Explain the different methods of manufacturing.	4	L2
	b.		C
	Define Additive Manufacturing. Brief on steps involved in 3D printing with a block diagram.	10	L2
			CO2
	c.		C
	Describe the various components of CNC with schematic diagram.	6	L2
			CO2
Module - 3			
Q.5	a.	M	L
	List the difference between Otto cycle and diesel cycle	4	L1
	b.		C
	Analyze the working of the 4 stroke diesel engine with sketch.	10	L4
			CO3
	c.		C
	Outline the classification of IC Engines.	6	L1
			CO3
OR			
Q.6	a.	M	L
	Describe Electric Vehicles. Explain the components and working of Electric Vehicles.	10	L2
	b.		C
	Describe Hybrid Vehicles. Explain the components and working of Hybrid Vehicles.	10	L2
			CO3

Module – 4			
Q.7	a.	Recite the classification of metals.	5 L1 CO4
	b.	Describe the three types of carbon steels with applications.	9 L2 CO4
	c.	Describe the following materials i) Graphite ii) Aluminum Alloy.	6 L2 CO4
OR			
Q.8	a.	Describe the construction and writing of gas welding process with neat sketch.	10 L2 CO4
	b.	List the differences between soldering brazing and welding.	10 L1 CO4
Module – 5			
Q.9	a.	Based on the configuration, explain the four types of robots with sketch.	10 L3 CO5
	b.	Define Mechatronics. List the difference between open loop and closed loop systems.	10 L1 CO5
OR			
Q.10	a.	Describe the communication models with respect to IoT.	5 L1 CO5
	b.	Define IoT List the characteristics of IoT.	5 L1 CO5
	c.	Describe the basic elements of automation system with a block diagram.	10 L2 CO5
