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BESCK204D

## Second Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 Introduction to Mechanical Engineering

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1				M	L	C
Q.1	a.	Explain the role of Mechanical engineering in Industries and society.		8	L2	CO1
	b.	With a neat sketch, explain the working of hydel power plant.		8	L2	CO1
	c.	Write a note on Biofuels.		4	L1	CO1
OR						
Q.2	a.	With a neat sketch, explain the working of wind mill or wind power plant along with its advantages and disadvantages.		8	L2	CO1
	b.	Explain the working of solar flat plate collector with neat sketch.		8	L2	CO1
	c.	Write short note on Global warming and Ozone depletion.		4	L1	CO1
Module – 2						
Q.3	a.	Explain the following machine tool operations with sketch : i) Turning      ii) Boring      iii) Slot milling.		12	L2	CO2
	b.	Explain 3D printing process with its advantages and disadvantages.		8	L2	CO2
OR						
Q.4	a.	Explain the components of CNC with block diagram along with its application and advantages.		12	L2	CO2
	b.	Explain the working principles of lathe machine and milling machine.		8	L2	CO2
Module – 3						
Q.5	a.	Explain the working of 4 – stroke petrol engine with P – V diagram.		10	L2	CO3
	b.	Describe the components of I.C. Engine with a neat sketch.		10	L2	CO3
OR						
Q.6	a.	Explain the components and working principle of following vehicles : i) Electric vehicles      ii) Hybrid vehicles.		12	L2	CO3
	b.	What are the advantages and disadvantages of Electric vehicles and Hybrid vehicles?		8	L1	CO3

Module – 4					
Q.7	a.	Explain three types of ferrous and three types of non – ferrous metals.	12	L2	CO4
	b.	Write a note on the following materials : i) Ceramics            ii) Glass.	8	L1	CO4
OR					
Q.8	a.	Explain the working principle of Arc welding with a neat sketch.	8	L2	CO4
	b.	Explain soldering and brazing process.	6	L2	CO4
	c.	Explain the three types of flames used in gas welding.	6	L2	CO4
Module – 5					
Q.9	a.	Explain open loop and closed loop mechatronic system.	8	L2	CO5
	b.	Explain the four types of robotic configurations with 2D sketch.	12	L2	CO5
OR					
Q.10	a.	Describe the three types of Automation system.	6	L2	CO5
	b.	What are the basic elements in an Automated system? Show that in a block diagram.	4	L1	CO5
	c.	Explain the characteristics and physical design of IoT.	10	L2	CO5

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