

CBCS SCHEME

BESCK104D/BESCKD104

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First Semester B.E./B.Tech. Degree Examination, June/July 2024 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.
3. Write neat sketches wherever it is necessary.*

Module – 1			M	L	C
Q.1	a.	Explain briefly the emerging trends of mechanical engineering in Automotive and Aerospace sector.	10	L2	CO1
	b.	Describe the following : i) Biofuels ii) Nuclearfuels.	10	L2	CO1
OR					
Q.2	a.	Describe the construction and working of Hydroelectric power plant.	8	L2	CO1
	b.	Explain the utilization of solar energy using flat plate collector with a schematic diagram.	8	L2	CO1
	c.	Outline the following : i) Environmental issues ii) Fossil fuels.	4	L1	CO1
Module – 2					
Q.3	a.	Explain the working principle of Lathe with line diagram.	7	L2	CO2
	b.	Illustrate the following operations of drilling with sketches. i) Boring ii) Reaming iii) Drilling.	6	L3	CO2
	c.	Explain the following milling operations i) Plain milling ii) Slot milling.	7	L2	CO2
OR					
Q.4	a.	Define additive manufacturing. List the various steps involved in Additive manufacturing.	6	L1	CO2
	b.	Describe the various components of CNC with Schematic diagram.	8	L2	CO2
	c.	List the advantages and applications of 3D printing (3 each).	6	L1	CO2
Module – 3					
Q.5	a.	Explain the working of the 4 stroke diesel engine with sketches plot the PV diagram.	12	L2	CO3
	b.	List the differences between 4 stroke petrol and diesel engine (any 8).	8	L1	CO3
OR					
Q.6	a.	Describe Electric vehicles. Explain the components and working of the electric vehicles.	8	L2	CO3
	b.	Describe Hybrid vehicles. Explain the components of Hybrid vehicles.	8	L2	CO3
	c.	List the advantages and limitation of electric vehicles (any two each).	4	L1	CO3
Module – 4					
Q.7	a.	Recite the classification of metals.	5	L1	CO4
	b.	Describe the following materials i) Plastics ii) Shape memory alloys.	6	L2	CO4
	c.	Observe and describe the three types of gas flames with sketches.	9	L2	CO4

OR					
Q.8	a.	List the difference between soldering, Brazing and welding (at least 5).	10	L1	CO4
	b.	Describe the construction and working of Arc welding. Process with neat sketch.	10	L2	CO4
Module – 5					
Q.9	a.	Define Mechatronics. List the differences between open loop and closed loop system (any 6).	8	L1	CO5
	b.	Based on the configuration, explain the four types of Robots.	8	L2	CO5
	c.	List the various applications of robots in various fields.	4	L3	CO5
OR					
Q.10	a.	Define Automation. Explain the three types of Automation.	7	L1	CO5
	b.	Describe the basic elements of automation system with block diagram.	8	L2	CO5
	c.	Define IoT. List the characteristics of IoT (any 6).	5	L1	CO5
