

CBCS SCHEME

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BESCK104D/BESCKD104

First Semester B.E./B.Tech. Degree Examination, Jan./Feb. 2023 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.	Difference between renewable and non-renewable energy sources.	6	L2	CO1
	b.	Briefly explain the role of Mechanical Engineering in Industries and Society.	6	L2	CO1
	c.	Illustrate the operation of liquid flat plate collector and solar-photo-voltaic cells with neat sketch.	8	L2	CO1
OR					
Q.2	a.	Briefly describe the Emerging Trends and Technologies in any two sectors.	6	L2	CO1
	b.	With neat sketch, explain the working of Hydel Power Plant.	6	L2	CO1
	c.	Illustrate the operation of Wind Mill with neat sketch.	8	L2	CO1
Module – 2					
Q.3	a.	Define lathe. With neat sketch and explain the following machining operations. i) Turning ii) Facing iii) Knurling iv) Boring	10	L2	CO2
	b.	Define CNC. With block diagram, explain the different components used in CNC.	10	L2	CO2
OR					
Q.4	a.	Define milling machine. With neat sketch, explain the following machining operations: i) Drilling ii) Reaming iii) Plane-Milling iv) Slot Milling	10	L2	CO2
	b.	Write the advantages and applications of CNC.	6	L2	CO2
	c.	Define 3-D printing and classify.	4	L2	CO2
Module – 3					
Q.5	a.	With neat sketch and explain the working of 4-stroke petrol engine. And also write its P-V diagram.	10	L2	CO3
	b.	Define EV (Electric Vehicle). With block diagram, explain the different components used in EV. Also write benefits of EV in current trend.	10	L2	CO3

OR					
Q.6	a.	With neat sketch and explain the working of 4-stroke diesel engine. And also write its P-V diagram.	10	L2	CO3
	b.	Define HEV (Hybrid Electric Vehicle). With block diagram, explain the different components used in HEV. Also write limitations of EV's in current trend.	10	L2	CO3
Module – 4					
Q.7	a.	Define Engineering Material. Briefly explain the classifications of ferrous and non-ferrous metals.	10	L2	CO4
	b.	Define welding. With neat sketch, explain the working of Electric Arc Welding.	10	L2	CO4
OR					
Q.8	a.	Define the following terms: i) Ceramic ii) Graphite iii) Polymers iv) Shape Memory Alloy	10	L1	CO4
	b.	Define Soldering. With neat sketch, explain the working of Gas welding and name the different types of flames used in oxy-acetylene welding.	10	L2	CO4
Module – 5					
Q.9	a.	With a neat sketch, explain the open-loop and closed-loop mechatronic systems.	10	L2	CO5
	b.	Define Automation. Explain the classifications of automation.	10	L2	CO5
OR					
Q.10	a.	Define Industrial Robot. Explain the different configurations of Robot with neat sketch.	10	L2	CO5
	b.	Define IOT. Briefly explain the characteristics of IOT.	6	L2	CO5
	c.	Explain the logical design of IOT.	4	L2	CO5
