

CBCS SCHEME

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BESCK104D/BESCKD104

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.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.

Module – 1			M	L	C
Q.1	a.	Explain the role of mechanical engineering in society.	10	L2	CO1
	b.	Explain the emerging trends and technologies in the following sectors. i) Manufacturing sector ii) Automotive sector iii) Aerospace sector iv) Marine sector.	10	L2	CO1
OR					
Q.2	a.	With a neat sketch, explain the working principle of Hydel power plant.	10	L2	CO1
	b.	Write short notes on : i) Fossil fuels ii) Bio-fuels.	10	L2	CO1
Module – 2					
Q.3	a.	What is lathe? With neat sketch explain the working principle of lathe machine.	6	L2	CO2
	b.	With neat sketches, explain the following lathe operations. i) Turning operation ii) Knurling operation.	8	L2	CO2
	c.	Differentiate between up milling and down milling.	6	L2	CO2
OR					
Q.4	a.	What is CNC? With neat sketches, explain the basic components of CNC.	8	L2	CO2
	b.	List the advantages and disadvantages of CNC.	6	L1	CO2
	c.	List the advantages and disadvantages of 3D printing.	6	L2	CO2
Module – 3					
Q.5	a.	With a neat sketch, explain the components of I.C engine.	10	L2	CO3
	b.	With a neat sketch, explain the working principle of 4-stroke petrol engine along with PV diagram.	10	L2	CO3
OR					
Q.6	a.	What is an electric vehicle? Briefly explain the components of an electric vehicle.	10	L2	CO3
	b.	State the advantages and disadvantages of EVs and hybrid vehicles.	10	L2	CO3

Module – 4					
Q.7	a.	Write the composition, properties and applications of the following materials. i) Cast iron ii) High carbon steel iii) Alluminium iv) Copper.	10	L2	CO4
	b.	Write short notes on : i) Polymers ii) Shape memory alloys.	10	L2	CO3
OR					
Q.8	a.	What is Welding? With a neat sketch, explain the working principle of Electric Arc Welding.	10	L2	CO4
	b.	With neat sketches, explain 3 types of flames used in gas welding process.	5	L2	CO4
	c.	List the applications of welding.	5	L2	CO4
Module – 5					
Q.9	a.	With the help of block diagram, explain open loop and closed-loop control systems.	10	L2	CO5
	b.	With neat sketches, explain four basic robot configurations.	10	L2	CO5
OR					
Q.10	a.	What is Automation? Explain 3 types of automation.	10	L2	CO5
	b.	Briefly explain characteristics of I.O.T.	10	L2	CO5

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