U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Semester End Main Examinations

Programme: B.E. **Semester: I / II**
Branch: Common to all Branches **Duration: 3 hrs.**
Course Code: 22ME1ESIME / 22ME2ESIME **Max Marks: 100**
Course: Introduction to Mechanical Engineering

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

			UNIT - I	*CO*	*PO*	Marks
1	a)		Explain the construction and working of Hydel power plant with a neat sketch.	*CO1*	*PO 1*	**12**
	b)		With the help of a neat labelled diagram, explain working of Bio-mass plant.	*CO1*	*PO1*	**08**
			UNIT - II			
2	a)		Briefly explain working principle of Lathe. Explain Lathe operations.	*CO1*	*PO1*	**10**
	b)		Draw the block diagram of components of CNC and Explain each component.	*CO1*	*PO1*	**10**
			OR			
3	a)		Explain following operations with a neat sketch Drilling ii) Boring iii) Reaming iv) Plain milling v) Slot milling	*CO2*	*PO1*	**15**
	b)		Write a flow chart indicating sequence of operations involved in 3D printing.	*CO2*	*PO1*	**05**
			UNIT - III			
4	a)		With the neat labelled diagram and PV curve, explain the working of 4 stroke petrol engine.	*CO2*	*PO1*	**12**
	b)		A four-strike diesel engine has a piston diameter of 200 mm and a stroke of 300 mm. It has mean effective pressure of 5.6 bar and a speed of 400 rpm. The diameter of the brake drum is 1 meter and the effective brake load is 64 kg. Find the indicated power, the brake power, the mechanical efficiency of the engine and the average piston speed.	*CO3*	*PO1*	**08**
			OR			
5	a)		Explain with the neat labelled diagram and PV curve the working of 4 stroke Diesel engine.	*CO2*	*PO1*	**12**
	b)		Explain the different components in Hybrid vehicle with a block diagram.	*CO2*	*PO1*	**08**

			UNIT-IV			
	6	a)	Write a concise note on following materials i) Ceramics ii) Composites iii) Smart materials	*CO2*	*PO1*	**12**
		b)	Explain the working principle of electric arc welding with a neat diagram.	*CO2*	*PO1*	**08**
			UNIT - V			
	7	a)	With a simple neat sketch explain anatomy of Robots.	*CO1*	*PO1*	**06**
		b)	Explain the basic four different configurations of Robots.	*CO1*	*PO1*	**08**
		c)	Explain the elements of Industrial Automation with the block diagram.	*CO1*	*PO1*	**06**

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