

U.S.N.

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

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E.

Branch: Mechanical Engineering

Course Code: 22ME7PEIN4

Course: Industry 4.0

Semester : VII

Duration: 3 hrs.

Max Marks: 100

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)	What role does automation play in optimizing industrial business processes?	CO1	PO1	10
		b)	What were the key drivers behind Google Inc.'s business transformation?	CO1	PO1	10
			OR			
	2	a)	Discuss how Industry 4.0 is influencing industrial transformation across different sectors?	CO1	PO1	10
		b)	Briefly explain key components of successful organizational transformation?	CO1	PO1	10
			UNIT - II			
	3	a)	How does predictive maintenance support manufacturing process automation?	CO3	PO1	10
		b)	How does automation in manufacturing improve operational efficiency and reduce costs?	CO3	PO1	10
			OR			
	4	a)	Discuss how process automation contribute to achieving Industry 4.0's goal of mass customization? Give two examples.	CO3	PO1	10
		b)	How does robotic process automation in the medical device segment align with the goals of Industry 4.0?	CO3	PO1	10
			UNIT - III			
	5	a)	What were the key technological innovations during the First Industrial Revolution?	CO2	PO1	10

	b)	Discuss about science and technology revolution in Industry 2.0.	CO2	PO1	10
		OR			
6	a)	Discuss the future of industrial economy in Industry 5.0.	CO2	PO1	10
	b)	Evaluate the societal changes brought about by the shift to digital technologies during the third Industrial Revolution.	CO2	PO1	10
		UNIT - IV			
7	a)	With a Schematic diagram explain Shop floor process control automation.	CO4	PO1	10
	b)	How does SCADA (Supervisory Control and Data Acquisition) improve monitoring and control of industrial processes in SMEs?	CO4	PO1	10
		OR			
8	a)	Evaluate the impact of VR on improving customer experience and engagement in the automotive industry.	CO4	PO1	10
	b)	How does process automation contribute to the growth and efficiency of the solar energy sector?	CO4	PO1	10
		UNIT - V			
9	a)	How can Industry 5.0 technologies, like collaborative robots (cobots) and AI, help create safer and more efficient workplaces?	CO5	PO1	10
	b)	What is SWOT analysis and how is it applied in the context of industrial transformation?	CO5	PO1	10
		OR			
10	a)	What role do industry collaborations, partnerships, and ecosystems play in shaping the transition strategy to Industry 5.0?	CO5	PO1	10
	b)	What is PESTLE analysis, and how is it applied in the Pepsi company?	CO5	PO1	10
