U.S.N.										

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

Autonomous Institute Affiliated to VTU

August 2024 Semester End Main Examinations

Programme: B.E. **Semester: IV**
Branch: Industrial Engineering and Management **Duration: 3 hrs.**
Course Code: 23IM4PCCIM **Max Marks: 100**
Course: Computers in Manufacturing

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.

			CO	PO	Marks
		UNIT – I			
1	a)	How do computers enhance the product cycle in both conventional and computerized manufacturing environments?	*CO 1*	*PO1*	**10**
	b)	What is CAPP, and how does it integrate with CAM systems? Discuss its importance in the design and manufacturing process.	*CO 2*	*PO2*	**10**
		OR			
2	a)	Describe the configuration of a graphic system in computer graphics.	*CO 1*	*PO1*	**10**
	b)	Explain the fundamentals of CAD and CAM. Discuss the advantages and disadvantages of CAD in the design process.	*CO 1*	*PO3*	**10**
		UNIT – II			
3	a)	Explain the function and use of punched tape in Numerical Control systems.	*CO 1*	*PO1*	**10**
	b)	Discuss the fundamental concepts of Numerical Control (NC). How are NC systems classified based on technology?	*CO 1*	*PO1*	**10**
		UNIT - III			
4	a)	Provide and explain at least 5 APT programming statements. Include the basic structure and purpose of each program.	*CO 3*	*PO12*	**10**
	b)	Outline the steps involved in the ATC process and describe the types of tool magazines and transfer systems.	*CO 1*	*PO1*	**10**
		UNIT – IV			
5	a)	What are tool radius and length compensation, and how are they applied in CNC programming?	*CO 1*	*PO1*	**10**
	b)	Describe the use of G and M codes in manual part programming. Provide examples of common G and M codes and their functions.	*CO 2*	*PO2*	**10**

			UNIT – V			
	6	a)	Explain the different robot configurations and their uses in industrial applications. How do these configurations impact robot performance?	*CO 1*	*PO1*	**10**
		b)	What are end effectors in robotics? Describe the various types of end effectors and their functions in industrial robots.	*CO 4*	*PO3*	**10**
			OR			
	7	a)	Discuss the different robot programming methods. How do these methods influence the programming and operation of robots in manufacturing?	*CO 3*	*PO9*	**10**
		b)	How do sensors contribute to the functionality and efficiency of robotic systems in industrial environments?	*CO 4*	*PO3, PO12*	**10**

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