U.S.N.										

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

Autonomous Institute Affiliated to VTU

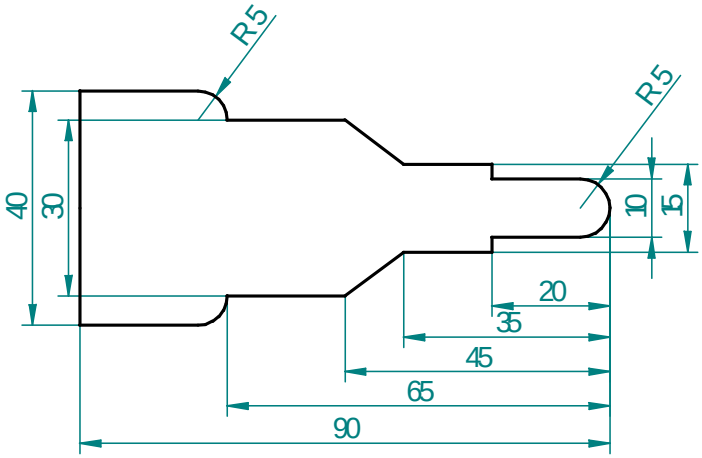
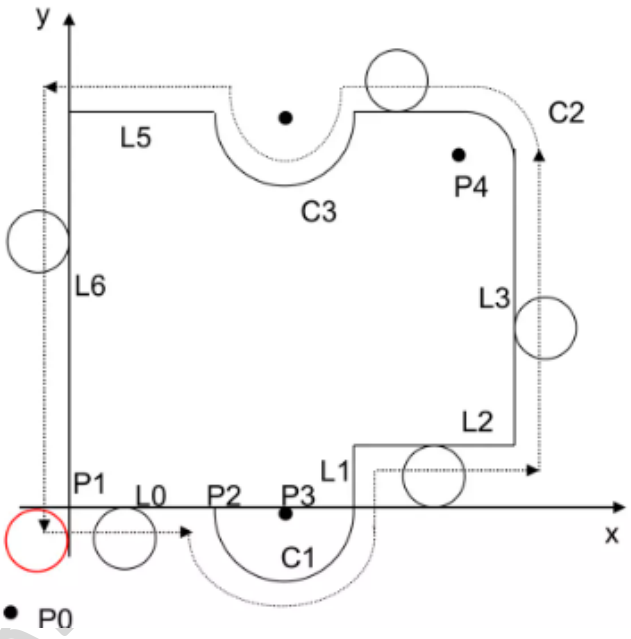
August 2024 Semester End Main Examinations

Programme: B.E. **Semester: IV**
Branch: Industrial Engineering and Management **Duration: 3 hrs.**
Course Code: 22IM4PCCIM **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)		With the help of a block diagram explain the product cycle in computerized manufacturing set up.	*CO1*	*PO1*	**06**
	b)		Discuss in detail the various functions of a graphics package.	*CO1*	*PO1*	**06**
	c)		The vertices of a triangle are situated at points (15, 30), (25, 35) and (5, 45). Find the coordinates of the vertices if the triangle is first rotated 10^o counter clockwise direction about the origin and then subsequently scaled to twice its size. Show the transformation calculations and draw the triangles on graph paper.	*CO1*	*PO1*	**08**
			UNIT - II			
2	a)		What is a NC system? Specify various tape formats for NC programming.	*CO1*	*PO1*	**08**
	b)		Mention different types of motion Control Systems in NC machines.	*CO1*	*PO1*	**12**
			OR			
3	a)		Explaining the basic components of an NC system? How are they related to the NC programming formats.	*CO1*	*PO1*	**10**
	b)		Compare the relative advantages and disadvantages of using NC systems.	*CO1*	*PO1*	**10**
			UNIT - III			
4	a)		How are ACO, ACC and GAC systems different? Explain their features.	*CO1*	*PO1*	**12**
	b)		What is ATC? Explain the steps in working of an ATC?	*CO1*	*PO1*	**08**
			UNIT - IV			
5	a)		Explain: i)Canned Cycles ii)APT programming iii) Radius and Length Compensation.	*CO2*	*PO2 PO3 PO12*	**06**

		b)	Write a CNC part program for the following component. 	*CO2*	*PO2 PO3 PO12*	**14**
			OR			
	6	a)	Explain the various types of statements used in APT Programming with suitable examples for each.	*CO2*	*PO2*	**06**
		b)	Write geometric and motion statements of the APT program for the following component. 	*CO2*	*PO2*	**14**
			UNIT - V			
	7	a)	What are the different Robot Configurations of present day commercially available industrial Robots?	*CO1 CO4*	*PO1 PO2 PO3*	**06**
		b)	Mention different programming methods of Robots.	*CO1 CO4*	*PO1 PO2 PO3*	**06**
		c)	What are the considerations for adopting Robots for various applications? Mention some of its applications.	*CO1 CO4*	*PO1 PO2 PO3*	**08**

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