U.S.N.										

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

Autonomous Institute Affiliated to VTU

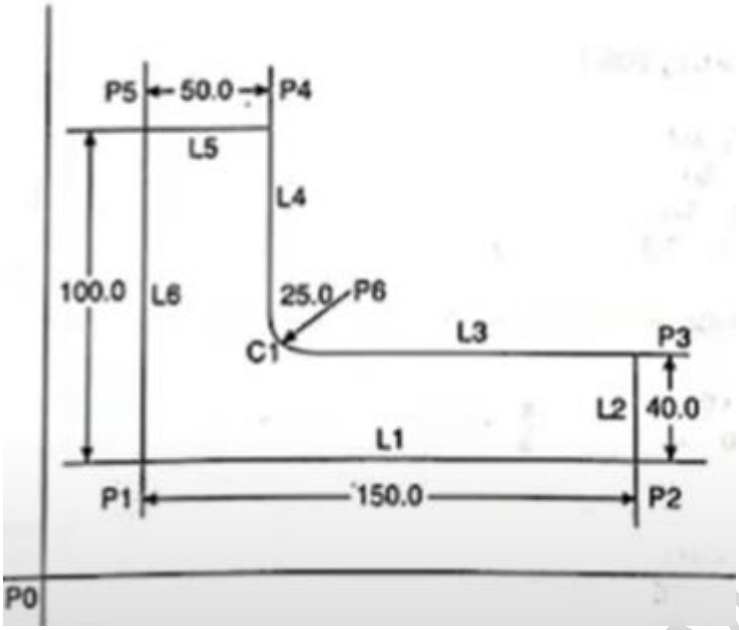
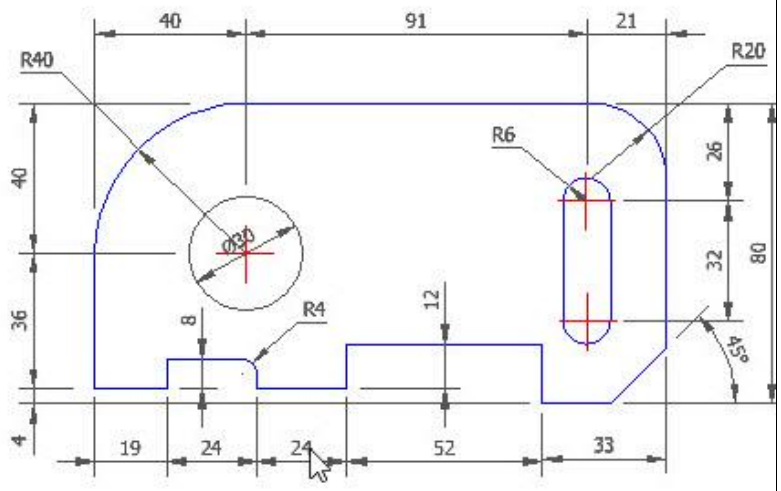
October 2024 Supplementary Examinations

Programme: B.E. **Semester: IV**
Branch: Industrial Engineering & 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)	With neat the help of flow charts explain any five contrasting points between conventional product cycle and computerised product cycle.		*CO1*	*PO1*	**10**
	b)	The vertices of a triangle are situated at (15, 30), (25, 35), (20,30) and (5, 45). Find the coordinates of the vertices if the triangle is first rotated 30^o counter clockwise direction about the origin and then subsequently scaled to thrice its size. Show the transformation calculations and draw the triangles on graph paper.		*CO1*	*PO1*	**10**
			UNIT - II			
2	a)	Explain the salient aspects of different tape formats used on Punched Tapes in NC systems.		*CO1*	*PO1*	**08**
	b)	What is a Motion Control System in NC machine tools? Explain the three different motion control systems.		*CO1*	*PO1*	**12**
			OR			
3	a)	What are the basic components of an NC system? Explain the working of each of the component parts.		*CO1*	*PO1*	**08**
	b)	Explain the utility of ACO, ACC and GAC systems over conventional CNC control system? Explain their features.		*CO1*	*PO1*	**12**
			UNIT - III			
4	a)	Discuss: i) Tool Presetting ii) Modular Tooling in CNC iii) Tool Signature of Single point cutting tool		*CO1*	*PO1*	**3X4= 12**
	b)	Explain the step-by-step working of an ATC in CNC milling centre?		*CO1*	*PO1*	**08**
			OR			
5	a)	Explain with examples different types APT Programming statements used.		*CO2*	*PO2*	**06**

		b)	Write geometric and motion statements of the APT program for the following component. 	*CO2*	*PO2*	**14**
			UNIT - IV			
	6	a)	Explain the difference between a Canned Cycle and a Subroutine in a CNC program with an example for each.	*CO2*	*PO2,3, 12*	**06**
		b)	Write a CNC part program for the following component. 	*CO2*	*PO2,3, 12*	**14**
			UNIT - V			
	7	a)	What are the different Robot design configurations of present day commercially available industrial Robots?	*CO1 CO4*	*PO1 PO2 PO3*	**06**
		b)	List and explain 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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