U.S.N.										

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

Autonomous Institute Affiliated to VTU

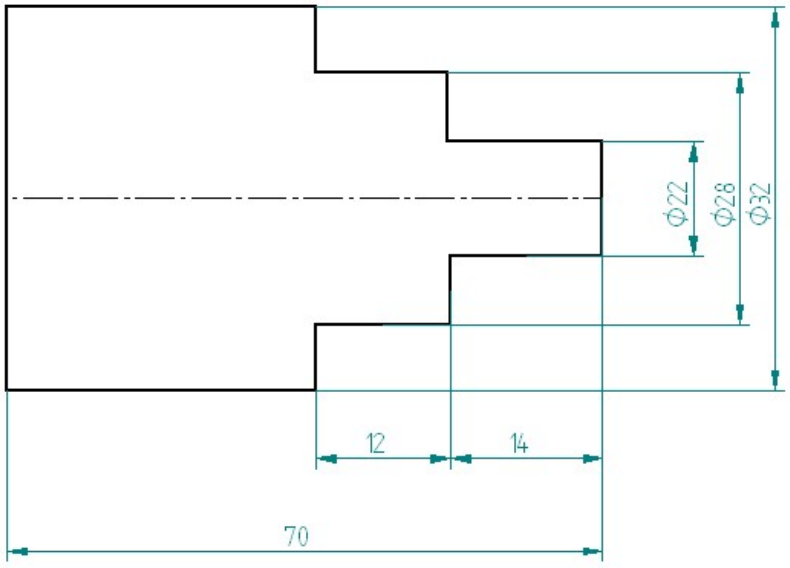
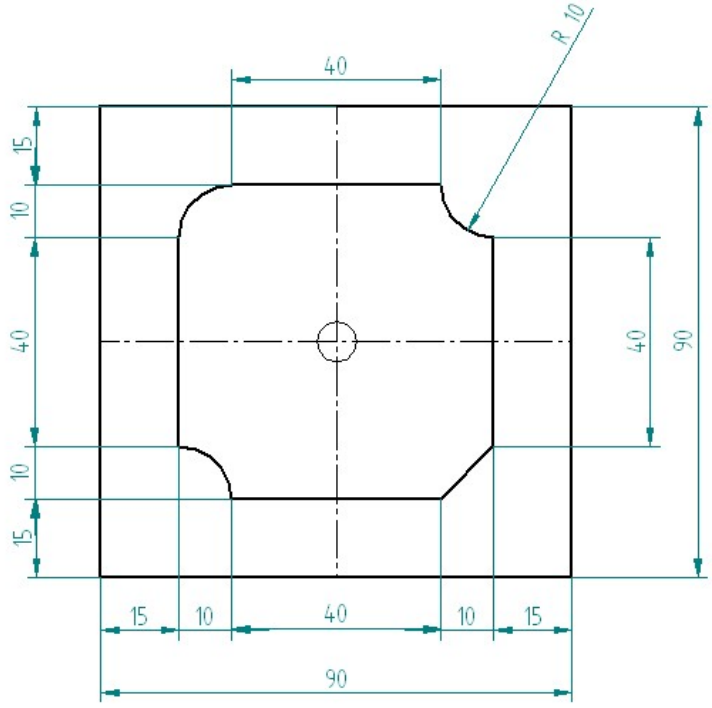
September / October 2023 Semester End Main Examinations

Programme: B.E. **Semester: 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)	Explain the steps involved in the conventional product cycle with a suitable example.	*CO1*	*PO1*	**12**
	b)	Differentiate between solid and wireframe modeling.	*CO1*	*PO1*	**08**
		UNIT - II			
2	a)	With the help of a block diagram, explain the basic components of an NC system.	*CO1*	*PO1*	**10**
	b)	With suitable examples, explain the three types of nc motion control systems	*CO1*	*PO1*	**10**
		UNIT - III			
3	a)	Explain the two types of adaptive control systems.	*CO1*	*PO1*	**10**
	b)	State the benefits of adaptive control in machine tools.	*CO1*	*PO1*	**10**
		UNIT - IV			
4	a)	List and explain different types of statements used in the APT language.	*CO1* *CO2*	*PO1* *PO2*	**08**

		b)	Generate program using G and M codes for turning operation for the profile given below. Cutting tool: RH turning tool. 	*CO1* *CO2*	*PO2* *PO3* *PO12*	**12**
			OR			
	5	a)	With example, explain canned cycles.	*CO1*	*PO2*	**08**
		b)	Generate milling program using G and M codes for the profile given below. Cutting tool: Slot Drill Cutter (φ 6mm), Depth of cut: 1mm 	*CO1* *CO2*	*PO2* *PO3* *PO12*	**12**
			UNIT - V			
	6	a)	List and Explain with sketches the Classification of robots based on robots configuration.	*CO1*	*PO1*	**12**
		b)	With the block diagram, explain open and closed loop control systems.	*CO1*	*PO1*	**08**

			OR			
	7	a)	Explain any five types of End Effectors.	*CO1*	*PO1*	**10**
		b)	Explain the 5 components of any Industrial robot	*CO1*	*PO1*	**10**

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