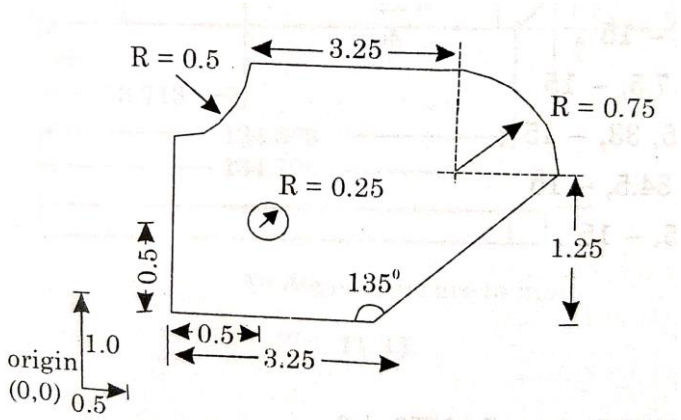
Name: **Enrolment No:**	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Program Name: B Tech (ADE) **Semester: VII**
Course Name: Automation in Manufacturing **Time: 03 hrs**
Course Code: MEPD 4011 **Max. Marks: 100**
Nos. of the page(s) : 02
Instructions:

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Briefly explain the functions that are expected to be served by numerical control in machine tools.	**4**	**CO1**
Q 2	What is automation and what are its types?	**4**	**CO1**
Q 3	Compare Non-parametric and Parametric representation of curves.	**4**	**CO1**
Q 4	Differentiate between incremental and absolute coordinate system.	**4**	**CO1**
Q 5	Discuss Macro statements used in APT with suitable examples.	**4**	**CO1**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	To develop a Part program what is the knowledge a computer numerical programmer should have.	**10**	**CO2**
Q 7	Suppose you are a design engineer in CNC cylindrical grinding machines manufacturing company. How will you implement CAD in your company? How will you use CAD to improve your design productivity? Comment.	**10**	**CO2**
Q 8	What do we expect from a geometric modelling system to accomplish, in a broad sense, in the total manufacturing scene?	**10**	**CO4**
Q 9	Described the advanced features of modern manufacturing system. OR Discuss with an example, the principle of a programmable logic controller.	**10**	**CO3**
	SECTION-C **(2Qx20M=40 Marks)**		
Q 10	Four vertices of Bezier polygon are P0 (1, 1), P1 (2, 3), P2 (4, 3), and P3 (3, 1). Determine seven points on the Bezier curve. Points can be taken as; 0, 1/7, 2/7, 3/7, 4/7, 5/7, 6/7, and 7/7.	**20**	**CO4**

	OR Determine and plot the blending functions for B – Spline curve. Write the limitations. How can they be removed?		
Q 11	Write APT program for end milling the edges of the part shown in following figure.  	**20**	**CO3**