Reg.No. _____

Karunya UNIVERSITY

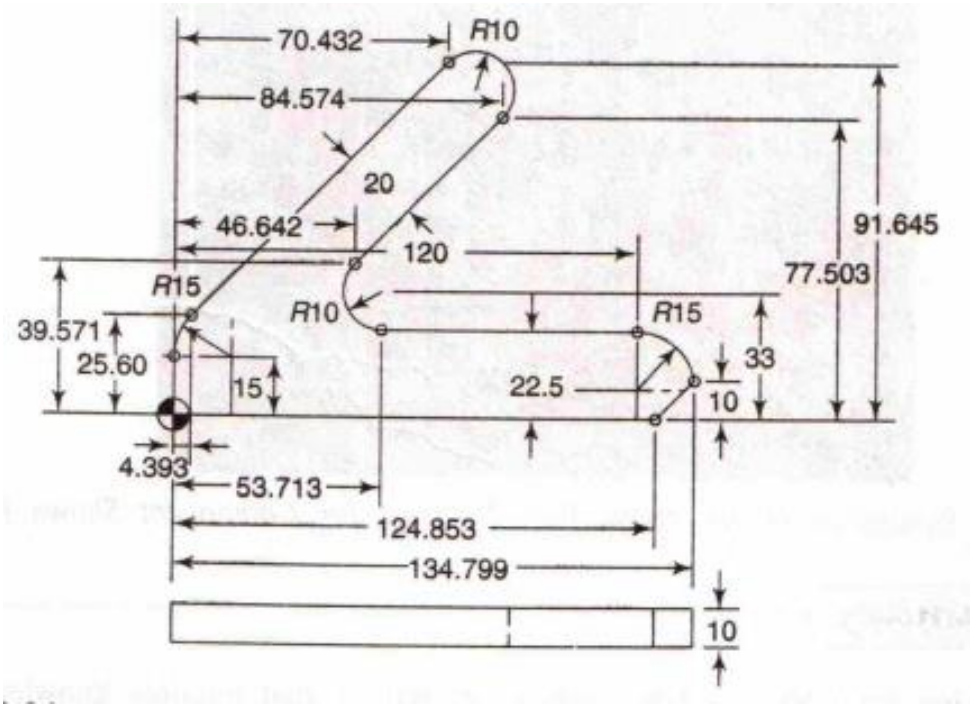
(Karunya Institute of Technology & Sciences)
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – Nov/Dec – 2016

Semester : 2016-17 ODD
Code : 14ME2025 **Duration : 3hrs**
Sub. Name : Computer Aided Design and Manufacturing **Max. marks : 100**

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	Briefly discuss the history of CAD/CAM development	CO1	
	b.	List out the CAD and CAM tools required to support the design and manufacturing process.	CO1	
		(OR)		
2.	a.	Sketch and distinguish between sequential and concurrent engineering. List the advantages of Concurrent engineering over sequential engineering.	CO1	
	b.	List and explain all the important CAD standards used in computer graphics applications.	CO1	
3.	a.	Sketch the product life cycle and and explain four stages using an example.	CO1	
	b.	Explain the product desing process with a neat flow chart.	CO1	
		(OR)		
4.	a.	A rectangle is defined in a two dimension system by its vertices **(A=2,2) (B=6,2)** and **(C=6,6)** and **(D=2,6)**. Perform the following transformations on this triangle. i. Translate the rectangle in space by 2 units in the **X** direction and 4 **units** in the **Y** direction. ii. Scale the original rectangle by a factor of **2** in the **X** direction and **3** in the **Y** direction. iii. Rotate the original rectangle by **45^{o}** about the origin.	CO1	
	b.	With a neat flowchart depict the complete process for implementing the DDA algorithm.	CO1	
5.	a.	Write the technique involved in Cohen Sutherland and Sutherland Hodgman Polygon Algorithm used in clipping the lines.	CO2	
	b.	Explain the back-face technique for removing the hidden lines and list the advantages and disadvantages of the hidden line algorithms.	CO2	
		(OR)		
6.	a.	List out the methods of defining synthetic curves	CO2	
	b.	Discuss in detail the nomenclature of Bezier curves and cubic Bezier curves for various control points.	CO2	
7.	a.	Discuss in detail about the constructive geometry and its applications in solid modelling.	CO2	
	b.	Explain boundary representation technique with its validity, advantages and disadvantages.	CO2	
		(OR)		
8.	a.	Draw a neat flow chart and explain the steps involved in the development of a proven part program in NC machining.	CO3	

	b.	Depict the concrete bedding used for the CNC machine and summarize the advantages of the concrete bed damping over steel structures.	CO3	
Compulsory:			CO3	
9.	a.	Explain the functions of *G00 and G02 and G03* with relevant sketches	CO3	
	b.	Write the part programming for the figure shown below using cutter radius compensation. 	CO3	

ALL THE BEST