VASAVI COLLEGE OF ENGINEERING *(AUTONOMOUS)*, HYDERABAD
Accredited by NAAC with A++ Grade

B.E. (Mech. Engg.) V-Semester Main & Backlog Examinations, Jan./Feb.-2024

CAD/CAM

Time: **3 hours**   Max. Marks: **60**

*Note: Answer all questions from **Part-A** and any **FIVE** from **Part-B***

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	What are the differences between wireframe model and solid model?	2	1	1	1
2.	Illustrate approximation curves giving examples.	2	2	1	1
3.	List the common types of synthetic surfaces in surface modelling.	2	1	2	1
4.	Illustrate various types of CAD data bases.	2	2	2	1
5.	Explain what you understand by cutter radius compensation in NC part programming.	2	2	3	1,2,5
6.	Illustrate the axes of the CNC machine and show the axes of turning machine.	2	2	3	2
7.	What are the advantages of DNC?	2	1	4	1
8.	Identify a few applications of Industrial robots.	2	3	4	1
9.	What do you understand by Group Technology? List its advantages.	2	1	5	1
10.	Explain any one file format used for geometry creation in 3D printing.	2	2	5	2,5

Part-B (5 × 8 = 40 Marks)

11. a)	Explain parametric and non-parametric representation of curves. Give examples.	4	2	1	1
b)	List the properties of a Bezier curve and B spline curve.	4	4	1	1
12. a)	Examine the C-rep(CSG) and B-rep approaches in building the 3D models.	4	4	2	1,2
b)	Solve for the final position of the line having the endpoints (1,1),(2,4) which is being translated by 2 units in X and 3 units in Y and scaled up by a scaling factor of "2" and then rotated about the origin by 30^0 positive direction.	4	3	2	3,1
13. a)	Explain Canned cycles used in NC part programming with an example.	4	2	3	1,5
b)	Write a brief note on a). Components of NC system b).Advantages of NC system	4	4	3	

			M	L	CO	PO
14.	a)	Explain Adaptive control used in a CNC with a suitable example.	4	2	4	1,2
	b)	Compare various robot programming methods.	4	4	4	1
15.	a)	What is FMS? Classify various FMS layouts.	4	4	5	1
	b)	Explain Optiz class of classification in Group Technology	4	2	5	2
16.	a)	What are NURBS, list their properties.	4	1	1	1
	b)	Examine various analytical surfaces in geometric modeling.	4	4	2	1
17.		Answer any *two* of the following:				
	a)	Explain the differences between NC and CNC systems.	4	2	3	1
	b)	Identify various configurations of industrial robots.	4	3	4	1
	c)	What is computer assisted process planning? Explain retrieval type of CAPP.	4	1	5	1,4

M : Marks;   L: Bloom's Taxonomy Level;   CO; Course Outcome;   PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	37.5%
iii)	Blooms Taxonomy Level – 3 & 4	42.5%

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