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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Fifth Semester, B.E. - Mechanical Engineering

Semester End Examination; February / March - 2022

CAD/CAM

Time: 3 hrs *Max. Marks: 100*

Course Outcomes

The Students will be able to:

CO1: Describe latest in-put and out-put devices used in CAD.

CO2: Explain modeling techniques and Solve problems on transformations.

CO3: Explain the basic components of NC system and Compare CNC machines.

CO4: Identify CNC machine components and cutting tool system used in CNC.

CO5: Develop CNC part program for different operations.

Note: ***I) PART - A*** *is compulsory.* ***Two*** *marks for each question.*

II) PART - B*: Answer any* ***Two*** *sub questions (from a, b, c) for Maximum of* ***18 marks*** *from each unit.*

Q. No.		Questions	Marks	BLs	COs	POs
		PART - A	**10**			
1	a.	List any four advantages of CAD.	2	L1	CO1	PO2
	b.	Name the two techniques used to generate the solid modeling.	2	L1	CO2	PO1
	c.	Differentiate between absolute and incremental coordinate system.	2	L2	CO3	PO3
	d.	What is the cutting tool materials used in the industry for different applications?	2	L1	CO4	PO5
	e.	Define canned cycles.	2	L1	CO5	PO2
		PART - B	**90**			
		UNIT - I	**18**			
1.	a	Describe the application of computer in design process.	9	L2	CO1	PO3
	b.	With the help of a block diagram, discuss product cycle in computerized manufacturing environment.	9	L2	CO1	PO2
	c.	Differentiate between LED and LCD and state the applications.	9	L3	CO1	PO3
		UNIT - II	**18**			
2	a.	Explain the functions and graphic software.	9	L2	CO2	PO2
	b.	Give a brief description about Bezier curves B-spines and NURBS.	9	L3	CO2	PO3
	c.	A triangle is defined in a two dimensional LCG system by its vertices (1, 3) (5, 7) and (4, 0). Rotate the triangle by 60° about a point (7, 9) in a counter clock wise direction.	9	L2	CO2	PO3
		UNIT - III	**18**			
3	a.	Describe the steps involved in NC procedure.	9	L2	CO3	PO2
	b.	Discuss three types of NC motion control system with sketches.	9	L2	CO3	PO2
	c.	Explain the machine tool control in CNC.	9	L2	CO3	PO2

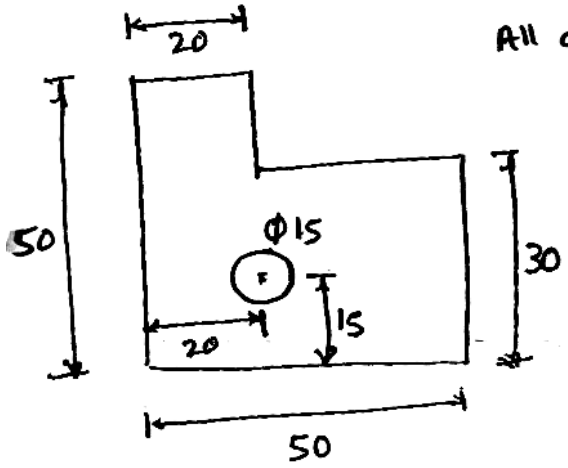
Contd… 2

UNIT - IV **18**

4 a.	Discuss the tool presetting in CNC machines.	9	L2	CO4	PO1
b.	Explain tool change procedure using double gripper with sketches.	9	L3	CO4	PO3
c.	Write ISO coding system for tungsten carbide inserts used in turning.	9	L3	CO4	PO3

UNIT - V **18**

5 a.	Discuss the various codes used in manual part programming considering, preparatory functions miscellaneous functions, Tool functions, Feed functions, spindle speed function, *x*, *y*, *z* motion and sequence numbers.	9	L2	CO5	PO3
b.	Write a manual part programme to drill two rows of 10 mm dia holes (03 holes in each row) on a rectangular block of 12 mm thickness. Assume suitable location of holes and dimensions of blank. Use canned cycle for program. Assume value of spindle speed and feed rate.	9	L4	CO5	PO5
c.	Write the manual NC part program for the given profile. Assume suitable feed and spindle speed.	9	L4	CO5	PO5



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