Register Number:……..

B.E/B.TECH DEGREE EXAMINATIONS: NOV/DEC 2024

(Regulation 2018)

Sixth Semester

MECHATRONICS ENGINEERING

U18MCI6201 : Computer Aided Manufacturing

COURSE OUTCOMES

CO1: Describe the fundamentals of Computer Aided Design.

CO2: Describe the basic and constructional features of CNC machines.

CO3: Develop a CNC Part programming for the basic turning and milling operations.

CO4: Explain the importance of group technology and Computer Aided process plan.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

1.	Brief the product cycle with its stages.	CO1	[K_2]
2.	Define homogeneous transformation in a cad system.	CO1	[K_2]
3.	Differentiate CNC with NC machine.	CO2	[K_2]
4.	How adaptive control works in CNC machines	CO2	[K_2]
5.	Why do you choose the recirculating ball screw for CNC machine	CO2	[K_2]
6.	List the importance of spindle orientation.	CO2	[K_2]
7.	Brief the canned cycle.	CO3	[K_2]
8.	Write a simple part programme to make a hole on a square plate 100x100mm. The diameter of the hole is 10mm and the position at center of the square plate.	CO3	[K_2]
9.	Define group technology and part family.	CO4	[K_2]
10.	List the advantages of CAPP over manual process planning.	CO4	[K_2]

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

11.	a)	Describe the CAD system architecture.	08	CO1	[K_2]
	b)	Discuss the 2D and 3D transformations in CAD system.	08	CO1	[K_2]
12.	a)	Explain the various types of recirculating ball screw with neat sketch. Along with		CO2	[K_2]

purpose of preloading.

13.	a)	Generate suitable part programming for the given diagram.		CO3	[K_3]

All dimensions are in MM

14.	a)	List the tool magazine used in CNC. Explain any one with neat sketch.	08	CO2	[K_2]
	b)	Discuss the factors influencing that selecting a CNC Machines	08	CO2	[K_2]
15.	a)	Discuss opitz system in group technology	08	CO4	[K_2]
	b)	Explain the FMS system along with its layout.	08	CO4	[K_2]
16.	a)	Describe the features and advantages of CNC machine	08	CO2	[K_2]
	b)	Explain the automatic tool changer.	08	CO2	[K_2]

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