Reg. No.												

Question Paper Code	12377

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Fourth Semester

Mechanical Engineering

20MEPC403 - COMPUTER AIDED DESIGN AND MANUFACTURING

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Define Computer-Aided Design.	*2,K1,CO1*
2.	Name the list of coordinate systems used in computer graphics systems.	*2,K1,CO1*
3.	What are Boolean operations? List the Boolean operations.	*2,K1,CO2*
4.	Write down the advantages and disadvantages of wireframe modelling.	*2,K1,CO2*
5.	What is visual realism?	*2,K1,CO3*
6.	What is rendering?	*2,K1,CO3*
7.	Define Graphics Kernel system and brief the purposes of the Graphical Kernel System (GKS).	*2,K1,CO4*
8.	Enumerate the importance of standards in CAD.	*2,K2,CO4*
9.	List down the advantages of CNC Manufacturing.	*2,K1,CO5*
10.	List the CNC codes and their purpose.	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Demonstrate and explain the various schemes for concurrent engineering.	*13,K2,CO1*
		OR	
	b)	Illustrate various stages in the product life cycle and the importance of each stage with suitable example.	*13,K2,CO1*
12.	a)	Relate and explain the different schemes used to generate the solid model.	*13,K2,CO2*
		OR	
	b)	Derive the equation for Hermite Cubic Spline Curve.	*13,K2,CO2*
13.	a)	Explain the Ray- tracing algorithm with neat sketch.	*13,K2,CO3*
		OR	

b) Explain various shading techniques with neat sketch. *13,K2,CO3*

14. a) Explain the IGES methodology. *13,K2,CO4*

OR

b) Explain in detail about GKS and features of the Graphics Kernel System. *13,K2,CO4*

15. a) Explain in detail a typical VMC with specifications. *13,K2,CO5*

OR

b) Write a program for deep hole peck drilling operation using the canned cycle concept. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Compare and contrast the hydraulic and pneumatic drives in CNC machining and evaluate the outcome. *15,K2,CO6*

OR

b) Extend the application of CNC manufacturing systems for Industry 4.0. *15,K2,CO6*