GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Sixth Semester Regular) Examinations, May – 2024

21BMEPE36001 - CAD/ CAM

(Mechanical)

Time: 3 hrs Maximum: 70 Marks

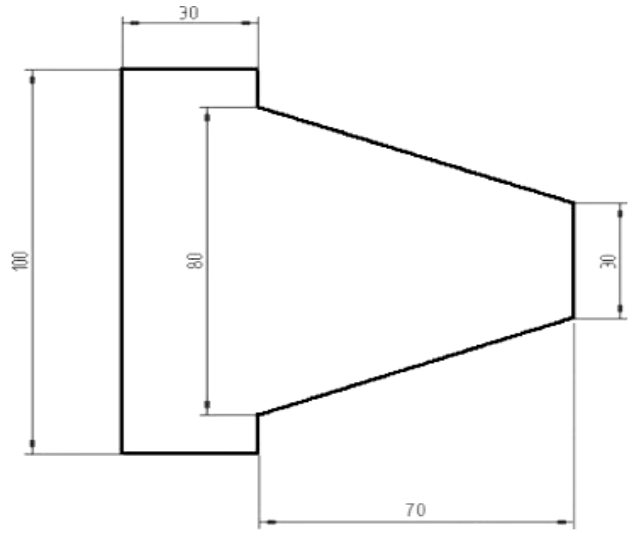
(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. What is the role of CAD in prototyping? Briefly explain.	CO1	K3
b. Write the benefits of CAM in manufacturing?	CO1	K3
c. Differentiate between NC, CNC and DNC.	CO2	K3
d. How does CIM improve manufacturing processes?	CO4	K3
e. Briefly justify that the lean manufacturing contribute to waste reduction.	CO4	K3

PART – B **(15 x 4=60 Marks)**

Answer ***ALL*** questions		Marks	CO #	Blooms Level
2. a.	Create a comprehensive Venn diagram illustrating the relationship between CAD and CAM.	7	CO1	K1
b.	Illustrate with examples how input devices aid in the creation and modification of designs in CAD/CAM.	8	CO2	K4
	(OR)			
c.	Explain the differences between RAM and ROM in terms of their usage and significance in CAD/CAM.	7	CO1	K2
d.	How does CAD improve design accuracy? Discuss how CAD enhances communication between design teams.	8	CO2	K4
3.a.	Explain the concept of geometric modeling in CAD with suitable sketch and examples.	8	CO2	K3
b.	Create a diagram illustrating the data flow between CPU, memory, and input/output devices in a CAD/CAM environment.	7	CO1	K2
	(OR)			
c.	Develop a simple algorithm for a CPU to execute basic geometric transformations in CAD/CAM.	8	CO2	K3
d.	Explain how the limitations of CAD/CAM can impact the overall cost and quality of manufactured parts.	7	CO3	K4
4.a.	Discuss the role of DNC systems in manufacturing, including their benefits and challenges.	7	CO3	K2
b.	Write the CNC programme code to make a tappering job for the given specification	8	CO3	K3



(OR)

c.	Compare and contrast the advantages and disadvantages of manual versus automated material handling systems.	7	CO3	K4
d.	List out various advantages of CNC. Differentiate between G-code and M-code used in CNC.	8	CO3	K3
5.a.	Explain the concept of material handling in manufacturing. Write the advantages of AGV and it's working principle.	7	CO4	K3
b.	What is robotics? Describe various classification robot with diagrams.	8	CO4	K3

(OR)

c.	Evaluate the potential benefits and challenges of implementing additive manufacturing technologies .	8	CO4	K4
d.	Why group technology is required? Explain it's advantages in smart manufacturing industries.	7	CO4	K4

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