Reg. No.															

Question Paper Code	14169

M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

First Semester

M.E. - CAD/CAM

24PCDPC101 - COMPETITIVE MANUFACTURING SYSTEMS

Regulations - 2024

Duration: 3 Hours | Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Adaptive control improves _____. (a) Tool life and machining efficiency (b) Inventory level (c) Worker morale (d) Material cost only	1	K1	CO1
2.	Which of the following is not a type of automation? (a) Fixed automation (b) Programmable automation (c) Human automation (d) Flexible automation	1	K1	CO1
3.	The layout of machines in a cell is generally represented by _____. (a) U-shaped or flow-line (b) Random (c) Circular storage-based (d) Straight batch line	1	K1	CO2
4.	Which of the following is not a common GT coding system? (a) Opitz system (b) MICLASS (c) FIFO system (d) KK-3 system	1	K1	CO2
5.	Simulation helps in _____. (a) Layout planning and process optimization (b) Material purchase (c) Marketing campaigns (d) Staff recruitment	1	K1	CO3
6.	CAD and CAM systems are examples of (a) Application software (b) System software (c) Middleware (d) Utility software	1	K1	CO3
7.	Lean manufacturing defines “value” from the point of view of _____. (a) Supplier (b) Manager (c) Customer (d) Engineer	1	K1	CO4
8.	The main purpose of the 5S system is to _____. (a) Reduce manpower (b) Reduce product cost (c) Improve machine speed (d) Create a clean, organized, and efficient workplace	1	K1	CO4
9.	The pull system is controlled by _____. (a) Kanban cards (b) Gantt charts (c) Quality reports (d) Material requisitions	1	K1	CO5
10.	The process of leveling production to match demand is called (a) Heijunka (b) Kaizen (c) Kanban (d) Jidoka	1	K1	CO5

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

		Marks	K – Level	CO
11.	Define automation.	2	K1	CO1
12.	List out the applications of sensor technology.	2	K1	CO1
13.	Illustrate the concept of Group Technology to part families and their benefits.	2	K2	CO2
14.	Show the main components of a Flexible Manufacturing System (FMS).	2	K1	CO2
15.	What are system issues in manufacturing?	2	K1	CO3
16.	What is data flow?	2	K1	CO3
17.	Outline the concept of Total Productive Maintenance (TPM) and its benefits.	2	K2	CO4
18.	Define Kaizen.	2	K1	CO4
19.	Illustrate the main characteristics of a Just-In-Time (JIT) system.	2	K2	CO5
20.	Name two major issues in implementing JIT.	2	K1	CO5
21.	What factors are considered in software specification and selection?	2	K1	CO3

22.		What are the benefits of lean manufacturing?	*2*	*K1*	*CO4*

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a) (i)	Compare numerical control and adaptive control.	*6*	*K2*	*CO1*
	(ii)	List out the advantages and disadvantages of competitive manufacturing.	*5*	*K2*	*CO1*
		OR			
	b)	Examine the applications of industrial robots with example.	*11*	*K2*	*CO1*
24.	a)	Apply the concept of part family with a suitable illustration.	*11*	*K3*	*CO2*
		OR			
	b)	Construct and explain the various FMS configurations with example.	*11*	*K3*	*CO2*
25.	a)	Outline the working of simulation software with applications.	*11*	*K2*	*CO3*
		OR			
	b)	Summarize the concept in manufacturing data systems.	*11*	*K2*	*CO3*
26.	a)	Examine the 5S system and list its benefits.	*11*	*K2*	*CO4*
		OR			
	b)	Elucidate Poka Yoke systems with two examples.	*11*	*K2*	*CO4*
27.	a)	Discuss the integration of quality management in JIT approach with example.	*11*	*K2*	*CO5*
		OR			
	b)	What is Value Stream Mapping? Explain its procedure and its advantages.	*11*	*K2*	*CO5*
28.	a)	Identify the importance of customer focus in Lean Manufacturing with example.	*11*	*K3*	*CO4*
		OR			
	b)	Develop the concept of Total Productive Maintenance (TPM) and its role in Lean Manufacturing with example.	*11*	*K3*	*CO4*