Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – December 2025

Date: 15-12-2025 **Time:** 1.00pm to 04.00pm

School: SOE	**Program:** B. Tech – Mechanical Engineering	
Course Code: MEC3034	**Course Name:** Computer Integrated Manufacturing	
Semester: V	**Max Marks**: 100	**Weightage**:50%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**	**C06**
Marks	**10**	**16**	**22**	**12**	**24**	**16**

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.				**2Mx10Q=20M**
1	What are the applications of CNC machines?	**2 Marks**	**L1**	**CO2**
2	What are encoders?	**2 Marks**	**L1**	**CO2**
3	What is tool magazine in CNC machine?	**2 Marks**	**L1**	**CO2**
4	What are the requirements of good slide-ways?	**2 Marks**	**L1**	**CO3**
5	Define Adoptive control system.	**2 Marks**	**L1**	**CO4**
6	List out the types of automated identification technology.	**2 Marks**	**L1**	**CO6**
7	What are micro factors in material planning?	**2 Marks**	**L1**	**CO6**
8	Define Concurrent Engineering.	**2 Marks**	**L1**	**CO6**
9	Give two examples of variant CAPP.	**2 Marks**	**L1**	**CO5**
10	What is process planning?	**2 Marks**	**L1**	**CO5**

Part B

Answer ALL Questions. Each question carries 20 marks.					4QX20M=80M
11	11a	Computer integrated manufacturing (CIM) contains different elements and role of each element is different. Explain any 5 important elements of CIM.	10 Marks	L2	CO1
	11b	The CNC lathe completed automated section produces a aerospace components and the section has 11 machines, all devoted to the productions of the same part. The section operates 12 shifts/wk. The number of hours'/shift averages 10.0. average production rate of each machine is 22 units/hr. determine the weekly production capacity of the turrets lathe section. Actual production is 8200 units/week. Find out the utilization of machine.	5 Marks	L3	CO3
	11C	What are the typical features of flexible automation? Give Examples	5 Marks	L2	CO3
		Or			
12	12a	Write a short note on a) Computer Aided Drawing (CAD) b) Computer Aided Process Planning (CAM) c) Enterprise Resource planning (CAPP).	10 Marks	L2	CO1
	12b	Explain the working of recirculating ball screw and nut with simple sketch.	10Marks	L2	CO3
13	13a	Write a short note on CIMOSA architecture and Its types of products.	10Marks	L2	CO2
	13b	i) Differentiate between AC and DC servo motor with respect to design, accuracy, stability, operation and weight ii) What are the features of CNC machine?	10 Marks	L2	CO3
		Or			
14	14a	Explain basic elements/components of CNC machine.	10Marks	L2	CO2
	14b	Explain the 180^0 Automatic tool changer with simple sketch.	10Marks	L2	CO3
15	15a	What are the requirements and need for the effective production planning and control	10 Marks	L2	CO5

	15b	Explain the three functions of adoptive control system.	**10 Marks**	**L2**	**CO4**
Or					
16	**16a**	Process planning and control will plan the future required product, raw material and scheduling of machines. Explain the techniques or elements of production planning.	**10 Marks**	**L2**	**CO5**
	16b	Write a short note on a) 1D (Linear) Bar code & b) 2 D bar code	**10 Marks**	**L2**	**CO4**

17	**17a**	What is the role of process planning in CAD/CAM integration? Explain in detail.	**10Marks**	**L2**	**CO5**
	17b	Describe the concept of concurrent engineering with flow diagram with its advantages.	**10 Marks**	**L2**	**CO6**
Or					
18	**18a**	Computer aided process plan (CAPP) approach search for existing or similar process plans of similar part families using codes, retrieves and then edit according to new process sequence. Describe the approach of CAPP in developing new process plan with simple flow chart	**10Marks**	**L2**	**CO5**
	18b	Advanced manufacturing planning attempts to forecast the new products that will be introduced in the next 2 to 10 years. Explain the Advanced manufacturing planning concept with neat flow diagram.	**10Marks**	**L2**	**CO6**