Reg. No.												

Question Paper Code	12152

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

Eighth Semester

Mechanical Engineering

ME8094 - COMPUTER INTEGRATED MANUFACTURING SYSTEMS

(Regulations 2017)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Explain specific characteristics that have to be incorporated in CIM models?	*2,K2,CO1*
2.	Define the drawing features of CAD package?	*2,K2,CO1*
3.	What is the variant approach in CAPP?	*2,K2,CO2*
4.	Write the different stages of shop floor control.	*2,K2,CO2*
5.	Describe group technology?	*2,K1,CO3*
6.	Distinguish the steps involved in production flow analysis.	*2,K2,CO3*
7.	Differentiate between primary and secondary material handling systems.	*2,K2,CO4*
8.	Summarize some of the functions of a FMS computer system.	*2,K1,CO4*
9.	List out the objective of using industrial robot.	*2,K2,CO5*
10.	Examine what is meant by degrees of freedom.	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain the following terms and brings out their difference between CAM and CIM.	*13,K2,CO1*
		OR	
	b)	Explain how CIM can act as an enabling technology for concurrent engineering?	*13,K2,CO1*
12.	a)	What is aggregate planning? Why it is needed? Discuss the steps involved in aggregate planning.	*13,K1,CO2*
		OR	
	b)	Briefly explain the steps involved in generation of route sheet using variant approach CAPP	*13,K2,CO2*
13.	a)	Name and briefly explain the various machine cells and layouts in used industries.	*13,K2,CO3*

OR

b) Demonstrate in brief of following
(i) Opitz coding system — *4,K2,CO3*
(ii) MICLASS — *3,K2,CO3*
(iii) DCLASS — *3,K2,CO3*
(iv) PFA — *3,K2,CO3*

14. a) Summarize with suitable sketches, explain the various FMS layout configurations prevalent today. — *13,K1,CO4*

OR

b) (i) Discuss the important of In-process monitoring of work piece quality in FMS. — *7,K1,CO4*
(ii) Express how is tool life monitored in FMS. — *6,K1,CO4*

15. a) (i) List out four common robot configuration and explain its applications. — *7,K2,CO5*
(ii) Name the relative merits and demerits of different types of robot configuration. — *6,K2,CO5*

OR

b) (i) Summarize what are robot end effectors? How do you classify them. — *7,K1,CO5*
(ii) Discuss various drive system used for robot gripper. — *6,K1,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Develop a case study of an industrial environment of cellular manufacturing. — *15,K2,CO6*

OR

b) What is EOQ? Derive the expression for EOQ when the demand of the item is uniform, the production rate is infinite and no stock-outs are allowed. — *15,K1,CO6*