

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 11537

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2012.

Seventh Semester

Mechanical Engineering

ME 2402/ME 72 — COMPUTER INTEGRATED MANUFACTURING

(Regulation 2008)

(Common to PTME 2402 – Computer Integrated Manufacturing for B.E. (Part-Time)
Sixth Semester – Mechanical Engineering – Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by geometry and topology?
2. List any four rules of dimensioning
3. Mention the benefits of CIM.
4. Differentiate between LAN model and MAP model.
5. What is meant by monocode and polycode structures?
6. List out the techniques available for formation of cell in GT.
7. Differentiate between dedicated FMS and random-order FMS.
8. State the purpose of primary and secondary material handling system.
9. Write down the three phases of shop floor control.
10. What is meant by procurement lead time?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the following types of transformations with example.
 (i) Translation
 (ii) Scaling
 (iii) Rotation. (16)

Or

- (b) Discuss the concept of B-rep and CSG techniques of solid modeling. Also mention the properties of solid model. (16)
12. (a) Explain and compare the different types of network topologies. (16)

Or

- (b) Discuss the various data transmission methods adopted in CIM. (16)
13. (a) (i) Explain the concept of OPITZ coding system with example. (8)
 (ii) Apply rank order clustering technique to the part-machine incidence matrix (Table-1) to arrange parts and machine into groups. (8)

Table 1

	Part							
Machine	A	B	C	D	E	F	G	H
1	1	1	1	1				1
2					1	1	1	
3	1	1	1		1			1
4		1		1		1		
5	1			1	1		1	1
6			1				1	1

Or

- (b) (i) Differentiate between generative and variant approach in CAPP. Also write the benefits of CAPP. (6)
 (ii) Briefly explain the steps involved in generation of route sheet using variant approach CAPP. (10)
14. (a) Explain the three phases in shop floor control with block diagram. Also discuss the techniques available for data collection in shop floor. (16)

Or

- (b) (i) Explain the types of FMS layout configurations. Also write its primary material handling systems. (10)
 (ii) Write short notes on the classification of FMS according to number of machines. (6)

15. (a) List out the inputs required for material requirements planning (MRP).
Also Explain the concept of MRP with neat sketch. (16)

Or

- (b) (i) State the principles of lean manufacturing and list down major
kinds of wastages. (8)
- (ii) Discuss the types of production monitoring systems. (8)
-