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B.E / B.Tech (Full Time) End Semester DEGREE EXAMINATION, APRIL / MAY 2012

Sixth Semester

59

Mechanical Engineering

ME 385 – COMPUTER INTEGRATED MANUFACTURING

(Regulation 2004)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. What are the functions in manufacturing ?
2. List any four advantages of CAD used in design process.
3. What are the drawbacks of manual process planning?
4. What are the activities in production planning and control?
5. What is meant by part family?
6. What is pull system in JIT?
7. What are the benefits of FMS?
8. List the elements in FMS.
9. What is End effectors in robot?
10. How do you specify a robot?

Part – B (5 x 16 = 80 marks)

11. a) i) What are the common robot configurations? Explain any two in detail. (8)
ii) Discuss the different methods of programming of robot. (8)
12. a) Discuss the stages in the development of computer integrated manufacturing (CIM) (16)

OR

- b) What are the common strategies for automation and production system? Discuss any five in detail. (16)
13. a) Discuss the importance of computer aided process planning in product development. (16)

OR

- b) i) Distinguish between MRP and MRP II. (8)
ii) What are the long term and short term adjustments in capacity planning? (8)

14. a) i) Five machines will constitute a GT cell. The from – to data for the machines are as follows :

From	To				
	1	2	3	4	5
1	0	10	80	0	0
2	0	0	0	85	0
3	0	0	0	0	0
4	70	0	20	0	0
5	0	75	0	20	0

- (a) Determine the most logical sequence of machines for these data, according to the / from ratios.
 (b) Construct the flow diagram from the data.
 (c) Develop a feasible layout plan for the cell.
 (d) Where do parts enter the cell and exit the cell? How many parts in each place? (8)

- ii) Discuss the various steps in production flow analysis. (8)

OR

- b) With the aid of simple flow chart, explain the basic structure of OPTIZ system of parts classification. (16)

15. a) i) What are the functions of the material handling and storage system in an FMS? (10)
 ii) What are the benefits of FMS? (6)

OR

- b) How the FMS computer control systems can be grouped? Explain. (16)