

G 6279

M.E. DEGREE EXAMINATION, MAY/JUNE 2007.

Second Semester

Industrial Engineering

IE 1651 — COMPUTER INTEGRATED MANUFACTURING SYSTEMS

(Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the major elements of a CIM system?
2. How is MRP II helpful to the management of a factory?
3. Name the various sub-systems present in a modern CNC controller unit.

What are all the basic functions of process planning software?

What are the circumstances under which star network is used?

List the salient features of MAP.

How do you optimize FMS?

What are the essential requirements of a RDBMS?

Give the specification of a Robot.

What are the four levels of control in DSS in a CIM environment?

PART B — (5 × 16 = 80 marks)

15. (a)

11. (a) (i) How are computer integrated manufacturing systems classified? Discuss the guidelines for application of CIMS. (8)
- (ii) Discuss the basic components of CIM. (8)

(b)

Or

- (b) (i) Draw a block diagram showing the interaction between MRP and other modules of a production planning system. (8)
- (ii) Discuss computer aided process planning. (8)
12. (a) (i) Describe the principle of numerical control. (8)
- (ii) Write a note on tool compensation. (8)

Or

- (b) (i) Describe general structure of an NC-CAM system. (8)
- (ii) What are the issues to be considered in the integration of computers in CIM environment. (8)
13. (a) (i) Discuss the communication modes available for CNC machine tools to talk to the outside world. (8)
- (ii) Distinguish between LAN and WAN. (8)

Or

- (b) (i) Discuss the issues in intersystem communication. (8)
- (ii) How do you carry out networking in a manufacturing company? Explain. (8)
14. (a) (i) Discuss the types of flexibility in manufacturing. (8)
- (ii) Enumerate the important enabling technologies and management practices to reorganise the production function for agile manufacturing. (8)

Or

- (b) (i) With a block diagram, describe the RDBMS architecture. (8)
- (ii) Give the stepwise procedure to implement CIM. (8)

15. (a) (i) Describe the four basic modes of Robot operation. (8)

(ii) What do you mean by an Expert system? Discuss its components. (8)

Or

(b) (i) Discuss the functions of a Robot control system. (8)

(ii) Explore the possibilities of vision applications in CIM environment. (8)

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