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Question Paper Code : 21577

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

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. Distinguish between reflection and scaling transformations.
2. What is sculptured surface?
3. What is a communication network? List its types.
4. What is MAP model?
5. What is the main difference between hierarchical codes and attribute code structures?
6. What is CMPP system?
7. Distinguish between on- line and off- line data collection systems.
8. List some important advantages of implementing FMS?
9. What do you mean by fixed- order quantity model?
10. What is direct digital control?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Write short notes on 3D scaling and 3D shearing geometric transformation. (8)

(ii) Consider a point P (3, 2) in a coordinate plane. Perform reflection of the point P:

(1) through y axis and

(2) through x axis. (8)

Or

(b) Explain with suitable example, how a solid model is generated using boundary representation and write the advantages of solid modelling. (16)

12. (a) (i) Explain the importance of CIM. Also write the reasons for implementing CIM. (8)

(ii) Explain in detail the communication matrix in CIM. (8)

Or

(b) (i) Explain briefly the seven layers of ISO/OSI reference model. (10)

(ii) What is CSMA/CD? And also write the rules for CSMA/CD. (6)

13. (a) Explain the methods for part family formation with a suitable illustration and discuss with examples: "coding system structure". (16)

Or

(b) (i) Explain composite part concept in cellular manufacturing. (6)

(ii) Discuss the benefits of computed aided process planning (CAPP) and explain CAPP approaches in detail. (10)

14. (a) (i) What are the functions of shop floor control (SFC)? (4)

(ii) Explain briefly the technologies used in Automatic Identification systems. (12)

Or

(b) (i) Explain the functions of a FMS computer control System. (8)

(ii) Discuss the application, advantages and disadvantages of a FMS. (8)

15. (a) (i) Briefly explain the objectives, principles and various concepts of lean production. (10)

(ii) Write short notes on material requirements planning (MRP). (6)

Or

(b) (i) Explain the configuration and function of adaptive control. (8)

(ii) Describe the components and their arrangement of a direct digital control. (8)

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