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**K 4395**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2009.

Seventh Semester

Aeronautical Engineering

ME 1403 — COMPUTER INTEGRATED MANUFACTURING

(Common to Mechanical Engineering, Mechatronics Engineering and  
Production Engineering)

(Common to B.E. (Part-Time) Sixth Semester - Mechanical Engineering  
Regulation 2005)

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define CIM and its scope.
2. How does CIM change the manufacturing system?
3. What are the methods for solving the problem in part family?
4. What are the main objectives of cellular manufacturing?
5. What are the techniques used to collect data from the factory floor?
6. How is an FMS optimized?
7. What are the system modelling tools?
8. Define Network management.
9. Define Open system.
10. How does the conventional file system differ from a database?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Describe the need for CIM and the issues addressed by CIM. (8)  
(ii) Briefly explain the ten automation strategies. (8)

Or

- (b) (i) What are the importance of Production planning and its merits? (8)  
(ii) Explain the special features of product related activities of a company. (8)
12. (a) (i) Briefly explain the MICLASS and OPITZ coding system with suitable examples. (8)  
(ii) Describe the role of process planning in CAD/CAM integration. Mention their merits. (8)

Or

- (b) (i) What is the need for computer aided process planning? What are their advantages? (8)  
(ii) Compare variant and generative process planning methodologies. (8)
13. (a) (i) Explain the different phases in shop floor control system. (8)  
(ii) Sketch the layout of a typical FMS and explain the important types of FMS layouts. (8)

Or

- (b) (i) How does a bar code reader work? Explain with neat sketch. (8)  
(ii) Describe the types of material handling devices used in a FMS and mention its benefits? (8)
14. (a) (i) Briefly explain the CIM open system architecture (CIMOSA). (8)  
(ii) Describe the three basic network topologies. (8)

Or

- (b) (i) What are the features of Product Data Management (PDM) which helps speedy product development? (8)  
(ii) Define the term LAN. What are the different components in a LAN? (8)

15. (a) (i) Describe the salient features of MAP and TOP. (8)  
(ii) Describe the architecture of a database system. (8)

Or

- (b) (i) Briefly explain the data modeling and data association. (8)  
(ii) What is relational database? Give an example and mention its advantages. (8)
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