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Question Paper Code : X 85839

M.E./M.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020
First Semester
Manufacturing Engineering
MF 5102 – COMPUTER INTEGRATED MANUFACTURING SYSTEMS
(Regulations 2017)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. Name any four desirable features of CAD packages.
2. When would you use pan command in CAD ?
3. Identify the nine major elements of a CIM system.
4. Give the advantages of networks in CIM.
5. What are the factors to be considered in selection of coding systems ?
6. Draw a sample process plan in manufacturing.
7. What is the use of bar code technology ?
8. Differentiate between primary and secondary material handling system in FMS.
9. Name any four applications of material requirement planning.
10. Define lean manufacturing.

PART – B **(5×13=65 Marks)**

11. a) i) Illustrate the benefits of using the homogenous coordinates in CAD transformations. **(7)**

ii) Summarize the desirable features of CAD package. **(6)**

(OR)

b) Compare and contrast the features of wire frame modeling, surface modeling and solid modeling in CAD packages.

12. a) i) Justify the statement – CIM as a concept and a technology. Describe how the CIM is helpful for the top management and the middle management in a manufacturing system. **(4+5)**

ii) Briefly describe the seriel data transmission systems in CIM. **(4)**

(OR)

b) Interpret an engineering brief about the following computer networking models in CIM

i) Seven layer OSI model. **(7)**

ii) MAP model. **(6)**

13. a) i) Explain the role of group technology in CIM. **(7)**

ii) How the part families are made in group technology ? **(6)**

(OR)

b) i) Explain the role of process planning in CAD/CAM integration. **(6)**

ii) Distinguish between variant and generative process planning approaches. **(7)**

14. a) Describe the various phases of shop floor control with its flow diagram.

(OR)

b) i) Describe the components of FMS with a neat sketch. **(6)**

ii) Outline the various FMS layout with neat sketches. **(7)**

15. a) i) How would you reorganize a production system for agility in agile manufacturing ? **(7)**

ii) Point out the features of inventory management in manufacturing. **(6)**

(OR)

b) Illustrate the structure model of manufacturing systems with the help of a diagram.

PART – C **(1×15=15 Marks)**

16. a) Write a case study on implementation of cellular manufacturing in process industry.

(OR)

b) Write a case study on implementation of flexible manufacturing system in an automobile industry.

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