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Question Paper Code : 41421

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Seventh/Eighth Semester

Mechanical Engineering

ME 6703 – COMPUTER INTEGRATED MANUFACTURING SYSTEMS

(Common to Mechanical and Automation Engineering/Robotics and Automation Engineering)

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What is the difference between CAD/CAM and CIM ?
2. What is concurrent engineering ?
3. What is a reorder point system in inventory control ?
4. What is Enterprise Resource Planning (ERP) ?
5. What are production conditions under which group technology and cellular manufacturing are most applicable ?
6. What is the application of the rank order clustering ?
7. What are the three capabilities that a manufacturing system must possess in order to be flexible ?
8. What are the difference between rail-guided vehicles and automated guided vehicles ?
9. What is the work volume of a robot manipulator ?
10. What is a palletizing operation ?

PART – B

(5×16=80 Marks)

11. a) i) Briefly explain the benefits obtain by CIM. (8)
ii) Explain about computerized elements of a CIM system. (8)
- (OR)
- b) i) Explain the five levels of automation in a production plant. (8)
ii) Explain about lean production. (8)



12. a) Explain about Computer Aided Process Planning (CAPP). (16)

(OR)

b) i) How Material Requirement planning works ? (12)

ii) Name four of the capacity adjustment for the short term. (4)

13. a) i) Explain about parts classification and coding. (8)

ii) Describe about MICLASS coding systems. (8)

(OR)

b) i) What are the advantages of cellular manufacturing ? (6)

ii) Explain about machine cell design and layout. (10)

14. a) i) Sketch and explain the layout of a typical FMS. (12)

ii) List the applications of FMS. (4)

(OR)

b) i) Explain about three categories of AGV and mention its applications. (10)

ii) Discuss about self guided vehicles technology. (6)

15. a) Draw the diagram of the following robots using the notation scheme for defining manipulator configuration : (a) TRT (b) VROT (c) LVL (d) TRT:R (16)

(OR)

b) i) Describe about Robot programming language. (8)

ii) Describe about Lead through programming. (8)