Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 41421

30/04/18 AN

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)**
