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14MCM/MAR/IAE12

First Semester M.Tech. Degree Examination, Dec.2015/Jan.2016
Automation and Computer Integrated Manufacturing

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions.***

1 a. Describe various activities involved in product development. **(12 Marks)**
b. What are the significance of concurrent engineering approach in limiting the design changes? **(08 Marks)**

2 a. Explain retrieval and generative type computer aided process planning systems **(10 Marks)**
b. With neat sketch, explain any two linear and rotary work transfer mechanisms. **(10 Marks)**

3 a. Discuss upper and lower bound approaches used in analysis of transfer lines without storage. **(06 Marks)**
b. In a 10 – station transfer line, the probability that a station breakdown will occur for a given work part is equal to 0.01. This probability is the same for all 10 stations. Determine the frequency of line stops per cycle on this flow using the upper –bound and lower bound approach. **(04Marks)**
c. List and explain elements of parts delivery systems. **(10Marks)**

4 a. Describe any two methods of implanting computer process control. **(10 Marks)**
b. Explain steady state optimal control and adaptive control strategies. **(10 Marks)**

5 a. Explain ISO – open system interconnection (OSI) model for data communication. **(10 Marks)**
b. Discuss asynchronous transfer mode (ATM) networks used for data transfer. **(10 Marks)**

6 a. What are the characteristics of enterprise wide network (EWN)? **(10 Marks)**
b. List and explain fundamentals of technical document management. **(10 Marks)**

7 a. Explain various types of material handling equipments. **(10 Marks)**
b. Discuss any four major types of conveyor systems. **(10 Marks)**

8 a. With neat sketch, explain construction and operation of CMM. **(10 Marks)**
b. With the help of a diagram, explain working principle of typical vision system. **(10 Marks)**

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