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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2012

MANUFACTURING ENGINEERING

VII Semester

MF 9402 FLEXIBLE MANUFACTURING SYSTEMS

(Regulation 2008)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. What is the algorithm for n-batch scheduling problem?
2. How flexibility will be achieved in FMS?
3. What are the functions of supervisory computer in FMS?
4. What are the system components of FMS?
5. Why simulation is an appropriate tool for FMS?
6. Differentiate between FMS database and an ordinary file system.
7. What are the common aspects of parts in part families and when is visual classification of parts preferred?
8. How mathematical programming models are used for GT formulation?
9. What are the CAD/CAM considerations when planning for FMS?
10. Briefly write about artificial intelligence in FMS?

Part – B (5 x 16 = 80 marks)

11. i) Explain the procedure for single product scheduling problem with an example. (8)
ii) Describe the knowledge based scheduling system for FMS. (8)
12. a) Briefly discuss the development of manufacturing systems and explain the need for FMS.

OR

b) Discuss any eight of the computer control functions of a work centre in detail.
13. a) What is FMS? Explain the types of software in FMS.

OR

b) What are the steps in simulation modeling? Discuss each step in detail.

14. a) i) Discuss sorting based algorithm of grouping parts and machines with an example. (8)

ii) Briefly illustrate the cluster analysis method of grouping parts and machines. (8)

OR

b) i) Discuss the economic justification of FMS. (6)

ii) Describe the application of possibility distribution in FMS justification. (10)

15. a) With a case study discuss the FMS application in automotive industry.

OR

b) Write short notes on:

i) FMS development towards factories of the future. (8)

ii) FMS database. (8)