
(3)

B.E (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOVEMBER 2011

MANUFACTURING ENGINEERING BRANCH

SEVENTH SEMESTER – (REGULATIONS 2004)

MN 471 – FLEXIBLE MANUFACTURING SYSTEMS

Time: 3 hr Max Mark: 100

Answer ALL Questions

Part- A (10 x 2 = 20 marks)

1. What are the major elements and benefits of flexible manufacturing system?
2. What are the steps involved in single batch scheduling problem?
3. Briefly describe the hierarchy of computer control in FMS.
4. What are the important criteria for software selection in FMS?
5. List the limitations of FMS simulation.
6. How flexibility will be achieved in FMS?
7. How FMS database differs from ordinary file system?
8. What is Group Technology and What are the methods are used for group parts into part families based on design attribute.
9. Explain the system concept of FMS.
10. Describe the characteristics of the future factory.

Part- B (5 x 16 = 80 marks)

11. Explain the steps required for single product scheduling algorithm and describe the knowledge based scheduling system with a block diagram.

12. a) Discuss the characteristics and control functions of computers in work center and assembly lines.

(OR)

b) What is supervisory computer control and discuss the types of software available for supervisory control system?

13. a) Explain why simulation is an appropriate tool for FMS and enumerate the steps required for simulation.

(OR)

b) Discuss the points to be considered while planning for FMS database and what are the CAD/CAM considerations in planning the FMS database?

14. a) Explain the steps required to determine machine cells and part families with an example using rank order clustering algorithm and cluster identification algorithm.

(OR)

b) How Possibility distributions applied in FMS Justification? Explain.

15. a) Draw a typical FMS layout showing the major features of sheet metal fabrication industry and discuss the developments of FMS.

(OR)

b) Explain how the Artificial and Expert systems enhance the performance of FMS.