Roll No. | | | | | | | | | | |

B.E / B. Tech (Full Time) END SEMESTER EXAMINATIONS April / May 2019

MANUFACTURING ENGINEERING
(Common with Industrial Engineering)

Seventh Semester

MF8073 – Flexible Manufacturing Systems

(Regulation 2012)

Time: 3 Hours | Answer ALL Questions | Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. What are the types of flexibility and how flexibility is obtained in FMS?
2. State any two advantages and limitations of FMS.
3. What are the software source alternatives for FMS?
4. Write any four functions of supervisory computer control in an FMS environment.
5. Why simulation is an appropriate tool for FMS?
6. What is machine part incidence matrix?
7. How mathematical programming models are used for GT formulation?
8. What are the limitations of FMS simulation?
9. Mention the characteristics of future factories.
10. How artificial intelligence will be applied in FMS?

Part – B (5 x 16 = 80 marks)
(Question No.11 is Compulsory)

11. Discuss the development of manufacturing systems and explain the need for flexible manufacturing systems.

12. a) Describe the extrinsic and intrinsic functions for the FMS with a block diagram.

(OR)

b) What is the composition of hierarchy of computer control? Discuss the functions of work center control computer and state the criteria for software specification and selection in FMS.

13. a) Discuss the CAD/CAM considerations in planning FMS database and explain the importance of database in FMS environment.

(OR)

b) Describe the stages in FMS simulation with an example.

14. a) How to determine the mutually separable machine cells and part families for cluster identification algorithm and rank order duster algorithm? Explain.

(OR)

b) Describe briefly on economic justification on investment of FMS and application of possibility distribution in FMS justification.

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

(OR)

b) Write short notes on
   i) Single batch scheduling problem. (8)
   ii) Expert systems in FMS. (8)