



Reg. No. : .....

Name : .....



**Eighth Semester B.Tech. Degree Examination, April 2014  
(2008 Scheme)**

**08.806.10 : FLEXIBLE MANUFACTURING METHODS (MPU)**

Time : 3 Hours

Max. Marks : 100

**Instructions :** 1) Answer **all** questions from Part – A.  
2) Answer **one** question from **each** Module in Part – B.

**PART – A**

1. Distinguish between programmable automation and flexible automation.
2. Discuss the components of a CAD system.
3. What are the commonly available functions provided by CAD software ?
4. Explain the basic components of NC systems.
5. Discuss the manufacturing system classification based on number of workstations and system layout.
6. List various types of FMS layout. How do you choose a layout based on variation in process routing ?
7. Describe the situations where FMS can be employed.
8. What kinds of integration exist in an FMS ? What components of the FMS make these integrations possible ?
9. Distinguish between dynamic and real-time scheduling in FMS.
10. Discuss the various approaches for modelling the performance evaluation of an FMS. **(10×4=40 Marks)**



**PART – B**  
**Module – 1**

11. Prepare an NC part program for the part shown in Figure 1. The dimensions given in the figure are in millimeters. The tool diameter is 20 mm.

OR

12. Prepare an APT part program for the part shown in Figure 1.

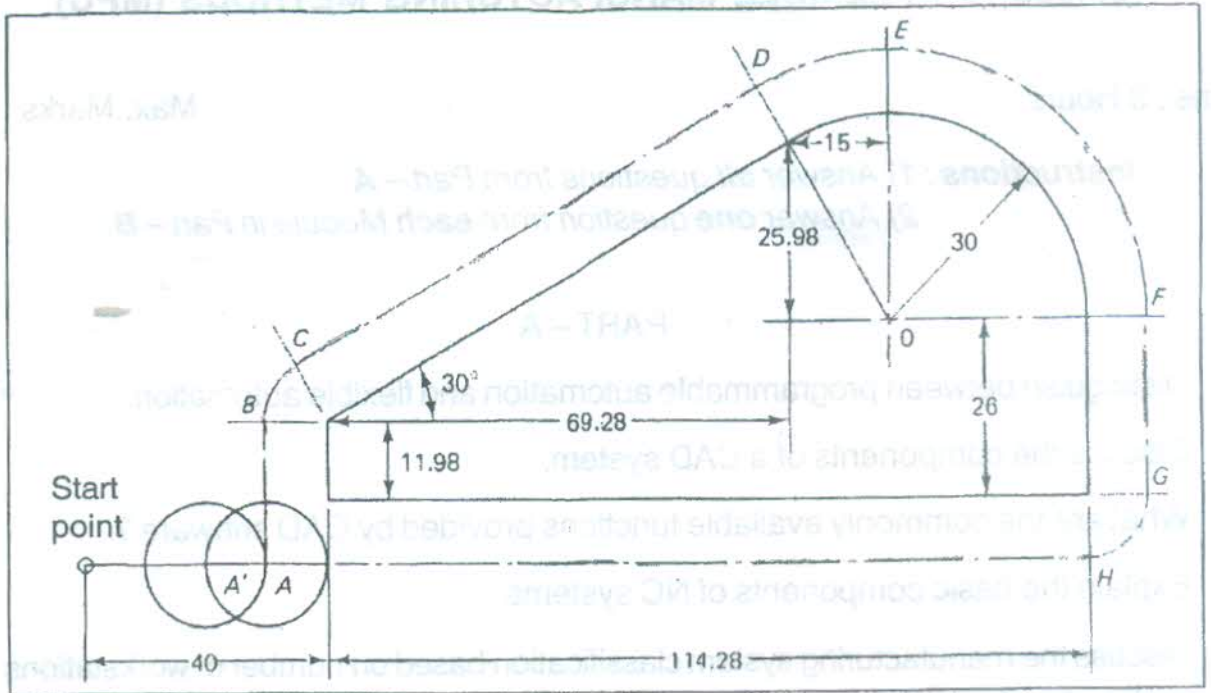


Figure 1 : Part drawing

**Module – 2**

13. a) Describe a part coding and classification system used in practice.  
b) Six manufactured components and their machine sequence are given below.

Part	P1	P2	P3	P4	P5	P6
Machine sequence	Q, S, T	X, Q, S	X, M, Q, S	X, M	Q, T	T, S

Create a part-machine incidence matrix. Form workcell grouping using the binary ordering algorithm. Identify the exceptional elements. How do you manage the exceptional elements ?

OR



14. a) Describe a flexible machining system.  
b) List the various material handling systems used in FMS. Describe the characteristics of automated guided vehicle used for material handling in FMS.

### Module – 3

15. a) What are the factors considered for FMS design ? Explain.  
b) Discuss the importance of tool management in an FMS. Explain the roll of tool magazine and quick tool changeover in the performance of FMS.

OR

16. a) Explain the role of simulation in FMS modelling.  
b) Describe the tool supply systems in FMS.



(3×20=60 Marks)