Roll No. ..... Total Pages : 4

11266/NJ

D-34/2111

COMPUTER AIDED MANUFACTURING

Paper–1112T/102, 201

Common for ME (Part Time) Semester–I &

ME (Regular) Semester–III & ME (Part Time)

Semester–V

Time Allowed : 3 Hours] [Maximum Marks : 50

Note : The candidates are required to attempt **three** questions each from Sections A and B carrying 5 marks each and the entire Section C consisting of 10 short answer type questions carrying 2 marks each.

SECTION—A

1. What do you mean by Automation ? Explain various types of Automation strategies. 5

2. Differentiate between Open Loop and Closed Loop CNC Systems. 5

3. Explain various work holding devices and tool holding devices in CNC machines. 5

4. What are the advantages of using Canned cycles and subroutines in part programming for CNC machines. 5

5. Differentiate between NC, CNC, DNC and Adaptive control in Computer aided manufacturing. 5

SECTION—B

6. What do you mean by Production flow analysis ? For what purpose is it used ? Explain with suitable examples. 5

7. Explain various control loop circuit elements in Point to Point (PTP) and Contouring systems. 5

8. What do you mean by Flexible Manufacturing Systems (FMS) ? Explain different types of Flexibilities in FMS. State important advantages of FMS. 5

9. Describe the latest trends in Manufacturing. 5

10. What is the uses of Parts classification and Coding system in group technology? Explain OPITZ system for parts classification and coding. 5

SECTION—C

11. Answer the following in short : 10×2=20

(i) Explain briefly the fundamental concepts in Numeric Control (NC).

(ii) State important constructional feature of Automatic tool changers in CNC machines.

(iii) List and name important numerical control codes for part programming.

(iv) What is the function of 'Controller' in a CNC machine ?

(v) Discuss various Human factors in a future automated factory.

(vi) What is a Part family ? Classify various types of Part families in Group technology.

(vii) Explain the applications of Expert system in CIM.

(viii) What type of tooling is required for CNC machines ?

(ix) What do you mean by Computer aided manufacturing ? Explain.

(x) Explain Group technology and its applications.