8E8071

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B.Tech. VIII Semester (Main) Examination, April/May 2016

Mechanical Engg.

8ME1A Computer Integrated Manufacturing Systems

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting one question from **each unit**. All questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.)*

Units of quantities used/calculated must be stated clearly.

Unit - I

1. a) Explain various components of CIM (6)

   b) What is NC system? Also discuss the different methods of listing the coordinates of points in NC system (10)

OR

1. a) Discuss the role of CIM in manufacturing, manufacturing planning and manufacturing control (8)

   b) Discuss various controls used in CNC ,machines Explain the principle of operation of closed loop CNC machine (8)

Unit - II

2. a) Explain manual part programming with suitable example (8)

   b) Explain NC application characteristics & NC part programming in detail (8)

OR

2. a) Explain NC Cutter path verification (8)

   b) Discuss in brief on interfacing NC with CIM (8)

Unit - III

3. a) Define group technology. List out various stages in GT and the methods available for solving problems in GT **(8)**

   b) Define part families.Explain the two categories of attributes of parts **(8)**

OR

3. Define the term process planning. Discuss various steps involved in process planning and its prerequisites **(16)**

Unit - IV

4. a) Discuss optical and non optical computer aided testing method. Discuss how computer is used in quality control **(8)**

   b) Discuss non contact inspection methods and different activities in a PPC system **(8)**

OR

4. Write short notes on

   a) MRP II

   b) Computer process control

   c) Contact inspection method **(16)**

Unit - V

5. a) What difficulties do companies interested in implementing CIM face **(8)**

   b) Compare agile and lean manufacturing **(8)**

OR

5. What is FMS? Describe the principle of FMS. Discuss the importance of material handling system in FMS **(16)**