CAD/CAM
(ME-404, DEC 2006)

Time: 3 Hrs
Max Marks: 60

Note: Section A is compulsory. Attempt any four questions from Section B and any two from Section C.

Section-A

1. a) What are the advantages of using CAD over traditional methods?
   b) Mention at least four graphic output devices.
   c) Explain the following terms: concatenation and ruled surface.
   d) Write down the parametric equation for the B-spline curve.
   e) Explain the need of standardization in CAD software.
   f) Give the steps which are subsequently followed while writing part programs in CNC.
   g) What are advantages of using Group Technology?
   h) Distinguish between flexible manufacturing systems and computer integrated manufacture.
   i) Define the terms: Fixed zero and floating zero.
   j) What are the limitations of wire frame models?

Section-B

2. a) With the aid of neatly labeled diagrams, explain drive surface, check surface and part surface.
   b) Write the syntax for geometry statement and motion statement in APT language. Give two examples for each.
3. a) Distinguish between manual part programming and computer aided part programming.
   b) Explain any one of the parts classification and coding systems used in Group Technology.
4. a) Write down the matrix representation of two dimensional translation and rotation transformations.
   b) Explain in detail the CSG approach for the creation of solid models.
5. a) Explain the term: MDI and DNC.
   b) Describe the adaptive control as applied to turning operations.
6. a) What are the advantages of CAPP?
   b) Write a short note on Machining cells.

Section-C

7. a) Describe the part classification and coding system propounded by opitz.
   b) What is meant by canned cycles in CNC?
8. a) Make a comparative analysis of the wire frame, surface and solid modeling.
   b) Describe how the data base in organized when building a solid model from the graphic primitives.
9. a) Distinguish between FMS and CIM.
   b) By means of a schematic diagram, explain the features of a typical FMS.