Code: 9A03602

B.Tech III Year II Semester (R09) Supplementary Examinations December/January 2014/2015

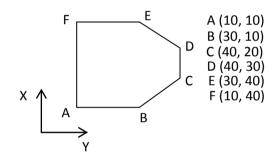
CAD/CAM

(Common to ME & MCT)

Time: 3 hours Max. Marks: 70

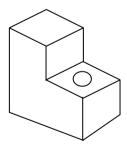
Answer any FIVE questions
All questions carry equal marks

- 1 (a) Discuss the role of CAD & CAM in advanced manufacturing industry. Write all the features, benefits and objectives of a good CAD-CAM system?
 - (b) Draw the block diagram to represent various components in a CAD-CAM system.
- 2 (a) With a schematic diagram, explain the principle of raster scanning process.
- b) (Apply the 2D transformations to the geometry shown in figure and show the transformed geometry along with coordinates. Translate the shape to (30,30), scale it to the factor 3, and rotate it to angle 30°. Assume that the 'A' is the reference point.



Typical two-dimensional geometrical shape.

- 3 (a) Discuss the wireframe, surface and solid modeling methods with neat illustrations.
 - (b) Explain the solid modeling technique to construct the model shown in figure and discuss each operation.



Solid model of an object.

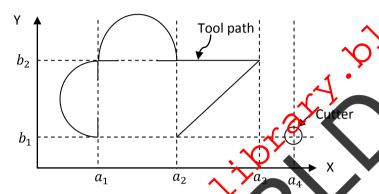
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4 (a) Discuss the benefits of CNC machine tools over the conventional machine tools.

(b) Write a CNC part program to machine the component along the tool path specified from the initial position of tool shown in figure. Use absolute coordinates, metric units and consider the cutter diameter compensation. Assume necessary machining talameters and take the diameter of the cutter as d.



Tool path to cut the profile with end milling

- 5 (a) Explain the concept of part family in group technology.
 - (b) With schematic diagrams, explain the process type plant layout and group technology based plant layout.
- 6 (a) Discuss the different types of manufacturing systems with neat illustrations and examples.
 - (b) Explain the flexible montacturing cell with a schematic diagram.
- 7 Explain the structure of the MRP system with a block diagram.
- Provide any four different definitions for "Quality" in manufacturing industry. Discuss the quality control process with a neat schematic diagram and specify various components in it
