B.E. / B.Tech (Full time) DEGREE END SEMESTER EXAMINATIONS APRIL / MAY 2011

MECHANICAL ENGINEERING BRANCH

(9)

SIXTH SEMESTER

ME 9354 – COMPUTER AIDED DESIGN AND MANUFACTURE

(REGULATION – 2008)

**Time : 3 hr** **Max. Mark: 100**

**Answer all Questions**

**Part – A (10x2=20 Marks)**

1. What is meant by point clipping?
2. A line (2,6) and (4,12) is rotated 45° about the origin. Find the final co-ordinate points.
3. Draw the Bezier spline for the following control points (0,0), (4,3) (8,4) and (12,0).
4. Explain revolved surface with a simple sketch.
5. What is meant by "Express" in STEP?
6. List the benefits of GT.
7. What do you understand by preset tooling and qualified tooling?
8. Give the meaning of the following w.r.t. APT language used in computer assisted part programme.

   L1 = LINE / P1, LEFT, TANTO, C1

   L7 = LINE / LEFT, TANTO, C3, LEFT, TANTO, C4
9. Define Business Process Re-engineering.
10. Sketch a Typical Route Sheet or Process Sheet.

**PART – B (5x16=80 Marks)**

11. (i) How do you construct the Fig.1 using CSG and B-rep solid modelling techniques. Explain the step by step procedure. (10)

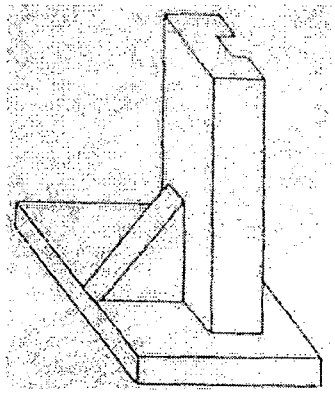

Fig. 1

....2

(ii) How the data structures support the interactive modelling? (6)

12. (a)(i) Discuss the reasons for implementing CAD in industries. (8)

(ii) Explain the various steps for the Design process as outlined by Shigley. (8)

*(OR)*

12.(b)(i) How to reflect the object about x axis and y axis? Explain with suitable example. ((8)

(ii) How the concurrent engineering differ from sequential engineering? (8)

13.(a) (i) What is IGES? Discuss the various sections in IGES with suitable example. (12)

(ii) Draw the various network topologies used in CAD Environment. (4)

*(OR)*

13. (b) Describe Production Flow Analysis used in G.T. to group parts into families. (16)

14. (a) Prepare a manual part programme to profile mill the given job shown in Fig. 2. Other details required for programming are given below: (16)

Speed = 1000 rpm, feed = 100 mm / min, Depth of cut = 3 mm

Tool position from the surface of the job = 10 mm

Thickness of job = 3mm, SP = Starting Point.

Take Z=0 at the top surface of the job. Assume suitably any missing data. Give explanation for each block of the programme and also show the tool path.

All Dimensions are in mm

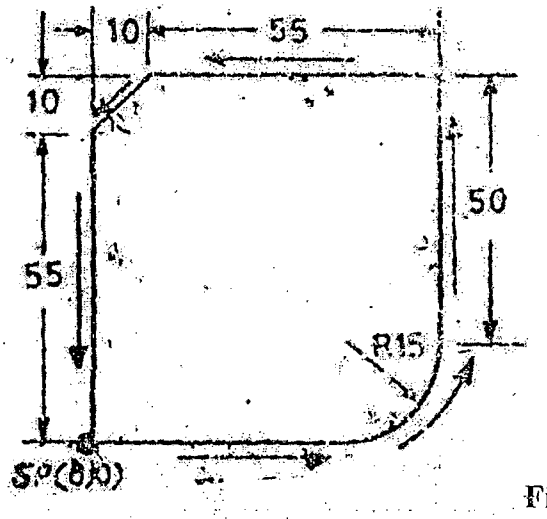


Fig.2

*(OR)*

14.(b)(i) Describe the features of CNC Machine. (10)

(ii) List the eight steps involved in Automatic tool changing in CNC Machine. (6)

15. (a) Describe the seven types of waste in Manufacturing. (16)

*(OR)*

15.(b)(i) Describe the JIT approach in Production with the aid of a neat sketch. (12)

(ii) Diffrentiate between Aggregate Planning and Master Production Planning. (4)

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