Code No. : 5192

FACULTY OF ENGINEERING
B.E. 3/4 (Mech./Prod.) II Semester (Suppl.) Examination, January 2012
CAD/CAM

Time : 3 Hours] [Max. Marks : 75

***Note** : Answer **all** questions of Part **A**.*
*Answer **five** questions from Part **B**.*

PART – A **(25 Marks)**

1. Explain any two geometric elements and their creation.
2. What are the characteristics of Bezier curves ?
3. With neat sketch explain surface of revolution and tabulated cylinder.
4. What are the mass properties of a model ?
5. Give any four CAD dates exchange formats.
6. What are canned cycles ?
7. Differentiate CNC and DNC.
8. What are the methods of robot programming ?
9. What is the principle of rapid prototyping ?
10. What is machine vision ?

PART – B **(5×10=50 Marks)**

11. a) What are the advantages of representing curves in the parametric form ? **5**
    b) Fit a Bezier curve with control points $P_0(1, 1)$, $P_1(3, 6)$, $P_2(5, 7)$ and $P_3(7, 4)$ and find out points corresponds to u = 0.4 and 0.6. Where 'u' is a parameter $0 \le u \le 1$. **5**

12. a) Explain C-rep and B-rep approaches of solid modelling. **5**
    b) Write the transformation matrices for translation, rotation and scaling in homogeous coordinates. **5**

13. a) Explain IGES and PDES CAD data exchange formats. 5

    b) Write the complete APT program to machine the following profile shown in Fig.1 5

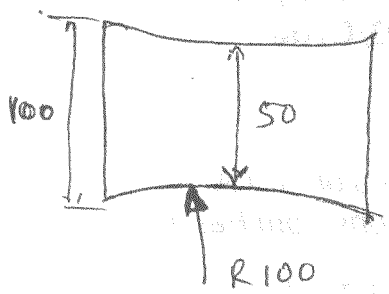

Fig. 1

14. a) Explain MICLASS system of coding. 5

    b) What are the benefits and limitations of FMS ? 5

15. a) What are the advantages of CNC compared to NC ? 5

    b) State the differences between load through programming and teach pendant programming. 5

16. a) What are the differences between retrieval and generative type of Computer Aided Process Planning (CAPP) ? 5

    b) Sketch and explain any one coordinate measuring machine. 5

17. Write short note on the following : 10

    a) MACROS

    b) Opitz system of GT

    c) Reverse engineering.
