(Pages : 3) **2458**

Reg. No. : .....

Name : .....

Sixth Semester B.Tech. Degree Examination, May 2013

(2008 Scheme)

08.603 : COMPUTER AIDED DESIGN (MPU)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions, **each** carries **4** marks.

1. What are the benefits of CAD ?
2. Explain what is meant by automated drafting.
3. Describe the working of a CRT.
4. How reflection of a triangle about an arbitrary line is performed ?
5. What is the need of homogeneous coordinates ?
6. Distinguish between window and view port.
7. Write notes on scan line algorithm.
8. Discuss the advantages and applications of FEM.
9. Define principle of minimum potential energy.
10. What are shape functions ? Explain their properties. **(10×4=40 Marks)**

PART – B

Answer **one full** question from **each** Module. **Each** question carries **20** marks.

Module – I

11. a) Explain how image generation in computer graphics is done. **10**

    b) Describe some common editing features available on a CAD system. **10**

OR

12. a) Write notes on :

    i) Data exchange formats **5**

    ii) Virtual reality. **5**

    b) Explain how images are created in plasma discharge displays. **10**

Module – II

13. a) What are the considerations to be made in designing graphics software ? **10**

    b) Prove that there is one to one correspondence with the points on a line and points on its transformed line. **10**

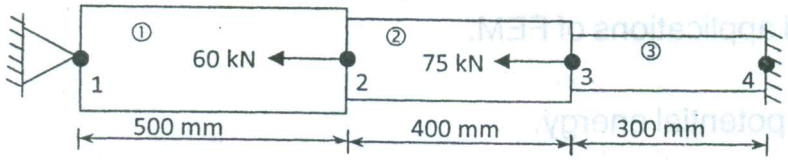
OR

14. a) A point (3, 7) is translated by 5 units in x and y direction and scaled by 2 units in x and y direction and then rotated by 45° in clockwise. Obtain the final co-ordinates of the point. **10**

    b) Discuss the various methods of creation of 3D solids. **10**

Module – III

15. Determine the displacements, strains, stresses and support reactions in the structure shown in Fig. 1. Use elimination method for handling boundary conditions. **20**



$A_1 = 2400\ m^2$ $A_2 = 1200\ m^2$ $A_3 = 600\ m^2$ and $E = 2 \times 10^5\ N/mm^2$

Fig. 1

OR

16. A thin plate of uniform thickness 25 mm is subjected to a point load of 420 N at mid depth as shown in Fig. 2. If Young's modulus $E = 2 \times 10^5$ N/mm^2 and weight density $\rho = 0.8 \times 10^{-4}$ N/mm^3, calculate the following, considering its self weight also : (i) nodal displacements (ii) stresses in each element and (iii) support reactions. **20**

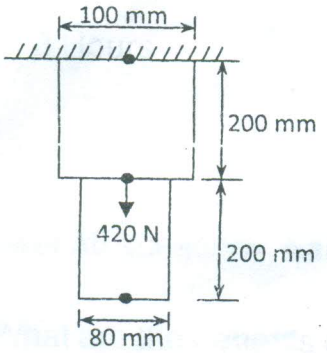


Fig. 2

(3×20=60 Marks)