Reg. No. : ....

Name : ....

Sixth Semester B.Tech. Degree Examination, June 2015
(2008 Scheme)
08.603 : COMPUTER AIDED DESIGN (MPU)

Time : 3 Hours   Max. Marks : 100

PART – A

Answer **all** questions. **Each** carries **4** marks.

1. Discuss the Graphic standards used in CAD.

2. Explain working of a CRT display.

3. What is meant by composite transformation ? Show that two successive translations are additive.

4. Define two dimensional Affine transformations. List the affine transformations which preserve the angles and length after transformation.

5. Explain the Cohen Sutherland Line clipping algorithm.

6. Obtain the scale factors for Window to View port co-ordinate transformation.

7. Explain OCTREES representation of solid objects.

8. List the advantages and limitations of FEM.

9. Describe the principle of minimum potential energy.

10. Write note on Galerkin method and weighted residual method.

PART – B

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

Module – I

11. a) Discuss the benefits of CAD in the design process and engineering analysis.

    b) Explain the various graphic standards used in CAD.

    OR

12. a) Briefly explain the role of virtual reality in CAD and modeling.

    b) Discuss the various CAD packages for automated drafting and modeling.

Module – II

13. a) Explain the computational procedure of midpoint circle algorithm.

    b) Scan convert a circle of radius 20 unit along the circle octant in the first quadrant using mid point circle algorithm.

    OR

14. a) Discuss the polygon tables for representing a polygon surfaces.

    b) Explain the Constructive Solid Geometry (CSG) methods for solid modeling.

Module – III

15. Fig. shows a stepped shaft subjected to an axial load. Find out the nodal displacements, strains and stress in each Member using FEM.
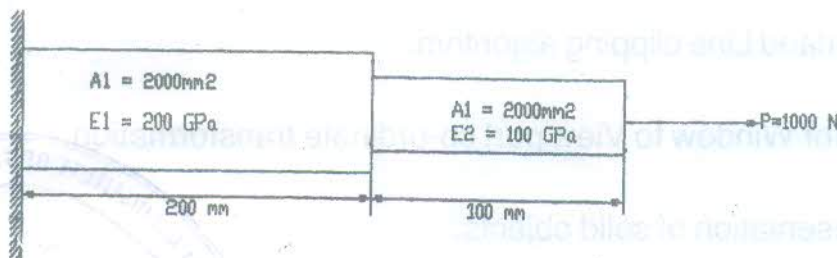
    OR

16. a) What do you mean by isoporametric formulation ?   5

    b) Write down the procedure for the formation of global stiffness matrix from local stiffness matrices.   8

    c) What do you mean by discretization in FEM ?   7