



Reg. No. : .....

Name : .....

**Sixth Semester B.Tech. Degree Examination, April 2014  
(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 fundamental reasons for implementing CAD system ?
2. Write short note on design database.
3. Explain the working of a Thin-film electroluminescent display.
4. Write short note on virtual reality in design.
5. Give 2D translation and rotation matrices.
6. Give the model of graphics software configuration.
7. Derive the reflection matrix about Y-axis in homogeneous co-ordinate system.
8. Explain any one method for formulating stiffness matrix in FEM.
9. Explain the procedure for assembling global stiffness matrix.
10. What are shape functions ?

PART – B

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

MODULE – I

11. a) Explain the working of any two non-emitter types of flat display.  
b) What are the different stages in design ? Explain.

OR



12. a) Explain the working of a shadow-mask CRT display.
- b) Explain the architecture of raster-graphics system.

### MODULE – II

13. a) Show that two successive scaling is multiplicative.
- b) Derive the 3D rotation matrices.

OR

14. a) Derive the scaling matrix about an arbitrary coordinates axes which is inclined at an angle  $\theta$  with respect to X-Y coordinate axes.
- b) Give the Bresenham's line algorithm.

### MODULE – III

15. a) Differentiate between element stiffness matrix and global stiffness matrix. Explain the steps for forming global stiffness matrix.
- b) Derive stiffness matrix for a bar element based on principle of minimum potential energy.

OR

16. a) Discuss linear static analysis with the help of an example.
  - b) What is a transformation matrix ? Explain its use in the analysis of trusses.
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