Code No. : 4013

FACULTY OF SCIENCE

M.Sc. I Semester Examination

April/May – 2007

COMPUTER SCIENCE

Paper-1.5 – Computer Graphics

Time : 3 Hours] **[Max. Marks : 100**

Note : Answer **all** questions.

SECTION – A **(8 × 5 = 40)**

1. Explain Raster Scan display.
2. Write about boundary fill algorithm.
3. Explain about line attributes.
4. Write two dimensional transformation for translation, rotation and scaling in matrix form, using homogeneous coordinates.
5. Write about Window, view port and viewing transformation.
6. Write short notes on Weiler – Artherton Polygon clipping.
7. Explain Cubic Bezier Curves.
8. Write about back-face detection.

SECTION – B **(4 × 15 = 60)**

9. (a) (i) Write DDA algorithm for drawing a time. Write about its demerits.

   (ii) Explain even-odd rule for finding inside-outside point of a Polygon.

   OR

   (b) Write mid-point circle algorithm for drawing a circle.

10. (a) (i) Write transformation relationship in 2-D for reflection about *x*-axis and y-axis and represent them in matrix form.

    (ii) Show that rotation about origin in 2-D can be done by three shear transformation.

    OR

(b) (i) Show that two successive rotations about origin in 2-D is additive and commutative.

(ii) Derive two dimensional formula for rotation about an arbitrary point (x_p, y_p).

11. (a) Explain Cohen- Sutherland line Clipping method.

OR

(b) Explain Sutherland-Hodgeman Polygon Clipping method.

12. (a) (i) Explain the steps of obtaining rotation about an arbitrary axis in 3-D.

(ii) Explain depth sorting algorithm.

OR

(b) Explain parallel projection. Obtain transformations relationship for oblique parallel projection.
