

Code: R7310503

R7

B.Tech III Year I Semester (R07) Supplementary Examinations, May 2013

COMPUTER GRAPHICS

(Common to CSE, IT, CSS and ECC)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Explain about various methods for generating electronic images in the fine arts.
(b) Explain about beam-penetration method for displaying color pictures.
- 2 What are the properties of ellipses? Explain mid-point ellipse algorithm.
- 3 (a) Derive transformation matrix for 2D transformation and scaling about origin.
(b) Derive transformation matrix for shear transformation.
- 4 Explain how Sutherland-Hodgeman polygon clipping algorithm works. Also, explain why it works for only convex clipping regions.
- 5 At a surface point P, if the surface normal, light vector and sight vectors are given by $N = j$, $L = -i + 2j - k$ and $S = i + 1.5j + 0.5k$ respectively. Find the vector of reflected ray and the angle it is making with surface normal.
- 6 (a) Write about various viewing co-ordinates.
(b) Write about 3D clipping in detail.
- 7 Write a program to display visible surfaces of a convex polyhedron using the BSP-tree method.
- 8 Write different advantages and disadvantages of computer animation languages.
