

II B.Tech II Semester Supplementary Examinations, April/May 2005
COMPUTER GRAPHICS
(Mechatronics)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Apply the Bresenham's algorithm to turn up pixels along the line segment determined by points (5,7) and (12,11).
(b) Give parametric equation of a line between points (1, 1, 2) and (14,14,10).
2. (a) Briefly explain the steps involved in flood-fill algorithm.
(b) Distinguish flood-fill and scan-line algorithms for polygon filling.
3. Give the homogeneous co-ordinate transformation matrices for the following transformations:
(a) Entire picture three times as large
(b) Counter clock-wise rotation about the origin, by 90 degrees.
4. (a) What is the utility of segments? Explain the use of segment table for organizing information about the segments.
(b) What are the various data structures that are used for storing segments? Comment on their relative merits and demerits.
5. What is line segment clipping? Describe the various clipping categories into which the line segments are categorized. What is the significance of each category?
6. Explain briefly the transformation steps for obtaining a composite matrix for rotation about an arbitrary axis with the rotation axis projected on to the z-axis
7. Write an 3D clipping algorithms for Parallel and Perspective projections.
8. Give the advantages and disadvantages of hard copy displays, vector refresh displays and raster displays.
