

III B.Tech I Semester Supplementary Examinations, November 2005
COMPUTER GRAPHICS
(Electronics & Computer Engineering)

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. Explain briefly about various display devices used in computer graphics. [16]
2. (a) Briefly explain the steps involved in flood-fill algorithm.
(b) Distinguish flood-fill and scan-line algorithms for polygon filling. [8+8]
3. Give the homogeneous co-ordinate transformation matrices for the following transformations:
(a) Scale x direction four times as large and the y-direction un-changed.
(b) Clock-wise rotation about the origin, by 60 degrees. [8+8]
4. Find the normalization transformation that maps a window whose lower left corner is at (1,1) and upper right corner is at (3,5) onto
(a) a view port that is the entire normalized device screen and
(b) a view port that has the lower left corner at (0,0) and upper right corner at (1/2,1/2). [16]
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? [16]
6. (a) Write about 3D viewing transformations.
(b) Write the 3D homogeneous transformation matrix for each of the following transformation
 - i. shift 0.5 in X , 2.0 in Y and -0.2 in Z
 - ii. Rotate by $\pi/4$ about X axis[8+4+4]
7. Explain the following:
(a) Painter's algorithm
(b) Warnock's algorithm. [8+8]
8. Write about the following:
(a) Generation of curves and surfaces.
(b) Sweeping method of interpolation. [8+8]
