

III B.Tech I Semester Supplementary Examinations, May 2005
COMPUTER GRAPHICS
(Mechatronics)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is the difference between simple DDA and Bresenham's line generation algorithm?
(b) Explain how dotted lines can be drawn.
(c) What is the method of producing a thick line segment?
2. Explain the following:
(a) world, screen and normalised coordinates.
(b) 2D graphics primitives.
3. Give 3x3 homogeneous-coordinate transformation matrix which will have the same effect as each of the following transformation techniques:
(a) Translate down 1 unit and right 1 unit , and then rotate counter-clockwise by 45 degrees.
(b) Scale the y coordinate to make the image twice as tall, shift it down 1 unit rotate clockwise by 30 degrees.
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).
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 the following:
(a) 1-Point, 2-point perspective projections.
(b) Viewing parameters.
7. Explain the following:
(a) Painter's algorithm
(b) Warnock's algorithm.
8. Explain about the following:
(a) B-spline method

(b) Raster graphics architecture.
