B.Tech. Degree V Semester Examination, November 2009

CS 504 COMPUTER GRAPHICS

(2006 Scheme)

Time: 3 Hours Maximum Marks: 100

PART - A

(Answer all questions)

(8x5=40)

I. (a) Write an algorithm based on boundary till to till a polygon.
(b) With the help of a neat diagram explain the basic video controller refresh operations.
(c) Magnify the triangle A (0,0), B (1,1), C (5,2) with respect to the fixed point C (5,2) by a factor of 2 in both directions.
(d) Obtain the matrix for reflection for any object with respect to the line y=x and y=-x.
(e) What is view volume? How it is specified?
(f) Write short note on Fractal Geometry methods.
(g) Explain a buffer method for visible surface detection.
(h) Differentiate between object space and image space algorithms.

PART – B

(4x15=60)

II. Explain Bresenham's line drawing algorithm. Illustrate Bresenham's line drawing algorithm for the line with end points (4,8) & (10,12). (15)

OR

III. (a) Trace the midpoint circle drawing algorithm for a circle with center (3,4) and radius 4 cm. (10)
(b) Write notes on (i) Bundled attributes (ii) Antialiasing techniques. (5)

IV. Differentiate between Sutherland Hodgeman polygon clipping algorithms and Weiler Atherton polygon clipping algorithm (15)

OR

V. (a) Explain any five 2D transformations? Give the homogeneous matrix representations for each transformation. (10)
(b) Differentiate between all –or –none string clipping and all –or –none character clipping. (5)

VI. Differentiate between parallel projection and perspective projections. Compare orthographic parallel projection and oblique parallel projection. (15)

OR

VII. Differentiate between Bezier curves and B-spline curves. (15)

VIII. (a) Explain painters' algorithm. How is depth of a polygon determined by Painter's algorithm. (10)
(b) Discuss Back-Face removal algorithm. (5)

OR

IX. Define rendering. What are the different polygon rendering methods? (15)

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