B. Tech Degree V Semester Examination November 2011

CS 504 COMPUTER GRAPHICS

(2006 Scheme)

Time : 3 Hours | Maximum Marks : 100

PART A

(Answer *ALL* questions) (8 x 5 = 40)

I. (a) Briefly explain Boundary Fill algorithm.
(b) Define Anti aliasing and explain various Anti aliasing techniques.
(c) Explain Window – View port transformation.
(d) Explain why a 2D transformation is represented by a 3×3 matrix.
(e) What is view volume? How is it specified?
(f) Define Bezier curve. What are the properties of the curve?
(g) Write short notes on Constant – Intensity shading.
(h) Differentiate between Object space and Image space Algorithms.

PART B

(4 x 15 = 60)

II. Explain Bresenham's line drawing algorithm. Illustrate the algorithm for a line with end points (21, 12) and (29, 16). (15)

OR

III. Explain Mid point Circle algorithm. Trace the algorithm for a circle with radius 15. (15)

IV. (a) Explain Sutherland – Hodgman polygon clipping algorithm. (10)
(b) Describe fixed point scaling. Write down its composite matrix representation. (5)

OR

V. (a) Explain Cohen – Sutherland algorithm for line clipping. (10)
(b) What is Affine-transformation? What are its general properties? (5)

VI. (a) Briefly explain Natural cubic splines. (9)
(b) Write down the matrix representation for 3D rotation. (6)

OR

VII. (a) Differentiate between Parallel and Perspective projection. (5)
(b) Write short notes on Fractal geometry methods. (10)

VIII. Explain Painter's algorithm for visible surface detection. (15)

OR

IX. Write short notes on: (3 x 5 = 15)
(i) Phong Shading
(ii) Back-Face Detection
(iii) A-Buffer method

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