

MCA.II/05.15.0389

Reg.No.

--	--	--	--	--	--	--	--	--	--

C

M.C.A. DEGREE II SEMESTER EXAMINATION MAY 2015

CAS 2201 COMPUTER GRAPHICS

(Supplementary)

Time : 3 Hours

Maximum Marks : 50

PART A

(Answer *ALL* questions)

(15 × 2 = 30)

- I. (a) Explain the boundary fill algorithm to fill the interior of a polygon.
(b) Briefly explain Random Scan Systems.
(c) Explain Bundled attributes with an example.
- II. (a) Explain affine transformation what are the properties of it.
(b) Explain window-to-viewport transformations.
(c) Derive the transformation that generates rotation of an object point (x, y) θ° counter clockwise direction.
- III. (a) Define Bezier curve. What are the properties of it?
(b) Write short notes on BSP trees
(c) Define hierarchical modeling.
- IV. (a) Differentiate between object space and Image space method for visible surface detection.
(b) Explain Back face detection.
(c) Write the matrix form of 3D rotation transformation with respect to x-axis.
- V. (a) Briefly explain constant intensity shading.
(b) What are Illumination models?
(c) What is Gouraud shading?

PART B

(5 × 4 = 20)

- VI. Briefly explain the midpoint circle algorithm.
- OR**
- VII. Explain Bresenham's algorithm to draw a line

(P.T.O.)

- VIII. Define Clipping. Explain Sutherland-Hodgeman algorithm for clipping.
OR
- IX. Explain the need for homogenous coordinate systems in transformations.
Write down the matrix representations for 2-D translation, rotation and scaling.
- X. Define Spline. Briefly explain natural Cubic Splines.
OR
- XI. What are the properties of fractals? Describe the classification of fractals.
- XII. Explain how a 2D Cohen-Sutherland algorithm can be extended to clip a line against a 3-D view volume.
OR
- XIII. Describe A-buffer method for visible surface detection.
- XIV. Briefly explain the animation sequence.
OR
- XV. Explain HSV colour model.
