MCA.I/12.15.1099 Reg. No. | | | | | | | | |

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MCA DEGREE I SEMESTER EXAMINATION DECEMBER 2015

CAS 2105 COMPUTER GRAPHICS

(Supplementary)

Time: 3 Hours Maximum Marks: 50

PART A

(Answer *ALL* questions)

(15 × 2 = 30)

I. (a) What is the difference between random scan display and raster scan display?
(b) List out the various line attributes.
(c) What is the use of antialiasing routines?

II. (a) Prove that two successive rotations are additive.
(b) Differentiate window and viewport.
(c) Discuss different techniques for text clipping.

III. (a) What is the logical classification of input devices?
(b) What is the difference between parametric continuity and geometric continuity in joining two successive curve sections?
(c) Explain constructive solidgeometry method for solid modelling.

IV. (a) What is the difference between 2-dimensional rotation and 3-dimensional rotation?
(b) Differentiate parallel projection and perspective projection.
(c) What are object-space methods and image-space methods in visible surface detection?

V. (a) What is the use of a surface-rendering algorithm?
(b) Differentiate light-emitting sources and light-reflecting sources, with suitable example.
(c) What is morphing?

PART B

(5 × 4 = 20)

VI. Illustrate the mid-point circle algorithm.

OR

VII. Explain scan-line polygon fill algorithm.

VIII. Illustrate how a unit square is converted to a parallelogram using x-direction shear with Sh_x=2.

OR

IX. Explain the Cohen-Sutherland line clipping algorithm,

X. Discuss fractal geometry methods for object modelling.

OR

XI. What are Bezier curves and surfaces?

XII. Explain depth-buffer method for detecting visible surfaces.

OR

XIII. Explain depth-sorting method for solving hidden-surface problem.

XIV. Compare Gouraud shading and Phong shading methods for rendering an object.

OR

XV. Discuss different steps in an animation sequence.

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