



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 214403

Roll No.

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M. C. A.

(SEM. IV) THEORY EXAMINATION, 2014-15

COMPUTER GRAPHICS & MULTIMEDIA

Time : 3 Hours]

[Total Marks : 100

Note : Attempt all questions.

1 Attempt any parts : **5×4=20**

- (a) Discuss various applications of computer graphics ?
- (b) Distinguish between uniform scaling and differential scaling.
- (c) Describe the key features of popular image editing software.
- (d) Discuss key attributes of an image.
- (e) Describe RGB and CMY color models.
- (f) Write short note on video conferencing.

2 Attempt any two parts : **2×10=20**

- (a) Consider two raster systems with the resolutions of 640×480 and 1280×1024 .
 - (i) How many pixels could be accessed per second in each of these systems by a display controller that refreshes the screen at a rate of 60 frames per second ?

- (ii) What is the access time per pixel in Each system ?
 - (b) What do you mean by window port and viewport ? How the transformation takes place from window to viewport co-ordinate ?
 - (c) Double a cube object by assuming its coordinate.

3 Attempt any two parts : 10×2=20

- (a) Explain the various properties of B-Spline curve.
- (b) Write down the Bresenham's midpoint circle generation algorithm to generate a octent of a circle. Rasterise an octent of circle having radius 10.
- (c) What do you mean by clipping ? Explain Cohen-Sutherland line clipping algorithm.

4 Attempt any two parts : 10×2=20

- (a) Derive the transformation matrix for rotation about arbitrary point.
- (b) What is projection ? Why it is used ? Explain the different types of projection.
- (c) Explain scan line and depth sorting method of back face algorithm.

5 Attempt any two parts :

10×2=20

- (a) What are splines ? Write short notes on Bezier splines.
 - (b) Explain how audio and video are used for multimedia.
 - (c) What is video on demand ? Explain.
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