Printed Pages : 3

CA403

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

PAPER ID : **214403**

Roll No.

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 ?

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(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-Sutheriand 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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