MCA DEGREE EXAMINATIONS: MAY/JUNE 2014

(Regulation 2013)

Second Semester

MASTER OF COMPUTER APPLICATIONS

P13CAT202**:** Computer Graphics and Multimedia Systems

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1. A raster system has resolution 640X480. Compute the size of frame buffer (in byte) to store 24 bits per pixel.

2. What are the uses of chromaticity diagram?

3. Develop a transformation matrix to scale a point (15, 10, 10) twice with respect to the origin.

4. Name the six logical classifications of input devices.

5. What is surface rendering?

6. Relate an interpolation spline with an approximation spline.

7. How multimedia is used in E-Commerce?

8. Compress the following sequence using Run Length Encoding and provide the compression %.

    PPQQRRRRRRRRRSTUUUUUUVVV.

9. What is pulse code modulation?

10. List the guidelines for performing animation.

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

Q.No:11 is Compulsory

11. (i)   Digitize a line from (10, 12) to (20, 18) on a raster screen using Bresenham's (12) line algorithm.

    (ii)   Prove that two successive translations are additive.   (4)

12.   Explain the RGB and HSV color models in detail.

13. (i)   Explain how a line can be clipped using Liang Barsky line clipping algorithm.   (8)

    (ii)   How 2D rotation of an object can be performed? Write the transformation matrix (8) for rotating a point (20, 30) in clockwise direction by an angle 45 degrees.

14. (i)   Explain the properties of Bezier curves.   (8)

    (ii)   Explain how a 3D object is projected onto the 2D view plane using Parallel (8) projection.

15. (i)   Explain the multimedia building blocks in detail.   (8)

    (ii)   What is lossless compression? Analyze the Huffman coding data compression (8) scheme.

16. (i)   Explain JPEG image compression with a neat block diagram.   (8)

    (ii)   List and explain the basic image editing steps.   (8)

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