Roll No ....

CS - 504 (New)

B.E. V Semester

Examination, December 2013

Computer Graphics and Multimedia

Time : Three Hours

Maximum Marks : 70

Note: Attempt all questions. All questions carry equal marks

Unit - I

1. a) What is the purpose of a display processor in a computer system? Give the architecture of a raster graphics system with a display processor. 7

   b) Compare simple DDA line drawing algorithm with Bresenham's algorithm. Does the points generated by both algorithms are same? Justify your claim. 7

OR

2. a) What do you mean by aliasing and antialiasing? Discuss one method for antialiasing. 7

   b) Write Bresenham's algorithm for generating a circle and use it to find the pixels which would be put on in one octant of the circle with centre origin and radius 6 units. If circle is shifted to centre (1,2), what will be the new locations of these pixels. 7

Unit - II

3. a) Find the transformation required to reflect a polygon whose vertices are A(–1,0), B(0,–2), C(1,0) and D(0,2) about the line Y = x + 2. Find reflected image.   7

b) Describe in detail the Cohen Sutherland algorithm for line clipping.   7

OR

4. a) Find the transformation matrix that transform the given square ABCD to half its size with center still remaining at the same position. The co-ordination of square are A(1,1), B(3,1), C(3,3), D(1,3) and center at (2,2).   7

b) Write short note on:

i) Polygon clipping

ii) Viewing Transformation   7

Unit - III

5. a) Find the co-ordinates of a unit cube when it is projected along a vector M = I + J + K on to a plane defined by point P(1, 1, 1) and a normal vector N = 3J + 4K.   7

b) Derive an illumination model for diffused and specular reflections.   7

OR

6. a) What steps are required to shade an object using Gouraud shading algorithm.   7

b) Discuss the properties of the Bezier and B-Spline curve.   7

Unit - IV

7. a) What are the components of multimedia system? In what format are these data stored in a computer.   7

b) Distinguish between Huffman coding and LZW coding methods of text compression.   7

OR

8. a) Discuss about major video recording and storage format.   7

b) Describe the main components and I / O port of a sound card with their functions.   7

Unit - V

9. a) Discuss the various principles of animation?   7

b) Describe the working principle of MPEG-1 Audio.   7

OR

10. Write short notes:-   14

i) 3 D Animation

ii) Multimedia Architecture

iii) Multimedia Databases

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