No. of Printed Pages : **2**

Sl. No.

B4.4-R4 : COMPUTER GRAPHICS AND MULTIMEDIA SYSTEMS

NOTE :

1. **Answer question 1 and any FOUR from questions 2 to 7.**
2. **Parts of the same question should be answered together and in the same sequence.**

Time : 3 Hours **Total Marks : 100**

1. (a) What is an illumination model in computer graphics ?

(b) Define the following terms.

(i) Resolution (ii) Zooming (iii) Viewport (iv) Pixel

(c) Explain the .jpeg and .gif format in detail.

(d) What is Computer Graphics ? Explain any three applications of computer graphics.

(e) Explain characteristics of multimedia System.

(f) Differentiate between Random Scan display and Raster Scan Display.

(g) Explain Shear Transformation in details. **(7x4)**

2. (a) Explain parallel and perspective projections and derive the matrix for perspective projection.

(b) What is the significance of DDA algorithm in computer graphics ? List and explain the merits and demerits of DDA algorithm. **(9+9)**

3. (a) Explain 3 dimensional scaling and rotation in computer graphics.

(b) What are Aliasing & Antialiasing ? Explain any one Antialiasing method in detail.

(c) List and explain the properties of Bezier Curves. **(6+8+4)**

4. (a) Explain Mid-point Circle drawing algorithm.

(b) List different video formats and describe any three types of video formats in detail.

(c) Describe Reflection and Shear in 2D transformation. **(6+8+4)**

5. (a) What is Multimedia ? List the application of multimedia in various fields. How multimedia can be play vital role in Education ?

(b) Explain Liang Barsky line clipping algorithm. Apply this algorithm to the line with coordinates (30, 60) and (60, 25) against the window (Xmin, Ymin) = (10, 10) and (Xmax, Ymax) = (50, 50). **(9+9)**

6. (a) Explain Differences Between Flood-fill and Boundary-fill Algorithm.
   (b) What is B-Spline Curve ? Explain the properties of B-Spline Curve.
   (c) Explain 2D translation with suitable example. **(6+6+6)**

7. (a) Explain Cohen Sutherland line clipping algorithm with suitable example.
   (b) Explain Bresenham's line draw algorithm. Plot a line by using Bresenham's line generating algorithm from (1, 1) to (5, 3). **(9+9)**

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