No. of Printed Pages : **2**

Sl. No.

B44 - R4 : COMPUTER GRAPHICS AND MULTIMEDIA

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) Briefly explain 3D viewing Process.

(b) List the properties of Bezier curves.

(c) Write short note on cathode ray tube.

(d) What are input and output devices in computer?

(e) What is rendering process in computer graphics? Write any one technique for rendering.

(f) What is compression? Write short note on JPEG.

(g) What is shearing in 3D geometrical transformation? **(7x4)**

2. (a) What are the applications of translation process in 2D geometrical transformation? Give suitable example.

(b) Differentiate between parallel and perspective projection.

(c) Derive 3D Rotation matrix. **(6+6+6)**

3. (a) Define polygon. Distinguish between convex and concave polygons.

(b) What is a Spline? Define B-Spline curve and B-Spline surface.

(c) Define Hermite Spline Curve. Mention applications of Hermite Curve. **(6+6+6)**

4. (a) Explain Breshenham's circle generation algorithm with appropriate example.

(b) Derive digital differential analyzer line drawing algorithm. Compare it with Bresenham's line drawing algorithm.

(c) Write application of matrices in computer graphics? Explain process of inverse of a matrix with suitable example. **(6+6+6)**

5. (a) Explain Cohen Sutherland line clipping algorithm with suitable example.

(b) What do you mean by filling process in computer graphics? Describe scan-line polygon fill algorithm. **(9+9)**

6. (a) Write short note on point clipping and line clipping.

(b) What are the applications of multimedia? List out basic multimedia building blocks.

(c) Justify that two successive rotation is additive. **(6+6+6)**

7. (a) Describe the working of input device joy stick, light pen and trackball in detail.

(b) Prove that simultaneous shearing in both direction (X & Y direction) is not equal to the composition of pure shear along x-axis followed by pure shear along y-axis. **(9+9)**

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