

B2.4-R5 : 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.

Total Time : 3 Hours

Total Marks : 100

1.
 - (a) Differentiate between the Raster scan display system and random scan display system.
 - (b) Explain the working of Beam Penetration Method and Shadow Mask Method in Computer Graphics.
 - (c) What are the steps to reflect a point (x, y) over a line with equation $y = mx + b$ using matrices ?
 - (d) Discuss the Cohen-Sutherland line clipping algorithm.
 - (e) Explain 3D rotational transformation.
 - (f) In context of basic illumination models, define ambient light and Diffusion reflection light.
 - (g) What is the difference between Bitmap and Vector Graphics ? (7×4)

2.
 - (a) Explain the process of Scan Conversion in Computer Graphics. Briefly describe Random Scan Display (Vector Display) System.
 - (b) What are Plotters ? Explain.
 - (c) Explain DDA Line Algorithm in Computer Graphics. (6+6+6)

3.
 - (a) Explain clipping operation and its application. Briefly explain polygon clipping.
 - (b) How does the MPEG-4 compare with other video compression standards ?
 - (c) Describe midpoint ellipse algorithm (Bresenham's Circle Algorithm). (6+6+6)

4.
 - (a) Briefly explain affine transformation.
 - (b) Differentiate between (i) Hypertext vs Hypermedia and (ii) Raster Graphics vs Vector Graphics.
 - (c) Explain types of Perspective projection. (8+6+4)

5.
 - (a) What is spline ?
 - (b) What are properties of Bezier curves ?
 - (c) Discuss Hermite Interpolation algorithm. (7+6+5)

6. (a) What is MIDI audio ?
(b) Write a short note on Binary Image Compression Scheme.
(c) Briefly explain Dithering, Gamma correction and Graphics Interchange Format.
(6+6+6)
7. (a) Differentiate between Lossy and Lossless compression.
(b) Explain parallel Projection.
(c) What are Animated Graphics ?
(6+6+6)

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