

NOTE: ALL QUESTIONS ARE COMPULSORY.
DRAW A NEAT AND LABELED DIAGRAM WHEREVER NECESSARY.

Q1] Attempt Any TWO**[10]**

1. Differentiate between Bitmap Images and Vector Images.
2. State and explain the Bresenham's Line Drawing Algorithm.
3. Consider a line AB with coordinates A (0,0) and B(8,4). Apply a simple DDA algorithm and calculate the pixels on this line. Also plot the graphs.
4. State and explain different types of Input Technology.

Q2] Attempt Any TWO**[10]**

1. Explain the concept of 2D Homogeneous Shear Transformation.
2. Write a short note on Transformation Matrix.
3. Write a short note on Rotation about an arbitrary point.
4. Write a short note on Rotation Transformation.

Q3] Attempt Any TWO**[10]**

1. Write a short note on World coordinates and Viewing Coordinates in 3D transformation.
2. Explain the concept of 3D Homogeneous Reflection Transformation.
3. Write a short note on Perspective Projection.
4. Write a short note on orthographic Projection.

Q4] Attempt Any TWO**[10]**

1. Write a short note on Polygon clipping.
2. Write a short note on Inside-Outside Test.
3. Write a short note on Winding Number Test
4. Write a short note on Polygon Filling.

Q5] Attempt Any TWO**[10]**

1. Write a short note on Coherence for Visibility.
2. Write a short note on properties of Bezier Curves.
3. What do you mean by concept of Reverse Painter Algorithm?
4. Write a short note on Bilinear surfaces.

Q6] Attempt Any TWO**[10]**

1. Write a short note on Raster Animation.
2. Write a short note on Color models.
3. Write a short note on Object Rendering.
4. Write a short note on Procedural Animation.

Q7] Attempt Any THREE

1. State the application of Computer Graphics.
2. Rotate a triangle ABC by an angle 90 degree about a point $(-1, 1)$ where the triangle has the coordinates $A(5,0)$, $B(10,2)$ and $C(7,4)$ in 2D Transformation.
3. Write a short note on 3D homogeneous Translation and Scaling Transformation.
4. State the Cohen-Sutherland line clipping algorithm.
5. Write a short note Back Face culling.
6. Define Animation. Explain the concept of Frame by Frame Animation and Real Time Animation.

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