Date 28/9/15 Sem - III 2015-16

VCD- -CG-SYIT-SEM-III 75 MARKS-2 ½ HRS

NOTE: ALL QUESTIONS ARE COMPULSORY.
DRAW A NEAT AND LABELED DIAGRAM WHEREVER NECESSARY.
FIGURE TO RIGHT INDICATES FULL MARKS.

Q1] Attempt Any TWO [10]

1. Write a short note on Cathode Ray Tube.
2. State and explain the DDA line drawing algorithm.
3. Consider the line coordinates (0, 0) and (8, 4). Rasterize the line segment using Bresenham's line drawing algorithm.
4. Write a short note on Spherical coordinate system and Polar coordinate system.

Q2] Attempt Any TWO [10]

1. Explain the concept of 2D Identity transformation and 2D Scaling transformation.
2. Explain the concept of 2D Homogeneous Rotation Transformation.
3. Explain the concept of 2D Homogeneous Reflection Transformation.
4. Rotate a triangle ABC by and 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.

Q3] Attempt Any TWO [10]

1. Explain the concept of 3D Homogeneous Shear Transformation.
2. Explain the concept of 3D Rotation Transformation.
3. Write a short note on Oblique Projection.
4. Write a short note on Orthographic Projection.

Q4] Attempt Any TWO [10]

1. State and explain the Line clipping algorithm.
2. Write a short note on Inside-Outside Test.
3. State and explain the Boundary Fill Algorithm.
4. Write a short note on Scan Line Algorithm.

Q5] Attempt Any TWO [10]

1. State and explain the properties of Bezier Curves.
2. Write a short note on Bilinear surfaces.
3. Write a short note Painter's algorithm.
4. State and explain the Coherence for visibility.

[10]

Q6] Attempt Any TWO

1. Write a short note on Object Rendering.
2. Write a short note on Morphing.
3. Explain the concept of Color Models.
4. State and explain the construction of animation sequences.

[15]

Q7] Attempt Any THREE

1. **Define:**
   a. Computer Graphics.
   b. Rasterization.
   c. Objects.
   d. Image.
   e. Scan Conversion.
2. Write a short note on Rotation about an arbitrary point.
3. Write a short note on Perspective projection.
4. Write a short note on Winding Number method.
5. Write a short note on Curve Continuity.
6. What do you mean by Twining in Animation?