



**Question No. 5****Marks : 1**

Which of the following statements is not true about flood-fill and boundary-fill algorithms?

- Both can be implemented as recursive as well as iterative methods
- Both are used for filling of close figure
- Flood-fill is best for filling of triangle
- A complex polygon can be filled with 8 connected approach

**Question No. 6****Marks : 6**

Write down steps required for scan-line filling algorithm?

**Question No. 7****Marks : 6**

Given below is the rotation equation about z-axis use this to derive rotation equations about x-axis and y-axis?

$$X' = X \cdot \cos(\theta) - Y \cdot \sin(\theta)$$

$$Y' = X \cdot \sin(\theta) + Y \cdot \cos(\theta)$$

$$Z' = Z$$

**Question No. 8****Marks : 8**

Write an algorithm to draw N points Bezier curve?

**Question No. 9****Marks : 12**

Define the following in view of Lighting Equation:

- a) Specular Reflection
- b) Ambient Light
- c) Diffuse Reflection

**Question No. 10****Marks : 12**

A Quad has vertices A (0.2, 0.2, 1.0), B (0.5, 0.2, 1), C (0.5, 0.5, 1.0), D (0.2, 0.5, 1.0). Calculate surface normal? Given light source has vertex L (0.8, 0.2, 1.0); Taking light factor  $I=0.5$  and surface type=0.5; Calculate light vector and light for vertices A, B, C and D?

**Question No. 11****Marks : 1**

The difference between Flat shading and Phong shading is that:

- Flat shading produces smooth shades and Phong does not
- Flat shading uses one color and Phong uses two colors
- Flat shading does not produce shining spot and Phong does that
- Phong shading does not produce shining spot and flat does that

**Question No. 12****Marks : 6**

Explain 'Alpha Blending' and its usage.

**Question No. 13****Marks : 1**

What is meant by Resolution:

- Number of horizontal pixels \* Number of Vertical Pixels
- Number of horizontal pixels \* Number of Vertical Pixels \* Number of colors
- Number of horizontal pixels \* Number of Vertical Pixels \* Number of colours \* Refresh Rate

- Number of horizontal pixels \* Number of Vertical Pixels \* Number of colours \* Number of Buffers