

## B4.4-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) Describe Hypertext and Hypermedia with examples.
  - b) What is isometric projection?
  - c) What are the main flaws of DDA line algorithm?
  - d) Explain text clipping in short.
  - e) Compare Phong shading with Gouraud shading model.
  - f) What is antialiasing?
  - g) What is Synchronized Multimedia Integration Language?

**(7x4)**
  
2.
  - a) What are Cubic Hermite Splines? Write its main characteristics.
  - b) Compare LCD, LED and TFT display technologies.

**(9+9)**
  
3.
  - a) Why in Bezier curve, all control points provides global control over the entire shape of the curve?
  - b) Magnify a triangle A (0,0), B(1,1) , C(5,2) to twice to its size keeping C fixed.

**(9+9)**
  
4.
  - a) Fit a line from (20,10) to (18,30) using Bresenham's line algorithm.
  - b) Explain the functioning and usages of joysticks.

**(9+9)**
  
5.
  - a) Explain how to convert a RGB image to JPEG image?
  - b) Clip a line P1(4,12) to P2(8,8) using Cohen Sutherland algorithm if window is from (5,5) to (9,9).

**(9+9)**
  
6.
  - a) What are the principal vanishing points for the standard perspective projection?
  - b) What is the difference in Knots and control points with respect to Non-uniform rational basis spline (NURBS). Write the general form of NURBS using basis function.
  - c) What do you mean by normalized device coordinate system?

**(6+6+6)**
  
7.
  - a) Discuss the functioning of a flatbed Scanner. What do you mean by '*ppi*'?
  - b) Using Mid Point circle algorithm, find out the pixels of circles if centre is at (0,0) and radius is 10. Show all intermediate steps.

**(9+9)**