Exam.		Regular	
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	III / I	Time	3 hrs.

Subject: - Computer Graphics *(EX603)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. What are the differences between random and raster display technologies? [4]

2. How do you apply symmetry concept while drawing circle? Calculate the point in the circumferences of the circle having radius 8 unit and center at (-5, 10) using midpoint circle algorithm. [2+8]

3. What are the conditions for a point clipping? Find the clipped region of the line with endpoins (5, 130) and (50, 5) in a rectangular window with (10, 10) and (100, 100) diagonal vertices using Cohen-Sutherland line clipping algorithm. [10]

4. What is 3D Shearing? Write its matrix representation. A unit length cube with diagonal passing through (0,0,0) and (1,1,1) is sheared with respect to yz place with the shear constants = 2 in both directions. Obtain the coordinates of all the corners of the cube after shearing. [2+8]

5. Explain about parametric cubic curves. What do you mean by Bezier Curve? Explain the properties of Bezier curves. [2+2+4]

6. Explain how the geometric and attribute information of a three dimensional objects are stored for the object representation? What are the conditions for error free generation of polygon table? [4+4]

7. Outline the Z buffer algorithm. List the advantages and disadvantages of the z-buffer algorithm. [6+2+2]

8. Explain about different types of lighting sources and how these light sources affect the illumination model? Explain about the intensity interpolation surface rendering technique by highlighting its pro and cons. Also give example about phong illuminations model. [3+5+6]

9. Why GLUT is implemented in OpenGL? What are the applications of OpenGL? [2+4]

***