

Exam.	Back		
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. Compare random and raster display technology. [6]
2. How symmetry property of circle reduces complexity to draw a complete circle. Derive decision parameter for midpoint circle algorithm assuming the start position as $(-r, 0)$ points are to be generated along the curve path in counter clockwise direction. [3+7]
3. Use Liang Barsky line clipping algorithm to clip a line starting from $(6, 100)$ and ending at $(60, 5)$ against the window having its lower left corner at $(10, 10)$ and upper right corner at $(90, 90)$. [8]
4. Reflect the triangle ABC about the line $3X-4Y+8=0$ the position Vector of coordinate ABC as $A(4, 1)$, $B(5, 2)$ and $C(4, 3)$. [8]
5. Develop the Matrix to transform an object from Three-Dimensional World Coordinate to Viewing Coordinate system. A unit length cube with diagonal passing through $(0, 0, 0)$ and $(2, 2, 2)$ is shared with respect to ZX-plane with share Constants = 3 in both directions. Obtain the final coordinates of the cube after shearing. [5+7]
6. Do you agree Polygon Descriptions are referred to as "Standard Graphics Object", If yes, Why? If you have three coordinates $(X1, Y1, Z1)$, $(X2, Y2, Z2)$ and $(X3, Y3, Z3)$, then how do you find the coefficient of Surface Normal $N(A, B, C)$? [3+3]
7. Compare the Gouraud shading with Phong shading. Develop the expression for Phong model considering the intensity attenuation for multiple point light sources with necessary figures. [6+8]
8. What is the difference between object space method and image space method for visible surface determination? Describe scan line method to find visible lines with example. [4+8]
9. What is OpenGL? Explain Call back function? [2+2]
