

Exam.	New Back (2066 & Later Batch)		
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. Derive the Bresenham's decision parameter to draw a line moving from left to right and having negative slope. State the condition to identify you are in the second region of the ellipse using mid point algorithm. [8+2]
2. Write down the condition for point clipping. Find the clipped region in window of diagonal vertex (10,10) and (100,100) for line  $P_1$  (5,120) and  $P_2$  (80,7) using Liang-Barsky line clipping method. [2+8]
3. Find the transformation matrix the transforms that rectangle ABCD whose center is at (4,2) is reduced to half of its size, the center will remain same. The co-ordinate of ABCD are A(0,0), B(0,4), C(8,4) and D(8,0). Find Coordinate of new square. Also derive the transformation matrix to convert this rectangle to square. [10]
4. List out the properties of Bezier curve. What is order of continuity? Explain. [8]
5. Explain the significance of spatial orientation of a surface and polygon tables. Explain with example. [8]
6. Compare Z-buffer and A-Buffer algorithm. Also write algorithm to find visible surfaces using scan-line method. [10]
7. Explain the general illumination model. How this model is used for rendering by using gouroud shading. [7+7]
8. Write short notes on: [5+5]
  - a) Raster scan display
  - b) OpenGL

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