

**B.Tech. Degree VI Semester (Supplementary) Examination,
November 2005**

**CS 603 COMPUTER GRAPHICS
(2002 Admissions)**

Time: 3 Hours

Maximum Marks: 100

- I a) Explain Bresenham's line drawing algorithm. (10)
b) Explain anti-aliasing techniques. (10)
- OR**
- II a) Write down an algorithm based on boundary fill to fill the polygon. (10)
b) Explain midpoint circle drawing algorithm. Illustrate the algorithm with centre (2,3) and radius 2 cm. (10)
- III a) What are the basic transformations? Give the homogeneous matrix representations for each. (10)
b) Find two dimensional transformation that represent rotation of an object by 60° about the origin. What are the new co-ordinates of the point P(2,-4) after rotation. (10)
- OR**
- IV a) Explain Sutherland Hodgeman algorithm for clipping a polygon. (10)
b) Give the matrix representation of reflection about the line $y=x$ and $y=-x$. (10)
- V a) Explain the use of fractal geometry in graphics. (10)
b) What are the basic 3D transformations? Give the matrix representations for each. (10)
- OR**
- VI a) Explain B-spline curves. What is the difference between uniform and non-uniform B-Spline curves. (10)
b) Describe how a 3D object is presented on the screen using perspective projection. (10)
- VII a) Explain depth buffer and A-buffer method for visible surface detection in 3D graphics. (10)
b) Explain scan line method for visible surface detection (10)
- OR**
- VIII a) Explain the following algorithm for visible surface detection. (20)
i) Octree method ii) Ray-Casting method
iii) Area sub division method.
- IX a) Explain RGB and HSV colour models. (10)
b) What are the various techniques in creating animation. (10)
- OR**
- X Write **short notes** on: (20)
i) VRML ii) Morphing
iii) Wireframe model iv) Illumination model

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