2009

Roll No. .....

Subject Code—678-X

M.C.A. (Fourth Year) EXAMINATION

(5 Years Integrated Course)

(Re-appear)

MCA-401

COMPUTER GRAPHIC & MULTIMEDIA

Time : 3 *Hours* *Maximum Marks :* 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. List the operating characteristics for the following display technology :

   Raster Scan Display, CRT Display, Calligraphic Display. **20**

2. (a) What steps are required to plot a line using Bresenham's method ? **10**

   (b) Explain Midpoint algorithm for Ellipse drawing. **10**

3. (a) Perform a 45 rotation of triangle A(0, 0), B(1, 1), C (5, 2) :

(i) about the origin

(ii) about the P(–1, –1). **10**

(b) Explain Bezier curves and surface with equation. **10**

4. Write 2-D Cohen-Sutherland algorithm for line segment clipping and hence find points of intersection in case of clipping candidate. Compare efficiency of clipping obtained using Mid-Point subdivision and Sutherland Cohen method. **20**

5. What is Hidden surface problem ? How is the depth of a polygon determined by the Painter's algorithm ? **20**

6. Explain hardware, software and application area of multimedia. **20**

7. (a) The unit cube is projected on to the xy-plane. Note the position of the x, y and z-axis. Draw the projected image using the standard perspective transformation with $d = 1$, where d is distance from the view plane. **10**

(b) Define the terms View plane, Vanishing point, Oblique Projection and Orthographic Projection. **10**

8. Write short notes on the following :

(a) Light pen

(b) Parallel Projection

(c) Mirror image transformation

(d) Z-buffer algorithm. **20**