

Code No: R6-35-MCA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

MCA-III Semester Regular Examinations, February 2010

COMPUTER GRAPHICS

Time: 3hours

Max.Marks:60

Answer any Five questions

All questions carry equal marks

- 1.a) List the operating characteristics for the following display technologies.
 - i) Raster refresh systems
 - ii) Vector refresh systems.
- b) Write a note on 'the input devices that are available for data input on graphics workstations'.

- 2.a) Write a boundary-fill procedure to fill an 8-connected region?
- b) What is DDA? Digitize the line with endpoints (20, 10) and (30, 18) by using Bresenham's line drawing algorithm?

- 3.a) Prove that the multiplication of two successive scaling matrices are commutative.
- b) Show that two successive reflections about either of the coordinate axis is equivalent to the original input object.

- 4.a) Explain major steps in Cohen-Sutherland line clipping algorithm?
- b) Distinguish between 'Cohen-Sutherland line clipping algorithm' and 'Cytwsbeck line clipping algorithm'?

5. Derive the matrix form for the geometric transformations in 3-D graphics for the following operations.
 - a) Translation
 - b) Scaling
 - c) Mirror reflections.

- 6.a) Explain the procedure followed in Bezier's methods for curve generation?
- b) What is the role of control points in Bezier's approach?

- 7.a) Write a program that uses the depth-sorting method to display the visible surfaces of any given object with plane faces.
- b) What is a BSP tree? Give one example?

- 8.a) What is computer animation? Explain major steps in the 'design of animation sequence'?
- b) Explain the following terms.
 - i) Morphing
 - ii) Raster animation.
