

MCA/D-12
COMPUTER GRAPHICS
Paper-MCA-501

Time allowed: 3 hours

Maximum marks: 80

Note: Attempt five questions in all. Question no. 1 is compulsory.
Attempt four more questions selecting one question from each unit.

Compulsory Question

1. Answer the following in brief:
- (a) Describe how graphics is applied in presentation.
 - (b) What are the advantages of plasma panel?
 - (c) How many bits will be required to represent a pixel in frame buffer if each pixel Can glow with 2048 different shades?
 - (d) How is the frame buffer loaded?
 - (e) What is composite transformation?
 - (f) What happens to an object when it is dragged?
 - (g) Which coordinate systems are used in 3-D graphics?
 - (h) What is oblique parallel projection?
- 8 x 3

Unit-I

2. What is the end-product of graphics applications? Describe the components of a Graphics system that are used in obtaining the end-product .In what context do the terms Resolution and Aspect ratio used? 14
3. What are the various input devices that are used to create and manipulate pictures? Illustrate the anatomy of these input devices alongwith the type of application for which they can be used. 14

Unit-II

4. Describe the various coordinate system used in graphics alongwith the description of the techniques / applications where they are used. 14
5. (a) Scan covert a line with end points (3, 2) and (10, 4) using bresenham's algorithm 7
(b) Show how an object can be filled using Scan line seed fill algorithm. 7

Unit-III

6. (a) What is the significance of window-to-viewport transformation? Find the position of a point P(6, 2) defined in circular window of radius 8 units and centre (1, 1) transformed on to a viewport with radius 8 units and centre (0, 0). 14
7. Use the Liang-Barsky algorithm to clip a line with end points (5, 6) and (7, 9) against a viewport with diagonal vertices at (1, 2) and (9, 8). 14

Unit-IV

8. Differentiate between the following:
- (a) Parallel projection and perspective projection.
 - (b) Depth buffer and area subdivision hidden surface algorithms. 7 x 2
9. Describe the role of the following:
- (a) Tweening the animation.
 - (b) Interpolation in shading. 7 x 2