Roll No. .....

Total Pages : 2

Exam. Code
6028

8902

BT-8/M-11

INTERACTIVE COMPUTER GRAPHICS

Paper : CSE-404

Time : Three Hours] [Maximum Marks : 100

Note : Attempt *five* questions in all, selecting at least *one* question from each unit.

UNIT–I

1. (a) What is shadow mask CRT ? Explain its construction and working. 10

   (b) Explain the construction and working of a LCD plasma panel display. 10

2. (a) What is Raster scan display ? Explain its organization and working. 10

   (b) Explain the following concepts associated with the display devices: Character generation, Display processor and Analog false colours. 10

UNIT–II

3. (a) Explain how a decision parameter is used to obtain points on a circle using Bresenham's circle drawing. 10

   (b) Obtain the points on a line with end points (3, 4) and (10, 7) using simple DDA algorithm. 10

4. (a) What is rotation and scaling 2D transformations ? Derive the transformation matrix that rotates an object point Q degree about the origin. 10

   (b) Describe how points defining a graphics entity are represented using any *two* coordinate systems. 10

UNIT–III

5. (a) What are the components of an Interactive computer graphics system? Explain the importance of each component. 10

   (b) For what kind of graphics applications is the digitizing tablet and mouse are suitable for giving input and how ? 10

6. Distinguish between Window and a Viewport. Derive the window-to-viewport transformation in terms of scaling and translation. Illustrate the effect of zooming and panning a window with the help of a suitable example. 20

UNIT–IV

7. (a) How is a point defined in eye coordinate system projected on a view plane using perspective projection ? 10

   (b) Describe the importance of *x*-, *y*- and *z*-minmax tests in hidden surface algorithms. 10

8. (a) What is meant by 3D transformations? What are their various types ? Also provide the transformation-matrix for each of these. 10

   (b) What is Shading model? What are the important properties of such a model? How does such a model help in 3D graphics ? 10