Computer Graphics

2007 June

Science Information Technology

FYBSc-IT

Semester 2

University Exam

University of Mumbai

B.Sc IT sem-II June 2007
Electronics & Telecommunication.
CD-502

B.Sc (IT) sem II June 2007
Computer Graphics 2007 CD-501

(3 Hours) [Total Marks : 100]

N.B. (1) Q. 1 is compulsory.
(2) Attempt any four from Q. 2 to Q. 7.
(3) Draw neat diagrams wherever necessary.

1. i) Derive expression for decision parameter of mid-pt circle algorithm. — 10Mks

   ii) With the help of suitable diagrams, explain the working of CRT. — 10Mks

2. i) Explain the Sutherland and cohen subdivision algorithm for line clipping with the help of an example. — 12Mks

   ii) What are the basic attributes of a straight line segment? Discus in detail about character attributes. — 8Mks

3. i) Discuss the various method of curve generation. — 15Mks

   ii) Write a note on display file interpreter used in a graphics system. — 5Mks

4. i) Write short notes on the following : — 10Mks
      a) parallel projection
      b) Z – buffer algorithm

   ii) Apply bresenham's line drawing algorithm to the end points, $(X1, Y1) = (20, 20)$ and $(X2, Y2) = (12, 15)$. — 10Mks

5. i) What do you mean by computer animations? Discuss the steps involved in the design of an animation sequence. — 8Mks

   ii) What is 'morphing' explain its rules ? — 8Mks

   iii) Give difference between raster scan and random scan system. — 4Mks

6. i) Write a short note on shadow mask technique. — 6Mks

   ii) Show that the transformation matrix for reflection about a line $Y=X$ is equivalent to reflection about X-axis followed by counter clock wise rotation of 90^0. — 6Mks

   iii) Perform a counter clockwise 45^0 rotation of triangle A(2,3), B(5,5) & C(4,3) about point (1,1). — 8Mks

7. i) Write a note on Bezier curves, explain the mid pt approach of constructing Bezier curves. — 10Mks

   ii) Write a detailed note on the various types of projections. — 10Mks