B. E. 5th Semester (I.T.) Examination,

December–2012

COMPUTER GRAPHICS

Paper–CSE-303-E

Time allowed : 3 hours] _[Maximum marks : 100_

Note : _Attempt any five questions._

1. (a) What do you mean by Computer Graphics ? Explain the various hardware and software tools of Computer Graphics. **10**

   (b) Write down the Bresenham's algorithm for drawing the line. Also state its various advantages over DDA algorithm. **10**

2. (a) Explain the Scanline Boundary Filled algorithm for polygon. **10**

   (b) Indicate which raster locations would be chosen by Bresenham's algorithm when scan converting a line from pixel coordinate (3, 3) to pixel coordinate (8, 6) **10**

2219–P–3–Q–8 (12)– [P.T.O.

3. (a) What do you mean by window to viewport mapping ? Explain the Cohen Sutherland algorithm for line clipping.   10

    (b) Magnify the triangle with vertices A (1, 2), B (2, 2) and C (3, 8) to thrice its size while keeping C (3, 8) fixed.   10

4. What do you mean by Projection ? Explain the various types of Projection in detail.   20

5. (a) What is the use of Hidden Surface Removal ? Explain the Z Buffer algorithm for hidden surface removal.   10

    (b) Explain the scanline algorithm for Hidden Surface Removal.   10

6. (a) Explain the various requirements of Curves and Surface Design. Also discuss Bezier Curves.   10

    (b) Explain the various quadratic surfaces with their equations.   10

2219

7. (a) Explain the various shading models in detail. 10

   (b) Explain the various applications of digital image processing. 10

8. Write short notes on the following :

   (a) Dithering 5

   (b) Anti-Aliasing 5

   (c) Translation and scaling 5

   (d) Filtering 5