BTS 143 (C)

B.TECH. DEGREE VI SEMESTER EXAMINATION IN
COMPUTER SCIENCE AND ENGINEERING
NOVEMBER 2001

CS 605 COMPUTER GRAPHICS
(1998 Admissions)

Time: 3 Hours   Maximum Marks: 100

I. (a) Explain the desirable qualities of a good line drawing algorithm.   (5)
    (b) Explain the DDA line drawing algorithm. What are its advantages and disadvantages
        when compared to other algorithms?   (15)
                                    OR
II. (a) Show the working of shadow mask CRT with a neat diagram. What are its drawbacks?   (10)
    (b) Write any one circle generating algorithm and explain the implementation.   (10)

III. (a) What do you mean by a two dimensional transformation?   (2)
     (b) What are the basic two dimensional transformations? Write the matrix representations
         of each.   (10)
     (c) Explain Cohen-Sutherland line clipping algorithm.   (8)
                                    OR
IV. (a) Explain the terms Window and Viewport.   (2)
     (b) Illustrate windowing transformation with a diagram. Derive the expressions.   (10)
     (c) What are the steps involved in midpoint subdivision line clipping algorithm?   (8)

V. (a) What do you mean by a display file? Explain its structure.   (15)
    (b) What is posting and unposting a segment? What is its use?   (5)
                                    OR
VI. (a) Explain how the free-storage allocation system meet the demands of a display file
        compiler.   (15)
    (b) Discuss the functions required for segmenting the display file.   (5)

VII. (a) What are the basic 3 dimensional transformations? Show the corresponding matrix
         representations.   (10)
     (b) What do you mean by homogenous coordinate representation? What is its advantage? (10)
                                    OR
VIII. (a) Explain the depth buffer algorithm for hidden surface removal. What are its limitations? (10)
      (b) Derive the transformation matrix required for perspective projection.   (10)

IX.   Explain briefly *ANY FOUR* of the following: (4 x 5 = 20)

           (i)   Refresh line drawing display
           (ii)   Random-scan storage tube displays
           (iii) Functions in derive independent graphics system
           (iv)   Keyboard command languages
           (v)   Menu driven command languages
           (vi)   A computer graphics application-animation.

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