SEAT No. :

P-5396

[6186]-522

S.E. (Computer Engineering/Computer Science & Design Engg./Artificial Intelligence & Data Science Engg.) (Insem.)
COMPUTER GRAPHICS
(2019 Pattern) (Semester - III) (210244)

Time : 1 Hour]   *[Max. Marks : 30*

Instructions to the candidates:

   1)   *Answer Q.1 or Q.2, Q.3 or Q.4.*

   2)   *Figures to the right indicate full marks.*

   3)   *Draw neat diagram wherever necessary.*

   4)   *Assume suitable data, if necessary.*

Q1) a)   Explain the following terms :   **[5]**

        i)   Persistence

        ii)   Resolution

        iii) Aspect ratio

        iv) Pixel

        v)   Refresh Buffer

   b)   Discuss the significance of OpenGL Pipeline and OpenGL Libraries.

                                                         [5]

   c)   Derive the expression for Decision Parameter used in Bresenhams line drawing algorithm.   **[5]**

OR

Q2) a)   Discuss any five applications of Computer Graphics   **[5]**

   b)   Differentiate between Raster scan and Random scan   **[5]**

   c)   Using DDA algorithm compute the pixels that would be turned on for line with end points (0, 0) to (4, 6).   **[5]**

Q3) a)   Explain Winding number method to perform the inside out test for a given point with example.   **[5]**

   b)   Comment on the advantages of using 8 connected method while using Seed Fill algorithm over 4 connected method with suitable example.

                                                           [5]

   c)   Explain Weiler Atherton Polygon Clipping Algorithm.   **[5]**

Q4) a) Compare Flood fill and Boundary fill algorithm. **[5]**

b) Consider the Clip window with vertices a A(1,2), B(10, 2), C(10, 10), D(1, 10) and a line with end points as S(3, 1) and T(6, 4). Clip the line ST against the given window using Cohen Sutherland Algorithm.**[5]**

c) Discuss the limitations of Cohen Sutherland algorithm? Explain the significance of Region Codes. **[5]**

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