Total No. of Questions : 4]

SEAT No. :

P-5396

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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]**

P.T.O.

OR

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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