

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 Bresenham's 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]

