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SEAT No. :

PE-549

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[6578]-22

**S.E. (Artificial Intelligenc & Data Science)/ (Computer Science & Design Engg.)/ (Computer Engineering) (In Sem.)**

**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 side indicate full marks.*
- 3) *Draw neat diagram wherever necessary.*
- 4) *Assume suitable data, if necessary.*

**Q1) a)** Define the following terms: Frame buffer, Resolution, Aspect ratio, Pixel and Display device. **[5]**

b) Differentiate between Raster Graphics and Vector Graphics. **[5]**

c) How Keyboard and Mouse interaction is done in OpenGL? **[5]**

OR

**Q2) a)** Derive the expression for decision parameter of Bresenham's Circle Drawing Algorithm. **[5]**

b) Explain DDA Line Drawing Algorithm with an example. **[5]**

c) Plot 6 points of circle using Bresenham's Circle Drawing Algorithm when radius of circle is 10 units. The circle has centre (50,50). **[5]**

**P.T.O.**

- Q3)** a) Define Polygon? Explain Convex and Concave Polygon with figure. [5]
- b) Explain winding number Method of inside test with example. [5]
- c) Write the Pseudocode for Cohen-Sutherland line clipping algorithm. [5]

OR

- Q4)** a) Explain Scan line fill algorithm with suitable example. [5]
- b) Write a Pseudocode for Polygon clipping Algorithm. [5]
- c) Explain even-odd method to determine polygon interior points. [5]

