

Total No. of Questions : 4]

SEAT No. :

PF225

[Total No. of Pages : 1

APR-26/SE/Insem-278

S.E. ( Information Technology) (Insem)

COMPUTER GRAPHICS

(2019 Pattern) (Semester - IV) (214453)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q.1 or Q.2 and Q.3 or Q.4.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data if necessary.

**Q1)** a) Consider a line P (6,6) to Q (15,12). Use Bresenham's line drawing algorithm to rasterize the line from P to Q. Draw the pixel wise rasterization of line. [8]

b) Explain with diagram the difference between raster scan and random scan displays. [7]

OR

**Q2)** a) Classify the major groups of graphics function in OpenGL. Explain in detail. with suitable example. [8]

b) What is computer graphics? Explain the concept of display file structure. [7]

**Q3)** a) Perform a 45 degree rotation of triangle A (0,0) B (20,40) C (40,0) in anticlockwise direction. [8]

i) About the origin (0,0)

ii) About a point P (20,20)

b) Explain with diagram the different methods for testing a pixel inside a polygon. [7]

OR

**Q4)** a) Apply following transformations on polygon A (20,20), B (40,40), C (60,20), D (40,0) using composite matrix calculation method. [8]

i) Translation -20, -20 units along X&Y directions

ii) Rotate 90 degrees about the origin.

iii) Scale with scaling factor of 2

b) Explain and compare flood fill and boundary fill algorithm for polygon. [7]

