Total No. of Questions : 4]

SEAT No. :

PB37

[Total No. of Pages : 1

[6268]-231
S.E. (Information Technology) (Insem)
COMPUTER GRAPHICS
(2019 Pattern) (Semester - IV) (214453)

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

Instructions to the candidates:

1) ***Answer Que.1 or Que.2, Que.3 or Que.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 from A (10, 10) to B (18, 15). Use Bresenham's line drawing algorithm to rasterize the line from A to B. Draw the pixel wise rasterization of Line. **[8]**

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

OR

Q2) a) Consider a line from P (2, 3) to Q (7, 11). Use DDA line drawing algorithm to resterize the line from P to Q. Draw the pixel wise rasterization of Line. **[8]**

b) What is aliasing and anti-aliasing? How aliasing effect is removed in vector generation algorithm. **[7]**

Q3) a) What are the steps involved in scan line polygon filling algorithm. **[8]**

b) Apply the shearing transformation to square with given coordinates below. **[7]**

A(0, 0), B(0, 3), C (3, 3), D (3, 0)

i) Shear Parameter value of 0.7 relative to the line Y_ref = –1.

ii) Shear Parameter value of 0.7 relative to the line X_ref = –1.

OR

Q4) a) Apply following transformations on polygon A (10, 10), B (20, 40), C (50, 40) D (40, 0) **[8]**

i) Translation 10, 20 units along X & Y directions.

ii) Rotate 45 degrees about the origin.

iii) Reflection against X-axis.

b) Explain concave and convex polygon with diagram. Explain even-odd method for testing a pixel inside or outside the polygon. **[7]**

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