

Total No. of Questions : 4]

SEAT No. :

PD38

[Total No. of Pages : 1

[6409]-238

**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, 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 from A (20, 10) to B (28, 16). Use Bresenham's line drawing algorithm to rasterize the line from A to B. Draw the pixel wise rasterization of Line. [8]

b) Explain different types of character generation methods with diagram. [7]

OR

**Q2)** a) Consider a line from P (5, 6) to Q (8, 12). Use DDA line drawing algorithm to rasterize the line from P to Q. Draw the pixel wise rasterization of Line. [8]

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

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

b) Show that the composition of two rotations is additive. [7]

$$R(\theta_1) \cdot R(\theta_2) = R(\theta_1 + \theta_2)$$

OR

**Q4)** a) Consider the square A(10,0), B(0,0), C(0,10) D(10,10). Rotate the square by 45 degree anti-clockwise direction followed by reflection about X-axis. [8]

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

