

**BT-6/M-20**

**36019**

**COMPUTER GRAPHICS**  
**Paper-IT-356**

Time : Three Hours]

[Maximum Marks : 100

**Note :** Attempt *five* questions in all selecting at least *one* question from each unit. All questions carry equal marks.

**UNIT-I**

1. (a) What is computer graphic? What is light pen? Discuss in brief the working of light pen.  
(b) Write the Bresenham's line drawing algorithm and making use of Bresenham's algorithm, find the coordinates of the pixels that lie on a line segment having the endpoints (2, 3) and (5, 8).
2. (a) What are the Digital Differential Analyzers (DDA)? Draw a line using Digital Differential Analyzers having coordinates as (-1, -4) and (5, 6).  
(b) Write the mid-point circle drawing algorithm.

**UNIT-II**

3. (a) Explain the procedure for Sutherland-Hodgeman polygon clipping.  
(b) What do you understand by clipping? What do you understand by text clipping? Discuss.

4. What is Liang-Basky line clipping algorithm? Why is it more efficient than Cohen-Sutherland line clipping algorithm? Discuss.

### UNIT-III

5. What do you understand by 2-D transformation? Given a rectangle on the screen, describe the steps to double the size of the rectangle taking care that the centre of the rectangle does not change.
6. (a) What is shearing? Explain using suitable example.  
(b) What is the difference between parallel and perspective projection? Explain.

### UNIT-IV

7. What do you understand by hidden surface elimination? Explain the depth-buffer algorithm for hidden surface elimination. Also discuss the limitations of depth-buffer algorithm.
  8. (a) What is the difference between Bezier curve and B-spline curve? Explain.  
(b) What is the difference between interpolation and approximation splines? Explain.
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