

Duration: 3 Hrs

Total Marks : 80

- N.B.:** 1) Question No. 1 is Compulsory.
 2) Attempt any three questions, from remaining five questions.
 3) Figure to the right indicates full marks

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| Q.1. | A) Compare Raster and Random Scan Techniques . | 5 |
| | B) What are the disadvantages of DDA algorithm? | 5 |
| | C) Explain inside outside test used in filling algorithm. | 5 |
| | D) What are Aliasing & Antialiasing? Explain any one Antialiasing method. | 5 |
| Q.2. | A) Explain Liang Barsky line clipping algorithm. Apply this algorithm to the line with coordinates (35,60) and (80,25) against the window (Xmin, Ymin) = (10,10) and (Xmax ,Ymax) =(50,50) | 10 |
| | B) Derive the matrix for 2D rotation about an arbitrary point. | 10 |
| Q.3. | A) Explain the Cohen-Sutherland line clipping algorithm with suitable example. | 10 |
| | B) What is meant by Parallel and Perspective Projections? Derive matrix for Perspective projection. | 10 |
| Q.4. | A) Specify midpoint circle algorithm. using the same ,plot the circle whose radius is 8 units and center is at (10,10) | 10 |
| | B) Explain any one Polygon clipping algorithm | 10 |
| Q.5. | A) Explain Bezier curve with its properties and construct | 10 |
| | B) Explain Gouraud and Phong Shading along with their advantages and disadvantages. | 10 |
| Q.6. | Write Short Note on (Any four) | 20 |
| | (a) Depth Buffer method | |
| | (b) Halftone and Dithering techniques | |
| | (c) Fractals | |
| | (d) Koch Curve | |
| | (e) Area Subdivision method | |
