

(OLD COURSE)**QP Code :4054**(3 Hours)
[OLD] [R-2007]

[Total Marks : 100]

- N.B. : (1) Question No. 1 is compulsory
 (2) Attempt any four questions from Q. No. 2 to 7
 (3) Assume suitable data if necessary

1. (a) What do you mean by term Computer Graphics? State various applications of it. 5
- (b) Explain different color models. 5
- (c) Explain Z-buffer algorithm 5
- (d) Clearly differentiate between random scan and raster scan system. 5
2. (a) What is 3D clipping? Derive equations for all the planes (left , right , top , bottom, front , back) 10
- (b) Derive the mathematical equations for Bresenham's line drawing algorithm. 10
3. (a) Define fractals ? Give classification of fractals. What is fractal dimension? 10
- (b) Explain Cohen Sutherland Line clipping algorithm. 10
4. (a) Explain computer assisted animation and frame-by-frame animation. 10
- (b) What do you understand by parallel & perspective projection. 10
5. (a) Explain Warnock's method of area sub-division method to remove hidden surface. 10
- (b) Compare boundary fill and flood fill algorithm. Illustrate one example with Diagram. 10
6. (a) Draw matrices for representing three basic transformations and show that two successive rotations are additive, i.e, $R(\theta_1) * R(\theta_2) = R(\theta_1 + \theta_2)$. 10
- (b) Explain Mid-Point Ellipse algorithm along this explain all mathematical derivation. 10
7. Write short notes on following (Any four) 20
 - a) Shading Algorithms
 - b) Antialiasing Technique
 - c) Dithering Technique
 - d) Character generation method
 - e) B-spline and Bezier Curve