

CS 4 SEM COMPUTER GRAPHICS JUN 2016

Q. P. Code : 541801

(3 hours)

[80 Marks]

N.B.:

1. Question No.1 is compulsory.
2. Attempt any **Three** questions out of remaining **Five** questions.
3. Figures to the right indicate full marks.
4. Assume any suitable data wherever required but justify the same.

- Q.1 a) Prove that two successive rotations are additive. 5
b) Explain the various applications of computer graphics 5
c) Explain dithering technique in detail. 5
d) Specify the disadvantage of DDA algorithm 5
- Q.2 a) Explain the steps used in rotation of 2 D object about an arbitrary axis and hence derive the matrix for the same. 10
b) Compare flood fill and boundary fill algorithm illustrating the same with a diagram 10
- Q.3 a) Explain any one polygon clipping algorithm in detail. 10
b) Explain midpoint circle algorithm. Explain the same to plot a circle whose radius is 10 units 10
- Q.4 a) Explain Cohen Sutherland line clipping algorithm in detail 10
b) Explain what is meant by Bezier curve. Also explain the properties of Bezier curve 10
- Q.5 a) What is meant by parallel and perspective projections? Derive matrix for perspective projections 10
b) Define window, viewport and hence explain how window to viewport transformation is performed 10
- Q.6 a) Write short notes on (any two): 20
b) Gouraud and Phong shading technique
c) Shearing and viewing transformation
d) Sweep representation