

IT/CBGS/II/CG & VR / 28.11.2016
Computer Graphics & Virtual Reality Systems. (3 Hours) QP Code:594304
CGVRold
CBGS



[Total Marks : 80

N.B. : (1) Question 1 is compulsory.

(2) Attempt any **three** from remaining Questions.

(3) **Assume** suitable **data** wherever **necessary**.

(4) **Figure in right** indicates **marks**.

1. (a) What are different application of computer graphics 20
(b) Explain even odd method for inside test for polygone
(c) Explain parallel and perspective projections
(d) Various application of VR
2. (a) Explain Cohen Sutherland line clipping algorithm with example 10
(b) Derive the DDA line drawing algorithm. Take suitable example and draw a line between two points. 10
3. (a) Write a short note on Homogeneous co-ordinate system. 10
(b) List various types of computing architectures of VR and explain any one in detail. 10
4. (a) Explain Flood Fill Algorithm using 8-connected approach. What are its advantages over Boundary Fill Algorithm? 10
(b) Derive the matrix for Rotation about an arbitrary point for 2D Rotation. 10
5. (a) Let ABCD be the rectangular window with A(20,20), B(90,20), C(90,70), and D(20,70). Find region codes for endpoints and use Cohen Sutherland algorithm to clip the lines P1P2 with P1 (10,30), P2 (80,90) and qlq2 with q1(10,tO),q2(70,60) 10
(b) Explain B spline curve 10
6. (a) Show that transformation matrix for reflection about line $y=x$ is equivalent to reflection to X axis followed by counter clockwise rotation of 90 degree. 10
(b) Derive mathematical representation for Beziers curve and state their property 10