

GUJARAT TECHNOLOGICAL UNIVERSITY**MCA Sem-4th Regular Examination May 2011****Subject code:640008****Date: 26/05/2011****Subject Name: Computer Graphics****Time : 02.30 p.m. – 05.00 p.m.****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 Attempt the following 14
- (a) Define: Data Visualization
 - (b) Differentiate: track ball and space ball
 - (c) State advantage and disadvantage of DDA line drawing algorithm
 - (d) What is anti aliasing?
 - (e) What is rigid body transformation?
 - (f) What is 2D point clipping?
 - (g) Explain in brief perspective projection
- Q.2 (a) Write detailed note on applications of computer graphics 07
- (b) Write detailed note on raster scan display. 07
- OR
- (b) Write bresenham line drawing algorithm. List advantage and disadvantage of bresenham algorithm. 07
- Q.3 (a) What is attributes of graphics primitive? Explain attributes of point, Line and Fill area attributes. 07
- (b) Explain boundary fill algorithm. How it is differ from flood fill algorithm? 07
- OR
- Q.3 (a) Explain any seven OpenGL Functions for output primitives 07
- (b) Write short note on three dimensional translation and three dimensional scaling 07
- Q.4 (a) What is reflection? Explain reflection about x-axis, y-axis, line $y=x$ taking suitable example 07
- (b) Define: Shear. Explain x-direction shear, y-direction shear, x-direction shear about line $y=y_{ref}$ and y-direction shear about line $x = x_{ref}$ taking suitable example. 07
- OR
- Q.4 (a) Explain three dimensional rotation about z-axis, x-axis and y-axis 07
- (b) What is viewing transformation? Explain window to viewport transformation 07
- Q.5 (a) Write detailed note on 3D viewing pipeline 07
- (b) Explain Cohen-Sutherland line clipping algorithm 07
- OR
- Q.5 (a) What is polygon clipping? Explain Sutherland-Hodgeman Polygon Clipping algorithm 07
- (b) What is projection? Write detailed note on parallel projections 07
