

GUJARAT TECHNOLOGICAL UNIVERSITY**MCA - SEMESTER-IV • EXAMINATION – WINTER • 2014****Subject Code: 640008****Date: 06-12-2014****Subject Name: Computer Graphics (CG)****Time: 10:30 am - 01:00 pm****Total Marks: 70****Instructions:**

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

- Q.1** Explain the Following with Brief **14**
 1) Image Processing.
 2) Perspective projection.
 3) Raster Scan System.
 4) Homogeneous co-ordinates.
 5) Rotation.
 6) Translation.
 7) Pixel Phasing.
- Q.2 (a)** Write Short Note on following **04**
 a) Refresh Cathode- Ray Tube. **03**
 b) Computer Aided Design.
- (b)** Write generalized Bresenham's line drawing algorithm. **07**
OR
- (b)** Explain Cohen-Sutherland line clipping algorithm. **07**
- Q.3 (a)** What is viewing transformation? Explain window to viewport transformation **07**
(b) Write Midpoint ellipse algorithm. **07**
OR
- Q.3 (a)** Explain Composite Transformation in Brief. **07**
(b) Write a Detail note on 2-D viewing Pipeline. **07**
- Q.4 (a)** Explain Sutherland-Hodgman Polygon Clipping Algorithm with example. **07**
(b) Write a short note on 3-D Viewing Pipeline. **07**
OR
- Q.4 (a)** What is reflection? Explain reflection about x-axis, y-axis, line $y=x$ taking suitable example. **07**
(b) Explain DDA line drawing algorithm. **07**
- Q.5 (a)** What is projection? Write Short note on parallel projections **07**
(b) Explain any seven OpenGL Functions for output primitives **07**
OR
- Q.5 (a)** Which methods can be applied to fill a color in areas with irregular closed shapes? **07**
(b) Explain Liang-Barsky line clipping algorithm. **07**
