

**MAL 754 - Principles of Computer Graphics**  
**MINOR-I EXAMINATION**

Time: 1 Hour

Date: 17.02.2015  
Max.Marks: 20

**NOTE:** Answer **all** the questions

1.  
a). Find the mirror reflection transformation where it is assumed that the mirror is placed along the line  $y = -2x + 1$ ?

b). When do we say a region is 4-connected? Is it true that every 4-connected region is 8-connected? Justify your answer.  
( 4+2 Marks )

2.  
a). Describe in detail the Cohen Sutherland line clipping algorithm.

b). State a method of extending the Cyrus-Beck line clipping algorithm for a non-convex polygonal window region.  
( 5+2 Marks )

3. A unit cube is placed at the origin such that its three edges lie along X, Y and Z axis. The cube is rotated about the Y axis by 45 degrees in the clockwise direction and then projected on the  $x+2=0$  plane with centre of projection being at (10, 0, 0). Find the projection matrix of transformation? Also, find its principal vanishing points?  
( 5+2 Marks )