**MGM’s College of Engineering & Technology, NOIDA**

**Subject –Computer Graphics Subject Code: RCS -603**

**CLASS TT-CS**

**ASSIGNMENT No-3**

1. Define 3 D transformation .Derive rotation about x-axis, y-axis and z-axis matrices in 3D with proper diagram.
2. What is oblique projection and drive oblique projection matrix? Provide some examples and types of oblique projection.
3. Define axonometric projection and types of axonometric projection in detail.
4. Explain how 2D Clipping is different from 3D clipping.
5. Find the matrix for parallel projection onto the plane 3x+y+4z+1=0 when

a>orthographic projection is used

b>oblique projection is used

1. Draw the block diagram of implementation of 3D viewing, while

converting 3D world coordinate output primitive to 2 D device coordinate. Also explain the functionality of each block.

1. Differenciate between parallel projection and prespective

projection .

8.Establish and write Cyrus-Beck 3D line clipping algorithm

9. Find the matrix for mirror reflection with respect to the plane

passing through the origin and having a normal vector whose

direction is N=i+j+k.

10. Find the coordinates of a pyramid whose coordinates are

A(0,0,0),B(1,0,0),C(0,1,0) and D(0,0,1) after mirror reflection with

respect to the plane passing through i) the origin ii) the point

C(0,1,0) and having a normal vector whose direction is N=i+j+k. also

draw diagram.

11.How do we represent a point in 3D and what are the advatages of

hoogeneous co-ordinate?

12.Discuss the following for 3-D:

(a) Rotation about a fixed point

(b) rotation about an arbitrary point

13 . Derive reflection matrix about xy-plane, yz-plane and xz-plane in

3D.