**BBDNITM**

**MECHANICAL DEPARTMENT**

**SESSION(2018-19)**

**COMPUTER AIDED DESIGN [NME-701]**

**ASSIGNMENT No. 2**

Q 1. What Graphic Functions are provided in a general purpose Graphic Package

 for creating and manipulating pictures ? How a two dimensional scene is

 modelled in a device co-ordinate ?

Q 2. The pyramid defined by the co-ordinate A(0,0,0), B(2,0,0), C(0,1,0) and

 D (0,0,1) is rotated 450 about the line L that has the direction v = j + k and

 passing through point C (0,1,0). Find co-ordinate of the rotated figure.

 Q 3. Draw a schematic diagram and explain the working of Colour Monitor

 Display Device. Also explain RGB and CMYK colour models.

Q 4. For the points P1(1,1), P2(3,1), P3(4,2), P4(2,3) that defines a 2-D polygon,

 develop a single concatenated transformation matrix that :

1. reflects about x = 0
2. translates by -1 in both x and y direction
3. rotate about z-axis by1800

Q 5. Discuss Bresenham’s Line Algorithms.

Q 6. Write an algorithm and computer program for scan conversion of a line

 segment with starting point (xs, ys) and end point (xe, ye) using Bresenham’s

 line algorithm.

Q 7. A square having end points A (1,1), B (6,1), C (6,6) & D (1,6) is rotated by

 500 in Clockwise direction keeping point (6,1) fixed. Find the final co-

 ordinates.

Q 8. Using Bresenhem’s line algorithm, find the pixel positions along the line path

 b/w end points (30,20) and (40,28).

Q 9. Plot the pixel value of circle from Bresenham’s circle algorithm for radius R =

 10.

Q 10. Scan convert a circle whose centre is (10,20) and the radius is 10 using Mid-

 Point Circle algorithm.