**ASSIGNMENT NO.- 13[Ch-11(Three Dimensional Geometry)]**

**Class -XII**

1. Find the angle between the lines $2x=3y=-z$ and $6x=-y=-4z$.

2. Find the distance between the parallel lines

 $\vec{r}=\left(\hat{i}-\hat{j}\right)+t\left(2\hat{i}-\hat{j}+\hat{k}\right)$ and $\vec{r}=\left(2\hat{i}+\hat{j}+\hat{k}\right)+s\left(2\hat{i}-\hat{j}+\hat{k}\right)$

3. Find the angle between the pair of lines $\frac{x-2}{2}=\frac{y-1}{5}=\frac{z+3}{-3}$ and $\frac{x+2}{-1}=\frac{y-4}{8}=\frac{z-5}{4}.$

4. Find the angle between the lines $\frac{5-x}{3}=\frac{y+3}{-4} ,z=7 $ and $x=\frac{1-y}{2}=\frac{z-6}{2}$.

5. Find the shortst distance between the lines whose vector equations are

 $\vec{r}=\left(\hat{i}+2\hat{j}+3\hat{k}\right)+λ\left(\hat{i}-3\hat{j}+2\hat{k}\right)$ and $\vec{r}=\left(4\hat{i}+5\hat{j}+6\hat{k}\right)+μ\left(2\hat{i}+3\hat{j}+\hat{k}\right)$

6. Show that the angle between any two diagonals of a cube is $cos^{-1}\left(\frac{1}{3}\right).$

7. Find the distance of the point $(2,-1,3)$ from the plane $\vec{r}.\left(3\hat{i}+2\hat{j}-6\hat{k}\right)+15=0.$

8. Find the distance between the planes $2x-2y+z+3=0$ and $4x-4y+2z+5=0.$

9. Find the measure of angle between the line $\frac{x-2}{2}=\frac{y-2}{-3}=\frac{z-1}{2}$ and the plane

 $2x+y-3z+4=0.$

10. Find the equation of the plane through the points $\left(2,1,0\right),(3,-2,-2)$ and (3,1,7).