WS_HOTS

Class XII

CH-3D Geometry

1. Find the image of the point P(1,-2,3) on the plane 2x+3y-4z+22=0 measured parallel to the line $\frac{x}{1} = \frac{y}{4} = \frac{z}{5}$.
2. Find the vector equation of the line passing through $(1, 2, 3)$ and parallel to each of the planes $\vec{r}.\left(\hat{\imath} - \hat{\jmath} + 2\hat{k}\right) = 5$ and $\vec{r}.\left(3\hat{\imath} + \hat{\jmath} + \hat{k}\right) = 6$. Also find the point of intersection of the line thus obtained with the plane $\vec{r}.\left(2\hat{\imath} + \hat{\jmath} + \hat{k}\right) = 4$
3. Find the distance of the point (1, – 2, 3) from the plane x – y + z = 5 measured parallel to the line $\frac{x-1}{2} = \frac{y-3}{3} = \frac{z+2}{-6}$.
4. Find the equation of the plane passing through P (–1, 3, –2) and perpendicular to the lines $\frac{x}{1} = \frac{y}{2} = \frac{z}{3}$ and $\frac{x+2}{-3} = \frac{y-1}{2} = \frac{z+1}{5}$
5. Find the equation of the plane passing through the line of intersection of planes 2x + y – z = 3 and 5x – 3y + 4z + 9 = 0 and parallel to the line $\frac{x-1}{2} = \frac{y-3}{4} = \frac{z-5}{5}$.
6. Find the distance of the point (3,4,5) from the plane x+y+z =2 measured parallel to the line 2 x= y = z
7. Find the equation of the plane which is perpendicular to the plane $5x + 3y + 6z + 8 = 0$ and which contains the line of intersection of the planes $x + 2y + 3z - 4 = 0$ and $2x + y - z + 5 = 0$. Also find the perpendicular distance from (1,2,1) to the plane.
8. Find the image point of the point P(3,2,1) with respect to the plane $2x - y + z + 1 = 0$.
9. Find the vector equation of the plane through the points (3,4,2) and (7,0,6) and perpendicular to the plane 2x-5y -15 = 0. Also, show that the plane thus obtained contains the line $\vec{r} = \hat{\imath} + 3\hat{\jmath} - 2\hat{k} + \lambda\left(\hat{\imath} - \hat{\jmath} + \hat{k}\right)$.
10. Show that the lines $\frac{x+3}{-3} = \frac{y-1}{1} = \frac{z-5}{5}$ *and* $\frac{x+1}{-1} = \frac{y-2}{2} = \frac{z-5}{5}$ are coplanar . Also find the equation of plane containing them .