

Three Dimensional Geometry - Class XII

Related Questions with Solutions

Questions

Question: 01

The equation of line: $\frac{x - x'}{a'} = \frac{y - y'}{b'} = \frac{z - z'}{c'}$

The equation of plane : $a(x - x_1) + b(y - y_1) + c(z - z_1) = 0$ Equation of plane through the intersection of the two planes

$a_1x + b_1y + c_1z + d_1 = 0$ and $a_2x + b_2y + c_2z + d_2 = 0$ is
 $(a_1x + b_1y + c_1z + d_1) + k(a_2x + b_2y + c_2z + d_2) = 0$

The equation of the plane through (0, 2, 4) and containing the line
 $\frac{x + 3}{3} = \frac{y - 1}{4} = \frac{z - 2}{-2}$ is

- A. $x - 2y + 4z - 12 = 0$
- B. $5x + y + 9z - 38 = 0$
- C. $10x - 12y - 9z + 60 = 0$
- D. $7x + 5y - 3z + 2 = 0$

Solutions

Solution: 01

Equation of plane be

$$a[x - 0] + b[y - 2] + c[z - 4] = 0$$

Point on plane $\rightarrow [-3, 1, 2]$

and parallel to vector $\rightarrow 3\hat{i} + 4\hat{j} - 2\hat{k}$

$$a[-3 - 0] + b[1 - 2] + c[2 - 4] = 0$$

$$3a + b + 2c = 0$$

$$\text{and } 3a + 4b - 2c = 0$$

$$\frac{a}{-10} = \frac{b}{12} = \frac{c}{9} = \lambda$$

$$a = -10\lambda, b = 12\lambda, c = 9\lambda$$

Plane

$$-10x + 12[y - 2] + 9[z - 4] = 0$$

$$-10x + 12y + 9z - 60 = 0$$

Correct Options

Answer:01

Correct Options: C