Three Dimensional Geometry

Q.No.1:

If the lines $\frac{x-2}{1}=\frac{y-3}{1}=\frac{z-4}{-k}$ and $\frac{x-1}{k}=\frac{y-4}{2}=\frac{z-5}{1}$ are coplanar, then k can have:

JEE 2013

A. any value.
B. exactly one value.
C. exactly two values.
D. exactly three values.

Q.No.2:

Distance between two parallel planes $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ is :

JEE 2013

A. $\frac{3}{2}$
B. $\frac{5}{2}$
C. $\frac{7}{2}$
D. $\frac{9}{2}$

Q.No.3: The distance of the point (1, 0, 2) from the point of intersection of the line $\frac{x-2}{3} = \frac{y+1}{4} = \frac{z-2}{12}$ and the plane $x - y + z = 16$, is:

JEE 2015

A. $2\sqrt{14}$
B. 8
C. $3\sqrt{21}$
D. 13

Q.No.4: The equation of the plane containing the line 2x – 5y + z = 3; x + y + 4z = 5, and parallel to the plane, x + 3y + 6z = 1, is : **JEE 2015**

A. 2x + 6y + 12z = 13

B. x + 3y + 6z = –7

C. x + 3y + 6z = 7

D. 2x + 6y + 12z = –13

Q.No.5: The distance of the point (1, –5, 9) from the plane $x - y + z = 5$ measured along the line $x = y = z$ is : **JEE 2016**

A. $10\sqrt{3}$

B. $\frac{10}{\sqrt{3}}$

C. $\frac{20}{3}$

D. $3\sqrt{10}$

Q.No.6: If the image of the point P(1, –2, 3) in the plane, 2x + 3y – 4z + 22 = 0 measured parallel to the line, $\frac{x}{1} = \frac{y}{4} = \frac{z}{5}$ is Q, then PQ is equal to : **JEE 2017**

A. $3\sqrt{5}$

B. $2\sqrt{42}$

C. $\sqrt{42}$

D. $6\sqrt{5}$

Q.No.7: The distance of the point (1, 3, –7) from the plane passing through the point (1, –1, –1), having normal perpendicular to both the lines $\frac{x-1}{1} = \frac{y+2}{-2} = \frac{z-4}{3}$ and $\frac{x-2}{2} = \frac{y+1}{-1} = \frac{z+7}{-1}$, is **JEE 2017**

A. $\frac{20}{\sqrt{74}}$

B. $\frac{10}{\sqrt{83}}$

C. $\frac{5}{\sqrt{83}}$

D. $\frac{10}{\sqrt{74}}$

Q.No.8: If L_1 is the line of intersection of the planes $2x - 2y + 3z - 2 = 0$, $x - y + z + 1 = 0$ and L_2 is the line of intersection of the planes $x + 2y - z - 3 = 0$, $3x - y + 2z - 1 = 0$, then the distance of the origin from the plane, containing the lines L_1 and L_2, is : **JEE 2018**

A. $\frac{1}{2\sqrt{2}}$

B. $\frac{1}{\sqrt{2}}$

C. $\frac{1}{4\sqrt{2}}$

D. $\frac{1}{3\sqrt{2}}$

Q.No.9: The equation of the line passing through (–4, 3, 1), parallel to the plane $x + 2y - z - 5 = 0$ and intersecting the line $\frac{x+1}{-3} = \frac{y-3}{2} = \frac{z-2}{-1}$ is:

JEE 2019

A. $\frac{x-4}{2} = \frac{y+3}{1} = \frac{z+1}{4}$

B. $\frac{x+4}{1} = \frac{y-3}{1} = \frac{z-1}{3}$

C. $\frac{x+4}{3} = \frac{y-3}{-1} = \frac{z-1}{1}$

D. $\frac{x+4}{-1} = \frac{y-3}{1} = \frac{z-1}{1}$

Q.No.10: The plane through the intersection of the planes $x + y + z = 1$ and $2x + 3y - z + 4 = 0$ and parallel to y-axis also passes through the point:

JEE 2019

A. (–3, 0, –1)

B. (–3, 1, 1)

C. (3, 3, –1)

D. (3, 2, 1)