VERY SHORT ANSWER QUESTIONS (VSAQs) BIS/041/LINE/VK

Answer each of the following questions in one word or one sentence or as per exact requirement of the question:

Q 1. Write the cartesian and vector equations of X-axis.

Q 2. Write the cartesian and vector equations of Y-axis.

Q 3. Write the cartesian and vector equations of Z-axis.

Q 4. Write the vector equation of a line passing through a point having position vector $\vec{\alpha}$ and parallel to vector $\vec{\beta}$.

Q 5. Cartesian equations of a line AB are $\frac{2x-1}{2}=\frac{4-y}{7}=\frac{z+1}{2}$ Write the direction ratios of the line parallel to AB.

Q 6. Write the direction cosines of the line whose cartesian equations are 6x - 2 = 3y + 1 = 2z - 4.

Q 7. Write the direction cosines of the line $\frac{x-2}{2}=\frac{2y-5}{-3}, z=2.$

Q 8. Write the coordinate axis to which the line $\frac{x-2}{3}=\frac{y+1}{4}=.\frac{z-1}{0}$ is perpendicular.

Q 9. Write the angle between the lines $\frac{x-5}{7}=\frac{y+2}{-5}=.\frac{z-2}{1}$ and $\frac{x-1}{1}=\frac{y}{2}=.\frac{z-1}{3}.$

Q 10. Write the direction cosines of the line whose cartesian equations are 2x = 3y = - z.

Q 11. Write the angle between the lines 2x = 3y = - z and 6x = - y = - 4z.

Q 12. Write the value of λ for which the lines $\frac{x-3}{-3}=\frac{y+2}{2\lambda}=\frac{z+4}{2}$ and $\frac{x+1}{3\lambda}=\frac{y-2}{1}=\frac{z+6}{-5}$ are perpendicular to each other.

Q 13. Write the formula for the shortest distance between the lines $\vec{r}=\vec{a_1}+\lambda\vec{b}$ and $\vec{r}=\vec{a_2}+\mu\vec{b}.$

Q 14. Write the condition for the lines $\vec{r}=\vec{a_1}+\lambda\vec{b_1}$ and $\vec{r}=\vec{a_2}+\mu\vec{b_2}$ to be intersecting.

Q 15. The cartesian equation of a line AB is $\frac{2x-1}{\sqrt{3}}=\frac{y+2}{2}=\frac{z-3}{3}$. Find the direction cosines of a line parallel to AB.

Q 16. If the equations of a line AB are $\frac{3-x}{1}=\frac{y+2}{-2}=\frac{z-5}{4}$, write the direction ratios of a line parallel to AB.