1. Unit vector along $\overrightarrow{PQ}$, where coordinates of P and Q respectively are (2,1,-1)and(4,4,-7), is

    (a) $2\hat{i} + 3\hat{j} - 6\hat{k}$

    (b) $-2\hat{i} - 3\hat{j} + 6\hat{k}$

    (c) $-\frac{2\hat{i}}{7} - \frac{3\hat{j}}{7} + \frac{6\hat{k}}{7}$

    (d) $\frac{2\hat{i}}{7} + \frac{3\hat{j}}{7} - \frac{6\hat{k}}{7}$

2. If in ΔABC, $\overrightarrow{BA}=2\overrightarrow{a}$ and $\overrightarrow{BC}=3\overrightarrow{b}$, then $\overrightarrow{AC}$ is

    (a) $2\overrightarrow{a} + 3\overrightarrow{b}$

    (b) $2\overrightarrow{a} - 3\overrightarrow{b}$

    (c) $3\overrightarrow{b} - 2\overrightarrow{a}$

    (d) $-2\overrightarrow{a} - 3\overrightarrow{b}$

3. Equation of line passing through origin and making 30°, 60° and 90° with x, y, z axes respectively is

    (a) $\frac{2x}{\sqrt{3}}=\frac{y}{2}=\frac{z}{0}$

    (b) $\frac{2x}{\sqrt{3}}=\frac{2y}{1}=\frac{z}{0}$

    (c) $2x=\frac{2y}{\sqrt{3}}=\frac{z}{1}$

    (d) $\frac{2x}{sqrt3}=\frac{2y}{1}=\frac{z}{1}$

4. If $\overrightarrow{a}, \overrightarrow{b}, \overrightarrow{c}$ are three non-zero unequal vectors such that $\overrightarrow{a}.\overrightarrow{b} = \overrightarrow{a}.\overrightarrow{c}$, then find the angle between $\overrightarrow{a}$ and $\overrightarrow{b} - \overrightarrow{c}$.

5. If the equation of a line is x = ay + b, z = cy +d, then find the direction ratios of the line and a point on the line.

6. Using Integration, find the area of triangle whose vertices are (-1, 1), (0, 5) and (3, 2).