Yakeen NEET 2.0 2026

Physics By Manish Raj Sir

DPP: 5

Vectors

Q1 The angle between the two vectors $\vec{A} = 3\hat{i} + 4\hat{j} + 5\hat{k}$ and $\vec{B} = 3\hat{i} + 4\hat{j} - 5\hat{k}$ will be
(A) 90°
(B) 0°
(C) 60°
(D) 45°

Q2 If force $(\vec{F}) = 4\hat{i} + 5\hat{j}$ and displacement $(\vec{s}) = 3\hat{i} + 6\hat{k}$ then the work done is; (All the values are in SI unit)
(A) 4×3
(B) 5×6
(C) 6×3
(D) 4×6

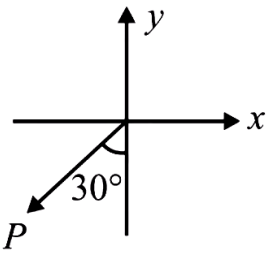
Q3 In an clockwise system
(A) $\hat{j} \times \hat{k} = \hat{i}$
(B) $\hat{i} \cdot \hat{i} = 0$
(C) $\hat{j} \times \hat{j} = 1$
(D) $\hat{k} \cdot \hat{j} = 1$

Q4 The resultant of $\vec{A}$ and $\vec{B}$ makes an angle α with $\vec{A}$ and β with $\vec{B}$, then:
(A) $\alpha < \beta$
(B) $\alpha < \beta$ if $A < B$
(C) $\alpha < \beta$ if $A > B$
(D) $\alpha < \beta$ if $A = B$

Q5 Two forces of magnitudes F and $\sqrt{3}F$ act at right angle to each other. Their resultant makes and angle β with F. The value of β is
(A) 30°
(B) 45°
(C) 60°
(D) 135°

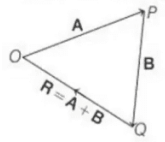
Q6 A truck travelling due north at $20\ \text{ms}^{-1}$ turns west and travels with same speed. What are the changes in velocity?
(A) $20\sqrt{2}\ \text{ms}^{-1}$ south-west
(B) $40\ \text{ms}^{-1}$ south-west
(C) $20\sqrt{2}\ \text{ms}^{-1}$ north-west
(D) $40\ \text{ms}^{-1}$ north-west

Q7 If $|\vec{P}| = 20$, then $\vec{P}$ in cartesian form is

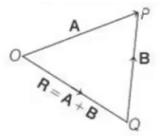


(A) $10\sqrt{3}\hat{i} + 10\hat{j}$
(B) $10\hat{i} + 10\sqrt{3}\hat{j}$
(C) $-10\hat{i} + 10\sqrt{3}\hat{j}$
(D) $-10\hat{i} - 10\sqrt{3}\hat{j}$

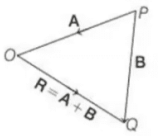
Q8 $\mathbf{A}$ and $\mathbf{B}$ are two inclined vectors and $\mathbf{R}$ is their sum. Choose the correct figure for the given description.
(A)



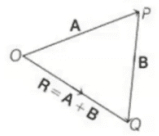
(B)



(C)



(D)



Q9 The vector $\vec{A} = 2\hat{i} + 3\hat{j} + 4\hat{k}$ and vector $\vec{B} = 4\hat{i} + 6\hat{j} + 8\hat{k}$ are given.
What is the angle between these two vectors?

(A) 0° (B) 45°
(C) 90° (D) 60°

Q10 If $\vec{A} = 7\hat{i} - 2\hat{j} + 3\hat{k}$, what is the vector $-3\vec{A}$?
(A) $-21\hat{i} + 6\hat{j} - 9\hat{k}$
(B) $-7\hat{i} + 2\hat{j} - 3\hat{k}$
(C) $21\hat{i} - 6\hat{j} + 9\hat{k}$
(D) $-7\hat{i} + 6\hat{j} - 9\hat{k}$

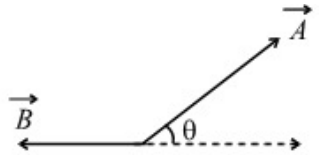
Q11 If $\bar{A} \times \bar{B} = \vec{C}$, then which of the following statements is wrong?
(A) $\vec{C} \perp \vec{A}$
(B) $\bar{C} \perp \vec{B}$
(C) $\vec{C} \perp (\bar{A} + \vec{B})$
(D) $\vec{C} \perp (\vec{A} \times \vec{B})$

Q12 If $\left|\overrightarrow{A}\right| = \left|\overrightarrow{B}\right| = a$ and θ is angle between $\overrightarrow{A}$ and $\overrightarrow{B}$ then $\left|\overrightarrow{A} - \overrightarrow{B}\right| =$?
(A) $2a\cos\left(\frac{\theta}{2}\right)$ (B) $2a\sin\left(\frac{\theta}{2}\right)$
(C) $4a\sin\left(\frac{\theta}{2}\right)$ (D) $4a\cos\left(\frac{\theta}{2}\right)$

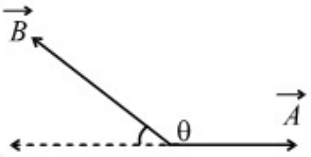
Q13 If a unit vector is represented by $0.3\hat{i} - 0.4\hat{j} + c\hat{k}$, then the value of '$c$' is:
(A) $\sqrt{0.75}$ (B) $\sqrt{0.25}$
(C) $\sqrt{0.01}$ (D) $\sqrt{0.39}$

Q14 Let q be the angle between vectors and . Which of the following figures **correctly** represents the angle θ?

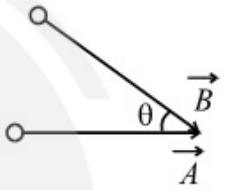
(A)



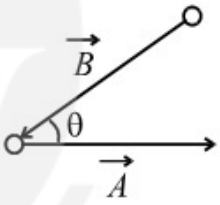
(B)



(C)



(D)



Answer Key

Q1	(A)
Q2	(A)
Q3	(A)
Q4	(C)
Q5	(C)
Q6	(A)
Q7	(D)
Q8	(D)
Q9	(A)
Q10	(A)
Q11	(D)
Q12	(A)
Q13	(A)
Q14	(C)