

Yakeen NEET 2.0 2026

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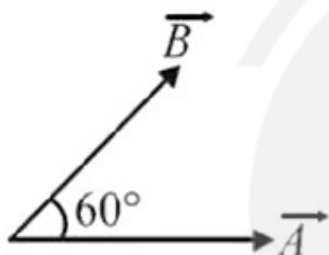
DPP: 3

Vectors

Q1 The resultant of two forces $2P$ and $\sqrt{2}P$ is $\sqrt{10}P$. The angle between the forces is

- (A) 30°
 (B) 60°
 (C) 45°
 (D) 90° .

Q2 If $|\vec{A}| = 4$ units and $|\vec{B}| = 3$ units then find $|\vec{A} - \vec{B}| = ?$



- (A) $\sqrt{15}$
 (B) $\sqrt{18}$
 (C) $\sqrt{13}$
 (D) $\sqrt{37}$

Q3 A vector $\vec{A} = 6\hat{i} + 8\hat{j}$ is inclined at angle θ with the x-axis. The angle θ is:

- (A) 45° (B) 60°
 (C) 30° (D) 53°

Q4 The vector $\vec{A} = 6\hat{i} - 8\hat{j} + 10\hat{k}$ makes an angle θ with the positive x-axis. What is the value of $\cos \theta$?

- (A) $\frac{6}{\sqrt{6^2+8^2+10^2}}$
 (B) $\frac{6}{14}$
 (C) $\frac{6}{12}$
 (D)

$$\frac{10}{\sqrt{6^2+8^2+10^2}}$$

Q5 An aeroplane is heading north east at a speed of 141.4 ms^{-1} . The northward component of its velocity is

- (A) 141.4 ms^{-1}
 (B) 100 ms^{-1}
 (C) Zero
 (D) 50 ms^{-1}

Q6 The angle made by the vector $\vec{A} = \sqrt{3}\hat{i} + \hat{j}$ with y-axis

- (A) 60°
 (B) 30°
 (C) 45°
 (D) 160°

Q7 Angle that the $\vec{A} = 2\hat{i} + 3\hat{j}$ vector makes with y-axis is:

- (A) $\tan^{-1}(3/2)$
 (B) $\tan^{-1}(2/3)$
 (C) $\sin^{-1}(2/3)$
 (D) $\cos^{-1}(3/2)$

Q8 The angles which a vector $\hat{i} + \hat{j} + \sqrt{2}\hat{k}$ make with X, Y and Z axes respectively are:

- (A) $60^\circ, 60^\circ, 60^\circ$
 (B) $45^\circ, 45^\circ, 45^\circ$
 (C) $60^\circ, 60^\circ, 45^\circ$
 (D) $45^\circ, 45^\circ, 60^\circ$

Q9 The vectors \vec{A} and \vec{B} are such that $|\vec{A} + \vec{B}| = |\vec{A} - \vec{B}|$. The angle between \vec{A}



and \vec{B} is:

- (A) 90° (B) 60°
(C) 75° (D) 45°

Q10 Force F_1 and F_2 act on a point mass in two mutually perpendicular directions. The resultant force on the point mass will be

- (A) $F_1 + F_2$
(B) $F_1 - F_2$
(C) $\sqrt{F_1^2 + F_2^2}$
(D) $F_1^2 + F_2^2$

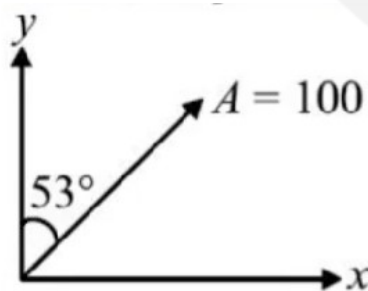
Q11 Which of the following pair of forces will never give a resultant force of 2N ?

- (A) 2N and 2N
(B) 1N and 1N
(C) 1N and 3N
(D) 1N and 4N

Q12 Which of the following sets of concurrent forces may be in equilibrium?

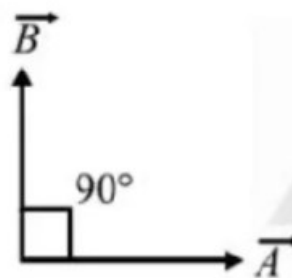
- (A) $F_1 = 3\text{N}$, $F_2 = 5\text{N}$, $F_3 = 1\text{N}$
(B) $F_1 = 3\text{N}$, $F_2 = 5\text{N}$, $F_3 = 9\text{N}$
(C) $F_1 = 3\text{N}$, $F_2 = 5\text{N}$, $F_3 = 6\text{N}$
(D) $F_1 = 3\text{N}$, $F_2 = 5\text{N}$, $F_3 = 15\text{N}$

Q13 Find x-component of vector \vec{A} .



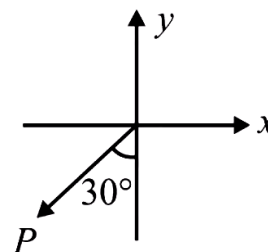
- (A) 80 (B) 60
(C) 40 (D) none

Q14 If $A = 10$ units and $B = 6$ units then find. $|\vec{R}| = |\vec{A} + \vec{B}| = ?$



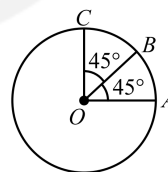
- (A) $\sqrt{136}$
(B) $\sqrt{360}$
(C) $\sqrt{105}$
(D) None

Q15 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) $-10\hat{i} - 10\sqrt{3}\hat{j}$

Q16 Find the resultant of three vectors \vec{OA} , \vec{OB} and \vec{OC} shown in the following figure. Radius of the circle is R



- (A) $2R$
(B) $R(1 + \sqrt{2})$
(C) $R\sqrt{2}$
(D) $R(\sqrt{2} - 1)$

Q17 A vector $\vec{A} = 4\hat{i} - 3\hat{j} + 5\hat{k}$. The magnitude of the vector is:

- (A) $\sqrt{50}$



(B) $\sqrt{16 + 9 + 25}$

(C) $4\hat{i} + 3\hat{j}$

(D) $\sqrt{16 + 9 + 25} = \sqrt{50}$

Q18 If a body is in equilibrium under a set of noncollinear forces, then the minimum number of forces has to be

(A) Four

(B) Two

(C) Three

(D) Five



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Answer Key

Q1 (C)

Q2 (C)

Q3 (D)

Q4 (A)

Q5 (B)

Q6 (A)

Q7 (B)

Q8 (C)

Q9 (A)

Q10 (C)

Q11 (D)

Q12 (C)

Q13 (A)

Q14 (A)

Q15 (D)

Q16 (B)

Q17 (A)

Q18 (C)

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