Parishram (2025)

Physics

Basic Mathematics

DPP: 1

Q1 If a particle moves from point $P(2,3,5)$ to point $Q\ (3,4,5)$. Its displacement vector be
(A) $\hat{i}+\hat{j}+10\hat{k}$
(B) $\hat{i}+\hat{j}+5\hat{k}$
(C) $\hat{i}+\hat{j}$
(D) $2\hat{i}+4\hat{j}+6\hat{k}$

Q2 $\vec{A}=2\hat{i}+\hat{j}, \vec{B}=3\hat{j}-\hat{k}$ and $\vec{C}=6\hat{i}-2\hat{k}$. Value of $\vec{A}-2\vec{B}+3\vec{C}$ would be
(A) $20\hat{i}+5\hat{j}+4\hat{k}$
(B) $20\hat{i}-5\hat{j}-4\hat{k}$
(C) $4\hat{i}+5\hat{j}+20\hat{k}$
(D) $5\hat{i}+4\hat{j}+10\hat{k}$

Q3 A body is at rest under the action of three forces, two of which are $\vec{F}_1=4\hat{i}, \vec{F}_2=6\hat{j}$, the third force is
(A) $4\hat{i}+6\hat{j}$
(B) $4\hat{i}-6\hat{j}$
(C) $-4\hat{i}+6\hat{j}$
(D) $-4\hat{i}-6\hat{j}$

Q4 The vector that must be added to the vector $\hat{i}-3\hat{j}+2\hat{k}$ and $3\hat{i}+6\hat{j}-7\hat{k}$ so that the resultant vector is a unit vector along the y-axis is
(A) $4\hat{i}+4\hat{j}+5\hat{k}$
(B) $-4\hat{i}-2\hat{j}+5\hat{k}$
(C) $3\hat{i}+4\hat{j}+5\hat{k}$
(D) Null vector

Q5 The minimum number of vectors of equal magnitude required to produce a zero resultant is:
(A) 2 (B) 3
(C) 4 (D) More than 4

Q6 Which of the following statements is false:
(A) Mass, speed and energy are scalars
(B) Momentum, force and torque are vectors
(C) Distance is a scalar while displacement is a vector
(D) A vector has only magnitude whereas as a scalar has both magnitude and direction

Q7 A physical quantity which has a direction:
(A) Must be a vector
(B) May be a vector
(C) Must be a scalar
(D) None of the above

Q8 The forces, which meet at one point but their lines of action do not lie in one plane, are called:
(A) Non-coplanar and non-concurrent forces
(B) Coplanar and non-concurrent forces
(C) Non-coplanar and concurrent forces
(D) Coplanar and concurrent forces

Answer Key

Q1	(C)	Q5	(A)
Q2	(B)	Q6	(D)
Q3	(D)	Q7	(B)
Q4	(B)	Q8	(C)