CBSE

MOTION IN A PLANE WS 5

Class 11 - Physics

Section A

1. The addition of vectors and the multiplication of a vector by a scalar together gives rise to **[1]**

   a) distributive laws
   b) commutative law
   c) asymmetric laws
   d) intransitive law

2. **Assertion (A):** if $\vec{\mathbf{A}}, \vec{\mathbf{B}}$ and $\vec{\mathbf{B}}$ are three coplanar vectors representing same physical quantities such that $|\vec{\mathbf{A}}| = |\vec{\mathbf{B}}| = |\vec{\mathbf{C}}|$ with each pair of vectors having angle of $\frac{2\pi}{3}$ radian between them, then their resultant is zero. **[1]**

   Reason (R): The resultant of three coplanar vectors is zero if they can be represented by three sides of a triangle taken in order.

   a) Both A and R are true and R is the correct explanation of A.
   b) Both A and R are true but R is not the correct explanation of A.
   c) A is true but R is false.
   d) A is false but R is true.

3. State the essential condition for the addition of vectors. **[1]**

Section B

4. Establish the **|a + b|** $\leq$ **|a| + |b|** vector inequalities geometrically or otherwise. When does this equality sign apply? **[2]**
5. Establish the $|a - b| \geq ||a| - |b||$ vector inequalities geometrically or otherwise.When does this equality sign apply? **[2]**