St. Lawrence High School

A Jesuit Christian Minority Institution

Term : 1st

Work Sheet – 7

Class – XI | Subject – Physics | Date – 22.06.20

Chapter – Vector | Topic –Vector Addition

Choose the correct option for the following questions. $1 \times 15 = 15$

1. Which one among the following is a vector quantity ?
   a. Electric current
   b. Pressure
   c. Area
   d. All of the above

2. Vector $\vec{A}$ *and* $3\vec{A}$ are –
   a. Parallel
   b. Coplanar
   c. Collinear
   d. All of the above

3. If $\vec{A}$ and $\vec{B}$ are two vectors such that $|\vec{A} + \vec{B}| = |\vec{A} - \vec{B}|$, then the angle between $\vec{A}$ and $\vec{B}$ is –
   a. 0^0
   b. 60^0
   c. 90^0
   d. 120^0

4. The vector sum of two forces is perpendicular to their vector differences. In that case, the forces –
   a. Are not equal to each other in magnitude
   b. Cannot be predicted
   c. Are equal to each other
   d. Are equal to each other in magnitude

5. Which one of the following is a scalar quantity?
   a. Displacement
   b. Acceleration
   c. Force
   d. Work

6. Which one of the following is a not a vector quantity?
   a. Torque
   b. Displacement
   c. Velocity
   d. Speed

7. Given that P = 12, Q = 5 and R = 13, also $\vec{P} + \vec{Q} = \vec{R}$. Then the angle between $\vec{P}\ and\ \vec{Q}$ will be –
   a. π
   b. $\frac{\pi}{2}$
   c. 0
   d. $\frac{\pi}{4}$

8. The forces which meet at one point but their lines of action do not lie in one plane, are called –
   a. Non-coplanar non-concurrent forces
   b. Non-coplanar concurrent forces
   c. Coplanar concurrent forces
   d. Coplanar non-concurrent forces

9. Given that $\vec{P} + \vec{Q} + \vec{R} = \vec{0}$. Two out of the three vectors are equal in magnitude. The magnitude of the third vector is $\sqrt{2}\ times$ that of the other two. Which of the following can be angles between these vectors?
   a. $90^0, 135^0, 135^0$
   b. $45^0, 45^0, 90^0$
   c. $30^0, 60^0, 90^0$
   d. $45^0, 90^0, 135^0$

10. The angle between $\vec{P} + \vec{Q}$ and $\vec{P} - \vec{Q}$ will be –
   a. 90^0
   b. Between $0^0$and 180^0
   c. 180^0 only
   d. $none\ of\ these$

11. Two vectors of equal magnitude have a resultant equal to either of them, then the angle between them will be –
   a. 30^0
   b. 120^0
   c. 60^0
   d. 45^0

12. Maximum and minimum values of the resultant of two forces acting at a point are 7N and 3N respectively. The smaller force will be equal to –
   a. 5N
   b. 4N
   c. 2N
   d. 1N

13. The resultant of two forces 3P and 2P is R. If the first force is doubled, then the resultant is also doubled. The angle between the two forces is –
   a. 30^0
   b. 120^0
   c. 60^0
   d. 45^0

14. The resultant two forces, one double the other in magnitude, is perpendicular to the smaller of the two forces. The angle between the two forces is –
    a. 0^0
    b. 60^0
    c. 90^0
    d. 120^0

15. The sum of two forces at a point is 16N. If their resultant is normal to the smaller force and has a magnitude of 8N, then their magnitudes be –
    a. 6N, 10N
    b. 8N, 8N
    c. 4N, 12N
    d. 2N, 14N

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