# ECAT Physics Chapter 2 Vectors and Equilibrium

| Sr | Questions | Answers Choice |
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| 1 | The magnitude of resultant of three vectors is 3. Its x-component is one, y-component is two, then its z-component is: | A. 0<br>B. 1<br>C. 2<br>D. 3 |
| 2 | The perpendicular distance from the axis of rotation to the line of action of force is called: | A. Moment arm<br>B. Moment of a force<br>C. Torque<br>D. Non of these |
| 3 | The change of order of vectors in a dot product of two vectors: | A. Changes its value<br>B. Doesn't change it's value<br>C. Changes the direction product quantity<br>D. None of these |
| 4 | Choose the set of physical quantities, which have both numerical and directional properties: | A. Velocity, mass<br>B. Speed, acceleration<br>C. acceleration weight<br>D. Distance, force |
| 5 | If x-component of a vector is -3 N and y-component is 3 N, then angle of resultant vector will x-axis is: | A. 45<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">°<br>B. 315<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">°<br>C. 135<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">°<br>D. 225<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">° |
| 6 | All trigonometric functions (sine, cosine, tangent etc) are positive in: | A. 1st quadrant<br>B. 2nd quadrant<br>C. 3rd quadrant<br>D. 4th quadrant |
| 7 | Tick the correct answer: | A. Torque is a vector quantity<br>B. Torque is the turning effect of a force<br>C. Torque is called moment of a force<br>D. All of above |
| 8 | The resultant of two velocities 3 m/sec and 400 cm/sec making an angle 90° with each other is: | A. 20 m/sec<br>B. 5 m/sec<br>C. 3 m.sec<br>D. None of these |
| | | A. 30<span style="font-size: 10.5pt; |

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| 9 | Two forces each of the magnitude F act perpendicular to each other. The angle made by the resultant force with the horizontal will be: | |
| 10 | Which of the following is scalar quantity? | A. Electric potential<br>B. Velocity<br>C. Momentum<br>D. Force |
| 11 | All trigonometric functions (since, cosine tangent etc. ) are positive in: | A. 1st Quadrant<br>B. 2nd Quadrant<br>C. 3rd Quadrant<br>D. 4th Quadrant |
| 12 | The rectangular components of a vector are equal in magnitude when the vector makes and angle _____with their x-component: | A. 0<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">°<br>B. 30<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">°<br>C. 45<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">°<br>D. 60<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">° |
| 13 | Unit vector is used to specify: | A. Magnitude of a vector<br>B. Dimensions of a vector<br>C. Direction of a vector<br>D. Position of a vector |
| | | A. 60<span style="font-size: 10.5pt; |

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| 14 | When the magnitude of two component vectors are equal to that of their resultant, then the angle between the components is: | line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">°<br>B. 90<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">°<br>C. 120<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">°<br>D. 150<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">° |
| 15 | If the vector 5 N lies along with x-axis, then its component along y-axis will be: | A. Zero<br>B. 5 N<br>C. 7 N<br>D. 10 N |
| 16 | Two forces each of 10 N act on a body, if the force are inclined at 30° and 60° respectively with x-axis, then x-component of their resultant is: | A. 20 N<br>B. 13.66 N<br>C. 10 N<br>D. 8.66 N |
| 17 | The sum of two or more vectors is equal to a single vector which is called: | A. Component vector<br>B. Resultant vector<br>C. Product vector<br>D. None of these |
| 18 | If a vector lies in second quadrant, than $B_x$ and $B_y$ are: | A. -,+<br>B. +,-<br>C. +,+<br>D. -,- |
| 19 | The vector in space has: | A. One component<br>B. Two components<br>C. Three components<br>D. None of these |
| 20 | For measuring the angle between two vectors graphically, we join: | A. Tails of both the vectors<br>B. Tail of one vector with the head of other<br>C. Heads of both the vectors<br>D. None of these |