

ECAT Mathematics Chapter 23 Conic Section

Sr	Questions	Answers Choice
1	The magnitude of vector $a=i-3j+5k$ is:	A. 3 B. $\sqrt{35}$ C. $\sqrt{17}$ D. $\sqrt{35}$
2	a _____ quantity is one that possesses both magnitude and direction.	A. Scalar B. Vector C. Segment D. None of these
3	The angle between the vectors $\underline{u} = [-3, 5]$ and $\underline{v} = [6, -2]$ is:	A. $\pi/2$ B. $-3\pi/2$ C. π D. None of these
4	If the angle between two vectors \underline{u} and \underline{v} is 0 or π , then the vectors \underline{u} and \underline{v} are:	A. Orthogonal B. Collinear C. Perpendicular D. None of these
5	If $a, b = 0$ then	A. $a \perp b$ B. $a \parallel b$ C. $a = b$ D. None
6	The vector $i = [1, 0]$ is called unit vector along:	A. x-axis B. y - axis C. z - axis D. Both a and y-axis
7	Vector addition is:	A. Commutative B. Associative C. Commutative and Associative D. None of these
8	If the sum of two unit vectors is a unit vector the the magnitude of their difference is	A. $\sqrt{2}$ B. $\sqrt{3}$ C. 1 D. None of these
9	If $a = 5i + 2j$, then $ a =$	A. $\sqrt{13}$ B. $\sqrt{7}$ C. $1/\sqrt{13}$ D. $\sqrt{29}$
10	The vector $k = [0, 0, 1]$ is called unit vector along:	A. x -axis B. y - axis C. z - axis D. None of these
11	If the angle between two vectors \underline{u} and \underline{v} is 0 or π , then the vectors \underline{u} and \underline{v} are:	A. Orthogonal B. Collinear C. Perpendicular D. None of these
12	The modulus of a vector $i-j+k$ is:	A. $\sqrt{3}$ B. 1 C. $\sqrt{2}$ D. ∞
13	If $a=5j + 2j, b=2i -3j$, then $ a+2b =$	A. $\sqrt{21}$ B. $\sqrt{97}$ C. $\sqrt{39}$ D. None of these
14	If $a \neq 0, b \neq 0$ and $ a+b = a-b $, then vectors a and b are:	A. Parallel to each other B. Perpendicular to each other C. Inclined at 60° D. neither parallel nor perpendicular
15	If G is the centroid of the triangle, then $GA + GB + GC =$	A. 0 B. 1 C. -1 D. 3

16	If $\underline{u} = 2a\hat{j} + \hat{j} - \hat{k}$ and $\underline{v} = \hat{j} + a\hat{j} + 4\hat{k}$ are perpendicular then $a =$	A. 4 B. 1/2 C. 3 D. 4/3
17	If $ \underline{a} = \underline{b} = \underline{a} + \underline{b} = 1$, then $ \underline{a} - \underline{b} $ is equal to:	A. 1 B. $\sqrt{3}$ C. $\sqrt{2}$ D. 7
18	If $\underline{u} = 2\hat{j} + p\hat{i} + 5\hat{k}$ and $\underline{v} = 3\hat{i} + \hat{j} + p\hat{k}$ are perpendicular, then $p =$	A. 1 B. 2 C. -1 D. -3
19	$\underline{O}(0,0)$ is called:	A. Position vector B. Free vector C. Unite vector D. Null vector
20	If \underline{a} and \underline{b} are two vectors then $\underline{a} + \underline{b} =$	A. $\underline{b} + \underline{a}$ B. $\underline{b} - \underline{a}$ C. $\underline{a}\underline{b}$ D. $\underline{a}^{\wedge}\underline{b}$