

ECAT Mathematics Chapter 23 Conic Section

Sr	Questions	Answers Choice
1	If $\underline{u} = 2a\mathbf{j} + \mathbf{i} - \mathbf{k}$ and $\underline{v} = \mathbf{i} + a\mathbf{j} + 4\mathbf{k}$ are perpendicular then $a =$	A. 4 B. 1/2 C. 3 D. 4/3
2	If $\underline{u} = [3, -4]$, then modulus of \underline{u} is:	A. 5 B. 5i C. -5 D. $\sqrt{5}$
3	If $a = [1, 4, 3]$ and $B = [2, -1, 5]$ then the mid point M of AB is:	A. [1, 1, 1.5] B. [2, 2, 1.5] C. [1.5, 1.5, 4] D. None of these
4	If $a = 2\mathbf{i} + 2\mathbf{j}$, $b = 3\mathbf{i} - \mathbf{j}$ and $c = 4\mathbf{i} + 5\mathbf{j}$, then $3b - a - 2c =$	A. $-\mathbf{i} - 15\mathbf{j}$ B. $\mathbf{i} - 15\mathbf{j}$ C. $\mathbf{i} - 3\mathbf{j}$ D. None of these
5	The modulus of a vector $\mathbf{i} - \mathbf{j} + \mathbf{k}$ is:	A. $\sqrt{3}$ B. 1 C. $\sqrt{2}$ D. ∞
6	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{ab} D. $\underline{a}^{\wedge} \underline{b}$
7	If $\underline{a} = 5\mathbf{i} + 2\mathbf{j}$, then $ \underline{a} =$	A. $\sqrt{13}$ B. $\sqrt{7}$ C. $1/\sqrt{13}$ D. $\sqrt{29}$
8	If $\underline{a} = 5\mathbf{j} + 2\mathbf{i}$, $\underline{b} = 2\mathbf{i} - 3\mathbf{j}$, then $ \underline{a} + 2\underline{b} =$	A. $\sqrt{21}$ B. $\sqrt{97}$ C. $\sqrt{39}$ D. None of these
9	If $\underline{u} = x\mathbf{i} + y\mathbf{j}$, then $ \underline{u} $	A. $x^2 + y^2$ B. $(x^2 + y^2)^2$ C. $x^2 - y^2$ D. $\sqrt{x^2 + y^2}$
10	The modulus of $12 - 5\mathbf{i}$ is:	A. 7 B. 13 C. $\sqrt{7}$ D. 119
11	$\underline{O}(0,0)$ is called:	A. Position vector B. Free vector C. Unit vector D. Null vector
12	If the sum of two unit vectors is a unit vector then the magnitude of their difference is	A. $\sqrt{2}$ B. $\sqrt{3}$ C. 1 D. None of these
13	The vector $\underline{k} = [0, 0, 1]$ is called unit vector along:	A. x-axis B. y-axis C. z-axis D. None of these
14	If the angle between two vectors \underline{u} and \underline{v} is 0° , then the vectors \underline{u} and \underline{v} are:	A. Orthogonal B. Collinear C. Perpendicular D. None of these
15	The magnitude of vector $\underline{a} = \mathbf{i} - 3\mathbf{j} + 5\mathbf{k}$ is:	A. 3 B. $\sqrt{35}$ C. $\sqrt{17}$ D. $\sqrt{35}$

16	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
17	If $\underline{u} = 2\mathbf{j} + p\mathbf{j} + 5\mathbf{k}$ and $\underline{v} = 3\mathbf{i} + \mathbf{j} + p\mathbf{k}$ are perpendicular, then $p =$	A. 1 B. 2 C. -1 D. -3
18	If G is the centroid of the triangle, then $GA + GB + GC =$	A. 0 B. 1 C. -1 D. 3
19	Vector $\underline{i} =$	A. [1,0] B. [0,1,0] C. [0,0,1] D. None of these
20	If m and n be two scalars, then $(m+n) \mathbf{g} =$	A. 0 B. $m+n$ C. $m_a + n_a$ D. $ma - m_a$