

ECAT Mathematics Chapter 23 Conic Section

Sr	Questions	Answers Choice
1	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
2	Vector \underline{j} =	A. [1,0] B. [0,1,0] C. [0,0,1] D. None of these
3	The modulus of $12-5i$ is:	A. 7 B. 13 C. $\sqrt{7}$ D. 119
4	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
5	If $ a = b = a + b = 1$, then $ a + b = 5$, then $ a - b =$	A. 4 B. 6 C. 5 D. 3
6	If $\underline{u} = [3, -4]$, then modulus of \underline{u} is:	A. 5 B. $5i$ C. -5 D. $\sqrt{5}$
7	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
8	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
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 a vector $\underline{i} + \underline{j} + \underline{k}$ is:	A. $\sqrt{3}$ B. 1 C. $\sqrt{2}$ D. ∞
11	If $\underline{u} = 2a\mathbf{i} + \mathbf{j} - \mathbf{k}$ and $\underline{v} = \mathbf{j} + a\mathbf{i} + 4\mathbf{k}$ are perpendicular then $a =$	A. 4 B. $1/2$ C. 3 D. $4/3$
12	If $\underline{a} = 5\mathbf{i} + 2\mathbf{j}$, then $ \underline{a} =$	A. $\sqrt{13}$ B. $\sqrt{7}$ C. $1/\sqrt{13}$ D. $\sqrt{29}$
13	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
14	The magnitude of vector $2\mathbf{i} - 7\mathbf{j}$ is	A. $\sqrt{23}$ B. $\sqrt{43}$ C. 3 D. $\sqrt{53}$
15	The vector $\underline{i} = [1, 0]$ is called unit vector along:	A. x-axis B. y - axis C. z - axis D. None of these

D. Both a and y-axis

16 a _____ quantity is one that possesses both magnitude and direction.

- A. Scalar
- B. Vector
- C. Segment
- D. None of these

17 The positive real number which is the measure of the length of a vector is called the

- A. Unit vector
- B. Modulus
- C. Inverse
- D. None of these

18 The angle between the vectors $\underline{u} = 2\hat{i} - \hat{j} + \hat{k}$ and $\underline{v} = -\hat{i} + \hat{j}$ is:

- A. $3\pi/2$
- B. $2\pi/3$
- C. $5\pi/6$
- D. $\pi/3$

19 If $|a| = |b| = |a+b| = 1$, then $|a-b|$ is equal to:

- A. 1
- B. $\sqrt{3}$
- C. $\sqrt{2}$
- D. 7

20 If $a = 5\hat{j} + 2\hat{j}$, $b = 2\hat{i} - 3\hat{j}$, then $|a+2b| =$

- A. $\sqrt{21}$
- B. $\sqrt{97}$
- C. $\sqrt{39}$
- D. None of these