

ECAT (Pre-Eng) Mathematics MCQ's Test For Chapter 23

Sr	Questions	Answers Choice
1	Vector \underline{i} =	A. [1,0] B. [0,1,0] C. [0,0,1] D. None of these
2	The modulus of a vector \underline{i} + \underline{j} + k is:	A. $\sqrt{3}$ B. 1 C. $\sqrt{2}$ D. ∞
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	a _____ quantity is one that possesses both magnitude and direction.	A. Scalar B. Vector C. Segment D. None of these
5	\underline{O} (0,0) is called:	A. Position vector B. Free vector C. Unite vector D. Null vector
6	If $a = 2i + 2j$, $b = 3i - j$ and $c = 4i + 5j$, the $3b - a - 2c =$	A. $-i - 15j$ B. $i - 15j$ C. $i - 3j$ D. None of these
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 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
9	Vector additon is:	A. Commutative B. Associative C. Commutative and Associative D. None of these
10	If $a = 5j + 2j$, $b = 2i - 3j$, then $ a+2b =$	A. $\sqrt{21}$ B. $\sqrt{97}$ C. $\sqrt{39}$ D. None of these
11	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
12	If $c = 2i+j+k$ and $d = -1 + 4j + 2k$, then $ c-d =$	A. $\sqrt{7}$ B. $\sqrt{41}$ C. $\sqrt{19}$ D. $\sqrt{2+7}$
13	The modulus of $12-5i$ is:	A. 7 B. 13 C. $\sqrt{7}$ D. 119
14	The vector $\underline{i} = [1,0]$ is called unit vector along:	A. x-axis B. y - axis C. z - axis D. Both a and y-axis
15	The magnitude of vector $a = 2i-7j$ is	A. $\sqrt{23}$ B. $\sqrt{43}$ C. 3 D. $\sqrt{53}$

16	The vector $k = [0,0,1]$ is called unit vector along:	A. x-axis B. y-axis C. z-axis D. None of these
17	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
18	If G is the centroid of the triangle, then $GA + GB + GC =$	A. 0 B. 1 C. -1 D. 3
19	If $a, b = 0$ then	A. $a \perp b$ B. $a \parallel b$ C. $a = b$ D. None
20	If $\underline{u} = 2\hat{i} + p\hat{j} + 5\hat{k}$ and $\underline{v} = 3\hat{i} + \hat{j} + p\hat{k}$ are perpendicular , then $p =$	A. 1 B. 2 C. -1 D. -3