

## ECAT Mathematics Chapter 24 Vectors Online Test

Sr	Questions	Answers Choice
1	Question Image	
2	Which of the following is a vector.	A. distance B. temperature C. energy D. acceleration
3	Which of the following is a vector.	A. energy B. force C. work D. power
4	Which of the following is a scalar.	A. force B. frequency C. weight D. acceleration
5	Which of the following is a vector.	A. work B. time C. density D. electric field
6	Which of the following is a vector	A. length B. momentum C. volume D. speed
7	Which of the following is a scalar.	A. electric field B. magnetic field C. weight D. mass
8	Which of the following us a scalar	A. displacement B. velocity C. acceleration D. density
9	Which of the following is a scalar	A. weight B. force C. speed D. momentum
10	The physical quantity which possesses both magnitude and direction is called a	A. scalar B. vector C. constant D. none of these
11	The physical quantity which can be specified by a number alongwith unit is called a	A. scalar B. vector C. constant D. none of these
12	If a,b,c are three non-coplanar vector then $[a + b, b + c, c + a] =$ _____	A. $[a, b, c]$ B. $2[a, b, c]$ C. $[abc] - 2$ D. $2[abc]^2$
13	If $a + b + c = 0$ then which of the following is true	A. $a = b = c = 0$ B. $a, b = b, c = c, a = 0$ C. $a \times b = b \times c = c \times a$ D. None
14	If $ a \times b ^2 + (a, b)^2 =$ _____	A. $ a ^2 +  b ^2$ B. $ a ^2 -  b ^2$ C. $ a ^2  b ^2$ D. None
15	Three points whose position vector a,b,c are collinear	A. $a \times b + b \times c + c \times a = 0$ B. $a, b + b, c + c, a = 0$ C. $a,  a \times c  = 0$ D. $a + b + c = 0$
16	If $a^2 = b^2$ then	A. $a = b$ B. $a + b = 1$ C. $ a + b  = 0$

		D. None
17	The zero vector is regarded to be parallel to	A. Every vector B. In some cases C. Both a,b D. None
18	Projection of vector u along v is	A. $ v  \cos\theta$ B. $ u  \cos\theta$ C. $ v  \sin\theta$ D. $ u  \sin\theta$
19	The null vector is regarded to be perpendicular to	A. Every vector B. In some cases C. Both a b D. None
20	For two vector a and b, $a+b =$ _____	A. a b B. b+a C. b-a D. None
21	If $ ai + (a+1)j + 2k  = 3$ then value of a is	A. 1,2 B. -1,-2 C. 1,-2 D. -1,2
22	$[i,j,k]$	A. 0 B. 2 C. 1 D. -2
23	If a,b,c are sides of a triangle taken in order then $a \times b =$	A. $b \times c$ B. $b \times a$ C. $c \times a$ D. Both a & b
24	The number z so that the triangle with vertices A(1,-1,0), B(-2,2,1) and C(0,2,z) is a right triangle with right angle at vertex C	A. 1,2 B. -1,-2 C. 2,-1 D. -2,1
25	If $\theta$ be angle between u,v and u,v determine the sides of a triangle then the third side opposite to angle $\theta$ has length	A. $ u+v $ B. $ u + v $ C. $ u-v $ D. $ u - v $
26	If a,b,c are unit vectors then $ a + b ^2 +  a - b ^2$	A. 4 B. 8ab C. 9cos D. 4(a,b)
27	If a force $F = 2i + j + 3k$ acts at point (1,-2,2) of a body then the moment of F about a pint lying on the line of action of the force is	A. 5 B. Equal to the moment of the force about origin C. 0 D. Cannot be found
28	u,v,w and $u \times (v \cdot w)$ are	A. Equal B. Parallel C. Additive immense of each other D. Meaningless
29	If $uv = \text{Proj}_v u$ then	A. U and v are parallel B. u is a unit vector C. U is a unit vector D. Both b and c
30	If $\text{Proj}_v u = \text{Proj}_v v$ , then	A. U and v are parallel B. $ u = v $ C. U and v are perpendicular D. One of u or v