Mathematics ECAT Pre Engineering Chapter 24 Vectors Online Test

Sr	Questions	Answers Choice
1	Which of the following is a scalar.	A. electric field B. magnetic field C. weight D. mass
2	Question Image	A. [0, 0, 0] B. [1, 0, 0] C. [0, 1, 0] D. [0, 0, 1]
3	Question Image	
4	Question Image	
5	Question Image	
6	The zero vector is	A. [0, 0, 0] B. [1, 1, 1] C. [0, 1, 0] D. [0, 0, 1]
7	Question Image	
8	If θ be angle between u,v and u,v determine the sides of a triangle then the third side opposite to angle θ has length	A. |u+v| B. |u|+|v| C. |u-v| D. |u|-|v|
9	If uv= Projuv then	A. Uandvare parallel B. vis a unit vector C. Uis a unit vector D. Both b and c
10	Question Image	A. 0 B. 90° C. 180° D. 360°
11	Unit vector in the positive direction of x-axis is	
12	For two vector a and b, a+b = _____	A. a b B. b+a C. b-a D. None
13	Question Image	D. none of these
14	[i,j,k]	A. 0 B. 2 C. 1 D. -2
15	Question Image	
16	If the vector 2i + 4j - 7k and 2i + 6j + xk are perpendicular then x = ?	A. 0 B. 2 C. 4 D. 7
17	Question Image	A. [0, 0, 0] B. [1, 0, 0] C. [0, 1, 0] D. [0, 0, 1]
18	Question Image	
19	If the angle between two vectors with magnitude 6 and 2 is 60° when their scalar product is	A. 12 B. 6 C. 3 D. 0
20	Question Image	D. none of these

21	Question Image	
22	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
23	If Projvu = Projuv, then	A. Uand vare parallel B. |u|=|v| C. Uandvre perpendicular D. One ofuorv
24	Question Image	A. 0 B. 1
25	Question Image	D. none of these
26	Question Image	A. [0, 0, 0] B. [1, 0, 0] C. [0, 1, 0] D. [0, 0, 1]
27	Question Image	C. 0 D. 1
28	Question Image	A. Free vector B. Null vector C. Unit vector D. None of these
29	If |a x b|2 + (a,b)2 = _____	A. |a|2 + |b|2 B. |a|2- |b|2 C. |a|2|b|2 D. None
30	Question Image	A. A,. B, C are coincident B. A, B, C are collinear C. Both A and B D. None of these
31	Question Image	A. $l^2 + m^2 + n^2 = 0$ B. $l^2 - m^2 + n^2 = 1$ C. $l^2 + m^2 + n^2 = 1$ D. $l^2 + m^2 - n^2 = 0$
32	Question Image	A. direction ratios B. direction cosines C. direction angles D. none of these
33	u,v,wand u x (v.w) are	A. Equal B. Parallel C. Additive immense of each other D. Meaningless
34	Which of the following is not a unit vector	A. [1, 1, 1] B. [0, 1, 0] C. [0, 0, 1] D. [1, 0, 0]
35	Question Image	
36	The position vector of the point P(a, b, c) is	
37	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
38	Question Image	A. perpendicular vectors B. concurrent vectors C. parallel vectors D. none of these
39	Question Image	D. none of these
40	Which of the following is a scalar	A. weight B. force C. speed D. momentum
41	Question Image	D. none of these

42	Question Image	
43	3j . k x i	A. 0 B. 1 C. 3 D. 9
44	Which of the following represents a vector	D. (x, y)
45	Question Image	
46	Projection of vector u along v is	A. |v| cosθ B. |u| cosθ C. |v| sinθ D. |u| sinθ
47	Question Image	D. none of these
48	Question Image	D. none of these
49	Question Image	
50	Question Image	A. parallel vectors B. perpendicular vectors C. concurrent vectors D. collinear vectors
51	Question Image	
52	Question Image	D. none of these
53	The zero vector is regarded to be parallel to	A. Every vector B. Is some cases C. Both a,b D. None
54	Question Image	A. A B. 0 C. Unit vector D. None
55	Question Image	
56	Question Image	
57	The position vector of any point in space is	
58	Question Image	
59	If a +b +c =0 then which of the following is true	A. a =b =c =0 B. a,b =b,c =c,a C. a xb=b xc =c xa D. None
60	Question Image	
61	Question Image	
62	Question Image	
63	Question Image	
64	If a,b,c are unit vectors then |a + b|2 +|a - b|2	A. 4 B. 8ab C. 9cos D. 4(a,b)
65	Question Image	A. 12 B. 6 C. 8 D. none of these
66	Question Image	D. none of these
67	Question Image	
68	Question Image	
69	Question Image	C. 1 D. 0
70	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

#	Question	Options
71	Question Image	A. $a_1 + a_2$ B. $a^2{}_1 + a^2{}_2$
72	Question Image	A. 1 B. 0
73	Question Image	
74	Question Image	
75	Question Image	C. 0 D. 1
76	Question Image	D. none of these
77	The unit vector along x-axis is	D. none of these
78	Which of the following is a vector.	A. distance B. temperature C. energy D. acceleration
79	Which of the following us a scalar	A. displacement B. velocity C. acceleration D. density
80	If C is the mid point of AB and P is any point outside AB, then	
81	The ortho center of triangle whose vertices are (0,0)(3,0)(0,4) is	A. (0,0) B. (1,1) C. (2,2) D. (3,3)
82	Question Image	
83	Question Image	D. none of these
84	If 2 and 2 are x and y components of vector then its angle with x-axis is	A. 30° B. 45° C. 60° D. 90°
85	Which of the vectors have opposite direction?	
86	A vector with magnitude one is called	A. constant vector B. unit vector C. zero vector D. null vector
87	Question Image	D. none of these
88	The angle between the vectors $3i + j - k$ and $2i - j + k$ is	
89	The area of the rhombus whose vertices are A(0,0),B(2,1),C(3,3),D(1,2) is	A. 36 square units B. 3 square units C. 6 square units D. 18 square units
90	If $a^2 = b^2$ then	A. a = b B. a+b= 1 C. |a+b| =0 D. None
91	If $\|\alpha i + (\alpha+1)j +2k\| =3$ then value of α is	A. 1,2 B. -1,-2 C. 1,-2 D. -1,2
92	The unit vector along z-axis is	D. none of these
93	Three points whose position vector a,b,c are collinear	A. a×b +b × c+ c × a = 0 B. a,b +b,c +c,a =0 C. a,|a xc| =0 D. a+b+c =0
		A. b x c B.

94	If a,b c are sides of a triangle taken in order then a x b =	B. b x a C. cxa D. Both a & b
95	The unit vector along y-axis is	D. none of these
96	The position vector of a point (x, y) in xy plane is	D. none of these
97	Question Image	
98	Question Image	
99	The magnitude of a vector can never be	A. Zero B. Negative C. Positive D. None of these
100	Which of the following is a vector.	A. energy B. force C. work D. power
101	The physical quantity which possesses both magnitude and direction is called a	A. scalar B. vector C. constant D. none of these
102	Which of the following is a scalar.	A. force B. frequency C. weight D. acceleration
103	Which of the following does not represent absolute value of a vector	A. magnitude B. length C. norm D. number
104	The null vector is regarded to be perpendicular to	A. Every vector B. In some cases C. Both a b D. None
105	Question Image	A. perpendicular vectors B. parallel vectors C. concurrent vectors D. none of these
106	Question Image	A. 0 B. 1 C. -1 D. None
107	Question Image	A. 0 B. 1
108	Question Image	A. 25 B. 16 C. 5 D. 0
109	Question Image	A. direction ratios B. direction cosines C. direction angles D. none of these
110	Which of the following is a vector	A. length B. momentum C. volume D. speed
111	Which of the following is a vector.	A. work B. time C. density D. electric field
112	If the angle between two vectors with magnitude 2 and 15 is 30°then their scalar product is	B. 15 C. 30
113	Question Image	
114	The direction cosines of y-axis are	A. 1, 0, 0 B. 0, 1, 0 C. 0, 0, 1 D. 1, 1, 1
115	Question Image	
		A. scalar

116	The physical quantity which can be specified by a number alongwith unit is called a	B. vector C. constant D. none of these
117	A vector of magnitude zero is called	A. Position vector B. Null vector C. Free vector D. None of these
118	Question Image	D. none of these
119	Question Image	
120	Question Image	D. none of these
121	Question Image	