NTS Educators ESE (Science) Jobs Test

Sr	Questions	Answers Choice
1	If the vector 2i+4j-2k and 2i +6j+xk are perpendicular then x-7	A. 4 B. 8 C. 14 D. 7
2	If the angle between two vectors with magnitude 8 and 2 is 60° then their scalar product is	A. 12 B. 8 C. 16 D. 1
3	The direction cosines of y-axis are	A. 1,0,0 B. 0,1,0 C. 0,0,1 D. 1,1,1
4	If i,m,n are the direction cosines of a vector $\overline{OP}$ then	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. $l^2 + m^2 - n^2 = 0$
5	The magnitude of a vector can never be	A. Zero B. Negative C. Positive D. Absolute
6	Unit vector in the positive direction of x-axis is	A. $\hat{i}$ B. $\hat{j}$ C. $\hat{k}$ D. All
7	The two different parts of the hyperbola are called is	A. Vertices B. Directrices C. Nappes D. Branches
8	The line through the center and perpendicular to the transverse axis is called the	A. Major axis B. Minor axis C. Focal axis D. Conjugate axis
9	The vertices of the ellipse $x^2 + 4y^2 = 16$ are	A. (±,4,0) B. (0,±,4) C. (± 2,0) D. (0,± 2)
10	The end points of the major axis of the ellipse are called its	A. foci B. Vertices C. Co-vertices D. eccentricity
11	The axis of the parabola $y^2 = 4ax$ is	A. x =0 B. Y =0 C. X = y D. X = -y
12	The conic is a parabola if	A. e <1 B. e > 1 C. e = 1 D. e = 0
13	The perpendicular bisector of any chord of a circle	A. Passes through the center of the circle B. Does not pass through the center of the circle C. May or may not pass through the center of the circle D. None of these

14	The equation of the normal to the circle $x^2 + 2^2 = 25$ at (4,3) is	A. 3x -4y =0 B. 3x -4y= 5 C. 4x + 3y=5 D. 4x - 3y =25
15	The circle $(x -2)^2 + (y + 3)^2 = 4$ is not concentric with the circle	A. $(x -2)^2 + (y + 3)^2 = 9$ B. $(x +2)^2 + (y - 3)^2 = 4$ C. $(x -2)^2 + (y + 3)^2 = 8$ D. $(x -2)^2 + (y + 3)^2 = 5$
16	The radius of the circle $(x- 1)^2 + (y + 3)^2 = 64$ is	A. 8 B. $2\sqrt{2}$ C. 4 D. 64
17	The equation of the circle with center origin and radius $2\sqrt{2}$ is	A. $x^2 + y^2 = 2\sqrt{2}$ B. $x^2 + y^2 = 8$ C. $x^2 - y^2 = 2\sqrt{2}$ D. $x^2 - y^2 = 8$
18	If a cone is cut by a plane perpendicular to the axis of the cone then the section is a	A. Parabola B. Circle C. Hyperbola D. Ellipse
19	8 > t then	A. $(s -t)^2 > (t -8)^2$ B. $(s -t)^2 < (t -8)^2$ C. $(s -t)^2 = (t -8)^2$ D. None
20	Ab > 0 and a > 0 then	A. a > b B. a < b C. a = b D. None
21	r + 3 > 5 then which is true	A. r + 2 > 4 B. r + 2 < 4 C. r + 2 + 4 D. None
22	x is a member of the set {-1,0,3,5} y is a member of the set {-2,1,2,4} which is possible?	A. x- y =-6 B. x -y < -6 C. x -y > 6 D. None
23	The total cost of 2 apples and 3 oranges is \$1.70, which of the following is true	A. The cost of one apple B. The cost of one orange C. Both have equal cost per item D. Cost of each single item can not be determined
24	If p and r are integers P = 0, and p ≠ -r, which of the following must be true?	A. p < r B. p > r C. p + r < 0 D. p - r < -0
25	If -1 < x < 0, which of the following statement must be true?	A. $x < x^2 < x^2$ B. $x < x^3 < x^2$ C. $x^2 < x^3 < x$ D. $x^2 < x < x^3$
26	For which of the following ordered pairs (s,t) is s + t> and s- t < -3?	A. (3,2) B. (2,3) C. (1,8) D. (0,3)
27	Which is in the solution set of 4x - 3y <2	A. (3,0) B. (4,1) C. (1,3) D. None
		A. Boundary B. Inequality

28	A point of a solution region where two of its boundary lines intersect is called	B. Inequality C. Half plane D. Vertex
29	Which is not a half plane	A. ax + by < c B. ax + by > c C. Both A and B D. None
30	If 4 - x > 5, then	A. x > 1 B. x > -1 C. x < 1 D. x < -1