Mathematics ECAT Pre Engineering Online Test

Sr	Questions	Answers Choice
1	In following question, a number series is given with one term missing. choose the correct alternative that will same pattern and fill in the blank spaces.1 , 4, 9, 16, 25, x	A. 35 B. 36 C. 48 D. 49
2	Question Image	A. 0 B. -1-w²
3	The solution of differential equation:	A. dy/dx+y/x = x²is : B. 4xy = x⁴+ c C. 4x = x⁴= c D. 4 y = x⁴+ c E. 4x=4x³ + c
4	An equation in which at least one term contains dy/dx, d^2 y /dx^2etc, is called.	A. Differential equation B. Initial condition C. General solution D. Singular equation
5	The general solution of the differential equation x dy / dx = 1 + y is:	A. 2 B. 1 C. 3 D. None
6	The area enclosed between the graph y = x^2 -4x and the x- axis is:	A. 20/3 B. 41/3 C. 32/3 D. 25/3
7	The area under the curve y = 1/x^2 between x = 1 and x =4 is:	A. -25 B. 0.75 C. -0.35 D. -10
8	The area between the x-axis the curve y =4x-x2 is :	A. 32/2 B. 15 C. 18 D. 21
9	The area between the x-axis and the curve y = x^2 + 1 from x = 1 to 2 is:	A. 15/6 B. 15/4 C. 10/4 D. 10/3
10	∫x/Sin^2 x dx is equal to:	A. x cot x + ln|sin x| B. -x cot x - ln|sin x| C. x cot x - ln|sin x| D. x. tan x- ln|sec x|
11	∫x sin xdx is equal to:	A. sin x/x + cos x B. sin x - cos x/x C. x cos x + sin x D. - x cos x + sin x
12	∫ x cos dx is equal to :	A. x cos x + sin x B. cos x + x sin x C. x cos x + x sin x D. x sin x + cos x
13	∫sin(ax+b) dx is equal to:	A. 1/2a cos (ax + b) B. -1/a cos (ax +b) C. 1/a cos (ax +b) D. 1/a ln (ax + b)
14	∫Sec^2 (ax + b) dx is equal to:	A. tan² (ax + b) B. 1/a tan² (ax + b) C. 1/atan (ax +b) D. tan (ax + b)
15	The integral of 3x^5dx is:	A. 15 x⁴ B. x⁶/2 C. 1/6x⁵ D. x⁵/ln3

16	$\int f(x)$ is known as:	A. Definite integral B. Indefinite integral C. Fixed integral D. Multiple integral
17	An integral of 1/x dx is:	A. 1/x² B. 1/-x² C. 1/lnx D. lnx
18	The graph of y> 0 is the upper - half of:	A. y-axis B. x-axis C. 1st and 4th quandrant D. 2nd and 3rd quadrant
19	The corner point of the boundary lines, x- 2x x+2y=10 is:	A. (8,1) B. (1,8) C. (6,10) D. (3,5)
20	The corner point of the boundary lines, x-2y 2x + y = 2 is:	A. (2,6) B. (6,2) C. (-2,2) D. (2,-2)
21	A point of a solution regions where two of its boundary lines intersect, is called:	A. Vertex of the solution B. Feasible point C. Point of inequality D. Null point of the solution region
22	For graphing a linear inequality, solid line is drawn if the inequality involves the symbols:	A. > or < B. <u>></u> or <u><</u> C. = or≠ D. = or >
23	Which of the following ordered pair is a solution of the inequality x+2y<6?	A. (2,3) B. (2,2) C. (6,0) D. (1,1)
24	The liner equation ax + by = c is called _____ of the inequality ax +by > c.	A. Associated equation B. Non-associated equation C. disjoint equation D. Feasible equation
25	A _____ divides the plane into left and right half planes.	A. Vertical line B. Horizontal line C. Non vertical line D. Inequality
26	The set of ordered pairs (x,y) such that ax+ by < c, and (x,y) such that ax + by>0, are called	A. Half planes B. Boundary C. Linear Inequalities D. Feasible regions
27	The graph of the linear equation of the form ax =by = c is a line which divided the plane into:	A. Two similar regions B. Two disjoint regions C. Four equal parts D. One region
28	Multiplying each side of an inequality by (-1) will:	A. Not effect B. Change the sign C. Become zero D. Not defined
29	Order (or sense) of an inequality is changed by multiplying or dividing its each side by a:	A. Zero B. one C. negative constant D. Non negative constant
30	$f(x) = 3x/x^2 + 1$ is:	A. an even function B. an odd function C. an even and implicit function D. neither even nor a odd