ECAT Mathematics Chapter 17 Functions and Limits Online Test

Sr	Questions	Answers Choice
1	The domain of the function x/x^2 -4 is given by	A. R B. R + 2 C. [R - (<u>+</u>2) D. R-4
2	If $f(x) = x^3 - 2x^2 + 4x - 1$ then f(2) is	A. 7 B. -16 C. 16 D. -9
3	Question Image	A. 0 B. 1 C. 1/2
4	Question Image	
5	Question Image	A. One-one but not onto B. One-one and onto C. Onto but not one-one D. Neither one-one nor onto
6	Question Image	A. 2 B. 4 C. 8 D. 12
7	An even function is symmetric about the line	A. y = x B. x = 0 C. y = -x D. y = 0
8	Question Image	
9	sin h x = _____	
10	f(x) = 1 is	A. identity function B. constant function C. linear function D. quadratic function
11	Question Image	A. R/[0,4] B. R/(0,4) C. (0,4) D. [0,4]
12	If $f(x) = -x^2$ then f(-2) is	A. -2 B. 2 C. -4 D. 4
13	Graph of the question $x^2 + y^2 = 4$ is	A. A circle B. An ellipse C. A parabola D. A square
14	Question Image	
15	In common logarithm the base is	A. 1 B. 0 C. 10 D. e
16	If $f(x) = x^2 - x$ then f(2) is	A. 4 B. 6 C. 2 D. 0
17	Question Image	A. -1 B. 1 C. 2 D. -2
		A. <span style="color: rgb(34, 34, 34); font-family: "Times New

18	Question Image	Roman"; font-size: 24px; text-align: center; background-color: rgb(255, 255, 224);">π B. 2π C. π/2 D. None of these
19	If a tangent line touches the function y = f (x) in more than one point then y = f (x) is	A. Periodic B. Surjective C. Bijective D. Injective
20	f(x) = sin x is:	A. an odd function B. an even function C. an implicit function D. an exponential function
21	What is range of the function g (x) =|x-3|?	A. [0 ,∞) B. (0 ,∞) C. (-∞ ,3] D. [0,∞)
22	f(x) = ax + b will be an identity function if	A. a = 1 , b = 1 B. a = 1 , b = 0
23	Question Image	A. 0 B. 1 C. -1 D. none of these
24	f(x) = log x + 3 is a	A. trigonometric function B. algebraic function C. exponential function D. logarithmic function
25	The range of inequality x + 2 > 4 is	A. (-1, 2) B. (-2, 2) C. (1,∞) D. None
26	The domain of y = cos-1 x is	A. -∞ < x < ∞ B. -1≤ x≤ 1 C. x≤ -1 or x ≥ 1 D. None of these
27	If f(x) = cos x then f(0) is	A. 0 B. 1 C. 1/2
28	The period of the function f(x) = $\sin^4 x + \cos^4 x$ is	A. π B. π/2 C. 2π D. None of these
29	If f(x) = $x^3 - 2x^2 + 4x - 1$ then f(0) is	A. 0 B. 1 C. -1 D. none of these
30	For f(x) = x^2 + px +1, if f(3) = 3 then P =	A. 3/7 B. -2/5 C. -7/5 D. -7/3
31	Question Image	A. [0,1[B. [0, 1] C.]0, 1[D. None of these
32	Question Image	

33	Question Image	A. 2 B. -1 C. 8 D. not defined
34	If f(x) = x^2then f(2) is	A. -2 B. 2 C. 4 D. -4
35	Question Image	A. 0 B. 1 D. -1
36	Question Image	A. sin h x B. cos h x C. tan h x D. cot h x
37	Question Image	A. quadratic function B. constant function C. trigonometric function D. linear function
38	A function from A to B is denoted by	A. f: A⟶ B B. f: B → A C. f: → A :B D. f → A⟶ B
39	Question Image	
40	Question Image	A. f(x) = x² B. f(x²) = x C. f(x) = x D. none of these
41	xy= 2 is:	A. a constant function B. an identity function C. an improper function D. implicit function
42	Question Image	A. Does not exist because f is unbounded B. Is not attained even though f is bounded C. Is equal to 1 D. Is equal to -1
43	The range of y=x2 + 1 is the set of non-negative real numbers except	A. 0≤ y < 1 B. 0 < y < 1 C. 0≤ y≤ 1 D. 0 < y≤1
44	Sin h^{-1}x = _____	
45	Question Image	
46	The domain the function : f(x) = x^2 is given by	A. R B. Set of all non-negative Real numbers C. R⁻¹ D. None of these
47	If f(α) = b2 and g (c) =d where c=b2 then (gof)(a) is	A. α B. c C. b D. d
48	If f(x) = x^2then f(0) is	A. 0 B. 1 C. 2 D. none of these
49	Question Image	
50	f(x) = C is	A. identity function B. constant function C. linear function D. quadratic function
51	The trigonometric function are continuous whenever	A. They are defined B. their limit exist C. Their period is given D. All are incorrect
52	If f(x) = -x^3then f(-2) is	A. -2 B. -4 C. 8

		C. -8 D. 8
53	sec h x = _____	
54	If f(x) = x^2- x then f(-2) is	A. 4 B. 6 C. 2 D. 0
55	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
56	Question Image	
57	f(x) = sin x + $\cos^2 x$ is	A. trigonometric function B. algebraic function C. exponential function D. logarithmic function
58	The function f(x) =|x| is a/an_____function	A. Even B. Odd C. Both even as well as odd D. Neither even nor odd
59	Question Image	A. range of f B. domain of f C. both (a) and (b) D. none of these
60	if f(x) = x^3 -3x^2 +5x -1, then f(-√2)=	A. 7+7√2 B. 3+3√2 C. -7-7√2 D. -3-3√2
61	Question Image	A. 2 D. 0
62	$\pi$is the period of the function	A. |sin x| + |sin x| B. sin⁴x + cos x C. sin (sin x) + sin (cos x) D. None of these
63	Question Image	A. 2 C. -2 D. none of these
64	Point (2,0) lies on trigonometric function f(x)=_____;	A. sinx B. cosx C. tanx D. secx
65	If y=f(x) is a function then x is called	A. dependent variable B. independent variable C. constant D. none of these
66	Question Image	
67	Inverse of the function y-10x is	A. y=logx B. y=lnx C. x=10y D. x=10y
68	Question Image	A. image B. pre-image C. constant D. none of these
69	_____ invented a symbolic way to write the statement "y is a function of x" as y= f(x)	A. Leibniz B. Newton C. Euler D. None of these
70	x = secθ,y = tanθ are the parametric equations of	A. Circle B. Hyperbola C. Ellipse D. parabola
71	Question Image	A. 0 B. 1 C. -1 D. none of these
72	Question Image	A. sin h x B. cos h x C. sec h x

		D. cosec h x
73	f(x) = $3x^4 - 2x^2 + 7$ is:	A. an even function B. an odd function C. an even and implicit function D. neither even nor a odd
74	f(x) = x is	A. trigonometric function B. exponential function C. quadratic function D. identify function
75	Question Image	A. 1 B. 0 C. -2 D. 3
76	A function of the form p(x)/Q(x) is called:	A. Rational function B. Logarithmic function C. Exponential function D. Hyperbolic function
77	Question Image	
78	If f(x) = $x^3 - 2x^2 + 4x - 1$, then f(-2) = ?	A. 0 B. -25 C. 5 D. 45
79	If f (x) is defined and continuous then f (x) is always	A. Rational function B. Trigonometric function C. Logarithmic function D. All are correct
80	If y=f(x) is a function then y is called	A. dependent variable B. independent variable C. constant D. none of these
81	f(x) = $2x^2 + 3x + 5$ is a	A. trigonometric function B. algebraic function C. exponential function D. logarithmic function
82	The domain of y =√(x^2-9) is	A. R B. (0 , +∞) C. (-∞ , -3) ∪ (3 , +∞) D. (0 ,∞)
83	For f(x) = x2, what is the value of f(a) +f (-a) in terms of a?	A. 3a2 B. 2a2 C. 2a D. -7a
84	Which is not included in the domain of $\cos^{-1}x$	A. 0 B. 1 C. -1 D. 2
85	If x is an image of y under the function f. This can be written as	A. y = f(x) B. f(x) = 0 C. x = f(y) D. f(y) =0
86	Question Image	A. 2 B. 1 C. 5 D. 0
87	A function f is said to be an even if f(-x) =	A. 0 B. 1 C. f(x) D. -f(x)
88	A function from X to Y is written as	B. f : X to Y D. f : Y to Y
89	Question Image	
90	Question Image	
91	Which of the following function form 1 to itself are bi-jective	A. F(x) = x + 3 B. F(x) = x⁵ C. F(x) = 3x + 2 D. F(x) = x²+ x
		A. y = f(x) B. x = f(y)

92	If y is an image of x under the function f, then we write	C. y = x D. none of these
93	The function discontinuous at x = 0 is (1) tan x (II) cot x (III) sec x (iv)cosec x)	A. I & III B. I & IV C. II & IV D. II & III
94	Question Image	A. 0 B. 1 C. 2 D. 1/2
95	If f (x) = 2x+1 then fof (x) = _____;	A. 4x+3 B. 2x +3 C. 4x +1 D. None of these
96	f(x) = 2^{x}+ 3 . 2^{2x}+ 5 is	A. trigonometric function B. algebraic function C. exponential function D. logarithmic function
97	If the function y=2x -3, what is the preimage of 11?	A. 11 B. 7 C. 5 D. 2
98	The range of function f(x)=-x2+2x-1 is	A. R B. (-∞,0] C. (-∞,1] D. [0,∞)
99	If f(x) = x + 1 then f(z^{2}-1) is	A. z² B. z²+ 2 C. z²- 2 D. none of these
100	A function from X to X is denoted as	B. f : X to Y D. f : Y to Y
101	Question Image	
102	Question Image	A. -2 B. -1 C. 1 D. 2
103	f (x) = | x | is a/an	A. Injective function B. Bijective function C. Surjective function D. Implicit function
104	The only function which is both even and odd is	A. f(x) =α B. f(x) = x C. f(x) =0 D. Both A & B
105	In natural logarithm the base is	A. 1 B. 0 C. 10 D. e
106	Question Image	
107	Question Image	
108	Question Image	
109	Express the perimeter P of square as a function of its area A?	A. P = 4√A B. P =√A C. P = 2A D. P =π√A
110	A rule or correspondence that assigns to each element x in X a unique element y in Y is called a function from	A. X to X B. X to Y C. Y to X D. none of these
111	If f(x) = x^{2}then f(0) is	A. 0 B. 1 C. 2 D. none of these
112	Domain of y = scs x is	A. All real numbers except π/2 + n*π B. R C. All negative integers

		D. None of these
113	tan h x = _____	
114	f(x) = ax + b will be a constant function if	A. a = 1 , b = 1 B. a = 1 , b = 0
115	If $f(x) = (-x)^2$then f(-2) is	A. 0 B. 2 C. -4 D. 4
116	Question Image	A. 0 B. -2 C. 1 D. 4
117	Question Image	A. (1,7/3) B. (1, 7/5) C. (1, 11/7) D. (1, 3/5)
118	Question Image	A. x = f(y) B. y = f(x) C. x = f(x) D. y = f(y)
119	A rule that assigns to each elements x in X a unique element y in Y is called a _____	A. domain B. range C. function D. none of these
120	if the value of the sphere, $v = 4/3\pi r^2$, then the which of the following statement is true?	A. r is the function of v B. v is the function ofπ C. π is independent variable D. None of these
121	Question Image	A. quadratic function B. constant function C. linear function D. exponential function
122	Question Image	A. 1/8 B. 1/2 C. 1/4 D. 1/6
123	Domain of cosh x is	A. R B. R -{0} C. $[1,\infty)$ D. $[0,\infty)$
124	The curve f(x,y) = 0 has a central symmetry if	A. f(-x,-y)=f(x,y) B. f(x,-y)=f(x,y) C. f(-x,y)=f(x,y) D. f(-x,-y)≠f(x,y)
125	A function in which the variable appears as exponent is called:	A. An identity function B. A logarithmic function C. an exponential function D. A rational function
126	If $f(x) = x^2$-x then f(0) is	A. 0 B. 1 C. 2 D. 3
127	The range of the function f : x→ y is defined by	A. {x| y = f (x) ∀x∈ X ∧y∈y} B. {(x,y) |y = f (x)∀x∈ X} C. {y|y = f (x) ∀x∈ X ∧y∈y} D. Y
128	Question Image	A. 2 B. 6
129	Question Image	
130	The set of points {(x,y)|y = f(x), ∀x∈} is called	A. Relation B. Graph of f C. Function D. All are correct
131	Question Image	A. 0 B. 1 C. 1/2
132	Question Image	A. sin h x B. cos h x C. tan h x

		C. tan h x D. cot h x
133	If f(x) = x^2then f(-2) is	A. -2 B. 2 C. 4 D. -4
134	Composition of functions is	A. Non-commutative (fg ≠ gf) B. non-associative [8(fh) ≠(8f)h] C. Commutative (fg = gf) D. f of-1≠ 1
135	Question Image	A. One-to-one and onto B. One-to-one but not on to C. Onto but not one-to-one D. Neither one-to-one nor onto
136	Question Image	A. 0 B. 1 C. 8 D. ∞
137	A function F(x) is called even if	A. F(x) = F (-x) B. F(x) = F(-x) C. F(x) = -F(x) D. 2F(x) = 0
138	Question Image	
139	If f(x)= x^3 then f(-2) is	A. -2 B. -4 C. -8 D. 8
140	The value of x which is unchanged by the mapping in the function defined by f ; x□ x^2 + 5x - 5 for x> 0 is	A. 1 B. 5 C. -5 D. -1
141	Question Image	
142	The area of circle of unit radius =	A. 0 B. 1 C. 4 D. π
143	Question Image	A. 3/4 B. r C. v D. None of these
144	Question Image	A. images B. pre-images C. constants D. none of these
145	Question Image	A. 0 B. 1 D. none of these
146	Question Image	
147	The function f : x→ y defined as f (x) =α∀x∈ X,α∈ y is called	A. Constant function B. Polynomial function C. Identity function D. Linear function
148	Question Image	A. 0 B. 1 D. -1
149	The largest possible domain of the function: y=√(x) is:	A. (0 ,∞) B. 12 C. (3 , 12) D. (3 ,∞)
150	Question Image	A. 0 B. 3 C. 9

		D. -3
151	The behavior of trigonometric function is called	A. Continuity B. Discontinuity C. Periodicity D. Smoothness
152	Every relation, which can be represented by a linear equation in two variables, represents a	A. Relation B. Cartesian product C. Function D. Graph
153	In the function f: A□B, the elements of a are called	A. Images B. Pre-images C. ranges D. Parameters
154	If the domain of the function f: x□ $2x^3$+ 1 is {-1,2,3}, the range of the function is	A. {3,2,5} B. {1,3,9} C. {-1,-2,-3} D. {3,9,19}
155	The periods of the function f(x) = x[x] is	A. 1 B. 2 C. Non periodic D. None of these
156	The period $\sin^2\theta$is	A. π² B. π C. 2π D. π/2
157	f(x) = $x^3$is:	A. an odd function B. an even function C. an implicit function D. a quadratic funtion
158	Question Image	A. 0 B. 1 C. 2
159	f(x) = x3-x/x2+1 is :	A. an even function B. an odd function C. an even and implicit function D. neither even nor a odd
160	cos h^2 x + sin h^2 x	A. an even function B. an odd function C. an even and implicit function D. neither even nor a odd
161	The domain of f(x) = log x is	A. [0,∞] B. (0,∞) C. [0,∞[D. [∞,∞]
162	Question Image	A. 0 B. -4 D. none of these
163	The domain and range of a trigonometric function can be allocate by their	A. graph B. Continuity C. Discontinuity

		C. Discontinuity D. Periods
164	If $f(x) = x^2 - x$ then f(1) is	A. 0 B. 1 C. 2 D. 3
165	If a variable y dependents on a variable x in such a way that each value of x determines exactly one value of y, then we say that	A. x is function of y B. y is a function of x C. y is independent variable D. x is real valued function
166	If f(x) = tan x then f(0) is	A. 0 B. 1 C. 1/2
167	$p(x) = 2x^4 - 3x^3 + 2x - 1$ is polynomial of degree	A. 1 B. 2 C. 3 D. 4
168	Which is an explicit function	A. y = x²+ 2x - 1 B. x²+ xy + y²= 2 C. x²+ y²= xy + 2 D. All are