MTH-101 Final Term Exams Preparation Virtual University

Sr	Questions	Answers Choice
1	$y=x^2/2$ Let find the average rate of change of y with respect to x over the interval [3,4]	A. 25/2 B. 7/2 C. 25/14 D. 7/14
2	if 2x-y=-3 they dy/dx=?	A. 2 B. -2 C. 0 D. -3
3	What is the sum of the following series? 1+2+3+----+n	A. n+1/2 B. (n+1)(n+2)/2 C. n(n+2)/2 D. n(n+1)/2
4	The pythagoras theorem describe the relationship between the sides of	A. right angle triangle B. isoceleous triangle C. equilateral traingle
5	The PYTHAGORAS theorem describe the relationship between the sides of	A. Right angle triangle B. Isoceleous Triangle C. Equilateral traingle
6	Which operation can not be applied on the function?	A. Subtraction B. Cross Product C. Addition D. Composition
7	The graph of the equation $y=x^2-4x+5$ will represent	A. Parabola B. Straight Line C. Ellipse
8	Polynomials are always _____ function	A. Continuous B. Discontinuous C. Not Sure
9	The tan(x) is discontinuous at the point where	A. Cos(x)=0 B. Sin(x)=0 C. Tan(x)=0
10	Let $y=(x^3+2x)^{37}$ Let Which of the following is correct?	A. dy/dx=(37)(x³+2x)³⁶ B. dy/dx=(111x²)(x³+2x)³⁶ C. dy/dx=(111x²+74)(x³+2x)³⁶ D.
11	$\log_b ac$=_____	A. log_ba + log_bc B. log_ba - log_bc C. log_ba/log_bc D. log_ba * log_bc
12	If a function has an extreme value (either a maximum or a minimum) on an open interval (a,b) then the extreme value occurs at ____ of f	A. First point B. Mid point C. Critical Point D. End Point
13	The mean value of theorem states that " Let function f can be differentiable on (a,b) and continuous on [a,b] then there is no exist at least one point c in (a,b) where _____	A. f'(c)=f(b)-f(a)/b-a B. f(c)=f(b)-f(a)/b-a C. f(c)=f(a)-f(b)/b-a
14	If there is some function F such that d/dx[F(x)]=f(x) then any of the function of the form F(x)+C is _____ of f(x)	A. Derivative B. Antiderivative C. Slope D. Maximum value
15	If there is some function F such that d/dx[F(x)]=f(x) then antiderivatives of f(x) are F(x)+C .What does C represent?	A. Polynomial B. Constant C. Dependent variable D. Independent variable
16	If f and g are continuous function on an interval [a,b] f(x)>=g(x) for a<=x<=b and ,then area is bounded by the lines parallel to :	A. X-axis B. Y axis C. Both x and y axis
		A. 1/n

17	What is the length of each sub interval ,if the interval [1,3] is divided into n sub interval of equal length?	B. 2/n C. 3/n D. 4/n
18	$\{1/2^n\}^n1$ represent the sequence	A. -1/2,-1/4,-1/8 B. 1/2,1/4,1/7=8 C. 0,1,1/2,1/4
19	For a sequence $\{a_n\}$ if the difference between successive terms $a_{n+1}-a_n<=0$ then the sequence is known as	A. increasing B. decreasing C. non decreasing D. non increasing
20	For a sequence $\{a_n\}$if the ration of successive terms $a_{n+1}/a_n>1$ then the sequence is known as	A. Increasing B. Decreasing C. Non Increasing D. Non decreasing
21	If the partial sum of series is finite then the series will be:	A. Convergent B. Glve no information C. Not Sure
22	_____ is the special case for the Taylor's theorem	A. Roll's Theorem B. Picard's Method C. Integration D. Maclaurin Theorem
23	Let f(x) is the function such that as x approaches a real number ,either from left or right hand side ,the function value increase or decrease unboundedly then lim f(x)	A. Exist B. Does not exist C. Not Sure
24	d(sec x)/dx=?	A. sec x tan x B. sec x tan y C. cosec x cot x
25	Consider the following function h(x) and a constant c then d/dx((c)){h(x)}=	A. 0 B. d/dx{h(x)} C. d/dx{h(cx)} D. cd/dx{h(x)}
26	Sigma notation which is represent which of the following greek letter?	A. χ B. η C. Σ D. ψ
27	At which points two curves $y=x^2$and y=x+6 intersect?	A. x=0 and x=2 B. x=0 and x=3 C. x=2 and x=3 D. x=-2 and x=3
28	For a graph to be symmetric about y axis mean ,for each point (x,y) on the graph the point ____ is also on the graph	A. (x,-y) B. (-x,y) C. (-x,-y)
29	The graph $x=y^2$is symmetric about ___ axis	A. X -axis B. Y-axis C. origin
30	If a quantity y depends on another quantity x in such a way that each value of x determines exactly one value of y,we say that y is _____ of x	A. relation B. Function C. Nota function D. Not a Relation
31	tan x is continuous everywhere except at points	A. +- kπ/2 (k=1,3,5....) B. +- kπ/2 (k=2,4,6....) C. Not Sure
32	Lim $_{x\to0}$sinx/x	A. 1 B. -1 C. 0 D. 2
33	2/3 is known as	A. even number B. irrational number C. natural number D. rational number
34	For a function f ,let $f'(x_n)=0$ for some n Does the newton method for work for approximating the solution of f(x)=0	A. yes B. no C. not sure
35	If $a_1>a_2>.....>a_n>....$ then a sequence $\{a_n\}$ is	A. increasing B. non decreasing C. decreasing D. non increasing

36	For a sequence $\{a_n\}$ if the ration of successive terms $a_{n+1}/a_n<1$ then the sequence is known as :	A. increasing B. decreasing C. Non increasing D. non decreasing
37	Which of the following option is true for the sequence $a_n=\{1/n\}_{n=1}$which of the following option is true for the sequence	A. Increasing B. Decreasing C. Non increasing D. Non Decreasing
38	If the partial sum of the series is finite then the series will be	A. Divergent B. Convergent C. Give no information
39	In alternating series test ,which one of the following condition must be satisfied	A. lim k→∞ a_k=1 B. a₁>a₂>a_{3.....>a}k C. a₁<a₂<a_{3.....<a}k
40	Which of the following is the spring constant k if a spring constant whose natural length is 2m exerts a force of 3N when started 1m beyond its natural legth?	A. 3 x B. 3 N/m C. 2 m
41	y=f(x) then the average rate of change of y with with respect to x over the interval $[x_o,x_1]$ is the _____ joining the points $(x_o,f(x_o))$ and $(x_1f(x_1))$ on the graph of f	A. Slope of the secant line B. Slope of the tangent line C. Secent line D. none of these
42	$(x^2-4)/(x-2)$ Natural domain is	A. (-∞,2)U (2,+∞) B. (-∞,2) C. (-∞,0) D. None of these
43	The equation $(x+4)^2+(y+1)^2=6$ represent a circle having center at____ and radius	A. (-4,1),undertoot 6 B. (-4,-11),undertoot 6 C. None of these
44	An object is displaced 1m by a force of 1N then the work done	A. 2 B. 1 C. 0
45	a function f is ___ on a closed interval [a,b] ,then f has both a maximum and minimum value on [a,b]	A. Continuous B. Discontinuous C. None of these
46	For a function f(x) to be continuous on interval (a,b) the function must be continuous	A. At all point in (a,b) B. Only at point a,b C. At mid point of a and b D. None of these
47	According to the power rule of differentiation,if $f(x)=x^n$where n is a real number then $d/dx[x^n]=$	A. xⁿ⁻¹ B. nxⁿ⁻¹ C. nxⁿ⁺¹
48	If a function g is differentiable at a point x and function f is differentiable at a point g(x),then the __ is differentiable a point x.	A. Composition (fog) B. Quotient f/g C. product f.g D. Sum (f+g)
49	If a slope m of a nonvertical line is m=1 then the angle of inclination of the line is	A. π /4 B. π /2 C. π /5
50	If a quantity y depends on another quantity x in such a way that each value of x determines exactly one value of y ,we say that y is ____ of x	A. relation B. function C. not a function D. not a relation
51	The lim x→a f(x)=___ where f(x)=k The k is constant	A. K+1 B. K+2 C. k
52	$\log_b 1/t$ =_____	A. log_bt B. 1-log_bt C. 1+log_bt D. -log_bt
		A. converges

53	If the geometric series $a+ar+ar^2+ar^3.....+ar^{k-1}$ which of the following is true for the given series	A. converges B. Diverges C. Give no information
54	If f is a twice differentiable function at stationary point $x_o$an $f'(x_o) >0$ then f has relative _____ At x_o	A. None of these B. Maxima C. Minima
55	If f is a twice differentiable function at stationary point $x_o$an $f'(x_o) <0$ then f has relative _____ At x_o	A. Minima B. Maxima C. None of these
56	lim x→0 sin2x/x____	A. 2 B. 4 C. 1 D. 8
57	lim $x\rightarrow 0^+$ln x/1/x=_____	A. 1 B. 0 C. none of these
58	d(tan x)/dx =___	A. sec x B. sec²x C. cosec²x D. cosec x
59	if xy=4 they dy/dx ?	A. -1/x² B. 4/x² C. -4/x²
60	Consider a function h(x) and a constant c then d/dx{(c){h(x)}}	A. 0 B. d/dx((h(x))) C. d/dx((h(cx))) D. cd/dx((h(x)))
61	Suppose that f and g are differentiable function of x then d/dx[f][g]=	A. [f'][g]-[f][g']/g² B. [f'][g'] C. [f'][g]+[f][g']
62	The power rule $d/dx[x^n]=nx^{n-1}$holds if n is	A. an integer B. a rational number C. an irrational number D. all of the above
63	Let a function be defined on an interval and let x_1 and $x_2$denotes two distinct points in that interval ,If $f(x_1)= f(x_2)$ for all points x_1 and$x_2$then which of the following statement is correct ?	A. f is decreasing function B. f is increasing function C. f is constant function
64	If f''(x)<0 on an open interval (a,b) then which of the following statement is correct	A. f is concave up on (a,b) B. f is concave down on (a,b) C. f is linear on a,b
65	If f is a continuous function such that $\lim_{x\rightarrow+\infty}=+\infty$ and$\lim_{x\rightarrow+\infty}=+\infty$ the f has on	A. maximum value but no minimum B. minimum value but not maximum C. both maximum and minimum value
66	If x>0 then d/dx[lnx]=_____	A. 1 B. x C. 1/x D. ln 1/x
67	How many critical points exist for a function f if f'(x)=(x-3)(x-2)	A. 0 B. 1 C. 3 D. 2
68	$\log_b ac$=_____	A. log_ba +log_bc B. log_ba - log_bc C. log_ba /log_bc D. log_ba *log_bc
69	$\log_b a^r$=____?	A. alog_br B. r log_ba C. log_ba /log_br
70	Which of the following are first two terms for the taylor series of $f(x)=e^{-x}$at x=0?	A. 1+(1)(x-0) B. 1+(-1)(x-0) C. 1+(-1)(x+0)
71	If 2x-y=-3 then dy/dx=?	A. 2 B. -2 C. 0
72	30^o	A. π/3 B. π/4 C. <span style="color: rgb(84, 84, 84); font-family: arial, sans-serif;

		C. <span style= color: rgb(84, 84, 84); font-family: arial, sans-serif; font-size: small;">π/6
73	Which of the following is true for the sequence {n}∞ n=0?	A. Non increasing B. non decreasing C. increasing D. decreasing
74	Suppose that we apply newton method to approximate the real solution of the equation $x^3-2x^2-1=0$ if we start at $x_1=2$,then which of the following is value of x_2?	A. 6 B. 2.25 C. 0 D. 2
75	What is the base of natural logaithem?	A. 2.71 B. 10 C. 5 D. Any real number
76	A function f is called antiderivative of a function on a given interval if _____ =f(x),for all x in that interval	A. F'(x) B. F(x) C. f(x) D. f''(x)
77	If $f(x)=e^{-x}$at x=0 be the taylor series ,then which of the following is also true?	A. Arithmetic Series B. Maclaurin Series C. Geometric Series D. Harmonic Series
78	Which operation could not be applied on the function?	A. Cross Product B. Sum C. Division
79	What is the length of each subinterval,if the interval [1,3]is divided into n sub interval of equal length?	A. 1/n B. 2/n C. 3/n
80	_____ is the special case of Taylor's Theorem	A. Roll's theorem B. Picard Method C. Integration
81	Tan(x) is continuous every where except at points	A. +- kπ/2 where k=(1,3,5.....) B. +- kπ/2 where k=(2,4,6.....) C. +- kπ/2 where k= (1,2,3,4,5,6.....)
82	$\lim_{x\to\infty}(-2x)=$	A. -2 B. 0 C. 2 D. Does not exist
83	Suppose that f and g are differentiable function of f x then d/dx(f)(g)=	A. [f'][g]-[f][g']/g² B. [f'][g'] C. [f'][g] + [f][g']
84	A line is called a tangent line to the circle if it meets the circle at precisely.....	A. one point B. two point C. infinite points
85	If $f(x)=3x^8+2x+1$ then f'x)	A. 3x⁷+2 B. 24x⁷+2 C. 3x⁷+23
86	π is a _____ number	A. rational B. irrational C. natural D. integer
87	The set {x:a<=x<=b} can be written in the form of interval ?	A. (a,b) B. (a.b) C. [a,b]
88	Suppose f and g are differentiable function of x then d/dx[f/g]	A. [g][f'] - [f][g']/g² B. [g'][f] - [f'][g]/g² C. [g'][f] - [f'][g]/f²
89	The graph $x=y^2$is symmetric about _____ axis?	A. X-axis B. Y-axis C. Origin
90	Chain rule is a rule for differentiating _____ of functions	A. Product B. Sum

	Chain rule is a rule for differentiating _____ of functions	C. Composition D. Difference
91	Lim $_{x\to a}$ f(x)=____ where f(x)=k?	A. k+2 B. K+1 C. k
92	If 2y-y=-3 then dy/dx ?	A. 2 B. -2 C. 0 D. -3
93	The graph of the equation $y=x^2-4x+5$ will represent	A. Parabola B. Single line C. Two straight line D. Ellipse
94	The equation of the line of the form $y-y_1=m(x-x_1)$ is known as	A. Point Slope form B. Two points form C. Intercept form D. Slop intersect form
95	d/dx[cosec x]	A. 1/1+cos²x B. -cos x/1-cos²x C. 1/1-cos²x
96	What is the base of natural logarithm ?	A. 2.71 B. 10 C. 5
97	Let $x_o$be the critical point of the function f,those critical point for which $f'(x_o)=0$ are called _____ of	A. Local points B. End points C. Stationary points
98	$\log_b a^r$=____?	A. a log_br B. rlog_ba C. log_ba/log_br
99	Average velocity of a body is V_{ave}	A. d₁-d_o/ t₁- t_o B. t₁- t_{o/f(}t₁₎- f(t_{o)} C. _{f(}t₁₎- f(t_{o)/}t₁- t_o D. None of these
100	Consider two function $f(x)=x^3$and g(x)=(x+9) then fog(x)=	A. (x+9)3 B. x+3 C. x+9
101	Center and radius of the circle is $(x+5)^2+(y-3)^2=16$ is	A. (-5,3),4 B. (5,-3),16 C. (5,-3),4 D. None of these
102	graph $x=y^2$is symmetric about	A. x axis B. y axis C. origin
103	Function f is differentiable function if it is differentiable on the interval	A. (-∞,∞) B. (a,∞) where a is any negative integer C. (0,∞) D. None of these
104	no of x and y are intercept for the equation y=1/x	A. Two x intercepts B. Two y intercepts C. No x and y intercept correct D. None of these
105	According to Power -Rule of differentiation ,if $f(x)=x^n$where n is a real number,then d/dx[x^n]	A. xⁿ⁻¹ B. nxⁿ⁻¹ C. (n-1)xⁿ⁻¹
106	If y=1/1-x the dy/dx=____?	A. -1 B. 1 C. 1/(1-x)²
107	if xy=4 then dy/dx =?	A. 0 B. -1/x² C. -4/x²
108	if $x^2+y^2=9$ then dy/dx=?	A. x/y B. -x/y C. -y/x
		A. dy/dx=37(x³2x)³⁶

109	Let $y=(x^3+2x)^{37}$ which of the following is correct?	B. dy/dx=111x²(x³2x)³⁶ C. dy/dx=(111x²+74)(x³2x)³⁶
110	$\log_b ac$_____?	A. log_ba + log_bc B. log_ba + log_bb C. None of these
111	$\log_b 1/c$=_____?	A. log_bc B. 1-log_bc C. -log_bc D. 1+log_bc
112	set{...-4,-3 ,-2,-1,0,1,2,3,4} is known as the set of	A. natural number B. Integer C. whole number
113	h(x)=1/(x-2)(x-4) domain of the function is	A. (-∞,2)U (2,4)U (4,+∞) B. (-∞,2)U (2,4)U (4,∞) C. All are incorrect
114	y=1/1-x dy/dx if then	A. 1 B. -1 C. 1/(1-x)²
115	Sigma notation is represent by	A. M B. N C. Σ