

MTH-101 Final Term Exams Preparation Virtual University

| Sr | Questions | Answers Choice |
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| 1 | π is a _____ number | A. rational B. irrational C. natural D. integer |
| 2 | 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 $f \cdot g$ D. Sum $(f+g)$ |
| 3 | $2/3$ is known as | A. even number B. irrational number C. natural number D. rational number |
| 4 | If the geometric series $a+ar+ar^2+ar^3+\dots+ar^{k-1}$ which of the following is true for the given series | A. converges B. Diverges C. Give no information |
| 5 | 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. $3/n$ |
| 6 | If the partial sum of series is finite then the series will be: | A. Convergent B. Give no information C. Not Sure |
| 7 | 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. $f'(x)$ |
| 8 | $\{1/2^n\}^n$ represent the sequence | A. $-1/2, -1/4, -1/8$ B. $1/2, 1/4, 1/7=8$ C. $0, 1, 1/2, 1/4$ |
| 9 | 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 |
| 10 | $d(\sec x)/dx=?$ | A. $\sec x \tan x$ B. $\sec x \tan y$ C. $\operatorname{cosec} x \cot x$ |
| 11 | Sigma notation which is represent which of the following greek letter? | A. χ B. η C. Σ D. ψ |
| 12 | 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. Slope intersect form |
| 13 | 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. $1+(-1)(x+0)$ |
| 14 | $\log_b a^r =$ _____? | A. $a \log_{b^r} b$ B. $r \log_{b^r} b$ C. $\log_{b^r} b^a$ D. $\log_{b^r} b^a$ |
| 15 | $\log_b a^r =$ _____? | A. $a \log_{b^r} b$ B. $r \log_{b^r} b$ C. $\log_{b^r} b^a$ D. $\log_{b^r} b^a$ |
| 16 | For a sequence $\{a_n\}$ if the difference between successive terms $a_{n+1}-a_n \leq 0$ then the sequence is known as | A. increasing B. decreasing C. non decreasing D. non increasing |

- 17 $y=x^2/2$
Let find the average rate of change of y with respect to x over the interval [3,4]
- 18 $y=1/1-x$ dy/dx if then
- 19 If $f(x)=3x^8+2x+1$ then $f'(x)$
- 20 If f is a twice differentiable function at stationary point x_0 and $f''(x_0) > 0$ then f has relative _____ At x_0
- A. $25/2$
B. $7/2$
C. $25/14$
D. $7/14$
- A. 1
B. -1
C. $1/(1-x)^2$
- A. $3x^7+2$
B. $24x^7+2$
C. $3x^7+23$
- A. None of these
B. Maxima
C. Minima