MATH101 important MCQs+ past papers objective questions for mid term 2017

1) What is Calculus??

the study of the continuous rates of the change of quantities. It is the study of how various quantities change with respect to other quantities. For example, one would like to know how distance changes with respect to time, or how time changes w.r.t speed, or how water flow changes w.r.t time etc

2) the simplest numbers are the ____?

a) Real numbers
b) Odd numbers
c) Complex numbers
d) Natural numbers

3) Wh y natural numbers are called natural numbers?

Because they was first which have cross paths with human intellect. we count things with them. Our ancestors used these numbers first to count, and they came to us naturally and called as natural niumbers.

4) The natural numbers form a subset of a larger class of numbers called the_____.

a) Subset of natural no.
b) Integers
c) Set
d) Both a and b

5) The collection of things with reference of numbers is called

a) Information
b) Counting
c) Set
d) Integer

6) If A is the subset of B then

a) $A \subseteq B$
b) $B \subseteq A$
c) $B \subseteq B$
d) $A \subseteq A$

7) We have two sets A={1, 2, 3, 4, 5} & B={2, 3} what is correct option belongs to these two sets.

a) A is subset of B
b) B is subset of A
c) $B \subseteq A$
d) *Both b and c*

8) …, -4, -3, -2, -1, 0, 1, 2, 3, 4,… these are _____?

a) Whole numbers
b) Negative numbers
c) Natural numbers
d) None of these

9) x+2 = 0. The solution is _____?

a) x = -2
b) x = +2
c) x = 1
d) x = - 1

10) The integers in turn are a subset of a still larger class of numbers called the

a) rational number

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b) natural number
c) irrational numbers
d) real numbers

11)If *x* is different from zero, this equation is

a) Contradictory
b) Setisfied
c) Unsetisfeid
d) Defined

12)_____was an ancient Greek philosopher and mathematician who study the properteis of numberes.

a) Roberet hook
b) Pythagoras
c) H. Methelda
d) Both a and b

13)Pythagoras concluded that the size of a physical quantity must consist of a _____of an additional unit.

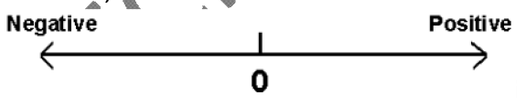
a) whole number+ some fraction *m / n*
b) Negative number+ some fraction *m / n*
c) natural number+ some fraction *m / n*
d) real number+ some fraction *m / n*

14)Using geometric methods, Pythagoras showed that the hypotenuse of the right triangle with base and opposite side equal to_____cannot be expressed as the ratio of integers

a) 0
b) 1
c) -1
d) Both a and b

15)The rational and irrational numbers together comprise a larger class of numbers, called

a) REAL NUMBERS
b) *WHOLE NUMBERS*
c) *NATURAL NUMBERS*
d) *Even numbers*



16) in this daigram origin is:

a) **Negative terminal**
b) **Positive terminal**
c) 0
d) Both a and b

17) 24,0,53π≥ ≤ <-3 is a_____ inequaliteis

a) Correct
b) Incorrect
c) Both in diferent origin

18) A = {1,2,3,4}, B = {1,2,3,4,5,6,7}, then, A ∪B =

a) {,1,1,2,3,4,5,6,7}
b) {1,2,3,4,4,5,6,7}
c) {1,2,3,4,5,6,6,7}
d) {1,2,3,4,5,6,7}

19)A = {1,2,3,4}, B = {1,2,3,4,5,6,7}, then A ∩B =

a) {1,2,3,4,5,6}
b) {1,2,3,4,}
c) {1,2,3,4,5,6,6,7}

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d) {1,2,3,4,5}

20)The absolute vale or magnitude of a real number a is denoted by |a| and is defined by

a) **|a|={ a if a>0 that is , a is non –negative**

b) **{-a if a< 0 that is , a is positive**

c) **Both a and b**

d) **None of these**

21)Solve |x-3|=4

Ans: If we depends upon x-3 is positive or negative , the equation |x-3| = 4 can be written as

x-3=4 (- + = -) then it will written as x=7 mean in other words (7-3=4)

x-3=-4 (- - = +) then it will written as x= -1 mean in other words (-1 & -3= -4)

22)What is Relationship between Square Roots and Absolute Values?

Ans:a number whose square is **a** is called a square root of **a**. The absolute vale or magnitude of a real number **a** is denoted by **|a|** and is defined by **|a|={ a if a>0 that is , a is non –negative** & **{-a if a< 0 that is , a is positive }**

23) $a, \sqrt{a^2} = |a|$ **is used for any**

a) Real number

b) Absolute value

c) Natural number

d) Whole number

24)What is distance formula?

If A and B are points on a coordinate line with coordinates a and b, respectively, then the distance d between A and B is **d = |b-a|** This formula provides a useful geometric interpretation

25)What do you know about triangle inequality?

If *a* and *b* are any real numbers, then $|a+b| < |a| + |b|$ it is called **Triangle Inequality.**

26)Which is the best example of Pythagoras conclusion

a) 1/2 =0.500000… =0.5

b) 1/3= 0.33333…

c) 1/4 = 0.44444… =0.4

d) All of these

27) What is a plane?

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A PLANE is just the intersection of two COORDINATE lines at 90 degrees. It is technically called the COORDINATE PLANE

28) To plot a point *P(a, b)* means to locate the point with _____in a coordinate plane

a) coordinates *(a, c)*

b) coordinates *(a, b)*

c) coordinates *(b,c)*

d) coordinates *(b,a)*

29) The COORDINATE PLANE and the ordered pairs we just discussed is together known as the

a) RECTANGULAR COORDINATE SYSTEM

b) RECTANGULAR GRAPH SYSTEM

c) RECTANGULAR PLAN SYSTEM

d) Both a and b

30) In a rectangular coordinate system the coordinate axes divide the plane into four regions called

a) Planes

b) Exis

c) quadrants.

d) Both a and c

31) *Upper* left quadrent is caled

a) (I)

b) (II)

c) (III)

d) (IV)

32) *Lower* right quadrent is called

a) (I)

b) (II)

c) (III)

d) (IV)

33) What sighns are written with 1st quadrent.

a) (- , +)

b) (+, +)

c) (+, -)

d) (-, -)

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34) $6x-4y=10$
sultion is?

a) 6-4=10

b) 6(3) _ 4(2) = 10

c) 6(2)-4(0)=18 is not 10

d) 6(0)-4(0)=10

35) The _____of an equation in two variables x and y is the set of all points in the xy-plane whose coordinates are members of the solution set of the equation.

a) GRAPH

b) PLANE

c) NUMBERS

d) EXIS

36) When a graph is obtained by plotting points, whether by_____ there is no guarantee that the resulting curve has the correct shape

a) Hand

b) Calculator

c) Computer

d) All of these

37) The number a is called an x-intercept of the graph and the number b a y-intercept then:

a) . x-axis =(a, 0), y-axis =(0, b)

b) . x-axis =(a, 1), y-axis =(1, b)

c) . x-axis =(a, 1), y-axis =(0, b)

d) . x-axis =(a, 0), y-axis =(1, b)

38)(a) 3x+2y= 6

(b) x = y2- 2y

(c) y = 1/x

3x + 2y =6

x-intercepts

Set y = 0 and solve for x

3x = 6 or **x = 2**

3x + 2y =6

y-intercepts

Set x = 0 and solve for y

2y = 6 or **y = 3**

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y = 1/x

x-intercepts

Set y = 0

1/x = 0 ⇒ **x** is undefined

No x-intercept

y-intercepts

Set x = 0

y = 1/0 ⇒ **y** is undefined

No y-intercept

39)_____is at the heart of many mathematical arguments concerning the structure of the universe, and certainly symmetry plays an important role in applied mathematics and engineering fields

a) Quadrant

b) Plane

c) line

d) Symmetry

40) Slop of a hill is the _____of its rise to its run:

a) Ratio

b) Equation

c) Rate

d) Time

41) Rising slope m is sometimes called the **rate of change of y with respect to**

a) Y along exis

b) X along exis

c) Y along exis

d) **X** along the line

42)slope of a line can be

a) positive

b) negative

c) zero

d) All of these

43) For a line L not parallel to the x-axis, the angle of _____is the smallest angle measured counterclockwise from the direction of the positive x-axis to L

a) Incidence

b) Reflection

c) quadrination

d) inclination

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44) The line with y-intercept b and slope m is given by the equation y = mx+b called___

a) **slope-intercept form** of the line

b) **plane-intercept form** of the slop

c) **angle-intercept form** of the line

d) **angle-intercept form** of the slop

45) Where A, B and C are constants and A and B are not both zero, is called a _____-degree equation in x and y

a) First

b) Second

c) Third

d) Fourth

46) We use the equations of lines called _____to study motions

a) Coordinate equations

b) **Linear equations**

c) **Negative equations**

d) **positive equations**

47) The distance d between two points (x1,y1) and (x2,y2) in a coordinate plane is given by

$a)\ d=\sqrt{|x_2-x_1|^2+|y_2-y_1|^2}$

$b)\ d=\sqrt{|y_2-y_1|^2-|x_2-x_1|^2}$ ans is a

$c)\ d=\sqrt{|x_2-x_1|^2-|y_2-y_1|^2}$

$d)\ d=\sqrt{|y_2-y_1|^2+|x_2-x_1|}^2$

48) The distance between two points P1 and P2 in a coordinate plane is commonly denoted by

a) d (P1,P2)

b) d (P2,P1)

c) d(P2, P2)

d) both a and b

49) The midpoint of the line segment joining two points (x1,y1) and (x2,y2) in a coordinate plane is

a) (X, y)=(1/2(x1+x2), ½(y1+y2))

b) (y, y)=(1/2(x1+x2), ½(y1+y2))

c) (X, x)=(1/2(x1+x2), ½(y1+y2))

d) (X, y)=(1/2(y1+y2), ½(y1+y2))

50) This is called the standard form of the equation of circle.

a) (x-x)2

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b) (y-y)2

c) (x-x)2+(y-y)2=r2

d) (x-x)2-(y-y)2=r2

51)X coordinates of the centre is

a) X nod

b) Y nod

c) 0

d) Both a and b

52)Y coordinates of the centre is

a) X nod

b) Y nod

c) 0

d) Both a and b

53) Radius is denoted by

a) Half of the circle

b) Inner point of the circle

c) By squere of r

d) R=x+y

54) The circle x2+y2=1, which is centered at the origin and has radius 1, is of special importance; it is called the :

a) unit circle

b) mid point

c) radius

d) canter

55)what are degenerated cases of thr circle?

Ans: k>0, k=0, k<0

56)describe a graph of (x-1)2 + (y+4)2=-9

Ans: There are no real values of x and y that will make the left side of the equation negative. Thus, the solution set of the equation is empty, and the equation has no graph.

57) The x-coordinate of the vertex of the parabola can be found by the following formula

a) Y=-b/2a
b) X = - b/2a
c) Y=b/2a
d) X=b/2a

58) To find these intercepts we set y=0 to obtain

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a) x^2-2x-2=0

b) x^2-2x-2=1

c) x^2-2x-2=2

d) x^2-2x-2=3

59)the height of the graph of a quadratic is maximum or minimum, depending on whether the graph opens

a) UP

b) DOWN

c) LONG

d) Both a and b

60) The area A of a circle depends on its ___by the formula a=pi r2

a) radius

b) centre

c) hight

d) breath

61)velocity is a _____of time

a) SPEED

b) LENGTH

c) AREA

d) FUNCTION

62)" Area is a FUNCTION of

a) Time

b) Speed

c) Radius

d) Velocity

63) In the_____, Swiss mathematician Euler introduced the notation which we mean y = f(x).

a) 1665

b) 1800

c) 1777

d) 1700

64) What Operations can be applied on Functions?

•Like numbers, functions can be OPERATED upon
• Functions can be added
• Functions can be subtracted
• Functions can be multiplied

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- Functions can be divided
- Functions can be COMPOSED with each other

65) We have f(x)=x2, g(x)=x if we wants to add these two functions then which of the following option is correct?

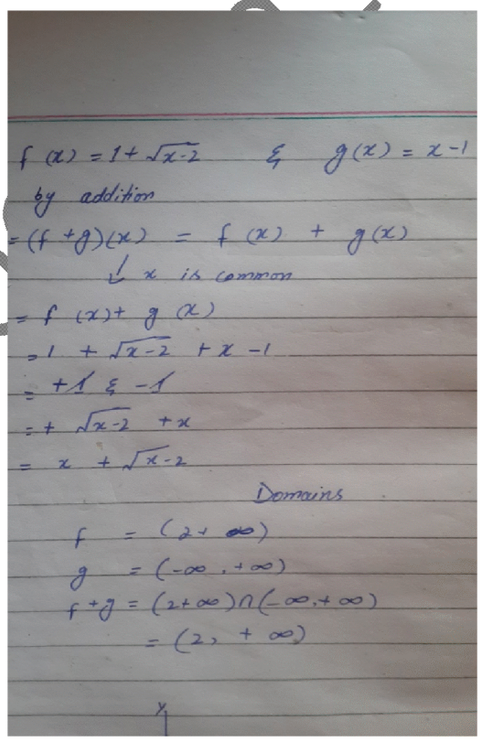
a) f(x)+x2= g(x)+x
b) f(x)+x2=g(x)=x
c) f(x)=x2= g(x)+x
d) f(x)+ g(x)=x2+x

66) what are products of addition, subtraction multiplication and division of these two function f(x)=x, g(x)=x

$$(f+g)(x)=f(x)+g(x)$$
$$(f-g)(x)=f(x)-g(x)$$
$$(f.g)(x)=f(x).g(x)$$
$$(\frac{f}{g})(x)=\frac{f(x)}{g(x)}$$

these are f+g, f-g, f.g and f/g

67) *solve this* $f(x)=1+\sqrt{x-2}$ $g(x)=x-1$



68) What is the domain of 3x?

a) -inf, -inf
b) +inf, +inf
c) -inf, +inf
d) +inf, -inf

69) _____operation Has no analog with the arithmetic operations ?

a) COMPOSITION
b) ADDITION
c) SUBTRACTION
d) MULTIPLICATION

70) When two functions are composed, ONE is assigned as a ____to the independent variable of the other

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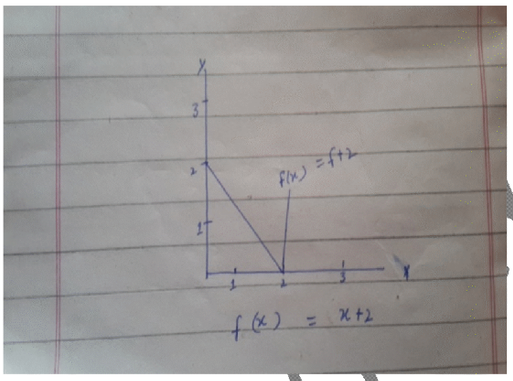
a) Number
b) Zero
c) Value
d) Both a and c

Function	g(x) Inside	f(x) Outside	composition
$(x^2+1)^{10}$	x^2+1	x^{10}	$(x^2+1)^{10}=f(g(x))$
$\sin^3 x$	$\sin x$	x^3	$\sin^3 x=f(g(x))$
$1/(x+1)$	$x+1$	$1/x$	$1/(x+1) = f(g(x))$
$\tan(x^5)$	x^5	$\tan x$	$\tan(x^5)=f(g(x))$

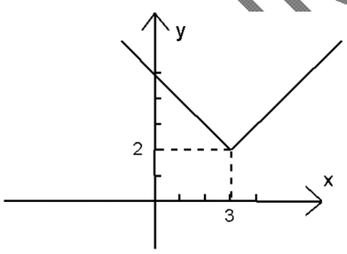
71) Define a graph?

A graph of an equation is just the points on the xy- plane that satisfy the equation

72) Sketch the graph of F(x)=x+2



73) Sketch the graph of y=f(x)=Ix-3I+3



graph of f(x) = |x - 3| + 2

74) If f (x) is MULTIPLIED by a POSITIVE constant c, then which of the following geometric effects take place?

a) The graph of f (x) is COMPRESSED vertically if 0 < c < 1
b) The graph of f (x) is STRETCHED vertically if c > 1
c) This is called VERTICAL Scaling by a factor of c
d) All of these

75) A graph in the plane is the graph of a function if and only if ____line intersects the graph more than once.

a) VERTICAL
b) NO VERTICAL
c) PERPENDICULER
d) NON-PERPENDICULER

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76) Traditionally, the Calculus that comes out of the tangent problem is called

a) MULTIPLYCATIONAL CALCULUS
b) NON-DIFFERENTIAL CALCULUS
c) DIFFERENTIAL CALCULUS
d) ALL OF THESE

77) Calculus that comes out of the area problem is called

a) DIFFERENTIAL CALCULUS
b) NON-DIFFERENTIAL CALCULUS
c) INTEGRAL CALCULUS
d) MULTIPLYCATIONAL CALCULUS

78) In geometry, a line is called___ to a circle if it meets the circle at exactly one point

a) coordinates
b) negative line
c) positive line
d) tangent

79) Consider a point P on a curve in the xy-plane. Let Q be another point other than P on the curve. Draw a line through P and Q to get what is called the _____line for the curve. Now move the Point Q toward P. The Secant line will rotate to a "limiting" position as Q gets closer and closer to P. The line that will occupy this limiting position will be called the _____line at P

a) TANGENT, SECANT
b) SECANT, TANGENT
c) TANGENT, TANGENT
d) SECANT, SECANT

80) If we let our rectangles increase in number, then the approx will be better and the result will be getting as _____on the number of rects.

a) LIMITING value
b) Non- LIMITING value
c) Tangent
d) coordinates

81) _____are basically a way to study the behavior of the y-values of a function in response to the x-values as they approach some number or go to infinity

a) Limits
b) Tangents
c) Circles
d) lines

82) Consider $f(x)=\frac{\sin(x)}{x}$ where x is in

a) Limits
b) Brackets
c) Radians
d) All of these

83) Remember that PI radians = ?

a) 150 degree
b) 180 degrees
c) 0 degree
d) 90 degree

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84)f (x) is not defined at x =

a) 0
b) 90
c) 80
d) 180

85) What happens if you get very close to x = 0?

Ans : We can get close to 0 from the left of 0, and from the right of 0. x can approach 0 along the negative x-axis means from the left. x can approach 0 along the positive x-axis means from the right. From both sides we get REALLY close to 0, but not equal to it. This getting really close is called the LIMITING process.

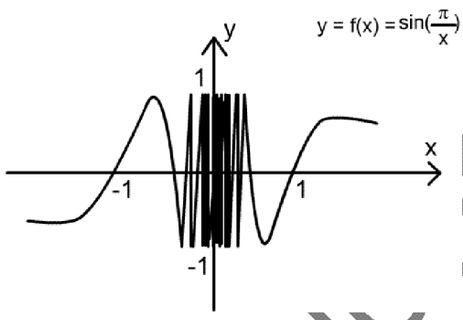
86) Define right hand rule and left hand rule?

"The limit of f (x) as x approaches 0 from the right" , the plus on the 0 stands for "from the right" This is called the RIGHT HAND LIMIT.

$$\lim_{x \to 0^+} \frac{\sin(x)}{x}$$

"The limit of f (x) as x approaches 0 from the left" , the minus on the 0 stands for "from the left" This is called the LEFT HAND LIMIT.

$$\lim_{x \to 0^-} \frac{\sin(x)}{x}$$



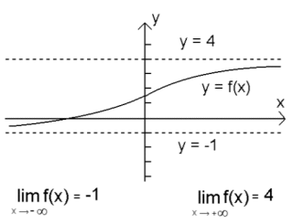
87) This Graph has NO LIMITING value as it OSCILLATES btw

a) -1 and -1
b) -1 and 1
c) Both a and b
d) 1 and -1

88) Limits fail for many reason, but usual culprits are

a) Oscillations
b) unbounded Increase
c) unbounded decrease
d) Both b and c

89)the values of f (x) = y DECREASE without bound as 0 → x nod from both the left and the right .



90) Basic function

a) $g(x) = x$

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b) $f(x) = k$

c) $\frac{\sin(x)}{x}$

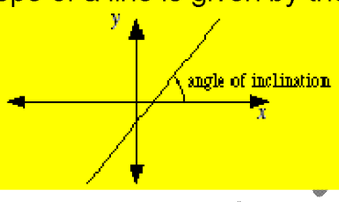
d) Both a and b

91) $\lim_{x \to 0} \frac{\sin(x)}{x}$ is Equals to

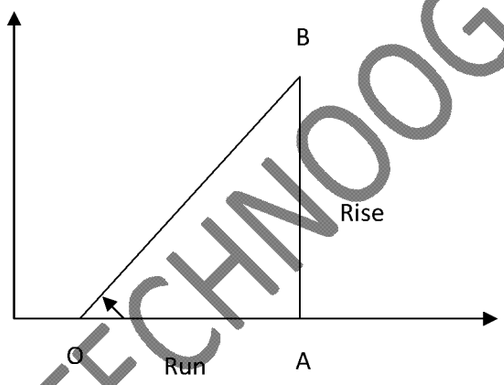
a) 1
b) 2
c) 3
d) 0

92)What is Angle of Inclination of a Line?

Ans. The angle between a line and the *x*-axis. This angle is always between 0° and 180°, and is measured counter clock wise from the part of the *x*-axis to the right of the line. Note: All horizontal lines have angle of inclination 0°. All vertical lines have angle of inclination 90°. Also, the slope of a line is given by the tangent of the angle of inclination



Theorem 1.4.3



In the above figure, if we take slope of the line , then it will become m= $\frac{AB}{OA}$ ……(i)

In the above figure, you can see that if we take tan θ , then it will become

Tan $\Phi = \frac{AB}{OA}$ …… (ii)

From (i) and (ii), we can equate the equations, so we have m= tan Φ

93) What is absolute value?

Ans.Absolute value is the magnitude of a quantity. Suppose you and your friend walking in opposite direction from the same location (say point zero), after some time both of you cover the distance of five yards. Now if the values are to be assigned to the new locations of both of you, it is suitable to say one is at +5 and the other is at -5, but the actual value of the distance covered by each of you is 5, this is

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called the absolute value whereas the other values are shown with the negative and positive signs, these signs are used to show the direction to which they are located from the starting point.As another example if you go from Lahore to Islamabad and cover the distance of x km (kilometers), your location with respect to Lahore is x km but if you come back it will be -x and you'll be in Lahore again, total distance covered by you is 2x which is absolute value but if it is not considered, you followed x km first and -x km after this.

What are three cases for this formula, depending on value of k.

94) In the equation of circle,

$$(x-x_0)^2+(y-y_0)^2=k \qquad ------(A)$$

Ans.

There are three cases for this formula, depending on value of k.

Case (1)

When $k>0$, the equation (A) shows a circle with radius k.

Case (2)

When $k=0$, the equation (A) shows a circle with radius 0 which is a single point $x=x_0$, $y=y_0$.

Case (3)

When $k<0$, the equation (A) has no real solution, so it shows no graph.

The cases (2) and (3) are the degenerated Case, i.e. these two cases deviate from the original form.

15) average velocity of a body is V_{ave}

a) $\dfrac{d_1-d_0}{t_1-t_0}$

b) $\dfrac{t_1-t_0}{f(t_0)-f(t_1)}$

c) $\lim_{t_1\to t_0}\dfrac{f(t_0)-f(t_1)}{t_1-t_0}$

d) None of these

95) Consider two function $f(x)=x^3 and g(x)=(x+9)$ then $fog(x)=$

a) $(x+9)^3$

b) $x+3$

c) $x+9$

d) None of these

96) Consider two function $f(x)=x^2 and g(x)=\sqrt{x}$ then $fog(x)=$ .....

a) x^2

b) $\sqrt{x}$

c) x -correct

d) None of these

97) Consider two function $f(x)=3\sqrt{x} and g(x)=\sqrt{x}$ what is true about these function

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$f(x)/g(x) = 3x$

a)

b) $f(g(x)) = 3x$

c) $f(x).g(x) = 3x$

d) None of these -correct

98) The centre and the radius of the circle $(x+5)^2 + (y-3)^2 = 16$ is

a) (5,-3),16

b) (5,-3),4

c) (-5,3) ,4

d) None of these

99) The graph $x = y^2$ is symmetric about

a) Y-axis

b) Origin

c) X-axis

d) None of these

100) The chain rule is used for two function f and g , if we have ---------- of these function

a) Product

b) Sum

c) Composition

d) None of these

101) A function f is differentiable function if it is differentiable on the interval

a) $(-\infty, \infty)$

b) (a, ∞) *where a is any negative* int *eger*

c) $(0, \infty)$

d) None of these

102) A function is said to be continuous function if the function is continuous on the interval

a) $(-\infty, +\infty)$

b) $(0, +\infty)$

c) $(-\infty, 0)$

d) None of these

103) $\lim_{x \to 0} \frac{\sin x}{x}$

a) 1

b) 2

c) 0-correct

d) 1/2

104) For any polynomial $P(x) = c_0 + c_1 x + \ldots + c_n x^n$ and any real number a

$\lim_{x \to a} P(x) = c_0 + c_1 a + \ldots + c_n a^n =$

a) $P(a)$ -correct

b) $P(a+1)$

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c) $P(a-1)$

d) $\frac{1}{P(a)}$

105) no of x and y intercepts for the equation y=1/x

a) Two x intercepts

b) Two y intercepts

c) No x and no y intercepts-

d) None of these

106) A line is called a tangent line to the circle if it meets the circle at precisely ……

a) One point

b) Two points

c) Infinite points

d) None of these

107) If f is a twice differentiable function at a stationary point x_0 and $f''(x_0) < 0$ then f h relative…… At x_0

a) Minima

b) Maxima

c) None of these

d) Both a and b

108) If the $\lim_{x \to a} f(x) = L$ then the inequality $(L-\varepsilon) < f(x) < L+\varepsilon$ holds in any subset of the interval

a) $(a-\delta, a) \cup (a, a+\delta)$

b) $(a-1, a) \cup (a, a+1)$

c) $(a-\varepsilon, a) \cup (a, a+\varepsilon)$

d) None of these

109) The set {…,-4,-3,-2,-1,0,1,2,3,4,..} is know as set of ……

a) Natural numbers

b) Integers

c) Whole numbers

d) None of these

110) The domain of the function $h(x) = \frac{1}{(x-2)(x-4)}$ is.

a) $(-\infty, 2) \cup (2, 4) \cup (4, +\infty)$.

b) $(-\infty, 2\} \cup \{2, 4\} \cup \{4, \infty)$

c) $(-\infty, 2.5) \cup (2.5, 4.5) \cup (4.5, \infty)$

d) All of these are incorrect

111) π is called

a) An integer

b) A rational number

c) An irrational number

d) A natural number

112) For a function f(x) to be continuous on interval (a,b) the function must be continuous

a) At all point in (a,b)

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b) Only at a and b
c) At a mid point of a and b
d) None of these

113) If a function satisfies the conditions

$$\lim_{x\to c^+} f(x) \qquad \lim_{x\to c^+} f(x) = f(c)$$

f(c) is defined , Exists Then the function is said to be

a) Continuous at c
b) Continuous from left at c
c) Continuous from right at c
d) None of these

$$\frac{d}{dx}[sex] = - - - - -$$

114)

a) $\frac{\sin x}{1-\sin^2 x}$

b) $\frac{-\sin x}{1-\sin^2 x}$

c) $\frac{1}{1-\sin^2 x}$

d) None of these

$$\log_b ac = - - - - - -$$

115)

a) $\log_b a + \log_b c$

b) $\log_a b + \log_c b$

c) $\log_{a+c} b$

d) None of these

$$\log_b a^r = - - - - - -$$

116)

a) $a\log_b r$

b) $r\log_b a$

c) $b\log_a r$

d) None of these

117) If $f''(x) < 0$ on an open interval (a,b) then f is ---------- on (a,b)

a) None of these
b) Concave up
c) Concave down
d) Closed

118) If f is a twice differentiable function at a stationary point x_0 and $f''(x_0) > 0$ then f has relative ..... At x_0

a) Minima
b) Maxima
c) None of these

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119) The equation $(x+4)^2+(y-1)^2=6$ represents a circle having center at ……. and radius ….

a) $(-4,1),\sqrt{6}$

b) $(-4,1),6$

c) $(-4,-1),\sqrt{6}$

d) None of these

120) The $\lim_{x\to a} f(x)\ where\ f(x)=k$ (k is a constant) is equal to

a) k+2

b) k+1

c) k

d) kf

121) For any polynomial $P(x)=c_0+c_1x+\ldots+c_nx^n$ and any real number a $\lim_{x\to a} P(x)=c_0+c_1a+\ldots+c_na^n=$

a) $P(a)$

b) $P(a+1)$

c) $P(a-1)$

d) $\frac{1}{P(a)}$

122) Polynomials are always …… Function

a) Continuous

b) Discontinuous

c) Both

d) none

123) $\frac{D}{Dx}[dh(x)]=$ ——— where d is a constant

a) $dh(x)$

b) $dh'(x)$

c) 0

d) None of these

124) The graph $x=y^2$ is symmetric about

a) X-axis

b) Y-axis

c) Origin

d) None of these

125) Consider two function $f(x)=3\sqrt{x}\ and\ g(x)=\sqrt{x}$ what is true about these functions

a) $f(x).g(x)=3x$

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$f(x)/g(x) = 3x$

b)

$f(g(x)) = 3x$

c)

d) None of these

$$\lim_{h\to 0} \frac{f(x+h)-f(x)}{h}$$

126) The formula is called ..... with respect to x of the function f

a) Derivative

b) Slope

c) Tangent

d) None of these

127) Suppose that $f \text{ and } g$ are differentiable function of x then $\frac{d}{dx}(\frac{f}{g})$

a) $\frac{g.f'-f.g'}{g^2}$

b) $\frac{g.f'+f.g'}{g^2}$

c) $\frac{g.f'-f.g'}{g}$

d) None of these

128) x^2-9|=.....

a) |(x-3)^2|

b) |(x+3)^2|

c) |x-3||x+3|

d) |x+3||x+3|

129) Usually the number that signifies the idea of f(x) being as close to limit L as want to be must be a/an .....

a) Integer

b) Natural number

c) Small positive number.

d) Small negative number.

130) A function f is said to be continuous on a closed interval [a, b] if f iscontinuous from the right at "a" and "f" is continuous from the left at "b" ad "f" is continuous on

a) (a,b]

b) [a,b)

c) [a,b]

d) (a, b)

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131) If f is continuous on [a, b], and if f(angel) and f(beer) have opposite signs, then there is …… one solution of the equation f(x) = 0 in the interval (a, b).

a) at most

b) exactly

c) at least

d) not more than

132) (epsilon) used in the definition of limit can be a negative number.

a) True

b) False

133) If a function is differentiable at a point then it is continuous at that point.The converse is

a) False

b) True

134) If the function f and g are continuous at c, then f + g is …… at

a) Discontinuous

b) Continuous

135) If f is continuous on a closed interval [a, b] and C is any number betweenf(angel) and f(beer), inclusive, then there is at least one number x in the inteval [a, b] such that ---------

a) f(x) is not equal to C

b) f(x) = C

c) f(x)>C

d) f(x)<C

136) |x-3| < 1 implies.....

a) -4 < x < 4

b) 2 < x < 4

c) -2 < x < -4

d) x-3 < 1

137) If for any positive number e(epsilon) we can find d (delta) such that| (3x-5)-1| < e ,if x satisfies 0< |x-2| < d Then f(x) =……

a) 3x-5- 1

b) x-2

c) 3x-5

d) None of these

138) graph of an equation is the points on the xy- plane that ……the equation. Select correct option:

a) ***Satisfy***

b) Does not satisfy

139) If two lines have same slope, say 1, then these two lines are _____ Select correct option:

a) ***Parallel to each other***

b) Parallel to x-axi

c) Parallel to y-axis

d) Perpendicular to each other

140) There is one-to-one correspondence between the points on co-ordinate line and _____

a) Set of natural numbers

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b) Set of integers

c) Set of irrational numbers

d) ***Set of real numbers***

141) Graph of the equation x2+y2=9 represents a.....

Select correct option:

a) Circle not sure

b) Parabola

c) Ellipse

d) None of these.

142) If Sin(3x^2) / 6 + C is the anti–derivative of a function f(x), then f(x) = _____.

a) x^2 Cos(3x^2).

b) x Cos(3x^2).

c) x Cos(3x).

d) none

143) Which of the following is the integral of Sin(3x+5) with respect to x ?

a) -1/3[-Cos(3x+5)]

b) 1/3[-Cos(3x+5)]

c) 1/15[-Cos(3x+5)]

d) -Cos(3x+5)

144) If 'n' goes from 1 to 3 and the summation of 'na' = 6a, then the value of 'a' is ------

a) 6

b) -6

c) 1

d) undetermined

145) If 'n' goes from 1 to any large ODD number then the summation of '(-1)^n' = -------

a) ***-1***

b) 0

c) 1

d) that specific large ODD number

146) 1+2+3.....+t equals

a) n(n+1)/2

b) t(t+1)/2

c) n(n+1)(2n+1)/6

d) none

147) If definite integral of f(x)=Sinx over [a,0] is equal to '-2' then the value 'a' is--------

a) pi/2

b) pi

c) 0

d) -pi

148) If the definite integral of f(x)=3 over [1,x] is greater than '12' then -----

a) x>12

b) x>5

c) x>3

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d) x>1

149) If [-8,8] is subdivided into '16' equally spaced subintervals, then the RIGHT end point of 13th sub-interval will be--------.

a) 2

b) 3

c) 4

d) 5

150) Which of the following is the integral of sin(2x)?

a) cos(2x)+C

b) 2cos(2x)+C

c) –(1/2)cos(2x)+C

d) ***n***one

151) Sum of cubes of n-terms of a series whose nth term is 'n' = ---

a) Square of n(n+1)(2n+1)/6

b) Square of n(n+1)/2

c) Square of (n+1)/2 (just a guess)

d) Square of n(n+1)/6

152) In a rectangular coordinate system the coordinate exes divide the plane into four regions called…

a) Cube

b) ***Quadrants***

c) Circle

153) An equation of the form is called …

a) Parabolic

b) Cubic

c) Quadratic

154) Graph of f(x) =|x| is ……

a) Circle shape

b) V shaped

c) U shaped

155) Y=f(x) +3 translation of the function is at 3 is ….. By c units

a) Up

b) Down

c) Left

d) Right

156) Graph of y=|x-5| …… of the graph y=|x| 5 units to the right to get the graph of y.

a) Reading

b) Translation

c) Creating

d) Definition

157) By the definition and …… be on the interval (xo, x1)

a) Greater than zero

b) Equal to zero

c) Less than zero

d) Less than and equal to zero

158) Cot(x) discontinuous at …….

a) Cos(x) =0

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b) Sin(x) = 0

c) Tan(x) =0

d) Cot(x) = 0

159) If a function is differentiable then the function is also …… on that point

a) Discontinues

b) No exit

c) Continuous

160) Tan (5-3x) find differentiation w.r.t. x

a) -3sce² (5-3x)

b) 3sce² (5-3x)

c) 3cos (5-3x)

d) 3cos² (5-3x)

161) Derivative of the will be solved by …….. Method

a) Implicit

b) Explicit

c) Simple

162) Constant function has the slope …..

a) Positive

b) Negative

c) Zero

163) Decreasing function has the slope …….

a) Negative

b) Positive

c) Zero

164) The equation of line of the form is known as

a) Point-slope form

b) Two points form

c) Intercepts form

d) Slope intercept form

165) The set of rational number is a subset of

a) Integers

b) Natural numbers

c) Odd integers

d) Real number

166) If Sin(3x^2) / 6 + C is the anti–derivative of a function f(x), then f(x) = _

a) x^2 Cos(3x^2).

b) x Cos(3x^2).

c) x Cos(3x).

c) none

167) Which of the following is the integral of Sin(3x+5) with respect to x ?

a) -1/3[-Cos(3x+5)]

b) 1/3[-Cos(3x+5)]

c) 1/15[-Cos(3x+5)]

d) -Cos(3x+5)

168) If 'n' goes from 1 to 3 and the summation of 'na' = 6a, then the value of 'a' is ----------

a) ***6***

b) -6

c) 1

d) undetermined

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169) If 'n' goes from 1 to any large ODD number then the summation of '(-1)^n' = ---------

a) ***-1***
b) 0
c) 1
d) that specific large ODD number

170) 1+2+3……+t equals

a) ***n(n+1)/2***
b) t(t+1)/2
c) n(n+1)(2n+1)/6
d) none

171) .If definite integral of f(x)=Sinx over [a,0] is equal to '-2' then the value 'a' is---------

a) pi/2
b) pi
c) 0
d) –pi

172) If the definite integral of f(x)=3 over [1,x] is greater than '12' then -----

a) x>12
b) x>5
c) x>3 (not sure)
d) x>1

173) If [-8,8] is subdivided into '16' equally spaced subintervals, then the RIGHT end point of 13th sub-interval will be--------.

a) 2
b) 3
c) 4
c) 5

174) Which of the following is the integral of sin(2x)?

a) cos(2x)+C
b) 2cos(2x)+C
c) –(1/2)cos(2x)+C
d) none

175) Sum of cubes of n-terms of a series whose nth term is 'n' = ---

a) Square of n(n+1)(2n+1)/6
b) Square of n(n+1)/2
c) Square of (n+1)/2 (just a guess)
d) Square of n(n+1)/6

176) In a rectangular coordinate system the coordinate exes divide the plane into four regions called…

a) Cube
b) ***Quadrants***
c) Circle

177) An equation of the form $y = ax^2 + bx + c$ is called ....

a) Parabolic
b) Cubic
c) ***Quadratic***

178) Graph of f(x) =|x| is ……

a) Circle shape
b) V shaped
c) U shaped

179) Y=f(x) +3 translation of the function is at 3 is ….. By c units

a) ***Up***
b) Down
c) Left

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d) Right

180) Graph of y=|x-5| …… of the graph y=|x| 5 units to the right to get the graph of y.

a) Reading

b) Translation

c) Creating

d) Definition

181) By the definition ε and δ …… be on the interval (xo, x1)

a) ***Greater than zero***

b) Equal to zero

c) Less than zero

d) Less than and equal to zero

182) Let f(x) is the function as x approaches to 0 then the limit from the positive will be …

$\lim_{x\to+0} x$

$\lim_{x\to-0}$

$\lim_{x\to0}$

183) Cot(x) discontinuous at …….

a) Cos(x) =0

b) Sin(x) = 0

c) Tan(x) =0

d) Cot(x) = 0

184) If a function is differentiable then the function is also …… on that point

a) Discontinues

b) No exit

c) Continuous

185) Tan (5-3x) find differentiation w.r.t. x

a) ***-3sce² (5-3x)***

b) 3sce² (5-3x)

c) 3cos (5-3x)

d) 3cos² (5-3x)

186) Derivative of the $7y^4 + x^3y + x = 4$ will be solved by …….. Method

a) ***Implicit***

b) Explicit

c) Simple

187) Constant function has the slope …..

a) Positive

b) Negative

c) Zero

188) Decreasing function has the slope …….

a) ***Negative***

b) Positive

c) Zero

189) **Consider two function** $f(x) = x^2 and g(x) = \sqrt{x}$ **then** $fog(x) =$ **.....**

a) x

b) x^2

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c) $\sqrt{x}$

d) None of these

190) A function is said to be continuous function if the function is continuous on the interval

a) $(-\infty, +\infty)$

b) $(0, +\infty)$

c) $(-\infty, 0)$

d) None of these

191) According to Power-Rule of differentiation, if $f(x) = x^n$ where n is a real number, then

$\frac{d}{dx}[x^n] =$

a) x^{n-1}

b) $n x^{n-1}$

c) $n x^{n+1}$

d) $(n-1)x^{n+1}$

192) $30^0 =$ _____

a) $\frac{\pi}{3}$

b) $\frac{\pi}{4}$

c) $\frac{\pi}{6}$

d) $\frac{\pi}{2}$

193) The equation of line of the form $y - y_1 = m(x - x_1)$ is known as

a) Point-slope form

b) two points form

c) Intercepts form

d) Slope intercept form

194) The set of rational number is a subset of

a) Integers

b) Natural numbers

c) Odd integers

d) Real number

195) On the straight line, the tangent at any point coincide with line -------

Select correct option:

a) no where

b) every where

c) some where

d)***none of these***

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196) On the straight line, the tangent at any point coincide with line -------

Select correct option:

a) no where

b) every where

c) some where

d) none of these

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