

Professional Online Academy Vu Topper RM



MTH202-Discrete Mathematics

Update MCQ'S Mid Term

By Vu Topper RM



Follow Us on YouTube:
[@vutopperrm](https://www.youtube.com/@vutopperrm)

For More Help Contact What's app Me!!!
Number's = # 0322-4021365, 0316-4980094

[Rizwan Manzoor](https://www.vu.edu.pk)
[Vu Topper RM](https://www.vu.edu.pk)

وَتَعَزَّ مِنْ تَشَاءٍ وَتَذَلُّ مِنْ تَشَاءٍ



Our Services

- Assignments
- Quiz & Gdb's
- LMS Handling
- Online Classes
- Lectures Views
- Project Handling
- Important Notes

Result
85% To
100%

پہلے ہمارے سٹوڈنٹس کے رزلٹ دیکھیں
پھر ہم سے سروسز لیں



www.youtube.com/@vutopperrm



Contact us
0322 4021365
0316 4980094

بری صحبت سے تہائی بہتر ہے اور تہائی سے نیک صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:1

(Marks:1)

Vu-Topper RM

Which of the following is not correct for a 'Sequence'?

A. A sequence is a function whose domain is the set of natural numbers.

B. A sequence is just a list of elements usually written in a row.

C. Terms of the sequence are listed in order of increasing subscripts.

D. A sequence is a relation whose domain is the set of natural numbers

Question No:2

(Marks:1)

Vu-Topper RM

Let $f(x) = x + 3$ then $\{f^{-1}\}(x)$ is

A. $3 - x$

B. $2x - 3$

C. $x - 3$

D. $x + 3$

Question No:3

(Marks:1)

Vu-Topper RM

Let $S = \{1,5,9\}$ and $T = \{2,4,8\}$. Define $g: S \rightarrow T$ by specifying that $g(1) = 2$, $g(5) = 4$, $g(9) = 8$. Why 'g' is one-to-one?

Options:

A. because each of the three elements of S are not mapped to a different elements of T by g

B. because each of the three elements of co-domain T of g is the image of some element of the domain S of g.

C. because each of the three elements of co-domain T of g is not the image of some element of the domain S of g.

D. because each of the three elements of S are mapped to a different elements of T by g

Question No:4

(Marks:1)

Vu-Topper RM

If $f(x) = 2x$ and $g(x) = x$ then $g(f(x))$ is.....

A. $2x$

B. $\{x^2\}$

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- C. x
D. $2\{x^2\}$

Question No:5 (Marks:1) **Vu-Topper RM**

Number of one to one functions form $X=\{a,b\}$ to $Y=\{u,v\}$ are equal to

- A. 5
B. 3
C. 2
D. 4

Question No:6 (Marks:1) **Vu-Topper RM**

The two functions 'f' and 'g' are equal if

Options:

A. $f(x) = 3x$, and $g(x) = \frac{\{6\{x^2\} + 3x\}}{\{2x\}}$, for all $x \in R$

B. $f(x) = 3x$, and $g(x) = \frac{\{6\{x^2\} + 3x\}}{\{2\{x^2\} + 1\}}$, for all $x \in R$

C. $f(x) = 3x$, and $g(x) = \frac{\{6\{x^2\} + 3x\}}{\{2x + 1\}}$, for all $x \in R$

D. $f(x) = 3x$, and $g(x) = \frac{\{6\{x^2\} + 3\{x^3\}\}}{\{2x + 1\}}$, for all $x \in R$

Question No:7 (Marks:1) **Vu-Topper RM**

Which of the following is the example of an alternating sequence?

Options:

A. $\{C_n\} = \frac{1}{n}$, for $n > 0$

B. $\{C_n\} = \frac{\{(-1)^n\}}{\{n + 2\}}$, for $n \geq 0$

C. $\{C_n\} = \frac{n}{\{n + 1\}}$, for $n \geq 0$

D. $\{C_n\} = \frac{\{(-1)\}}{\{n + 2\}}$, for $n \geq 0$

بري صحبت سے تتهائي بهتر ہے اور تتهائي سے نيك صحبت بهتر ہے

For More Help Contact What's app 03224021365

Question No:8

(Marks:1)

Vu-Topper RM

If $f(x) = x$ and $g(x) = -x$ are both one to one functions then $(f + g)(x)$ is also one to one function .

A. True

B. False

Question No:9

(Marks:1)

Vu-Topper RM

The functions 'f' and 'g' are inverse of each other if and only if their composition gives ____.

A. bijective function

B. identity function

C. injective function

D. constant function

Question No:10

(Marks:1)

Vu-Topper RM

If $\{f^{-1}\}(x) = \frac{\{6 - x\}}{\{2\}}$ then $\{f^{-1}\}(2)$ is

A. 2

B. 0

C. 3

D. 1

Question No:11

(Marks:1)

Vu-Topper RM

Cardinality means the total number of elements in a set.

A. False

B. True

Question No:12

(Marks:1)

Vu-Topper RM

A constant function is surjective if and only if.....

A. The domain consists of a single element.

B. The co domain consists of a single element

C. The domain consists of more than one elements.

D. The co domain consists of more than one elements.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:13

(Marks:1)

Vu-Topper RM

The composition functions $f \circ g$ and $g \circ f$ are always equal.

A. False

B. True

Question No:14

(Marks:1)

Vu-Topper RM

Real valued function is a function that assigns _____ to each member of its domain.

A. negative real number

B. positive real number

C. only a real number

D. any arbitrary real number

Question No:15

(Marks:1)

Vu-Topper RM

Let $f: \mathbb{R} \rightarrow \mathbb{R}$ is a one to one function then $c \cdot f(x)$, is also one to one function for

A. $c \neq 0$

B. $c = 0$

Question No:16

(Marks:1)

Vu-Topper RM

An infinite sequence may have only a finite number of values.

A. True

B. False

Question No:17

(Marks:1)

Vu-Topper RM

The common ratio of the following geometric sequence

4,12,36,108,..... is _____.

A. 3

B. 4

C. 2

D. 8

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:18

(Marks:1)

Vu-Topper RM

If r is a positive real number, then the value of r in $3.r.r = -27r$ is

A. -9

B. none of these

C. 0

D. +9

Question No:19

(Marks:1)

Vu-Topper RM

Which of the following is the reason for a function $f(x)=x^2$ for all $x \in \mathbb{Z}$ for being 'f' not one-to-one?

A. because range is equal to co domain.

B. because two different elements of domain are mapped onto the same element of range

C. because range is not equal to co domain.

D. because function is not defined for all values of the domain

Question No:20

(Marks:1)

Vu-Topper RM

$y = \{x^3\}$ is a graph of bijective function from \mathbb{R} to \mathbb{R} .

A. True

B. False

Question No:21

(Marks:1)

Vu-Topper RM

Which of the following set is the domain of a sequence?

A. Set of rational numbers

B. Set of real numbers

C. Set of complex numbers

D. Set of natural numbers

Question No:22

(Marks:1)

Vu-Topper RM

The two functions 'f' and 'g' are equal if

Options:

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

A. $f(x) = 3x$, and $g(x) = \frac{6x^2 + 3x}{2x + 1}$, for all $x \in \mathbb{R}$

B. $f(x) = 3x$, and $g(x) = \frac{6x^2 + 3x}{2x}$, for all $x \in \mathbb{R}$

C. $f(x) = 3x$, and $g(x) = \frac{6x^2 + 3x^3}{2x + 1}$, for all $x \in \mathbb{R}$

D. $f(x) = 3x$, and $g(x) = \frac{6x^2 + 3x}{2x^2 + 1}$, for all $x \in \mathbb{R}$

Question No:23

(Marks:1)

Vu-Topper RM

If $f^{-1}(x) = \frac{6-x}{2}$ then $f^{-1}(2)$ is

A. 3

B. 1

C. 0

D. 2

Question No:24

(Marks:1)

Vu-Topper RM

Let $X = \{1, 5, 9\}$ and $Y = \{3, 4, 7\}$. Define a function f from X to Y such that $f(1) = 7$, $f(5) = 3$ and $f(9) = 4$. Then which one of the following statement about the function f is true?

A. f is neither one-to-one nor onto

B. f is not onto

C. f is not one-to-one

D. f is both one-to-one and onto

Question No:25

(Marks:1)

Vu-Topper RM

Inverse of a function may not be a function.

A. False

B. True

Question No:26

(Marks:1)

Vu-Topper RM

Common ratio in sequence “36, 12, 4, 4/3,.....” is

بري صحبت سے تھائی بہتر ہے اور تھائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- A. 3
- B. 4
- C. 1/4
- D. 1/3**

Question No:27 (Marks:1) **Vu-Topper RM**

If f and g are two one-to-one functions, then their composition that is $g \circ f$ is one-to-one.

- A. True**
- B. False

Question No:28 (Marks:1) **Vu-Topper RM**

if f is a bijective function then $(f^{-1} \circ f)(x)$ is equal to

-
- A. 1
 - B. 0
 - C. None of these

D. x

Question No:29 (Marks:1) **Vu-Topper RM**

Consider a function f defined on $X = \{1, 2, 3, 4\}$ by $f(1) = 1, f(2) = 2, f(3) = 3$ and $f(4) = 4$ then _____.

- A. f is an identity function**
- B. f is a constant function

Question No:30 (Marks:1) **Vu-Topper RM**

Domain and range are same for

- A. Linear Function
- B. Identity Function**
- C. Constant Function
- D. None of these.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:31

(Marks:1)

Vu-Topper RM

Common ratio in the sequence “4, 16, 64, 256,” is

- A. 1/4
- B. 3
- C. 12
- D. 4**

Question No:32

(Marks:1)

Vu-Topper RM

If $f(x) = \sin^{-1}(x)$ and $g(x) = \sin x$ then $gof(x)$ is.....

- A. $\sin^{-1}(\cos x)$
- B. 1
- C. $\cos^{-1}(\sin x)$
- D. x**

Question No:33

(Marks:1)

Vu-Topper RM

Let $X = \{1,5,9\}$ and $Y = \{3,4,7\}$. Define a function f from X to Y such that $f(1) = 7$, $f(9) = 7$ and $f(5) = \dots\dots\dots$

What would be the value of $f(5)$ to make it a constant function?

- A. 4
- B. 1
- C. 3
- D. 7**

Question No:34

(Marks:1)

Vu-Topper RM

What does ‘r’ denotes in a geometric sequence?

- A. Sum
- B. Common difference
- C. Explicit formula
- D. Common ratio**

Question No:35

(Marks:1)

Vu-Topper RM

$x+a, x+3a, x+5a, \dots\dots\dots$

بري صحبت سے تڻهائي بهتر هے اور تڻهائي سے نيك صحبت بهتر هے

For More Help Contact What's app 03224021365

is a/an _____.

A. arithmetic sequence

B. geometric sequence

C. arithmetic series

D. geometric series

Question No:36

(Marks:1)

Vu-Topper RM

1,2,4,8,16.....is a/an

A. not a sequence

B. geometric sequence

C. arithmetic series

D. arithmetic sequence

Question No:37

(Marks:1)

Vu-Topper RM

The set Z of all integers is countable.

A. True

B. False

Question No:38

(Marks:1)

Vu-Topper RM

A function whose inverse function exists is called a/an _____.

A. surjective

B. symmetric

C. not injective

D. invertible

Question No:39

(Marks:1)

Vu-Topper RM

Let f be a function defined by, $f(x) = 2x + 1$ Then the composition of left
right x is

A. $4\sqrt{x + 1}$

B. $4\sqrt{x + 3}$

C. $4\{x^2\} + 4x + 1$

D. $4\sqrt{x + 2}$

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:40 (Marks:1)

Vu-Topper RM

The set Z of all integers is _____.

A. uncountable

B. countable

Question No:41 (Marks:1)

Vu-Topper RM

Let $f(x)=x^2+1$ define functions f from R to R and $c=2$ be any scalar, then $c,f(x)$ is _____.

A. $2\{x^2\}\{\rm{ + 2}\}$

B. $\{x^2\}\{\rm{ + 1}\}$

C. 2

D. $2\{x^2\}\{\rm{ - 1}\}$

Question No:42 (Marks:1)

Vu-Topper RM

Two functions 'f' and 'g' from X to Y are said to be equal if and only if

.....

A. none of these

B. $f(x)=g(x)$ for all 'x' belongs to X

C. $f(x)=g(x)$ for a fix 'x' belongs to X

D. $f(x)=g(x)$ for some 'x' belongs to X

Question No:43 (Marks:1)

Vu-Topper RM

A function $f:\{R^+ \}$ to R defined by $f(x) = \log(x)$ is a real valued function .

A. False

B. True

Question No:44 (Marks:1)

Vu-Topper RM

An important data type in computer programming consists of _____.

A. Matrices

B. Equations

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:49

(Marks:1)

Vu-Topper RM

A function $f: X \rightarrow Y$ that is both one to one and onto is called a

.....

- A. surjective function
- B. Injective function
- C. bijective function**
- D. None of these

Question No:50

(Marks:1)

Vu-Topper RM

Inverse of a surjective function is always a function.

- A. False**
- B. True

Question No:51

(Marks:1)

Vu-Topper RM

Let function defined by $g(x) = x + 1$ Then the composition of left $g \circ g(x)$ is

Options:

- A. x
- B. $x + 1$
- C. $\{x^2\} + 2x + 1$
- D. $x + 2$**

Question No:52

(Marks:1)

Vu-Topper RM

Let $A = \{1, 2, 3, 4\}$ and $B = \{7\}$ then the constant function from A to B is _____.

- A. Both one to one and onto
- B. Neither one to one nor onto
- C. One to one
- D. Onto**

Question No:53

(Marks:1)

Vu-Topper RM

A function is bijective if it is

- A. one to one but not onto

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

B. not one to one and not onto

C. one to one and onto

D. not one to one but onto

Question No:54

(Marks:1)

Vu-Topper RM

How many one-to-one functions are there from a set with seven elements to a set with six elements.

A. 7

B. 1

C. 6

D. 0

Question No:55

(Marks:1)

Vu-Topper RM

Which of the following is not true for an identity function?

A. The identity function is always a constant function

B. The identity function is always a surjective function.

C. The identity function is always a bijective function

D. The identity function is always an injective function.

Question No:56

(Marks:1)

Vu-Topper RM

Let f and g be two functions defined by $f(x) = x+2$ and $g(x) = 2x+1$.

Then $g(f(x)) =$ _____.

A. $2\{x^2\} + 5x + 2$

B. $x - 1$

C. $2x + 3$

D. $2x + 5$

Question No:57

(Marks:1)

Vu-Topper RM

Range of function $\{f(x) = \{e^x\}\}$ is.....

A. Set of integers

B. Set of negative Real number.

C. Set of positive Real numbers

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

D. Set of Real number

Question No:58

(Marks:1)

Vu-Topper RM

The logic gate NOT is a uninary operation on $\{0,1\}$.

A. false

B. true

Question No:59

(Marks:1)

Vu-Topper RM

If $f^{-1}(x)=6-x^2$ then $f^{-1}(2)$ is

A. 2

B. 1

C. 0

D. 3

Question No:60

(Marks:1)

Vu-Topper RM

Given a Set $A=\{ a,b\}$ and $B=\{1,2,3\}$, then number of functions from A to B is

A. 6

B. 8

C. 5

D. 9

Question No:61

(Marks:1)

Vu-Topper RM

How many one-to-one functions are there from a set with five elements to a set with six elements.

A. 3 factorial (3!)

B. 4 factorial(4!)

C. 6 factorial(6!)

D. 5 factorial(5!)

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:62

(Marks:1)

Vu-Topper RM

A graph of a function f is one to one iff every horizontal line intersects the graph in at most one point.

A. true

B. false

Question No:63

(Marks:1)

Vu-Topper RM

Which is not a binary operation on the set of natural numbers N ?

A. Multiplication

B. Subtraction

C. None of these.

D. Addition

Question No:64

(Marks:1)

Vu-Topper RM

The relation $R = \{(12, 14), (13, 5), (-2, 7), (x, 13)\}$ is a function if x is not equal to

A. 14, 7 or 13.

B. 12, 13 or 2.

C. 12, 13 or -2.

D. 14, 5 or 7.

Question No:65

(Marks:1)

Vu-Topper RM

Let $f(x)=x$ and $g(x)=-x$ for all $x \in \mathbb{R}$, then $(f+g)(x)$ is _____.

A. $-x$

B. 0

C. $2x$

D. $-2x$

Question No:66

(Marks:1)

Vu-Topper RM

The Range of $X \rightarrow Y$ is also called the image of X under

A. true

B. false

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:67

(Marks:1)

Vu-Topper RM

Which of the following relations are functions? $R_1 = \{(3, 4), (4, 5), (6, 7), (8, 9)\}$, $R_2 = \{(3, 4), (4, 5), (6, 7), (3, 9)\}$, $R_3 = \{(-3, 4), (4, -5), (0, 0), (8, 9)\}$, $R_4 = \{(8, 11), (34, 5), (6, 17), (8, 19)\}$

A. R3 and R2 are functions

B. R1 and R3 are functions

C. R1 and R2 are functions

D. R2 and R4 are functions

Question No:68

(Marks:1)

Vu-Topper RM

Cardinality of positive prime numbers less than 20 is

A. 5

B. 10

C. 8

D. 20

Question No:69

(Marks:1)

Vu-Topper RM

Which of the following is not a binary operation on the set of Integers?

A. Multiplication

B. Subtraction

C. Addition

D. Division

Question No:70

(Marks:1)

Vu-Topper RM

A set is countably infinite if, and only if, it has the same cardinality as the set of

A. whole numbers

B. real numbers

C. positive integers

D. integers

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:71

(Marks:1)

Vu-Topper RM

Let f be a function from $X = \{2, 4, 5\}$ to $Y = \{1, 2, 4, 6\}$ defined as $f = \{(2, 6), (4, 2), (5, 1)\}$. Then the range of f is _____ .

- A. $\{2, 4, 5\}$
- B. $\{1, 2, 6\}$**
- C. $\{1, 4, 6\}$
- D. $\{1, 2, 4, 6\}$

Question No:72

(Marks:1)

Vu-Topper RM

A function $f: \mathbb{R} \rightarrow \mathbb{R}$ defined by $f(x) = x - \sqrt{x}$ is a real valued function.

- A. true
- B. false**

Question No:73

(Marks:1)

Vu-Topper RM

A graph of a function f is onto iff every horizontal line intersects the graph in at least one point.

- A. true**
- B. false

Question No:74

(Marks:1)

Vu-Topper RM

Given a set X , define a function i from X to X by $i(x) = x$ from all x belonging to X . Then _____ .

- A. i is both injective and surjective**
- B. i is injective but not surjective
- C. i is surjective but not injective
- D. i is neither injective nor surjective

Question No:75

(Marks:1)

Vu-Topper RM

A constant function is one to one iff its is a singleton.

- A. Range
- B. Domain**

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:76

(Marks:1)

Vu-Topper RM

If $f^{-1}(x)=6-x^2$ then $f^{-1}(2)$ is

A. 2

B. 3

C. 1

D. 0

Question No:77

(Marks:1)

Vu-Topper RM

The logic gates OR and AND are uniry operation on $\{0,1\}$.

A. true

B. false

Question No:78

(Marks:1)

Vu-Topper RM

Let $f(x)=x+3$ then $f^{-1}(x)$ is

A. $x+3$

B. $x-3$

C. $3-x$

D. $2x-3$

Question No:79

(Marks:1)

Vu-Topper RM

The range of a function is alwaysthe co-domain of f.

A. a superset of

B. equal to

C. a subset of

D. not equal to

Question No:80

(Marks:1)

Vu-Topper RM

Let R and S be reflexive relations on a set A then R intersection S is reflexive.

A. True

B. False

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:81

(Marks:1)

Vu-Topper RM

Let $A = \{2, 3, 4\}$ and $B = \{2,6,8\}$ and let R be the “divides” relation from A to B i.e. for all (a,b) belong to (Cartesian product of A and B), $a R b$ iff $a | b$ (a divides b). Then

- A. $R = \{(2,2), (2,6), (2,8), (3,6), (4,8)\}$**
- B. $R = \{(2,6), (3,6), (4,8)\}$
- C. $R = \{(3,6), (3,8)\}$
- D. $R = \{(2,2), (2,6), (2,8), (3,6), (4,8), (6,8)\}$

Question No:82

(Marks:1)

Vu-Topper RM

Suppose A has 3 elements and B has 4 elements, then the number of functions from A to B are.....

- A. 64**
- B. 81
- C. 12
- D. 7

Question No:83

(Marks:1)

Vu-Topper RM

Which of the following logical connective is not a binary operation?

- A. Negation**
- B. Implication
- C. Disjunction
- D. Conjunction

Question No:84

(Marks:1)

Vu-Topper RM

For $(2x-3, 4y+2)=(1,10)$, what will be the value of x and y ?

- A. (1 , 2)
- B. (2 , 2)**
- C. None of these
- D. (3 , 4)

برى صحبت سے تنہائی بہتر ہے اور تنہائی سے نیک صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:85

(Marks:1)

Vu-Topper RM

In the directed graph of an antisymmetric relation there ispair of arrows between two distinct elements of the set.

- A. one
- B. two
- C. no**
- D. infinite

Question No:86

(Marks:1)

Vu-Topper RM

Let $S = R$ and define the "square" relation $R = \left\{ \{(x,y) | x^2 = y^2\} \right\}$. The square relation is an_____ relation.

- A. Not equivalence relation
- B. Equivalence relation**

Question No:87

(Marks:1)

Vu-Topper RM

If $f(x) = 2x$ and $g(x) = x$ then $g(f(x))$ is.....

- A. $2\{x^2\}$
- B. $\{x^2\}$
- C. x
- D. $2x$**

Question No:88

(Marks:1)

Vu-Topper RM

Let $A = \{1, 2, 3, 4\}$ and define relation $R = \{(1, 1), (1, 3), (2, 4), (3, 1), (4,2)\}$ on A then which of the following statement about R is true?

- A. R is symmetric**
- B. R is not symmetric
- C. R is reflexive
- D. R is transitive

Question No:89

(Marks:1)

Vu-Topper RM

If R is transitive then the inverse relation will be transitive.

بري صحبت سے تڻهائي بهتر ٿي ۽ اور تڻهائي سے نيڪ صحبت بهتر ٿي

For More Help Contact What's app 03224021365

- A. false
B. true

Question No:90 (Marks:1) **Vu-Topper RM**

Let A be a set with m elements and B be a set with n elements then the number of elements in $A \times B$ are

- A. $\{m^n\}$
B. $\{n^m\}$
C. m.n
D. $\{2^{\{mn\}}\}$

Question No:91 (Marks:1) **Vu-Topper RM**

Logic gate NOT does not define a binary operation on $\{0,1\}$ because

- A. It takes a single input and gives more than one output.
B. It takes a single input and gives a single output
C. It takes a two inputs and gives multiple outputs.
D. It takes two inputs and gives a single output.

Question No:92 (Marks:1) **Vu-Topper RM**

Which of the following is not a type of a Relation?

- A. Symmetric
B. Permutation
C. Transitive
D. Reflexive

Question No:93 (Marks:1) **Vu-Topper RM**

In matrix representation of a relation, the diagonal entries are always 1.

- A. Transitive
B. Reflexive
C. Symmetric

بری صحبت سے تنہائی بہتر ہے اور تنہائی سے نیک صحبت بہتر ہے

For More Help Contact What's app 03224021365

D. Null

Question No:94

(Marks:1)

Vu-Topper RM

Operation of subtraction is a binary operation on the set of

- A. Positive integers
- B. Natural numbers
- C. Whole numbers

D. Integers

Question No:95

(Marks:1)

Vu-Topper RM

In the matrix representation of an irreflexive relation all the entries in the main diagonal are

- A. 1
- B. 3
- C. 2

D. 0

Question No:96

(Marks:1)

Vu-Topper RM

The inverse relation R^{-1} from B to A is defined as _____.

- A. $R^{-1} = \{(b,a) \notin B \times A \mid (a,b) \in R\}$
- B. $R^{-1} = \{(b,a) \in B \times A \mid (b,a) \in R\}$
- C. $R^{-1} = \{(b,a) \in B \times A \mid (a,b) \in R\}$**

D. None of the above

Question No:97

(Marks:1)

Vu-Topper RM

Range of function $f(x) = \left| x \right|$ will be

- A. Set of whole numbers
- B. Set of positive real numbers**
- C. Set of negative real numbers
- D. Set of real numbers

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:98

(Marks:1)

Vu-Topper RM

Suppose A has 3 elements and B has 4 elements, then the number of the binary relations from A to B that are functions is

A. $2^{1/2^6}$

B. $2^6/2^{12}$

C. $2^6/2^8$

D. $2^6/2^4$

Question No:99

(Marks:1)

Vu-Topper RM

For any set A, the Cartesian product of A and A is known as

_____ .

A. Empty relation

B. Universal relation

Question No:100

(Marks:1)

Vu-Topper RM

The relation R on set A is not symmetric iff there are elements a and b in A such that _____ .

A. Both (a, b) and (b, a) does not belong to R

B. (a, b) belongs to R but (b, a) does not belong to R

C. None of these

D. Both (a, b) and (b, a) belong to R

Question No:101

(Marks:1)

Vu-Topper RM

Composite Relation symbolically written as _____ .

A. $SoR = \{(a,c)|a \in A, c \in C, \exists b \in B, (a,b) \in R \text{ and } (b,c) \in S\}$

B. None of the above

C. $SoR = \{(a,c)|a \in A, c \in C, \exists b \in B, (a,b) \in R \text{ and } (b,c) \notin S\}$

D. $SoR = \{(a,c)|a \in A, c \in C, \exists b \notin B, (a,b) \in R \text{ and } (b,c) \in S\}$

Question No:102

(Marks:1)

Vu-Topper RM

In the representation of an irreflexive relation using a matrix, all its diagonal entries will be

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- A. -1
- B. 2
- C. 1
- D. 0**

Question No:103 (Marks:1) **Vu-Topper RM**

If $A = \{1, 2, 3\}$ is a set and $R = \{(2, 3), (2, 2), (3, 4)\}$ is a relation on A , then R is

A. Reflexive

B. None of these

C. Symmetric

D. Transitive

Question No:104 (Marks:1) **Vu-Topper RM**

A relation R is said to be iff it is reflexive, antisymmetric and transitive.

A. Equivalence Relation

B. Partial order Relation

C. both equivalence partial order Relation

D. Total order Relation

Question No:105 (Marks:1) **Vu-Topper RM**

The domain of a relation R from A to B is symbolically written as:

A. $D(R) = \{a \text{ belongs to } B \text{ such that } (a,b) \text{ belongs to } R\}$

B. $D(R) = \{a \text{ belongs to } A \text{ such that } (a,b) \text{ belongs to } R\}$

Question No:106 (Marks:1) **Vu-Topper RM**

If A contains 3 elements and B contains 2 elements, then number of subsets of $A \times B$ are

A. 12

B. 6

C. 64

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

D. 32

Question No:107

(Marks:1)

Vu-Topper RM

Let $A = \{1,2,3,4\}$ and R be the relation defined on A such that $R = \{(1,3), (2,2), (2,4), (3,1), (4,2)\}$, then R is _____.

A. Antisymmetric

B. Symmetric

Question No:108

(Marks:1)

Vu-Topper RM

Let $A = \{1,2,3\}$ and $B = \{2,4\}$ then number of binary relations from A to B are _____.

A. 64

B. 16

C. 6

D. 9

Question No:109

(Marks:1)

Vu-Topper RM

Cartesian product of two sets symbolically written as _____.

A. $A \times B = \{(a, b) | a \in A \text{ and } b \in B\}$

B. $A \times B = \{(a, b) | a \notin A \text{ and } b \in B\}$

C. $A \times B = \{(a, b) | a \in A \text{ and } b \notin B\}$

D. $A \times B = \{(a, b) | a \notin A \text{ and } b \notin B\}$

Question No:110

(Marks:1)

Vu-Topper RM

Let $S = R$ and define the "square" relation $R = \left\{ \{(x,y) | \{x^2\} = \{y^2\}\} \right\}$. The square relation is an _____ relation.

A. Not equivalence relation

B. Equivalence relation

Question No:111

(Marks:1)

Vu-Topper RM

Why the function $f:Z \rightarrow R$ defined by $f(x) = \{1 \over x^2-25\}$ is not well defined?

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

A. Because f is not defined for 5 and -5.

B. Because f is not defined for $x < 0$

C. Because f is not defined for $x > 0$

D. Because f gives imaginary values for all integers,

Question No:112

(Marks:1)

Vu-Topper RM

Let $R = \{ (1,1), (2,2), (3,3), (1,3) \}$ be the relation on set $A = \{ 1,2,3 \}$ then

_____.

A. R is not reflexive and not transitive

B. R is reflexive and transitive

C. R is reflexive and not transitive

D. R is not reflexive and transitive

Question No:113

(Marks:1)

Vu-Topper RM

If a relation $R = \{ (1,2)(2,3)(3,4)(4,1)(2,2) \}$ is given then which of the following is true about this relation.

A. R is Reflexive.

B. R is Antisymmetric.

C. R is Transitive.

D. R is Symmetric.

Question No:114

(Marks:1)

Vu-Topper RM

If a relation R is reflexive, anti symmetric and transitive then which of the following is not true for the inverse relation.

A. inverse relation will be anti symmetric.

B. inverse relation will be reflexive.

C. inverse relation will be transitive.

D. inverse relation will be irreflexive.

Question No:115

(Marks:1)

Vu-Topper RM

The number of elements in $A \times B$ are if A is a set with '5' elements and B is a set with '4' elements.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- A. 0
- B. 20**
- C. 1
- D. 9

Question No:116 (Marks:1) **Vu-Topper RM**

A function whose range consists of only one element is called.....

- A. One to one function
- B. Onto function
- C. Constant function**
- D. Identity function

Question No:117 (Marks:1) **Vu-Topper RM**

A set is countable if, and only if, it is _____.

- A. infinite
- B. finite or countably infinite**
- C. finite
- D. countably infinite

Question No:118 (Marks:1) **Vu-Topper RM**

If $f(x)=2x$ and $g(x)=x$ then $g(f(x))$ is.....

- A. 2x**
- B. $2x^2$
- C. x
- D. x^2

Question No:119 (Marks:1) **Vu-Topper RM**

Let $X = \{1,2,3,4\}$ and a function 'f' defined from X to X by $f(1) = 1$, $f(2) = 1$, $f(3) = 1$, $f(4) = 1$ then which of the following is true?

- A. f is an identity function
- B. f is injective

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

C. f is a constant function

D. f is bijective

Question No:120

(Marks:1)

Vu-Topper RM

Domain of the relation $\{(0,1),(3,22),(90,34)\}$ is _____ .

A. $\{1,22,34\}$

B. $\{0,1,3\}$

C. $\{0,1,3,22,90,34\}$

D. $\{0,3,90\}$

Question No:121

(Marks:1)

Vu-Topper RM

Let $P(A)$ be the power set of a non-empty set A and by using the definition of "subset" relation, \subseteq , for all $X, Y \in P(A)$, $X \subseteq Y \Leftrightarrow \forall x$, iff $x \in X$ then $x \in Y$. Then _____.

A. \subseteq is a partial order relation.

B. \subseteq is not a partial order relation.

Question No:122

(Marks:1)

Vu-Topper RM

Let R be the universal relation on a set A then which one of the following statement about R is true?

A. R is not reflexive

B. R is not transitive

C. R is reflexive, symmetric and transitive.

D. R is not symmetric

Question No:123

(Marks:1)

Vu-Topper RM

Let $A = \{1, 2, 3, 4\}$ and $R = \{(1, 1)(2, 2)(3, 3)(4, 4)\}$ then R is

A. Symmetric

B. Options a,b,and c all true

C. Reflexive

D. Transitive

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:124

(Marks:1)

Vu-Topper RM

$R = \{(a,1)(b,2)(c,3)(d,4)\}$ then the inverse of this relation is.....

A. $\{(a,1)(2,b)(3,c)(4,d)\}$

B. $\{(1,a)(2,b)(3,c)(4,d)\}$

C. $\{(a,1)(b,2)(3,c)(4,d)\}$

D. $\{(1,a)(b,2)(3,c)(4,d)\}$

Question No:125

(Marks:1)

Vu-Topper RM

Range of the relation $\{(0,1),(3,22),(90,34)\}$ is _____ .

A. $\{0,3,90\}$

B. $\{0,1,3,22,90,34\}$

C. $\{1,22,34\}$

D. $\{0,1,3\}$

Question No:126

(Marks:1)

Vu-Topper RM

Let $A = \{1,2,3\}$ and R be the relation defined on A such that $R = \{(1,1), (1,2), (2,3), (3,1)\}$, then R is _____ .

A. Symmetric

B. Antisymmetric

Question No:127

(Marks:1)

Vu-Topper RM

Let R and S be transitive relations on a set A then _____

A. Both R union S and R intersection S are transitive

B. R intersection S is transitive

C. Neither R union S is transitive nor R intersection S is transitive

D. R union S is transitive

Question No:128

(Marks:1)

Vu-Topper RM

There is atleast one loop in the graph of an irreflexive relation.

A. true

B. false

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:129

(Marks:1)

Vu-Topper RM

Let R be a binary relation on a set A. R is anti-symmetric iff _____.

A. $a, b \in A$ if $(a,b) \in R$ and $(b,a) \in R$ then $a = b$

B. $a, b \in A$ if $(a,b) \in R$ and $(b,a) \in R$ then $a \neq b$

C. $a, b \notin A$ if $(a,b) \in R$ and $(b,a) \in R$ then $a \neq b$

D. None of the above

Question No:130

(Marks:1)

Vu-Topper RM

Find x and y given $(2x, x + y) = (6, 2)$.

A. $x=2, y=1$

B. $x=3, y=-1$

C. $x=2, y=-1$

D. D. $x=3, y=1$ $x=2, y=1$

Question No:131

(Marks:1)

Vu-Topper RM

Domain of a relation symbolically written as _____.

A. None of these

B. $\text{Dom}(R) = \{a \in A \mid (a, b) \in R\}$

C. $\text{Dom}(R) = \{b \in B \mid (a, b) \in R\}$

D. $\text{Dom}(R) = \{a \notin A \mid (a, b) \in R\}$

Question No:132

(Marks:1)

Vu-Topper RM

Let $A = \{0,1\}$ and $B = \{1\}$. Let R and S be two binary relations on Cartesian product of A and B such that $R = \{(0,1)\}$ and $S = \{(1,1)\}$. Then $R \cap S =$ _____.

A. $\{1,1\}$

B. $\{(0,1)\}$

C. $\{0,1\}$

D. empty

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:133

(Marks:1)

Vu-Topper RM

If $x \equiv -10 \pmod{15}$ Which of the following integers are valid solution for x ?

A. 7

B. 5

C. 3

D. 6

Question No:134

(Marks:1)

Vu-Topper RM

Let $R = \{(1, 2), (3, 4), (5, 6), (7, 8)\}$. Range of the inverse of the relation is _____.

A. {1, 3, 5, 7}

B. {5, 6, 7, 8}

C. {1, 2, 3, 4}

D. {2, 4, 6, 8}

Question No:135

(Marks:1)

Vu-Topper RM

Let R be a relation on a set A. If R is symmetric then its compliment is _____.

A. Irreflexive

B. Symmetric

C. Reflexive

D. Antisymmetric

Question No:136

(Marks:1)

Vu-Topper RM

If $A = \{1, 2, 3\}$ is a set and $R = \{(1, 2), (2, 2), (2, 1)\}$ is a relation on A, R is

A. Reflexive

B. Symmetric

C. None of these

D. Transitive

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:137

(Marks:1)

Vu-Topper RM

If a relation $R = \{(1,1)(2,1)(1,2)(2,2)\}$ is given then which of the following is not true about this relation.

A. R is Symmetric.

B. R is Transitive

C. R is Reflexive.

D. R is Irreflexive.

Question No:138

(Marks:1)

Vu-Topper RM

If $x \equiv 17 \pmod{5}$ Which of the following integers are valid solution for x ?

A. 4

B. -44

C. 8

D. 12

Question No:139

(Marks:1)

Vu-Topper RM

Let R be a relation on a set A. If R is reflexive then its compliment is

_____ .

A. Reflexive

B. Antisymmetric

C. Symmetric

D. Irreflexive

Question No:140

(Marks:1)

Vu-Topper RM

Let the set $A = \{1,2,3,4\}$ Then the relation $\{(2,4),(4,2)\}$ is _____.

A. Transitive

B. AntiSymmetric

C. Reflexive

D. Symmetric

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:141

(Marks:1)

Vu-Topper RM

The union of the transitive binary relations $R = \{(1,2), (1,3), (2,2), (3,3), (4,2), (4,3)\}$ and $S = \{(2,1), (2,4), (3,3)\}$ on the set $A = \{1,2,3,4\}$ is given by $R \cup S = \{(1,2), (1,3), (2,1), (2,2), (2,4), (3,3), (4,2), (4,3)\}$ then $R \cup S$ is _____?

- A. not transitive**
- B. transitive

Question No:142

(Marks:1)

Vu-Topper RM

Let $R = \{(1, 2), (3, 4), (5, 6), (7, 8)\}$. Domain of the inverse of the relation is _____.

- A. {2, 4, 6, 8}**
- B. {1, 2, 3, 4}
- C. {1, 3, 5, 7}
- D. {5, 6, 7, 8}

Question No:143

(Marks:1)

Vu-Topper RM

Let $A = \{1,2,3,4\}$ and define the relation R on A by $R = \{(1,2), (2,3), (3,3), (3,4)\}$. Then _____

- A. R is neither reflexive nor irreflexive**
- B. R is both reflexive and irreflexive
- C. R is reflexive
- D. R is irreflexive

Question No:144

(Marks:1)

Vu-Topper RM

Range of a relation symbolically written as _____.

- A. None of the above
- B. $\text{Ran}(R) = \{a \in A \mid (a, b) \in R\}$
- C. $\text{Ran}(R) = \{b \in B \mid (a, b) \in R\}$**
- D. $\text{Ran}(R) = \{b \notin B \mid (a, b) \in R\}$

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:145

(Marks:1)

Vu-Topper RM

The matrix representation of an inverse relation can be obtained by taking theof the relational matrix.

A. transpose

B. Determinant

C. inverse

D. adjoint

Question No:146

(Marks:1)

Vu-Topper RM

Let R be a relation on a set A. R is transitive if and only if for all $a, b, c \in A$ then:

A. $(a, b) \in R$ and $(b, c) \in R$ but $(a, c) \notin R$

B. $(a, b) \in R$ then $(b, a) \notin R$

C. $(a, b) \in R$ and $(b, c) \in R$ then $(a, c) \in R$

D. $(a, b) \in R$ and $(b, c) \in R$ then $(a, c) \in R$ and $(a, b) \in R$ then $(b, a) \in R$

Question No:147

(Marks:1)

Vu-Topper RM

The properties of being symmetric and being anti-symmetric are

_____.

A. Negative of each other

B. Not negative of each other

Question No:148

(Marks:1)

Vu-Topper RM

Let $A = \{1, 2, 3, 4\}$ and define a relation R on A by $R = \{(1, 1), (1, 2), (1, 3), (2, 3)\}$. Then which one of the following is a correct statement about R:

A. R is both transitive and reflexive

B. R is neither reflexive nor transitive

C. R is transitive

D. R is reflexive

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:149

(Marks:1)

Vu-Topper RM

Let $A = \{0, 1, 2\}$ and $R = \{(0,2), (1,1), (2,0)\}$ be a relation on A. Then which of the following statement about R is true?

- A. R is reflexive
- B. R is symmetric**
- C. None of the above
- D. R is transitive

Question No:150

(Marks:1)

Vu-Topper RM

Which of the following is always true for the matrix representation of a symmetric relation?

- A. Matrix has always 0 in its diagonal entries
- B. Matrix has always 1 in its diagonal entries
- C. Matrix is singular
- D. Matrix is equal to its transpose.**

Question No:151

(Marks:1)

Vu-Topper RM

If $A = \{1,2,3\}$ & $B = \{4,5,6\}$ and $R = \{(1,4)(2,5)(3,6)(3,4)\}$ The complementary relation is

- A. $A \times B$
- B. $A \times B$ (intersection) R
- C. $A \times B$ (difference or -) R**
- D. $A \times B$ (Union) R

Question No:152

(Marks:1)

Vu-Topper RM

Let $A = \{1,2,3,4\}$ and $R = \{(1,2), (2,3), (3,3), (3,4)\}$ be a relation on A. Then which one of the following ordered pair has made R not an irreflexive relation?

- A. (3,3)**
- B. (3,4)
- C. (2,3)
- D. (1,2)

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:153

(Marks:1)

Vu-Topper RM

A sequence whose terms alternate in sign is called

- A. Series
- B. Cauchy sequence
- C. Alternating sequence**
- D. None of the above

Question No:154

(Marks:1)

Vu-Topper RM

The 3rd term of the sequence $B_5 = 5n$

- A. 125**
- B. 625
- C. 5
- D. 25

Question No:155

(Marks:1)

Vu-Topper RM

If a function is recursively defined as $f(0) = 4$ & $f(n + 1) = 3f(n) + 3$
then $f(2) = \dots\dots\dots$

- A. 15
- B. 55
- C. 48**
- D. 50

Question No:156

(Marks:1)

Vu-Topper RM

The _____ of the terms of a sequence forms a series.

- A. Sum**
- B. Multiplication

Question No:157

(Marks:1)

Vu-Topper RM

Let $f: \mathbb{R} \rightarrow \mathbb{R}$ is one to one function then c, f, c is not equal 0 is also one to one function.

- A. False
- B. True**

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:158

(Marks:1)

Vu-Topper RM

720 =

- A. 4!
- B. 5!
- C. 7!
- D. 6!**

Question No:159

(Marks:1)

Vu-Topper RM

The composition of functions is always _____.

- A. Onto
- B. Associative**
- C. one-to-one
- D. commutative

Question No:160

(Marks:1)

Vu-Topper RM

What will be the fourth term of the following sequence $1/2, 2/3, 3/4,$
_____?

- A. 5/6
- B. 7/8
- C. 4/5**
- D. 6/7

Question No:161

(Marks:1)

Vu-Topper RM

Let $A = \{0, 1, 2\}$ and $R = \{(0,2), (1,1), (2,0)\}$ be a relation on A. Then which of the following ordered pairs are needed to make it transitive?

- A. (2,0) and (0,2)
- B. (0,0) and (0,2)
- C. (2,0) and (2,2)
- D. (0,0) and (2,2)**

بري صحبت سے تہائی بہتر ہے اور تہائی سے نیک صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:162

(Marks:1)

Vu-Topper RM

Let $A = \{1,2,3\}$ and $B = \{0,1,2\}$ and $C = \{a,b\}$

$R = \{(1,0),(1,2),(3,1),(3,2)\}$

$S = \{(0,b),(1,a),(2,b)\}$

Composite of R and S = _____ .

A. $\{(1,b),(1,a),(3,a),(3,b)\}$

B. $\{(1,a),(2,a),(3,a)\}$

C. $\{(1,a),(1,b),(2,a),(3,b)\}$

D. $\{(1,b),(3,a),(3,b)\}$

Question No:163

(Marks:1)

Vu-Topper RM

If $f(x) = 4x - 8$, find $f(5)$

A. 18

B. 15

C. 12

D. 14

Question No:164

(Marks:1)

Vu-Topper RM

Define a relation $R = \{ (1,1), (2,2), (3,3), (1,3), (3,2) \}$ then relation is_____.

A. R is not reflexive and transitive

B. R is reflexive and transitive

C. R is reflexive and not transitive

D. R is not reflexive and not transitive

Question No:165

(Marks:1)

Vu-Topper RM

Let $R = \{(1,1), (2,2), (3,3), (1,3)\}$ be the relation on set $A = \{1,2,3\}$ then _____.

A. R is reflexive and not transitive

B. R is not reflexive and transitive

C. R is not reflexive and not transitive

D. R is reflexive and transitive

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Question No:166

(Marks:1)

Vu-Topper RM

Input values of the function are called the

A. Range

B. Domain

C. None of these.

D. Relation

Question No:167

(Marks:1)

Vu-Topper RM

$25 \equiv 1 \pmod{3}$ means that 3 divides

A. 25-1

B. 25+1

C. 25*1

D. 25/1

Question No:168

(Marks:1)

Vu-Topper RM

Let $A = \{1,2,3,4,5\}$ and $B = \{4,9,16,17,25\}$. Then the relation $R = \{(2,4), (3,9), (4,16), (3,17)\}$ Then inverse of R is _____.

A. None of the above

B. $\{(2,4), (3,9), (16,4), (17,3)\}$

C. $\{(4,2), (9,3), (4,16), (3,17)\}$

D. $\{(4,2), (9,3), (16,4), (17,3)\}$

Question No:169

(Marks:1)

Vu-Topper RM

Subtraction (-) is a binary operation on the set of integers.

A. True

B. False

Question No:170

(Marks:1)

Vu-Topper RM

Range of function will be

A. Set of real numbers

B. Set of negative real numbers

C. Set of positive real numbers

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

D. Set of whole numbers

Question No:171

(Marks:1)

Vu-Topper RM

Let $A = \{p, q, r, s\}$ and define a relation R on A by $R = \{(p, p), (p, r), (q, r), (q, s), (r, s)\}$ Then which one of the following is the correct statement about R :

A. R is not reflexive

B. R is symmetry

C. R is reflexive

D. R is transitive

Question No:172

(Marks:1)

Vu-Topper RM

Let $A = \{1,2,3,\dots,50\}$ and $B = \{2,4,6,8,10\}$.

Then the Cartesian product of A and B has _____ elements.

A. 50

B. 250

C. 5

D. 100

Question No:173

(Marks:1)

Vu-Topper RM

The relation $R = \{(2, 4), (x, 1), (4, 2), (5, 6)\}$ is a function if x is not equal to

A. 4, 1 or 6

B. 2, 4 or 5

C. 2, 4 or 6

D. 1, 2 or 6

Question No:174

(Marks:1)

Vu-Topper RM

The function defined from Z to Z as $f(x) = \frac{1}{(x+2)(x-2)}$ is not well defined because.....

A. Each input has two outputs.

B. Function is defined at $x=2$ but not defined at $x=-2$

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

C. Function is not defined at $x=-2$ and $x=2$

D. Function gives imaginary values for $x < 0$

Question No:175

(Marks:1)

Vu-Topper RM

Let $X = \{2,4,5\}$ and $Y = \{1,2,4\}$ and R be a relation from X to Y defined by $R = \{(2,4), (4,1), (a,2)\}$. For what value of 'a' the relation R is a function ?

A. 4

B. 1

C. 2

D. 5

Question No:176

(Marks:1)

Vu-Topper RM

Consider the relations $R = \{(1,3), (1,4), (2,3), (2,4), (3,1), (3,4)\}$ on the set $A = \{1,2,3,4\}$ then R is _____.

A. both reflexive and irreflexive

B. reflexive

C. None of the above

D. Irreflexive

Range of function $f(x) = (e^x)$ is _____

- Set of positive real numbers

Composite relation symbolically written as _____

- $SoR = \{(a,c) \in A \times C, c \in C, \exists b \in B, (a,b) \in R \text{ and } (b,c) \in S\}$

If $x \equiv 17 \pmod{5}$ which of the following integers are valid solution for x ?

- 12

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Range of the relation $\{(0,1),(3,22),(90,34)\}$

- $\{1,22,34\}$

Let $A = \{0,1,2\}$ and $R = \{(0,2),(1,1),(2,0)\}$ be a relation on A . The which of the following ordered pairs are needed to make it transitive?

- $(0,0)$ and $(2,2)$

Operation of subtraction is a binary operation on the set of _____

- Integers

Let $S=R$ and define the 'square' relation $R = \{(x,y) | x^2=y^2\}$. The square relation is an _____ relation

- Equivalence relation

The logic gate NOT is a unary operation on $\{0,1\}$.

- True

Let $A = \{1,2\}$, then $P(A) =$ _____

- $\{\emptyset, \{1\}, \{2\}, \{1,2\}\}$

If a relation R is reflexive, anti symmetric and transitive then which of the following is not true for the inverse relation.

- Inverse relation will be irreflexive.

Let R be a binary relation on a set A , R is anti-symmetric iff _____

- $a, b \in A$ if $(a,b) \in R$ and $(b,a) \in R$ then $a=b$

"-" is a binary operation on the set of integers Z .

- True

The inverse relation R^{-1} from B to A is defined as _____

- $R^{-1} = \{(b,a) \in B \times A \mid (a,b) \in R\}$

Which of the following is always true for the matrix representation of a symmetric relation?

- Matrix is equal to its transpose

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Let $A = \{1,2,3,4\}$ and let R and S be transitive binary relations on A defined as; $R = \{(1,2), (1,3), (2,2), (3,3), (4,2), (4,3)\}$ and $S = \{(2,1), (2,4), (3,3)\}$ then $R \cup S = \{(1,2), (1,3), (2,1), (2,2), (2,4), (3,3), (4,2), (4,3)\}$

- R union S is transitive

Let $S=R$ and define the 'square' relation $R = \{(x,y) | x^2=y^2\}$. The square is an _____ relation.

- Equivalence relation

If $x \equiv -10 \pmod{15}$. Which of the following integers are valid solution for x ?

- 5

Let R be a binary relation on a set A . If R is anti symmetric then _____

- Inverse of R is anti symmetric

If $A = \{1,2,3\}$ is a set and $R = \{(1,2), (2,2), (2,1)\}$ is a relation on A , R is

- Symmetric

Let $A = \{0,1\}$ and $B = \{1\}$. Let R and S be two binary relations on Cartesian product of A and B such that $R = \{(0,1)\}$ and $S = \{(1,1)\}$. Then $R \cap S =$ _____

- Empty

A relation R is said to be _____ iff it is reflexive, antisymmetric and transitive.

- Partial order Relation

Let $X = \{1,2,3\}$ and $Y = \{7,8,9\}$ and let f be function defined from X to Y such that f is onto then which of the following statement about f is true?

- Co-domain of f must contain 1 element

The function $f \circ g$ and $g \circ f$ are always equal

- False

If a relation $R = \{(1,2), (2,3), (3,4), (4,1), (2,2)\}$ is given then which of the following is true about this relation.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- R is reflexive

A set is called countable if , and only if, it is _____

- finite

Let $f(x) = x^2 - 1$ define function f from R to R and $c=2$ be any scalar, then $c \cdot f(x)$ is _____

- $2x^2 + 2$

Let R be a binary relation on a set A. If R is anti symmetric then _____

- Inverse of R is symmetric

For $(2x-3, 4y+2) = (1, 10)$. What will be the value of x and y ?

- (2,2)

Let f and g be the two functions from R to R defined by $f(x) = |x|$ and $g(x) =$ square root of x^2 for all $x \in R$. Then _____

- F(x) is not equal to g(x)

If a set A has 15 elements then $P(A)$ (power set of A) has _____ elements.

- 2^{15}

For the relation below to be a function, x cannot be what values $\{(12, 14), (13, 5), (-2, 7), (x, 13)\}$?

- X cannot be 12, 13, or -2

Let the set $A = \{1, 2, 3, 4\}$. Then the relation $\{(2, 4), (4, 2)\}$ is _____

- Symmetric

For the following relation to be a function, x can not be what values? $R = \{(2, 4), (x, 1), (4, 2), (5, 6)\}$.

- x cannot be 2, 4 and 5

Vertical line test is used to determine that whether the graph of a relation is a function or not.

- True

بری صحبت سے تنہائی بہتر ہے اور تنہائی سے نیک صحبت بہتر ہے

For More Help Contact What's app 03224021365

The properties of being symmetric and being anti symmetric are _____

- Not negative of each other

The number of elements in $A \times B$ are _____ if A is a set with '5' elements and B is a set with '4' elements.

- 20

$R = \{(a,1)(b,2)(c,3)(d,4)\}$ then the inverse of this relation is _____

- $\{(1,a)(2,b)(3,c)(4,d)\}$

Logic gate NOT does not define a binary operation on $(0,1)$ because _____

- It takes a single input and gives a single output

How many real numbers exist between 1 and 5

- 3

The number pi is

- Irrational

The number square root 2 is

- Irrational

Range the relation $\{(0,1)(3,22),(90,34)\}$

- $\{0,3,90\}$

Spherical coordinate 0 is related to the cylindrical coordinate as _____

- $@=@$

Operation of subtraction is a binary operation on the set _____

- Integers

Let $A = \{1,2,3,4\}$ and $R = \{(1,2),(2,3),(3,3),(3,4)\}$ be a relation on A. Then which one of the following ordered pair has made R not an irreflexive relation?

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- (3,3)

Input values of the function are called the _____

- Domain

Range of function $f(x)=|x|$ will be

- Set of positive real numbers

Which of the following is not a binary operation on the set of integers?

- Division

In the matrix representation of an irreflexive relation all the entries in the main diagonal are _____

- 0

If the partition set of A is $\{A_1, A_2\}$ then

- $A_1 \cap A_2 =$ not empty set

Let $A = \{a, b\}$ then $P(A) =$

- $\{\text{Non empty set}, \{a\}, \{b\}, \{a, b\}\}$

Which relations below are not functions?

- $\{(13,14), (13,5), (16,7), (18,13)\}$

In the directed graph of an antisymmetric relation there is _____ pair of arrows between two distinct elements of the set.

- No

If a relation $R = (1,1), (2,1), (2,2)$ is given then which of the following is not true about this relation

- R is irreflexive

Let R and S be transitive relations on a set A then _____

- Neither R union S is transitive nor R intersection S is transitive

Let $R = \{(1,2), (3,4), (5,6), (7,8)\}$. Domain of the inverse of the relation is

برى صحبت سے تنہائی بہتر ہے اور تنہائی سے نیک صحبت بہتر ہے

For More Help Contact What's app 03224021365

- $\{2,4,6,8\}$

Let $A=\{1,2,3,4,5\}$ and $B=\{4,9,16,17,25\}$. Then the relation $R=\{(2,4),(3,9),(4,16),(9,17)\}$ The inverse of R is'

- $\{(4,2),(9,3),(16,4),(17,3)\}$

Let R be a relation on a set A. If R is symmetric then its compliment is _____

- Irreflexive

Which is not a binary operation on the set of natural numbers \mathbb{N} ?

- Subtraction

If a relation $R=\{(1,1)(2,1)(1,2)(2,2)\}$ is given then which of the following is not true about this relation.

- R is irreflexive

$R=\{(a,1)(b,2)(c,3)(d,4)\}$ then the inverse of this relation is _____

- $\{(1,a)(2,b)(3,c)(4,d)\}$

For any set A, the Cartesian product of A and A is known as _____

- Universal relation

Let $A=\{p,q,r,s\}$ and define a relation R on A by $R=\{(p,p),(p,r),(q,r),(q,s),(r,s)\}$ Then which one of the following is the correct statement about R:

- R is not reflexive

$A=\{1,2\}$ $B=\{3,4\}$, $R=\{(1,3)(2,4)\}$. Then the complement of R is _____.

- $\{(1,4)(2,3)\}$

Domain of a relation symbolically written as _____.

- $\text{Dom}(R)=\{a \in A \mid (a,b) \in R\}$

Let $X=\{2,4,5\}$ and $Y=\{1,2,4\}$ and R be a relation from X to Y defined by $R=\{(2,4)(4,1)(a,2)\}$. For what value of 'a' the relation R is a function?

- 5

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Let $A=\{1,2,3,4,5,6,7,8,9\}$, then which of the following sets represent the partition of the set A?

- $A=\{1,3,5,7,9\}$, $B=\{2,4,6\}$, $C=\{8\}$

Let $A=\{1,2,3\}$ and $B=\{2,4\}$ then number of binary relations from A to B are _____.

- 64

A relation R is said to be _____ iff it is reflexive, antisymmetric and transitive.

- Partial order Relation

Let f be a function from $X=\{2,4,5\}$ to $Y=\{1,2,4,6\}$ defined as: $f=\{(2,6),(4,2),(5,1)\}$. The range of f is _____

- $\{1,2,6\}$

Let $A=\{0,1,2\}$ and $R=\{(0,2),(1,1),(2,0)\}$ be a relation on A. Then which of the following statement about R is true?

- R is symmetric

Let $A=\{2,3,4\}$ and $B=\{2,6,8\}$ and let R be the “divides” relation from A to B i.e for all (a,b) belong to (Cartesian product of A and B), aRb iff $a \mid b$ (a divides b). Then

- $R=\{(2,2),(2,6),(2,8),(3,6),(4,8)\}$

Let $A=\{1,2,3,\dots,50\}$ and $B=\{2,4,6,8,10\}$. Then the Cartesian product of A and B has _____ elements.

- 250

In the matrix representation of an reflexive relation all the entries in the main diagonal are _____

- 1

Which of the following is not a type of a relation?

- Permutation

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

Let $X=\{2,4,5\}$ and $Y=\{1,2,4\}$ and R be a relation from X to Y defined by $R=\{(2,4),(4,1),(a,2)\}$. For what value of 'a' the relation R is a function ?

- 5

Which of the following is not a representation of a relation?

- Venn diagram

Let $A=\{1,2,3,4\}$ and define the following relations on A . Then $R=\{(1,3),(1,4),(2,3),(2,4),(3,1),(3,4)\}$ is _____

- R is irreflexive

The range of $f:X \rightarrow Y$ is also called the image of

- True

Complementary Relation symbolically written as _____

- $R=A \times B - R = \{(a,b) \in A \times B \mid (a,b) \text{ not belong to } R\}$

Let $A=\{1,2,3,4\}$ and $R=\{(1,1),(2,2),(3,3),(4,4)\}$ then R is

- All options

If a relation $R=\{(1,1),(2,1),(1,2),(2,2)\}$ is given then which of the following is not true about this relation.

- R is irreflexive

Which of the following logical connective is not a binary operation ?

- Implication

A set may be dividend up into its disjoint subsets, such division is called _____

- Partition

If $A=\{1,2,3\}$ & $B=\{4,5,6\}$ and $R = \{(1,4)(2,5)(3,6)(3,4)\}$ The complementary relation is _____

- $A \times B$ (difference or $-$) R

In matrix representation of a _____ relation, the diagonal entries are always 1.

برى صحبت سے تنہائی بہتر ہے اور تنہائی سے نیک صحبت بہتر ہے

For More Help Contact What's app 03224021365

- Reflexive

R is not symmetric iff there are elements a and b in A such that

- (a,b) belongs to R but (b,a) does not belong to R

Which relations below are functions?

$$R1 = \{(3,4), (4,5), (6,7), (8,9)\}$$

$$R2 = \{(3,4), (4,5), (6,7), (3,9)\}$$

$$R3 = \{(-3,4), (4,-5), (0,0), (8,9)\}$$

$$R4 = \{(8,11), (34,5), (6,17), (8,19)\}$$

- R1 and R3 are functions

The logic gate OR and AND are unary operation on {0,1}

- False

There is atleast one loop in the graph of an irreflexive relation

- False

There is atleast one loop in the graph of an reflexive relation

- True

A contains 3 elements and B contains 2 elements, then number of subsets of $A \times B$ are _____

- 64

Let $A = \{1,2,3\}$ and $B = \{0,1,2\}$ and $C = \{a,b\}$ $R = \{(1,0), (1,2), (3,1), (3,2)\}$
 $S = \{(0,b), (1,a), (2,b)\}$ composite of R and S = _____

- $\{(1,b), (1,a), (3,a), (3,b)\}$

If R is transitive then the inverse relation will be transitive

- True

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

The number of elements in the power set of P(not empty set) denoted by $P(P(\text{not empty set}))$ is

- 2

The function defined from Z to Z as $f(x) = 1/(x+2)(x-2)$ is not well defined because _____

- Function is not defined at $x=2$ and $x=-2$

Rang of relation $\{(0,1),(3,22),(90,34)\}$ is _____

- $\{1, 22, 34\}$

The number of elements in the power set of P(not empty set) denoted by $P(P(\text{not empty set}))$ is

- 1

Let $R = \{(1,2),(3,4),(5,6),(7,8)\}$. Domain of inverse of the relation is _____

- $\{2,4,6,8\}$

The relation 'divides' on the set of integers is _____

- A symmetric relation

Operation of subtraction is a binary operation on the set of _____

- Integers

If R is transitive then the inverse relation will be transitive.

- True

Let $A = \{1,2,3,4\}$ and define the relation R on A by $R = \{(1,2),(2,3),(3,3),(3,4)\}$. Then _____

- R is both reflexive and irreflexive

A set may be divided up into its disjoint subsets, such division is called

- Partition

If a set A contains n elements then the number of elements in its power set $P(A)$ is _____

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- 2^n

Range of a relation symbolically written as _____.

- $\text{Ran } R = \{b \in B \mid (a, b) \in R\}$

Let R be a binary relation on a set A. IF R is anti symmetric then _____.

- Inverse of R is anti symmetric

Let A be a set with m elements and B be a set with n elements then the number of elements in $A \times B$ are _____

- m.n

Let $A = \{1, 2, 3, 4\}$ and define the following relation on A. Then

$R = \{(1, 3), (2, 2), (2, 4), (3, 1), (4, 2)\}$ Is _____

- R is symmetric

If $A = \{1, 2, 3\}$ & $B = \{4, 5, 6\}$ and $R = \{1, 4\}, \{2, 5\}, \{3, 6\}, \{3, 4\}$. The complementary relation is _____

- $A \times B$ (difference or -) R

Let R be a relation on a set A. If R is reflexive then its compliment is _____

- Irreflexive

$25 \equiv 1 \pmod{3}$ means that 3 divides _____

- 25-1

Let R be the universal relation on a set A then which one of the following statement about R is true ?

- R is reflexive, symmetric and transitive

Domain of a relation symbolically written as _____

- $\text{Dom}(R) = \{a \in R \mid (a, b) \in R\}$

Let R be a relation on a set A. R is transitive if and only if for all $a, b, c \in A$ then

- $(a, b) \in R$ and $(b, c) \in R$ then $(a, c) \in R$

بری صحبت سے تنہائی بہتر ہے اور تنہائی سے نیک صحبت بہتر ہے

For More Help Contact What's app 03224021365

Let A be a non-empty set and P(A) the power set of A. Define the 'subset' relation, \subseteq , as follows for all $X, Y \in P(A)$, $X \subseteq Y \iff$ for all x , iff $x \in X$ then $x \in Y$. Then \subseteq is _____

- \subseteq is partial order relation

Define a relation $R = \{(1,1), (2,2), (3,3), (1,3)\}$ the relation is

- R is reflexive and transitive

Let R be a relation on a set A. R is transitive if and only if for all $a, b, c \in A$ then.

- $(a,b) \in R$ and $(b,c) \in R$ then $(a,c) \in R$

Let R and S be reflexive relations on a set A then $R \cap S$ is reflexive

- True

A function whose range consists of only one element is called _____

- One to one function

One-to-one correspondence means the condition of _____

- Both (a) and (c)

Let $X = \{1, 5, 9\}$ and $Y = \{3, 4, 7\}$, Define a function f from X to Y such that $f(1) = 7, f(5) = 3, f(9) = \underline{\hspace{2cm}}$. Which is true f(9) to make it a one-to-one (injective) function?

- 4

What will be the fourth term of the following sequence $1/2, 2/3, 3/4, \underline{\hspace{2cm}}?$

- 4/5

The value of $6! =$

- 720

A constant function is one to one iff its _____ is a singleton.

- Domain

A constant function is onto iff its _____ is a singleton.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- Co-domain

If f is defined recursively by $f(0) = -1$ and $f(n+1)=f(n)+3$, then $f(2)=$ _____.

- 5

Composition of a function is a commutative operation.

- False

Composition of a function is not a commutative operation

- True

The sum of first five whole number is _____.

- 10

Inverse of a surjective function is always a function.

- False

Inverse of a surjective function may not be a function

- True

Let $X=\{1,2,3,4\}$ and $Y=\{7,8,9\}$ and let f be function defined from X to Y such that f is onto then which of the following statement about f is true?

- Co-domain of f must contain 3 elements

If $f: X \rightarrow Y$ and $g: Y \rightarrow Z$ are both onto functions. Then $g \circ f: X \rightarrow Z$ is _____

- onto

If $f: W \rightarrow X$, $g: X \rightarrow Y$, and $h: Y \rightarrow Z$ are functions, then _____

- $(h \circ g) \circ f = h \circ (g \circ f)$

Cardinality of positive prime numbers less than 20 is _____.

- 8

If $f(x)=\sin^{-1}(x)$ and $g(x)=\sin x$ then $g \circ f(x)$ is _____.

- x

$0! =$ _____.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- 1

Let $f(x)=2x$ and $g(x)=x+2$ define functions f and g from R to R , then $(f-g)(x)$ is _____.

- $x-2$

The total number of terms in an arithmetic series $0+5+10+15+\dots+50$ are _____.

- 11

$9!/6! =$ _____

- 504

Let $f(x)=3x$ and $g(x)=3x-2$ define functions f and g from R to R , THEN $(F+G)(X)$ is _____

- $6x-2$

Common ration in the sequence “4, 16, 64, 256,...” is.....12.

- 4

0.8181818181 is a infinite geometric series.

- True

The word ‘algorithm’ refers to a step-by-step method for performing some action.

- True

A predicate become _____ when its variables are given specific values

- Sentence

The sum of two irrational numbers must be an irrational number.

- False

The sum of two irrational numbers need not be irrational number

- True

The division by zero is allowed in mathematics.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- False

The product of any two consecutive positive integers is divisible by 2

- True

If 'n' is an odd integer then n^3+n is _____.

- Even

For integers a,b,c, If divides b and a divides c, then a divides (a+b).

- False

Quotient remainder theorem states that for any positive integer d, there exist unique integer q and r such that _____ and $0 < r < d$

- $N=d.q+r$

A rule that assigns a numerical value to each outcome in a simple space is called

- Random variable

If A and B are two disjoint (mutually exclusive) events then $P(AB)=$

- $P(A) + P(B)$

How many ways are there to select five players from a 10 member tennis team to make a trip to a match to another school?

- $C(10,5)$

The expectation of x is equal to

- $\sum xf(x)$

If $P(A \text{ intersection } B) = P(A) P(B)$ THEN THE events A and B are called

- Independent

A walk that starts and ends at the same vertex is called.

- None optins

How many integers from 1 through 1000 are neither multiple of 3 nor multiple of 5

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- 497

What is the probability of getting a number greater than 4 when a die is thrown?

- $\frac{3}{5}$

Euler formula for graphs is _____.

- $F=e-v+2$

Composition of a function is a commutative operation.

- False

Let $X=\{1,2,3,4\}$ and a function 'f' defined on X $f(1)=1, f(2)=2, f(3)=3, f(4)=4$ then _____

- F is an identity function

If $f(x)=2x$ and $g(x)=x$ then $g(f(x))$ is _____.

- $2x^2$

Let $X=\{1,2,3,4\}$ and a function 'f' defined from X to X by $f(1)=1, f(2)=1, f(3)=1, f(4)=1$ then which of the following is true?

- F is a constant function

Which of the following is not correct for a 'sequence'?

- A sequence is a relation whose domain is the set of natural numbers

$F(x)=x^2$ is not one to one function from R to R^+

- True

Let $f(x)=x+2$ then $f^{-1}(x)$ is _____

- $x-2$
- $2x^2-1$

One to one correspondence means the condition of _____.

- Both (a) and (c)

If $g:R \rightarrow R$ defined by $g(x)=e^x$ is a real valued function of a real variable.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- True

$\frac{1}{2}$, then 3rd term of sequence is _____.

- $\frac{1}{2}$

The process of defining an object in terms of smaller versions of itself is called recursion.

- True

A set is called countable if, and only if, it is _____.

- Finite and countable infinite.....both

A set that is not countable is called _____.

- Uncountable

Let $f(x) = x+3$ then $f^{-1}(x)$ is _____ -

- $x-3$

The fibonacci sequence is defined as $F_0=1, F_1=1, F_k=F_{k-1}+F_{k-2}$ for all integers $k \geq 2$ then which of the following is true for F_2

- $F_2-F_1= 2+1=3$

$x+a, x+3a, x+5a, \dots$ is a/n _____.

- Arithmetic sequence

In the following sequence $a_k=K/(k+1)$, for $k=1$, a_1 will be _____.

- $\frac{1}{2}$

If $f(x)=x$ and $g(x)= -x$ are both one to one function then $(f+g)(x)$ is also one to one function.

- False

If $f(x)=x$ and $g(x)= -x$ are both one to one function then $(f+g)(x)$ is not one to one function.

- True

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

The function 'f' and 'g' are inverse of each other if and only if their composition gives_____.

- Identity function

Let C is defined as the set of all countries in the world then C is a _____.

- Finite set

The sum of the series $a_1 + a_2 + a_3 + \dots$ can be written as _____.

•

Let $X=\{1,2,3,4\}$ and a function 'f' defined from X to X by $f(1)=1, f(2)=1, f(3)=1, f(4)=1$ then which of the following is true?

- F is a constant function

The composition of function is always

- Associative

A set is countably infinite if, and only if, it has the same cardinality as the set of

- Positive integers

Two functions 'f' and 'g' from 'X' to 'Y' are said to be equal if and only if _____.

- $F(x)=g(x)$ for all 'x' belongs to X

$Y=x^3$ is a graph of bijective function from R to R.

- True

Let $X=\{1,2,3,4\}$ and a function 'f' defined on X by $f(1)=1, f(2)=2, f(3)=3$

- F is an identity function

Composition of a function is a commutative operation.

- True

Given a set X define a function I from X to X by $i(x)=x$ from all x belonging to X . Then_____.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- I is both injective and surjective

Let $X=\{1,5,9\}$ and $Y=\{3,4,7\}$. Define a function f from X to Y such that $f(1)=7$, $f(5)=3$, $f(9)=$ _____. Which is true for $f(9)$ to make it a one-to-one (injective) function?

- 4

Which of the following is not a predecessors of a_k ?

- A_{k+1}

The two functions 'f' and 'g' are equal if _____.

- $F(x) = 3x$ and $g(x) = \frac{6x^2+3x}{2x^2+1}$ for all $x \in \mathbb{R}$

If first term of a geometric sequence is 2 and common ratio is $\frac{1}{2}$, then 3rd ter, of sequence.

- $\frac{1}{4}$

$Y = \text{square root } x$ is an _____ function form \mathbb{R}^+ to \mathbb{R}

- One to one function

$Y = x^2$ is an _____ function form \mathbb{R} to \mathbb{R}^+

- NOT ONE TO ONE FUNTION

If a function $(g \circ f)(x) : X \rightarrow Z$ is defined as $(g \circ f)(x) = g(f(x))$ for all $x \in X$, Then the function _____.

- (gof)

If 0 is the first term and -2 be the common difference of an arithmetic series, then the sum of first five terms of series is _____.

- -20

If $f(x) = \sin^{-1}(x)$ and $g(x) = \sin x$ then $g \circ f(x)$ is _____.

- X

What does 'y' denotes in a geometric sequence?

- Common ratio

Which of the following is true for the following sequence?

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

• If n is even, then $C_n = 2$ and if n is odd, then $C_n = 0$
The function 'f' and 'g' are inverse of each other if and only if their composition gives _____.

• Identity function
 $n!$ is defined to be _____.

• The product of the integers from 1 to n
Let $A = \{1,2,3,4\}$ and $B = \{7\}$ then the constant function from A to B

• Both one to one and onto
A set is called countable if, and only if, it is _____.

• Countably infinite and finite
If a is the 1st term and d be the common difference of an arithmetic sequence then the sequence is $a, a+d, a+2d, a+3d, \dots$

• True
 $x+a, x+3a, x+5, \dots$ is a/n _____.

• Arithmetic sequence
inverse of an injective function may not be a function.

• True
Common ratio in sequence '36, 12, 4, 4/3,' is

• 1/3
A set is called finite if, and only if, is the _____ or there is _____.

• Empty set or one-to-one
Let $f(x) = x^2 - 1$ and $g(x) = x + 1$ define functions f and g from R to R , then $(f/g)x$

• $x-1$
What does 'l' denotes in a geometric sequence?

• Common ratio
 $n!$ is defined to be _____.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

• The product of the integers from 1 to n
A set is called countable if, and only if, it is _____.

• Both b and c
 $X+a, x+3a, x+5a, \dots$ is an _____

• Arithmetic sequence
0, -5, -10, -15, ... is an _____.

• Arithmetic sequence
5, 9, 13, 17, ... is an _____.

• Arithmetic sequence
One-to-one correspondence means the condition of _____.

• One-one and ontoboth
A set is called finite if , and only if, it is the _____ or there is _____.

• Empty set or one-to-one
Let f and g be the two functions from R to R defined by $f(x) = |x|$ and $g(x) = \text{square root } x^2$ for all $x \in R$, then _____.

• $F(x)$ is not equal to $g(x)$
If $f^{-1}(x) = 6-x/2$ then $f^{-1}(2)$ is _____.

• 2
An important data type in computer programming consists of _____.

• Finite sequence
Let $f(x)=x+3$ then $f^{-1}(x)$ is _____.

• $X-3$
If $f: X \rightarrow Y$ and $g: Y \rightarrow Z$ are both onto function. Then $g \circ f : X \rightarrow Z$ is _____.

• One-to-one function
The two function 'f' and 'g' are equal if _____.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

• $F(x) = 3x$ and $g(x) = 6x^2 + 3x/2x + 1$ for all $x \in \mathbb{R}$
Composition of a function is a commutative operation.

- True

If a function $(g \circ f)(x): X \rightarrow Z$ is defined as $(g \circ f)(x) = g(f(x))$ for all $x \in X$. Then the function _____ is known as composition of f and g .

- $(g \circ f)$

A set is countably infinite if and only if and only if, it has the same cardinality as the set of _____.

- Positive integers

The 3rd term of the sequence $b_n = 5^n$ is _____.

- 125

Let $f(x) = x$ and $g(x) = -x$ for all $x \in \mathbb{R}$, then $(f+g)(x)$ is _____.

0

The functions $f \circ g$ and $g \circ f$ are always equal .

- False

A function whose range consists of only one element is called _____.

- Constant function

Let $X = \{1, 5, 9\}$ and $Y = \{3, 4, 7\}$. Define a function f from X to Y such that $f(1) = 7$, $f(5) = 3$, $f(9) = 4$ then which of the following statement about 'f' is true?

- f is both one-to-one and onto

$Y = x^3$ is a graph of bijective function from \mathbb{R} to \mathbb{R} .

- True

The _____ of the terms of a sequence forms a series.

- Sum

The sum of first five whole number is _____.

بري صحبت سے تہائی بہتر ہے اور تہائی سے نیک صحبت بہتر ہے

For More Help Contact What's app 03224021365

- 10

If $f_k = f_{k-1} + f_{k-2}$ then $f_0 = 1$, $f_1 = 2$, then $f_2 =$ _____.

- 3

Let $f(x) = 3x$ and $g(x) = x + 2$ define functions f and g from R to R , then $(f \cdot g)(x)$ is _____.

- $3x^2 + 6x$

Let R be a relation on a set A . If R is reflexive then its compliment is _____.

- Irreflexive

If $A =$ Set of students of virtual university then A has been written in the _____.

- Descriptive form

If a function $(g \circ f)(x): X \rightarrow Z$ is defined as $(g \circ f)(x) = g(f(x))$ for all $x \in X$. Then the function _____ is known as composition of f and g .

- $(g \circ f)$

If X and Y are independent random variables and a and b are constants, then $\text{Var}(aX + bY)$ is equal to

- $a\text{Var}(X) + b\text{Var}(Y)$

Let $A = \{1, 2, 3\}$ and $B = \{2, 4\}$ then number of functions from A to B are _____.

- 8

p is equivalent to q means _____.

- p is necessary and sufficient for q .

Let A and B be subsets of U with $n(A) = 12$, $n(B) = 15$, $n(A') = 17$, and $n(A \cap B) = 8$, then $n(U) =$ _____.

- 29

For the following relation to be a function, x can not be what values?

$R = \{(2,4), (x,1), (4,2), (5,6)\}$

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- x cannot be 2, 4 or 5

Find the number of the word that can be formed of the letters of the word "ELEVEN".

- 120

There are three bus lines between A and B, and two bus lines between B and C. Find the number of ways a person can travel round trip by bus from A to C by way of B?

- 6

Among 20 people, 15 either swim or jog or both. If 5 swim and 6 swim and jog, how many jog?

- 16

A predicate becomes _____ when its variables are given specific values.

- statement

Find the number of distinct permutations that can be formed using the letters of the word "BENZENE"

- 420

Suppose there are 8 different tea flavors and 5 different biscuit brands. A guest wants to take one tea and one brand of biscuit. How many choices are there for this guest?

- 40

In how many ways a student can choose one of each of the courses when he is offered 3 mathematics courses, 4 literature courses and 2 history courses.

- 24

If $p \leftrightarrow q$ is True, then _____.

- p and q both are True.

If A and B be events with $P(A) = 1/3$, $P(B) = 1/4$ and $P(A \cap B) = 1/6$, then $P(A \cup B) =$ _____ .

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- 5/12

an integer n is a perfect square if and only if _____ for some integer k .

- $n = k^2$

If A and B are disjoint finite sets then $n(A \cup B) = \underline{\hspace{2cm}}$.

- $n(A) + n(B)$

Let $X = \{2, 4, 5\}$ and $Y = \{1, 2, 4\}$ and R be a relation from X to Y defined by $R = \{(2,4), (4,1), (a,2)\}$. For what value of 'a' the relation R is a function ?

- 5

$\sim(P \rightarrow q)$ is logically equivalent to _____.

- $p \wedge \sim q$

A tree is normally constructed from _____.

- left to right

A Random variable is also called a _____.

- Chance Variable

The conjunction $p \wedge q$ is True when _____.

- p is True, q is True

The logical statement $p \wedge q$ means _____.

- p AND q

Which of the followings is the factorial form of $5 \cdot 4$?

- $5!/3!$

What is the minimum number of students in a class to be sure that two of them are born in the same month?

- 13

If p is false and q is true, then $\sim p \leftrightarrow q$ is _____.

- True

$(p \vee \sim p)$ is the _____.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

• Tautology
(-2)! = _____ ?

• Undefined
If $p =$ It is raining, $q =$ She will go to college
“It is raining and she will not go to college”
will be denoted by

• $p \wedge \sim q$
Let $f(x) = x^2 + 1$ define functions f from R to R and $c = 2$ be any scalar, then $c.f(x)$ is _____.

• $2x^2 + 2$
The disjunction of p and q is written as _____.

• $p \vee q$
If X and Y are independent random variables, then $E(XY)$ is equal to

• $E(x)E(y)$
How many possible outcomes are there when a fair coin is tossed four times?

• 16
Which of the followings is the product set $A * B * C$? where $A = \{a\}$, $B = \{b\}$, and $C = \{c, d\}$.

• $\{(a, b, c), (a, b, d)\}$
The number of the words that can be formed from the letters of the word, “COMMITTEE” are

• $9! / (2!2!2!)$
One-to-One correspondence means the condition of _____.

• One-One and onto
The functions $f \circ g$ and $g \circ f$ are always equal.

• FALSE

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

If order matters and repetition is allowed, then which counting method should be used in order to select 'k' elements from a total of 'n' elements?

- K-Sample

Determine values of x and y, where $(2x, x + y) = (8, 6)$.

- $x = 4$ and $y = 2$

What is the truth value of the sentence?

'It rains if and only if there are clouds.'

- False

Reductio and absurdum' is another name of _____.

- Proof by contradiction

X belongs to A or x belongs to B, therefore x belongs to _____.

- A union B

Which of the followings is the product set $A * B * C$? Where $A = \{a\}$, $B = \{b\}$, and $C = \{c, d\}$.

- $\{(a, b, c), (a, b, d)\}$

The negation of "Today is Friday" is

- Today is not Friday

A non-zero integer d divides an integer n if and only if there exists an integer k such that _____.

- $n = d k$

The statement $p \rightarrow q$ is logically equivalent to $\sim q \rightarrow \sim p$

- True

Let R be the universal relation on a set A then which one of the following statement about R is true?

- R is reflexive, symmetric and transitive.

Let $f(x)=3x$ and $g(x) = 3x - 2$ define functions f and g from R to R. Then $(f+g)(x) =$ _____.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- $6x - 2$

The switches in parallel act just like _____.

- OR gate

The converse of the conditional statement $p \rightarrow q$ is

- $q \rightarrow p$

If X and Y are random variables, then $E(aX)$ is equal to

- $aE(X)$

Which of the following statements is true according to the Division Algorithm?

- $17 = 5 \times 3 + 2$

Let $p \rightarrow q$ be a conditional statement, then the statement $q \rightarrow p$ is called _____.

- Converse

The disjunction $p \vee q$ is False when _____.

- P is False, q is False.

A student can choose a computer project from one of the two lists. The two lists contain 12 and 18 possible projects, respectively. How many possible projects are there to choose from?

- 30

The converse of the conditional statement 'If I live in Quetta, then I live in Pakistan' is _____.

- If I live in Pakistan, then I live in Quetta.

$P(0, 0) =$ _____?

- 1

Let p_1, p_2, p_3 be True premises in a given Truth Table. If the conjunctions of the Conclusion with each of p_1, p_2, p_3 are True, then the argument is _____.

بري صحبت سے تنہائی بہتر ہے اور تنہائی سے نيك صحبت بہتر ہے

For More Help Contact What's app 03224021365

- Valid

If p is false and q is false, then $\sim p$ implies q is _____.

- False

A box contains 5 different colored light bulbs. Which of the followings is the number of ordered samples of size 3 with replacement?

- 125

Let $A = \{2, 3, 5, 7\}$, $B = \{2, 3, 5, 7, 2\}$, $C =$ Set of first five prime numbers. Then from the following which statement is true ?

- $A = B$

The set of prime numbers is _____.

- Infinite set

The contrapositive of the conditional statement 'If it is Sunday, then I go for shopping' is _____.

- I do Not go for shopping, then it is Not Sunday.

Let p be True and q be True, then $(\sim p \wedge q)$ is _____.

- False

In how many ways a student can choose a course from 2 science courses, 3 literature courses and 5 art courses.

- 30

The method of loop invariants is used to prove _____ of a loop with respect to certain pre and post-conditions.

- correctness

A student is to answer five out of nine questions on exams. Find the number of ways that can choose the five questions

- 126

If A and B are any two sets, then $A - B = B - A$

- False

برى صحبت سے تڻهائي بهتر هے اور تڻهائي سے نيك صحبت بهتر هے

For More Help Contact What's app 03224021365

There are 5 girls students and 20 boys students in a class. How many students are there in total?

- 25

Visit My YouTube Channel
For Subjective and More
Important Files
Channel Name = #VuTopperRM

برى صءبء سے ءءهائى بهءر هے اور ءءهائى سے نىك صءبء بهءر هے

For More Help Contact What's app 03224021365