**Question No : 1 of 26** **Marks: 1 (Budgeted Time 1 Min)**

Which one of the following is the negation of the statement

" If Tanveer lives in Lahore then he lives in Pakistan. " ?

**Answer ( Please select your correct option )**

- If Tanveer does not live in Lahore then he does not live in Pakistan.
- Tanveer does not live in Lahore then he lives in Pakistan.
- Tanveer does not live in Lahore and he lives in Pakistan.
- If Tanveer lives in Lahore then he does not live in Pakistan.

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**Question No : 2 of 26** **Marks: 1 (Budgeted Time 1 Min)**

If " p " and " q " are propositions , " p " is true and "q " is false, then $p \rightarrow q$ is _____?

**Answer ( Please select your correct option )**

- True
- False

**Question No : 3 of 26** **Marks: 1 (Budgeted Time 1 Min)**

According to Demorgan's law
$\sim (p \wedge q) \equiv$

**Answer ( Please select your correct option )**

- $\sim p \wedge q$
- $\sim p \wedge \sim q$
- $\sim p \vee \sim q$
- $p \wedge \sim q$

Question No : 4 of 26 Marks: 1 (Budgeted Time 1 Min)

The statement "**He will be the president if and only if he wins the presidential election**" is a _____?

Answer ( Please select your correct option )

- Conditional statement.
- Biconditional statement.

Question No : 5 of 26 Marks: 1 (Budgeted Time 1 Min)

If the truth values of all premises and conclusions are true in a critical row then the argument will be invalid.

Answer ( Please select your correct option )

- True
- False

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Question No : 6 of 26 Marks: 1 (Budgeted Time 1 Min)

An argument is invalid if the conclusion is false when all the premises are .....

Answer ( Please select your correct option )

- False
- True

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**Question No : 7 of 26** **Marks: 1 (Budgeted Time 1 Min)**

Let A={1,2,3,4} and B={5,6,7}, then $A \cap B =$ .....

**Answer ( Please select your correct option )**

- {1,2,3}
- {5,6,7}
- {1,2,3,4,5,6,7}
- Ø

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**Question No : 8 of 26** **Marks: 1 (Budgeted Time 1 Min)**

Which one of the following sets is finite?

**Answer ( Please select your correct option )**

- Set of Real numbers
- Set of Even numbers
- $\{x \mid x \in Z \wedge 0 \leq x \leq 12\}$
- $\{x \mid x \in \text{ } \wedge x \geq 12\}$

Question No : 9 of 26 Marks: 1 (Budgeted Time 1 Min)

The sets {a, b,c} and {1,2,3} are equal.

Answer ( Please select your correct option )

- True
- False

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Question No : 10 of 26 Marks: 1 (Budgeted Time 1 Min)

The sets {1, b} and { b,1 } are equal.

Answer ( Please select your correct option )

- True
- False

**Question No : 11 of 26** **Marks: 1 (Budgeted Time 1 Min)**

All of the following sets are equal.
$\{r,s,t\},\{s,r,t\},\{t,r,s\},\{s,t,r\}$

**Answer ( Please select your correct option )**

- False
- True

**Question No : 12 of 26** **Marks: 1 (Budgeted Time 1 Min)**

Let R be a relation from set A to B, if R is symmetric then its inverse will be .....

**Answer ( Please select your correct option )**

- symmetric
- antisymmetric
- transitive

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**Question No : 13 of 26** **Marks: 1 (Budgeted Time 1 Min)**

Which of the relation defines a function from X = {2,4,5} to Y={1,2,4,6}.
$R_1$ = {(2,4), (4,1)}
$R_2$ = {(2,4), (4,1), (4,2), (5,6)}
$R_3$ = {(2,4), (4,1), (5,6)}

**Answer ( Please select your correct option )**

- $R_1$ and $R_2$
- $R_1$
- $R_3$
- $R_2$ and $R_3$

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Question No : 14 of 26 Marks: 1 (Budgeted Time 1 Min)

If A={1,-1} then the number of elements in A×A are

Answer ( Please select your correct option )

- 2
- 4
- 8
- 6

Question No : 15 of 26 Marks: 1 (Budgeted Time 1 Min)


Answer ( Please select your correct option )

- Not a function
- One to one function
- onto function
- Many to one function

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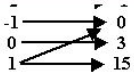
Question No : 15 of 26 Marks: 1 (Budgeted Time 1 Min)




The above relation shows _____.

Answer ( Please select your correct option )

- Not a function
- One to one function
- onto function
- Many to one function

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**Question No : 16 of 26** **Marks: 1 (Budgeted Time 1 Min)**

Let $a_1, a_2, a_3, \ldots, a_n$ be an arithmetic sequence, then sum of the terms of sequence is

**Answer ( Please select your correct option )**

- $S_n = \frac{n}{2}\{2a + (n-1)d\}$
- $S_n = \frac{n(a_1+a_n)}{6}$
- $S_n = \frac{n(a_1+a_n)}{4}$

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**Question No : 17 of 26** **Marks: 1 (Budgeted Time 1 Min)**

The general term of the geometric sequence -1,1,-1,1,..... is

**Answer ( Please select your correct option )**

- $(1)^n$
- $(1)^{n-1}$
- $(-1)^{n-1}$
- $(-1)^n$

Question No : 18 of 26 Marks: 1 (Budgeted Time 1 Min)

Simplify

$(20\%) \times 100 = \ldots\ldots$

Answer ( Please select your correct option )

- 0.2
- 20
- 0.002
- 2.0

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**Question No : 19 of 26** **Marks: 1 (Budgeted Time 1 Min)**

If
Initial value = 200
Final Value = 210
Increase = 10
Then the Percentage change .....

**Answer ( Please select your correct option )**

- 10%
- 5%
- 20%
- 15%

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**Question No : 20 of 26** **Marks: 1 (Budgeted Time 1 Min)**

If
Initial value = 12
Final Value = 15
Increase = 3
Then the Percentage change.....

**Answer ( Please select your correct option )**

- 30%
- 15%
- 25%
- 12%

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**Question No : 21 of 26** **Marks: 2 (Budgeted Time 4 Min)**

Find x and y ,where

$(x + y, 2x) = (2, 6)$.

**Answer ( Please click here to Add Answer )**

**Question No : 22 of 26** **Marks: 2 (Budgeted Time 4 Min)**

Change the index k of the following summation so that lower limit is zero instead of 2.

$$\sum_{k=2}^{5} \frac{1}{k+3}$$

**Answer ( Please click here to Add Answer )**

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**Question No : 23 of 26** **Marks: 3 (Budgeted Time 6 Min)**

Let f: R→R defined as $f(x)= 9x^2$ . Show that the function is well defined.

**Answer ( Please click here to Add Answer )**

**Question No : 24 of 26** **Marks: 3 (Budgeted Time 6 Min)**

Let $A = \{1, 2, 3\}$

Determine the relation R such that xRy iff $x < y$ . Also find the domain and range of the relation.

**Answer ( Please click here to Add Answer )**

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**Question No : 25 of 26** **Marks: 5 (Budgeted Time 10 Min)**

Convert the following into fractions:

(*a*) 23.75%

(*b*) 88.5%

**Answer ( Please click here to Add Answer )**

**Question No : 26 of 26** **Marks: 5 (Budgeted Time 10 Min)**

Let R be the relation of the set $X = \{1, 2, 3, 5, 6\}$ defined by the equation $5 < x + y < 8$

(i) Write R as a set of ordered pairs.
(ii) Is R reflexive or irreflexive? Justify your answer

**Answer ( Please click here to Add Answer )**