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

The following directed graph can be represented in form of matrix as

Answer (Please select your correct option)

- $\begin{pmatrix} 1 & 0 & 1 \\ 1 & 0 & 0 \\ \end{pmatrix}$
- $\begin{pmatrix} 2 & 0 & 1 \\ 1 & 0 & 0 \\ \end{pmatrix}$
- $\begin{pmatrix} 0 & 1 & 1 \\ 1 & 0 & 0 \\ \end{pmatrix}$
- $\begin{pmatrix} 1 & 0 & 1 \\ 1 & 0 & 0 \\ \end{pmatrix}$

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

If p & q are statements, then their disjunction is

Answer (Please select your correct option)

- p or q
- p and q
- p and q and p
- None of these

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

The statement of the form $p \vee \sim p$ is

Answer (Please select your correct option)

- Tautology
- Contradiction
- Fallacy

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

Which of the following law is used to show?
$p \leftrightarrow q \equiv q \leftrightarrow p$

Answer (Please select your correct option)

- Implication Law
- Commutative law
- Exportation Law
- None of these

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

An argument is a list of statements called premises followed by a statement called the _____.

Answer (Please select your correct option)

- Assumptions
- Hypotheses
- Conclusion
- None of these

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

A circuit with two input signals and one output signal is called

Answer (Please select your correct option)

- NOT-gate (or inverter)
- AND- gate
- None of these

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

If a set contains exactly m distinct elements then the set is

Answer (Please select your correct option)

- Finite
- Infinite
- None of these

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

If A={{5}},then power set of A is equal to

Answer (Please select your correct option)

- {{∅,{5}}}
- {ϕ,{5}}
- {∅,{{5}}}
- {{∅},{5}}

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

The power set of a set A is the set of all subsets of A and its denoted by P (A).

Answer (Please select your correct option)

- False
- True

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

Identify the Associative law of union for three sets

Answer (Please select your correct option)

- $A \cup (B \cup C) = (A \cup B) \cup C$
- $A \cap (B \cap C) = (A \cap B) \cap C$
- $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
- None of these

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

Symmetric and Anti-symmetric relations are

Answer (Please select your correct option)

- negative of each other.
- same.
- not negative of each other.

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

Inverse of relation can be obtained by

Answer (Please select your correct option)

- changing signs of elements in order pairs.
- changing position of elements in order pairs.
- taking multiplicative inverse of elements in order pairs.

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

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

Answer (Please select your correct option)

- $x - 1$
- $\frac{1}{2}(x - 1)$
- $x^2 + 2$
- $\frac{1}{2x + 1}$

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

If $f(x) = 2x + 1$, $g(x) = x^2 - 1$ then $gof(x) =$

Answer (Please select your correct option)

- $4x^2+2$
- $2x^2 -1$
- $4x^2+4x$

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

Let $A = \{x, y, z\}$ and $B = \{a, b, c\}$ be two sets then a function f defined as $\{(x, a), (y, a), (z, a)\}$ is

Answer (Please select your correct option)

- Onto
- Constant
- One-to- one
- Onto and constant

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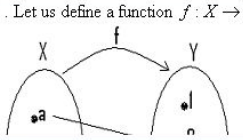
Question No : 16 of 26 Marks: 1 (Budgeted Time 1 Min)

If $X = \{a, b, c\}$ and $Y = \{1, 2, 3, 4\}$. Let us define a function $f : X \to Y$ as shown in following figure then the inverse image of 1 is



Answer (Please select your correct option)

- 1
- 2
- 1,2
- None of these

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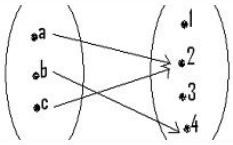
Question No : 16 of 26 Marks: 1 (Budgeted Time 1 Min)



Answer (Please select your correct option)

- 1
- 2
- 1,2
- None of these

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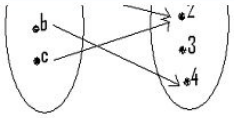
Question No : 16 of 26 Marks: 1 (Budgeted Time 1 Min)



Answer (Please select your correct option)

- 1
- 2
- 1,2
- None of these

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

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

Answer (Please select your correct option)

- Not One-to-One
- On to
- One-to-One
- One-to-One and Onto

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

A function whose domain is a subset of the set of natural numbers and range subset of real or complex numbers is called

Answer (Please select your correct option)

- onto mapping
- into mapping
- sequence
- relation

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

Let f is defined recursively by $f(0) = 3, f(n+1) = 2f(n) + 3$ then $f(1) =$

Answer (Please select your correct option)

- 9
- 10
- 18
- 21

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

$p \wedge q$ shows

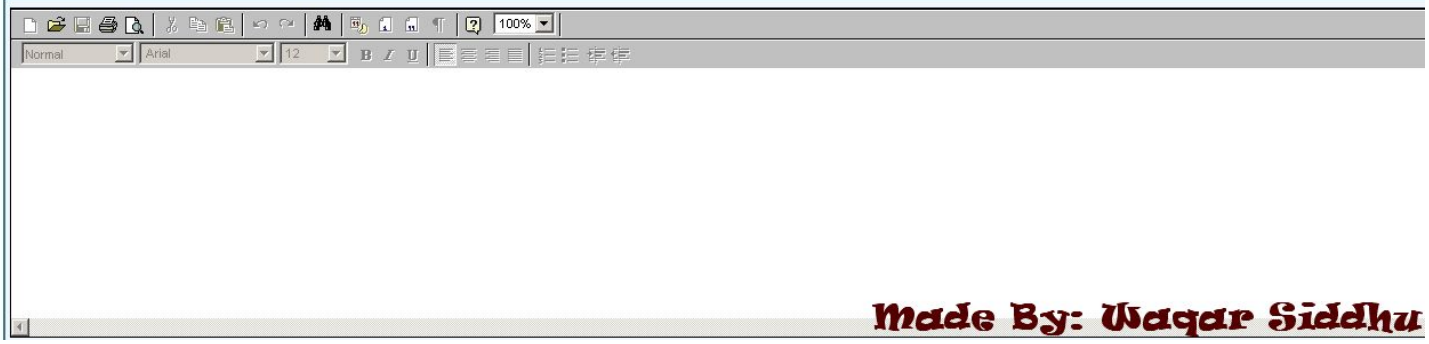
Answer (Please select your correct option)

- Conjunction of p and q
- Disjunction of p and q
- Contingency of p and q

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

If A = $\{1,2,3,4\}$ is a set and R is a relation on A as $R = \{(1,1),(2,2),(2,3),(3,2),(3,3),(4,2),(4,4)\}$. Is R (a) Reflexive (b) Symmetric? Justify your answer.

Answer (Please click here to Add Answer)



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

Suppose that f is defined recursively by $f(0) = 1, f(n+1) = 3f(n) + 1$ then find $f(2)$.

Answer (Please click here to Add Answer)

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

If A = $\{1,2,3,4\}$ is a set and R is a relation on A as $R = \{(1,1),(2,2),(2,3),(3,2),(3,3),(4,2),(4,4)\}$. Is R (a) transitive (b) anti-symmetric? Justify your answer.

Answer (Please click here to Add Answer)

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

Let $f(x) = 2x + 1$ and $g(x) = x^2 - 1$ be the real valued function then find the expression $f \circ f(x) =$

Answer (Please click here to Add Answer)

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

Determine whether the relation shown by the directed graph is reflexive, symmetric, anti-symmetric or transitive?

Answer (Please click here to Add Answer)

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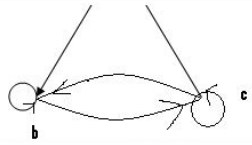
Question No : 25 of 26 Marks: 5 (Budgeted Time 10 Min)



Answer (Please click here to Add Answer)

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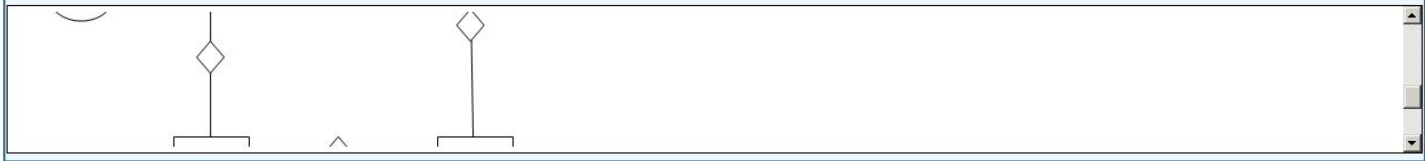
Question No : 25 of 26 Marks: 5 (Budgeted Time 10 Min)



Answer (Please click here to Add Answer)

Made By: Waqar Siddhu

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

The fifth term of an arithmetic sequence is 17 and ninth term is 37 find the first four terms of this sequence.

Answer (Please click here to Add Answer)