

Chapter 02 (Objectives)

Sets, Functions & Groups

TEXTBOOK OF ALGEBRA AND TRIGONOMETRY FOR CLASS XI

Ⓓ Fill in the Blanks.

- 1) A set is defined as a well defined collection of
- 2) The objects in a set are called its or
- 3) are used as names of sets.
- 4) Small letters are used as of sets.
- 5) The method by which a set may be specified by which a set described in words is called method.
- 6) The method by which a set may be specified by listing its elements with in brackets is called method.
- 7) is more convenient in specifying sets.
- 8) is done by using letter or symbol for an arbitrary member of set and stating the property common to all members.
- 9) A symbol used for of a set is \in .
- 10) $a \in A$ means, a is a of A .
- 11) In algebra, we usually deal with set of
- 12) \mathbf{N} is symbol of set of numbers.
- 13) \mathbf{W} is symbol of set of numbers.
- 14) \mathbf{Z} is symbol of set of numbers.
- 15) \mathbf{Z}' is symbol of set of numbers.
- 16) \mathbf{O} is symbol of set of numbers.
- 17) \mathbf{E} is symbol of set of numbers.
- 18) \mathbf{Q} is the symbol of set of numbers.
- 19) \mathbf{Q}' is the symbol of set of numbers.
- 20) \mathbf{R} is symbol of set of numbers.
- 21) Two sets are equal if they have same
- 22) While describing a set in form, its elements can be written in any order.
- 23) If the elements of two sets are paired in such a way that each element of one set is paired with only one element of one element of other set, then the pairing is called a
- 24) Two sets are said to be if one to one correspondence can be established.
- 25) Two equivalent sets are not always
- 26) The symbol is used for equivalent set.
- 27) A set having only one element is called a
- 28) A set having no element is called an or set.
- 29) The empty set is denoted by
- 30) The set of odd integers between 2 and 4 is a set.

- 31) The set of even integers between 2 and 4 is a set.
- 32) The solution of equation $x^2 + 1 = 0$ in set of real numbers is
- 33) Set $\{0\}$ is not set.
- 34) If a set is equivalent to $\{1, 2, 3, \dots, n\}$ for fixed natural number n , it is called a set.
- 35) Sets of \mathbf{N} , \mathbf{Z} and \mathbf{Z}' are sets.
- 36) If every element of a set is a member of other set, the set is called of other set.
- 37) Subset is denoted by symbol
- 38) If A is subset of B , then B is of A .
- 39) If A is subset of B and B contains at least one element which is not in A , then A is said to be of B .
- 40) If A is subset of B and $A = B$, A is said to be of B .
- 41) set is a subset of every set.
- 42) A power set of a set is a set containing all possible of that set.
- 43) The power set of empty set is
- 44) A bigger set, all the sets are whose subsets, is called a set or
- 45) In arithmetic, we deal with..... numbers only.
- 46) When we deal with negative numbers and fractions, the set of numbers can be treated as universal set.
- 47) The operation of union and intersections are performed on
- 48) The of a set is the set of all elements of the given sets.
- 49) The of a set is the set of all elements common in given sets.
- 50) If the intersection of two sets is an empty set, sets are called sets.
- 51) If the intersection of two sets is not empty but neither is a subset of other, sets are called sets.
- 52) The set of all elements of universal set which do not belong to a given set is called of that set.
- 53) The difference of two sets A and B contain all elements which to A but to B .
- 54) Venn diagrams were first used by English Mathematician
- 55) In Venn diagrams, represents universal set.
- 56) The sets whose elements are not specified are called sets.
- 57) $(A \cup B)' = A' \cap B'$ and $(A \cap B)' = A' \cup B'$ are called law.
- 58) The way of drawing conclusion from opinions on the basis of few contacts is called
- 59) The way of reasoning drawing conclusion from premises believed to be true is called
- 60) Basic principle for deductive logic was laid down by Greek philosopher

- 61) A declarative statement which may be true or false but not both is called a
- 62) Deductive logic in which every statement is regarded as true or false and there is no other possibility is called
- 63) The logic in which there is a scope of 3rd or 4th possibility is called
- 64) If p is any proposition, its negation is
- 65) Conjunctions of two statements p and q are denoted by
- 66) A conjunction is considered to be true if of its components are true.
- 67) Disjunction of two statements is considered to be true if of the components is true.
- 68) A compound statement of the form if p then q also written as p implies q is called a or an
- 69) In an implication of statement if p then q , p is called and q is called
- 70) A conditional is regarded as false if antecedent is and consequent is
- 71) $q \rightarrow p$ is called of $p \rightarrow q$.
- 72) $\sim p \rightarrow \sim q$ is called of $p \rightarrow q$.
- 73) $\sim q \rightarrow \sim p$ is called of $p \rightarrow q$.
- 74) The converse and inverse are to each other.
- 75) The statement which is true for all possible values of variables involved in it is called
- 76) A statement which is already false is called an
- 77) A statement which may be true or false depending upon the truth values of variables involved is called.....
- 78) The words or symbols which convey idea of quantity or number are called
- 79) The words of symbols which convey idea of quantity or number are called
- 80) Truth set of tautology and absurdity in universal set is set.
- 81) is a set of ordered pairs.
- 82) For two non empty sets A and B , Cartesian product $A \times B$ is called
- 83) The set of first elements of ordered pairs forming a relation is called
- 84) The set of second elements of ordered pairs forming a relation is called
- 85) If A is a non-empty set, any subset of $A \times A$ is called
- 86) If in a function $A \rightarrow B$, the range = B , the function is called function.
- 87) Onto function is also called function.

- 88) The function $\{(x, y) | y = mx + c\}$ is called a function.
- 89) A function $\{(x, y) | y = ax^2 + bx + c\}$ is called a function.
- 90) Inverse of a line is a
- 91) The function $\{(x, y) | y = x\}$ is an function.
- 92) An operation which when performed on a single number yields another number of a same or different system is called a
- 93) A is a non-empty set on which a binary operation $*$ is defined.
- 94) A non-empty set is a semi group if it is w.r.t operation $*$ and the $*$ is associative.
- 95) Semi-group having an identity is called
- 96) A monoid having inverse of each of its elements under an operation is called under operation.
- 97) A group satisfies the commutative law is called group.

Keys (Chapter 02)

- 1- Set 2 - Member, elements 3 - Capital letters 4- Members
 5- Description 6- Tabular 7- Set builder method 8- Set builder method
 9- Membership 10- Member 11- Numbers 12- Natural 13- Whole
 14- Integer 15- Negative integer 16- Odd 17- Even 18- Rational
 19- Irrational 20- Real 21- Elements 22- Tabular
 23- One to one correspondence 24- Equivalent 25- Equal 26- \sim
 27- Singleton set 28- empty, null set 29- $\{\}$ or \varnothing 30- Singleton
 31- Empty 32- Empty 33- Empty 34- finite 35- infinite 36- Subset
 37- \subseteq 38- Superset 39- Proper subset 40- Improper subset
 41- Empty set 42- Subsets 43- Not empty
 44- Universal set, Universe of discourse 45- Whole 46- Rational
 47- Sets 48- Union 49- Intersection 50- Disjoint 51- Overlapping
 52- Compliment 53- Belong, does not belong 54- John Venn
 55- Rectangular region 56- Abstract 57- Demorgan's 58- Induction
 59- Deduction 60- Aristotle 61- Proposition 62- Aristotelians logic
 63- Non aristoltian logic 64- $\sim p$ 65- $p \wedge q$ 66- Both 67- At least one
 68- Conditional, Implication 69- Antecedent, Consequent 70- True, False
 71- Converse 72- Inverse 73- Contrapositive 74- Equivalent 75- Tautology
 76- Absurdity 77- Contingency 78- Quantifiers 79- Quantifiers
 80- Empty 81- Relation 82- Binary relation 83- Domain 84- Range
 85- Relation in A 86- Onto 87- Surjective 88- Linear 89- Quadratic
 90- Line 91- Identity 92- Unary operation 93- Groupoid 94- Closed
 95- Monoid 96- Group 97- Abelian

The End

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