Chapter 1 SETS

1) If $x \in L \cup M$, then

A) $x \notin L$ or $x \notin M$
B) $x \notin L$ or $x \in M$
C) $x \in L$ or $x \notin M$
D) $x \in L$ or $x \in M$

Answer: D

2) Let A = {a, b, c, d} B = {b, c, d} then $A \cap B$ =

A) {b, c, d}
B) {a, b, c}
C) {a, b, c, d}
D) {a, c, d}

Answer: A

3) If $x \in B' = U - B$ then

A) $x \in B$ and $x \in U$
B) $x \notin B$ and $x \in U$
C) $x \notin B$ and $x \notin U$
D) $x \in B$ and $x \notin U$

Answer: B

4) Let A = (1, 2, 3, 4, 5 …..}, B = {2, 4, 6, 8 ….}
The $A \cup B$ is

A) {1, 2, 3}
B) {1, 2, 3, 4, 5, …..}
C) {2, 4, 6, 8, …..}
D) {6, 7, 8, 9}

Answer: B

5) $L \cup M = L \cap M$ then L is equal to

A) M
B) L
C) ϕ
D) M'

Answer: A

6) Which of the following sets has only one subset.
A) {Y, Z}
B) {Y}
C) {0}
D) { }

Answer: D

7) $A \subseteq B$ then
A) $A \cap B = A$
B) $A \cap B' = A$
C) $A - B = A$
D) $A - B = B$

Answer: A

8) If $x \in L - M$ then
A) $x \in L$ and $x \in M$
B) $x \in L$ and $x \notin M$
C) $x \notin L$ and $x \in M$
D) $x \notin L$ and $x \notin M$

Answer: B

9) Total number of subsets that can be formed from the set {x, y, z} is

A) 1
B) 2
C) 5
D) 8

Answer: D

10) If $x \in L \cap M$ then

A) $x \in L$ and $x \in M$
B) $x \in L$ and $x \notin M$
C) $x \notin L$ and $x \in M$
D) $x \notin L$ and $x \notin M$

Answer: A

11) Let A and B be any none empty sets then $A \cup (A \cap B)$ is

A) $B \cap A$
B) A
C) B
D) $A \cup B$

Answer: B

12) Let A, B, C be any sets. Let $A \cup B = A \cup C$ and $A \cap B = A \cap C$, then B set is equal to

A) $A \cup B$
B) $A \cap B$
C) A
D) C

Answer: D

13) If S contains n elements then power set of S, P (s) contains elements. Which are?

A) 2^n
B) 4^n
C) 5^n
D) 6^n

Answer: A

14) A set is a collection of objects which are

A) well defined
B) well defined and distinct
C) identical
D) not defined

Answer: B

15) The power set of a set S containing six numbers is the set whose elements are

A) three subsets of S
B) two subsets of S
C) five subsets of S
D) all possible subsets of S

Answer: D

16) A is a subset of B if

A) Every element of A $\in$ B
B) Some element of A $\in$ B
C) Every element of A $\notin$ B
D) Every element of B $\in$ A

Answer: A

17) The complement of set A relative to universal set U is the set

A) $\{x/x \in U$ and $x \in A\}$
B) $\{x/x \notin U$ and $x \notin A\}$
C) $\{x/x \notin U$ and $x \in A\}$
D) $\{x/x \in U$ and $x \notin A\}$

Answer: D

18) If A - B = A then

A) $A \cap B = A$
B) $A \cap B = A'$
C) $A \cap B = B$
D) $A \cap B = \phi$

Answer: D

19) If B – A = B then

A) $A \cap B = \phi$
B) $A \cap B = A$
C) $A \cap B \neq \phi$
D) $A \cap B = B$

Answer: A

20) The union of the sets A and B is defined as

A) $A \cup B = \{x/x \in A$ or $x \in B\}$
B) $A \cup B = \{x/x \notin A$ or $x \in B\}$
C) $A \cup B = \{x/x \notin A$ or $x \notin B\}$
D) $A \cup B = \{x/x \in A$ or $x \notin B\}$

Answer: A

21) If Q, R are any sets then Q – R =

A) $Q – (Q \cap R)$
B) $Q \cap (Q – R)$
C) $Q + (Q \cap R)$
D) $Q – (Q \cup R)$

Answer: A

22) If A and B are any two sets and A′ B′ are Their compliments relative to the universal set U, the $(A \cup B)' =$

A) $A' \cup B'$
B) $A \cup B$
C) $A' \cap B'$
D) $A \cap B$

Answer: C

23) Difference between two sets A\B is defined as

A) $\{x/x \in A \wedge x \in B\}$
B) $\{x/x \in A \wedge x \notin B\}$
C) $\{x/x \notin A \wedge x \in B\}$
D) $\{x/x \notin A \wedge x \notin B\}$

Answer: B

24) For union Associative Law is

A) $(A \cup B) \cup C = A \cup (B \cup C)$
B) $(A \cup B) \cup C = A \cap (B \cap C)$
C) $(A \cap B) \cup C = A \cup (B \cup C)$
D) $(A \cup B) \cup C = A - (B - C)$

Answer: A

25) The set of odd numbers between 1 and 9 is

A) {1, 3, 5, 7}
B) {3, 5, 7, 9}
C) {1, 3, 5, 7, 9}
D) {3, 5, 7}

Answer: D

26) The set of rational numbers between 5 and 9 is

A) Finite
B) Infinite
C) {5, 6, 7, 8, 9}
D) {6, 7, 8}

Answer: B

27) If x is a set having 6 elements then the numbers in P(x) is:

A) 6^2
B) 6
C) 6(2)
D) 2^6

Answer: D

28) If $B \subseteq A$ then A′ is subset of

A) A
B) B
C) B′
D) $A \cup B$

Answer: C

29) The set $A \cap (A \cup B) =$

A) A
B) B
C) $A \cup B$
D) None of these

Answer: A

30) The set $A \cup (A \cap B) =$

A) B
B) A
C) $A \cup B$
D) None of these

Answer: B

31) If A and B are any two sets and A′, B′ are their complements relative to the universal set U, then

$(A \cap B)' =$

A) $A' \cup B'$
B) $A' \cap B'$
C) $A' \cup B$
D) $A \cap B'$

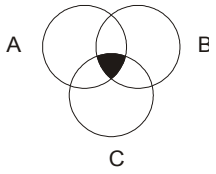
Answer: A

32) If $A \subseteq U$ then A' relative to U is equal to

A) A – B
B) B – A
C) U – A
D) A – U

Answer: C

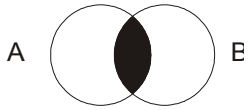
33) The shaded area in the figure represents the set



A) $A \cap E \cap C$
B) $A \cup E \cup C$
C) $A \cup E \cap C$
D) $A \cap E \cup C$

Answer: A

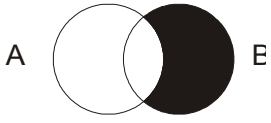
34) The shaded area in the figure represents the set:



A) $A \cup E$
B) $A \cap E$
C) A – E
D) E – A

Answer: B

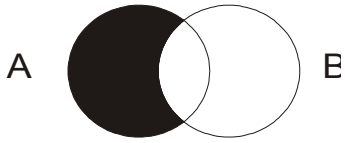
35) The shade area in the figure represents the set:



A) $A \cup E$
B) $A \cap E$
C) A – E
D) E – A

Answer: D

36) The shaded area in the figure represents the set:



A) $A \cup E$
B) $A \cap E$
C) A – E
D) E – A

Answer: C

37) Well defined collection of distinct objects is called a _____

A) a function
B) a set
C) a real number
D) none

Answer: B

38) A diagram which represents a set is called _____ diagram.

A) Venn's
B) Argand
C) Plane
D) None

Answer: A

39) If a set A is the subset of B & $A \neq B$, then A _____ of B.

A) Proper subset
B) Improper subset
C) None
D) None

Answer: A

40) Every set is the _____ of itself.

A) proper subset
B) improper subset
C) super set
D) none

Answer: B

41) The set of real Nos. (points) belonging to interval (a, b) is _____

A) finite set
B) empty set
C) singleton set
D) infinite set

Answer: D

42) The power set of an empty set is _____

A) null set
B) singleton set
C) super set
D) none

Answer: B

43) $X^{/} =$ _____

A) A
B) $A^{/}$
C) ϕ
D) X

Answer: C

44) Two set A & B are called overlapping if A∩B = _____

A) $A \subseteq B,\ B \subseteq A$
B) $A \subseteq B$
C) $A \subseteq B,\ B \subseteq A$
D) None

Answer: D

45) Which one is always true.

A) $A \subseteq B$
B) $A \cap B \subseteq B$
C) $B \subseteq A$
D) none

Answer: B

46) If X & Y are two sets & n (X) = 18, n (Y) = 24, n(XUY) = 40 then n(X ∩ Y) = _____

A) 3
B) 4
C) 6
D) 2
E) 1

Answer: D