Work Sheet- One (07.07.2020)
Class- Ten, Chapter-2
Sets and Function
Exercise-2.1

Creative Multiplication Choice Questions

1. **When A = {3, 4} and B = {1, 2, 3} then B\A = What? [D.B.- 20]**

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

2. **If $\{x \in \mathbb{N} : x^2 > 15$ and $x^3 < 36\}$ then which one of the following is roster method? [My.B.- 20]**

a) $\{4, 5, 6\}$ b) $\{1, 2, 3\}$
c) $\{3\}$ d) $\emptyset$

3. **If A = {1, 2, 3, 4} then how many proper subsets of the set A? [R.B.- 20]**

a) 4 b) 14
c) 15 d) 16

4. **Which one of the following is the roster method of the set $\{x \in \mathbb{N} : x \leq 5$ and x is prime} [C.B.- 20]**

a) $\{1, 3, 5\}$ b) $\{5, 7, 11\}$
c) $\{2, 3, 5\}$ d) $\{3, 5, 7\}$

5. **How many proper subsets of P = {1, 3, 5, 7}? [S.B.- 20]**

a) 7 b) 8
c) 15 d) 16

6. **If $A = \{x \in \mathbb{N} : x^2 < 25\}$, $B = \{x \in \mathbb{N} :$ x is a prime number and $x^2 < 25\}$ and $C = \{x \in \mathbb{N} : x^2 - 25\}$ then $(A \cap B) \cup C$ = What? [J.B.- 20]**

a) { } b) $\{2, 3, 5\}$
c) $\{-5, 2, 3, 5\}$ d) $\{1, 2, 3, 4, 5\}$

7. **If the number of elements of any power set is 32 then what is the number of elements of that set? [B.B.- 20]**

a) 64 b) 32
c) 8 d) 5

Answer to the questions no. (8 – 9) according to the following information: $\cup$ = {1, 2, 3, 4, 5, 6}, A = {1, 3, 5} and B = {2, 4, 6}.

8. **Which one is the value of $(A' \cup B')$? [B.B.- 20]**

a) { } b) $\{2, 4, 6\}$
c) $\{1, 3, 5\}$ d) $\{1, 2, 3, 4, 5, 6\}$

9. **Which one is the value of (A\B)? [B.B.- 20]**

a) $\{1, 2, 3, 4, 5, 6\}$ b) $\{2, 4, 6\}$
c) $\{1, 3, 5\}$ d) { }

Answer to the questions no. (10 – 11) according to the following information: $\cup$ = {1, 2, 3, 4, 5, 6} and A = {1, 2, 3, 4}.

10. **How many subsets are there in A? [Dj.B.- 20]**

a) 4 b) 8
c) 12 d) 16

11. **If $D = A'$ then – [Dj.B.- 20]**

i. Element of D is 2.
ii. Element of $A \times D$ is 8.
iii. $A \times D$ is a function.

Which one of the following is correct?

a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

12. **How many proper subsets of the A = {2, 3, 4}? [D.B.- 19]**

a) 3 b) 7
c) 8 d) 9

13. **If D = {2, e} then what is the value of P (D) of the following? [R.B.- 19]**

a) $\{2\}, \{e\}$
b) $\{2, e\}$
c) $\{\{2\}, \{e\}, \{2, e\}\}$
d) $\{\{2\}, \{e\}, \{2, e\}, \emptyset\}$

14. **If P = {-3, -2, -1, 0, 1, 2} and Q = {-3, -2, 0, 1, 3} then Q - P = What? [R.B.- 19]**

a) $\{-3, -2, -1, 0, 1, 2, 3\}$
b) $\{-3, -2, 0, 1\}$
c) $\{-1, 2\}$
d) $\{3\}$

15. **Which one is the range of the relation S = {(3, 1), (3, 2), (4, 2)}? [Dj.B.- 19]**

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

16. **If A = {a, b, c, d} and B = {b, c, d, e} then which one of the following is the number of elements of P (A∩B)? [C.B.- 19]**

a) 3 b) 5
c) 8 d) 32

17. Which one of the following is A\B if A = {a, b, c} and B = {b, c, d}? [Ctg.B.- 19]

a) {a} b) {d}
c) {a, b, c, d} d) {b, c}

18. Which one is the range of S = {(2, 1), (2, 2), (4, 2), (5, 4)}? [J.B.- 19]

a) {2, 2, 4} b) {2, 4, 5}
c) {1, 2, 4} d) {1, 4, 5}

Read the following statement and answer the questions no. 19 and 20:

Universal set U = {1, 2, 3, 4, 5, 6}, P= $\{n \in N : x^2 - 6x + 8 = 0\}$, Q = {1, 3} and R = {1, 4, 5}.

19. Q' ∪ R = What? [S.B.- 19]

a) {4, 5} b) {2, 4, 5, 6}
c) {1, 2, 4, 5, 6} d) {1, 2, 3, 4, 5, 6}

20. Which is the set of P∩R = What? [S.B.- 19]

a) {1, 2, 4, 5} b) {1, 4, 5}
c) {2, 4} d) {4}

21. If Q = {0, 2} and R = {-1, 0, 1} then- [Dj.B.- 19]

i. The number of proper subsets of Q is 3.
ii. Q∩R = {0}
iii. R\Q = R

Which one of the following is correct?

a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

22. If A = {x ∈ ℕ : 3 ≤ x ≤ 7} then- [Ctg.B.- 19]

i. A prime number of the set A is 3.
ii. The number of elements of P(A) is 16.
iii. There are 2 number which divisible by 3 is set A.

Which one of the following is correct?

a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

23. If A = {1, 3, 5} and B = {2, 3, 5} then- [J.B.- 19]

i. A∩B = {3, 5}
ii. The number of elements of P(A∪B) is 76.
iii. A\B = {1, 5}

Which one of the following is correct?

a) i an ii b) i and iii
c) ii and iii d) i, ii and iii

24. ∪ is universal set and A is a subset of ∪, then- [B.B.- 19]

i. A^c ∪A = ∪
ii. A^c ∩A = ∅
iii. A∪ ∪ = A^c

Which one of the following is correct?

a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

25. Which one indicates A ∩ B of the following? [All B.- 18]

a) {x : x ∈ A and x ∉ B}
b) {x : x ∈ B and x ∉ A}
c) {x : x ∈ A and x ∈ B}
d) {x : x ∈ A and x ∉ A}

26. If A = {a, b, c, d}, how many real subset of P(A)? [D.B.- 17]

a) 4 b) 14
c) 15 d) 16

27. If A = {6, 7, 8, 9, 10, 11, 12, 13} then which set formed with the multiples of 3, is the subset of set A? [R.B.- 17]

a) {6, 9, 12} b) {9, 12, 15}
c) {6, 11} d) {3, 6}

28. If A = {w, x, y, z} then how many proper subsets of A? [Dj.B.- 17]

a) 12 b) 13
c) 15 d) 16

29. Which one of the following is the tabular method of C = {y : y ∈ ℕ and 5 ≤ y ≤ 10}? [S.B.- 17]

a) {5, 6, 7, 8, 9, 10} b) {6, 7, 8, 9}
c) {5, 6, 7, 8, 9} d) {6, 7, 8, 9, 10}

30. What kind of set is {∅}? [B.B.- 17]

a) It is not a set
b) An empty set
c) Complement set
d) Power set of empty set

31. If A = {x ∈ N : 2 < x < 6}, then [Dj.B.- 17]

i. A prime number of the set A is 2.

ii. The number of elements of P(A) is 8.

iii. The number of divisible by 2 of the set A is 1.

Which one of the following is correct?

a) i and ii b) i and iii

c) ii and iii d) i, ii and iii

32. If $A = \{1, 2, 3\}$ then what is the number of elements of P(A)? [C.B.- 16]

a) 3 b) 6

c) 8 d) 10

33. What is the number of elements of the power set of $\emptyset$? [R.B.- 16]

a) 0 b) 1

c) 2 d) 3

34. Which of the following is an infinite set? [R.B.- 16]

a) $\{3, 5, 7\}$

b) $\{1, 2, 2^2, \ldots\ldots, 2^{10}\}$

c) $\{x: x \text{ is a natural number and } x < 41\}$

d) $\{3, 3^2, 3^3, \ldots\ldots\ldots\}$

35. If $(p + 5, -5) = (5, q - 5)$ then (p, q) = What? [S.B.- 16]

a) $(-10, 10)$ b) $(10, -10)$

c) $(0, 0)$ d) $(1, 1)$

36. If A = {9, 10, 11, 12, 13, 14, 15} which one of the following is the set builder method of set A? [Dj.B.- 16]

a) $\{x \in \mathbb{N} : 9 \leq x < 15\}$

b) $\{x \in \mathbb{N} : 9 < x < 15\}$

c) $\{x \in \mathbb{N} : 9 < x \leq 15\}$

d) $\{x \in \mathbb{N} : 9 \leq x \leq 15\}$

$A = \{-1, 1, 2, 3\}$ and $B = (x : x^2 - 2x - 3 = 0\}$.

Answer the questions No. (37 – 39) based using the above information:

37. The elements of the set B are - [B.B.- 16]

a) $1, 3$ b) $-1, 3$

c) $-3, 1$ d) $-3, -1$

38. A ∩ B = What? [B.B.- 16]

a) $\{1, 2\}$ b) $\{1, 3\}$

c) $\{-1, 3\}$ d) $\{-1, 2\}$

39. What is the number of elements of $A \times B$? [B.B.- 16]

a) 4 b) 5

c) 6 d) 8

40. If the set A is the proper subset of the set B. Which relation is correct? [D.B.- 15]

a) $A \subset B$ b) $A \subseteq B$

c) $A \backslash B$ d) $A \not\subset B$

41. Which one is the complement set of the set B? [D.B.- 15]

a) $B' = U \cap B$ b) $B' = B - \cup$

c) $B' = \cup \cap B$ d) $B' = U \backslash B$

42. If the number of elements of a set is 3, what is the number of subsets of that set? [D.B.- 15]

a) 3 b) 6

c) 8 d) 9

43. Which one of the following is empty se? [C.B.- 15]

a) $\{x \in \mathbb{N} : x \text{ is prime number and } 23 < x < 29\}$.

b) {x : x, where as x is odd natural number and 23 < x < 29}.

c) $\{x \in \mathbb{N} : 23 < x < 29\}$

d) $\{x \in \mathbb{Z} : 23 < x < 29\}$

44. A = {2, 3, 5} and R = {(x, y): x ∈ *A*, y ∈ A and y = x – 1}. Which one is the tabular method of R? [C.B.- 15]

a) $\{(2, 3)\}$ b) $\{(3, 2)\}$

c) $\{(3, 3)\}$ d) $\{(5, 5)\}$

45. How many proper sets are of the set $M = \{1, 2, 3\}$? [R.B.- 15]

a) 3 b) 6

c) 7 d) 8

46. How many proper subsets of A are there, when A = {a, b, c}? [J.B.- 15]

a) 3 b) 6

c) 7 d) 8

47. What is the expressions of set A = {x : x ∈ ℕ and 2 < x ≤ 6} by tabular method? [Ctg.B.- 15]

a) $A = \{2, 3, 4, 5, 6\}$

b) $A = \{3, 4, 5, 6\}$

c) $A = \{2, 3, 4, 5\}$

d) $A = \{3, 4, 5\}$

48. **If C = {a, b} and D = {a, b} then C – D = What? [Ctg.B.- 15]**

a) {0} b) {∅}
c) ∅ d) {a, b}

49. **If P ∩ Q = { } then P and Q will be mutually- [S.B.- 15]**

a) Subset b) Disjoint set
c) Universal set d) Intersection set

50. **If A = {0, 1, 2, 3, 4} and B = {- 1, 0, 1, 2, 3} which is the correct value of (A ∪ B)? [S.B.- 15]**

a) {-1, 0, 1, 2, 3, 4}
b) {0, 1, 2, 3}
c) {−1, 0, 1, 2, 3}
d) {0, 1, 2, 3, 4}

51. **What is called {x ∈ N : 9 < x < 10} this set? [S.B.- 15]**

a) Disjoint set b) Infinite set
c) Empty set d) Finite set

52. **If A = {1, 2} and B = {3, 4} then A × B = What? [Dj.B.- 15]**

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

53. **For set A and B, if A∩B = ∅ then- [Dj.B.- 16]**

i. A and B are disjoint set.
ii. A and B are finite set.
iii. A and B are infinite set.

Which one of the following is correct?

a) i b) i and ii
c) ii and iii d) i, ii and iii

54. **If A = {$x \in N : 2 < x < 6$}, then [D.B.- 15]**

i. There are 2 prime numbers in set A.
ii. Number of elements of P(A) is 8.
iii. There is one number divisible by 2 in the set A is 1.

Which one of the following is correct?

a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

In respect of the information answer to the following questions No. (55 – 57): A = {1, 2}, B = {2, 3} and C = {3, 4}

55. **How many numbers of elements of (A∪B∪C)? [S.B.- 15]**

a) 4 b) 5
c) 6 d) 7

56. **Which is the correct value of P(A ∩ B)? [S.B.- 15]**

a) $(2, \phi)$ b) $\{\{2\}, \emptyset\}$
c) {2} d) ∅

57. **Define (A∩B)×C. Which is correct? [S.B.- 15]**

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

58. **If Q = {0, 2} and R = {-1, 0, 1} then- [Dj.B.- 15]**

i. The number of proper subsets of Q is 3.
ii. Q∩R = {0}
iii. R\Q = R

Which one of the following is correct?

a) i and ii b) i andiii
c) ii and iii d) i, ii and iii

59. **If A = {x ∈ ℕ : 3 ≤ x ≤ 7} then- [Dj.B.- 15]**

i. A ∩ B = {3, 5}.
ii. The number of elements P (A∪B) is 76.
iii. A \ B = {1, 5}

Which one of the following is correct?

a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

60. **What is the number of proper subsets of set x = {a, b, c} [Ctg.B.- 15]**

a) 3 b) 6
c) 7 d) 8