



Question 1(5 marks,1 marks each)

Q1.1) If $M = \{1, 3, 5\}$, $N = \{2, 4, 6\}$, then $M \cap N = ?$

- (A) $\{1, 2, 3, 4, 5, 6\}$ (B) $\{1, 3, 5\}$ (C) ϕ (D) $\{2, 4, 6\}$

Q1.2)) $P = \{x \mid x \text{ is an even prime, } 3 < x \leq 6\}$ How to write this set in roster form?

- (A) $\{3, 4, 5\}$ (B) $\{4\}$ (C) $\{0\}$ (D) ϕ

Q1.3) $Q = \{x \mid x \text{ is an even number, } x \in \mathbb{N}\}$

- (A) Null set (B) Infinite set (C) Finite set (D) None of these

Q1.4)) $M \cup N = \{2, 4, 6, 8, 10, 7\}$ and $M = \{2, 4, 6\}$ then which of the following represent set N ?

- (A) $\{1, 2, 3\}$ (B) $\{8, 10, 7\}$ (C) $\{8, 10, 12\}$ (D) $\{8, 10, 7, 12\}$

Q1.5)If $n(A) = 15$, $n(A \cap B) = 29$, $n(A \cup B) = 7$ then $n(B) = ?$

Q2)Write the subset relations between the following sets (2 marks)

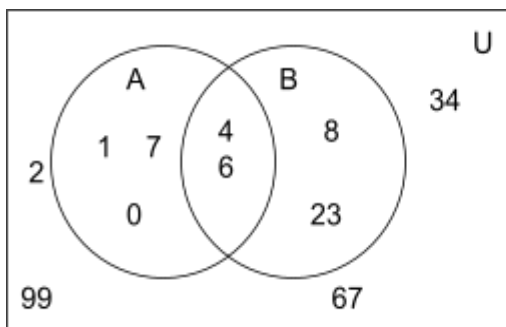
$X = \text{set of all quadrilaterals}$ $Y = \text{set of all rhombuses}$

$S = \text{set of all squares}$ $T = \text{set of all parallelograms}$ $V = \text{set of all rectangles}$

Q3)If M is ant set, then write $M \cup \phi$ and $M \cap \phi$ (2 marks)

Q4) Represent the union of two sets by Venn diagram for each of the following. (2 marks)

- (i) $A = \{3, 4, 5, 7\}$ $B = \{1, 4, 8\}$ (ii) $P = \{a, b, c, e, f\}$ $Q = \{l, m, n, e, b\}$



Observe the Venn diagram and write the given sets U , A , B , $A \cup B$, $A \cap B$.

$(A \cup B)^c$, $(A \cap B)^c$ and $A^c \cup (A \cap B)^c$

(4 marks)

Question 6(5 marks)(any 1)

Q6.1) 70 trees were planted by Parth and 90 trees were planted by Pradnya on the occasion of Tree Plantation Week. Out of these; 25 trees were planted by both of them together.

How many trees were planted by Parth or Pradnya ?

Q6.2) A survey was conducted to know the hobby of 220 students of class IX. Out of which 130 students informed about their hobby as rock climbing and 180 students informed about their hobby is sky watching. There are 110 students who follow both the hobbies. Then how many students do not have any of the two hobbies ? How many of them follow the hobby of rock climbing only ? How many students follow the hobby of sky watching only ? (5 marks)