

- Q.1** The set $(A \cup B \cup C) \cap (A \cap B' \cap C')' \cap C'$ is equal to
(A) $B \cap C'$ (B) $A \cap C$ (C) $B \cup C'$ (D) $A \cap C'$
- Q.2** The set $(A \cap B) \cup (B \cap C)$ is equal to
(A) $A' \cup B \cup C$ (B) $A' \cup B$ (C) $A' \cup C'$ (D) $A' \cap B$
- Q.3** If A and B are two sets, then $A \cap (A \cup B)$ equals
(A) A (B) B (C) ϕ (D) $A \cap B$

Q.4 If X and Y are two sets and X' denotes the complement of X , then $X \cap (X \cup Y)'$ is equal to

(A) X

(B) Y

(C) ϕ

(D) $X \cap Y$

Challenging Problems-II

Subsets & Power Set

- Q.1** | Given that $N = \{1, 2, 3, \dots, 100\}$, then
- (i) Write the subset A of N , whose element are odd numbers.
 - (ii) Write the subset B of N , whose element are represented by $x + 2$, where $x \in N$.
- Q.2** Two finite sets have m and n elements respectively. The total number of subsets of first set is 56 more than the total number of subsets of the second set. The values of m and n respectively are.
- (A) 7, 6 (B) 5, 1 (C) 6, 3 (D) 8, 7
- Q.3** If X and Y are two sets and X' denotes the complement of X , then $X \cap (X \cup Y)'$ is equal to
- (A) X (B) Y (C) ϕ (D) $X \cap Y$

Challenging Problems-II

Subsets & Power Set

- Q.4** If $X = \{8^n - 7n - 1 \mid n \in \mathbf{N}\}$ and $Y = \{49n - 49 \mid n \in \mathbf{N}\}$. Then
(A) $X \subset Y$ (B) $Y \subset X$ (C) $X = Y$ (D) $X \cap Y = \phi$
- Q.5** If $n[P(A)] = 8, n[P(B)] = 4$ then max. number of elements in $P(A \cap B)$ is
(A) 0 (B) 2 (C) 4 (D) 8
- Q.6** State true or false
 $P(A - B) = P(A) - P(B)$
- Q.7** State true or false
 $P(A \cup B) = P(A) \cup P(B)$

- Q.8 If total number of proper subsets of set A is 63 than find $n(A)$.
- Q.9 If $A = \{0, 1, 2, 3, 4\}$ find number of all the subsets of set A, which has two or more elements.
- Q.10 Is $n(A \cap B) = 2$ than find $n[P(A) \cap P(B)]$ and $n[P(A \cap B)]$