

11th AND 12th STANDARD PCM FOR CBSE BOARD, JEE MAIN, NEET (UG), CUET AND OTHER ENTRANCE EXAMS

Regarding Sets

Let: $U = \{1, 2, 3, 4, 5, 6\}$, $A = \{1, 2, 3, 4\}$ & $B = \{3, 4, 5, 6\}$

• Union $A \cup B = A \vee B =$ Either belongs to A or B or both - (Repetition is not allowed) = $\{1, 2, 3, 4, 5, 6\}$

• Intersection $A \cap B = A \wedge B =$ common to both = $\{3, 4\}$

• Difference of sets:

$A - B = \{1, 2, 3, 4\} - \{3, 4, 5, 6\} = \{1, 2\} =$ Belongs to A only.
 $= A \cap \bar{B}$

only $B - A = \{3, 4, 5, 6\} - \{1, 2, 3, 4\} = \{5, 6\} =$ Belongs to B only.
 $= B \cap \bar{A}$

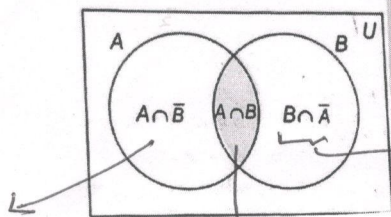
A symmetric difference $A \Delta B = (A - B) \cup (B - A)$

Venn's Diagram = $(A \cup B) - (A \cap B)$

= $\{1, 2, 5, 6\}$

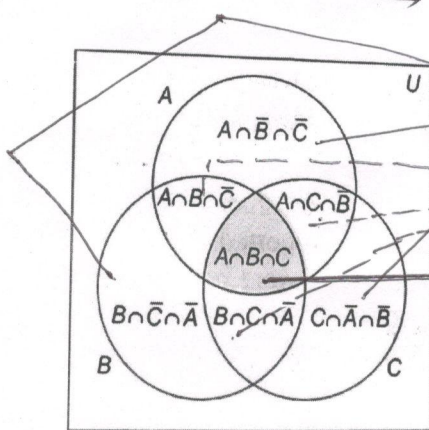
• Complement of A = $A' = U - A$

only A



Common to both

Belongs to A only
B only
only



} Belongs to A & B and not C
B & C and not A
C & A and not B

Belongs to A, B & C all three

Success + failure = U

At least one + none = U
ie all the above $\bar{A} \cap \bar{B} \cap \bar{C} = U$

De Morgan's Law

$(A \cup B)' = A' \cap B'$
 $(A \cap B)' = A' \cup B'$

Apply according to requirement of Que..