

BCM SCHOOL BASANT AVENUE DUGRI ROAD LUDHIANA
ASSIGNMENT (SETS)
CLASS XISC

1	If sets A and B are defined as $A = \{(x, y): y = \frac{1}{x}, x \neq 0, x \in R\}$, $B = \{(x, y): y = -x, x \in R\}$, then (A). $A \cap B = A$ (B). $A \cap B = B$ (C). $A \cap B = \emptyset$ (D). $A \cup B = A$
2	If A, B, C be three sets such that $A \cup B = A \cup C$ and $A \cap B = A \cap C$, then, (A) $B = C$ (B) $A = C$ (C) $A = B = C$ (D) $A = B$
3	Assertion: If $A = \{1, 3, 5, 7, 9, 11, 13, 15, 17\}$, $B = \{2, 4, \dots, 18\}$ and N the set of natural numbers is the universal set, then $A' \cup (A \cup B) \cap B'$ is N Reason: The set which contains all the sets is called Universal set
4	Two finite sets have m and n elements. The total no. of subsets of the first set is 56 more than the total no. of subsets of second set. Find the value of m and n.
5	A and B are two sets such that $n(A - B) = 14 + x$, $n(B - A) = 3x$ and $n(A \cap B) = x$. Draw a Venn diagram to illustrate this information. If $n(A) = n(B)$, Find (i) the value of x (ii) $n(A \cup B)$
6	A, B and C are subsets of Universal Set U. If $A = \{2, 4, 6, 8, 12, 20\}$, $B = \{3, 6, 9, 12, 15\}$, $C = \{5, 10, 15, 20\}$ and U is the set of all whole numbers, draw a Venn diagram showing the relation of U, A, B and C.
7	Using properties of set prove the statement. For all sets A and B, prove that $A - (A - B) = A \cap B$
8	For all sets A, B and C, show that $(A - B) \cap (A - C) = A - (B \cup C)$
9	In a survey of 25 students, it was found that 15 had taken mathematics, 12 had taken physics and 11 had taken chemistry, 5 had taken mathematics and chemistry, 9 had taken mathematics and physics, 4 had taken physics and chemistry and 3 had taken all three subjects. Find the no. of students that had taken (i) only chemistry (ii) only mathematics (iii) only physics (iv) physics and chemistry but mathematics (v) mathematics and physics but not chemistry (vi) only one of the subjects (vii) at least one of three subjects (viii) None of three subjects.

