


GAIL DAV PUBLIC SCHOOL GAIL GAON, DIBIYAPUR
CLASS - XI SUB-MATHS
ASSIGNMENT

1	Let A and B have 3 and 6 elements respectively. What can be the Minimum number of elements that in $A \cup B$? (a) 3 (b) 6 (c) 9 (d) 1
2	The number of proper subsets of a set with 5 elements is: (a) 31 (b) 32 (c) 15 (d) 16
3	Which of the following is always true? A) $(A \cup B)' = A' \cup B'$ B) $(A \cap B)' = A' \cap B'$ C) $(A \cup B)' = A' \cap B'$ D) None
4	If $A \subset B$ and $B \subset C$, then: A) $A = C$ B) $A \subset C$ C) $C \subset A$ D) None
5	Number of subsets of a set with 4 elements: A) 8 B) 16 C) 32 D) 4
6	If $A \cap B = \emptyset$, then sets are: A) Equal B) Disjoint C) Universal D) Finite
7	If $n(U) = 50$, $n(A) = 20$, $n(A') = ?$ A) 20 B) 30 C) 50 D) 10
8	Define empty set with a real-life example.
9	Observe the figure given below.  The interval at which the value of x lies is (a) $x \in (-\infty, -2)$ (b) $x \in (-\infty, -2]$ (c) $x \in (-2, \infty]$ (d) $x \in [-2, \infty)$
10	Power set of empty set has: A) 0 elements B) 1 element C) 2 elements D) Infinite
11	If $A = \{1, 2, 3\}$ and $B = \{2, 3, 4\}$, then $A \Delta B$ is: A) $\{2, 3\}$ B) $\{1, 4\}$ C) $\{1, 2, 3, 4\}$ D) $\{1, 2, 3\}$
12	If two sets have same elements, they are: A) Equivalent B) Equal C) Disjoint D) Null
13	If $n(A) = 20$, $n(B) = 30$, $n(A \cap B) = 10$, then $n(A \cup B)$ is: A) 60 B) 40 C) 30 D) 20
14	Which of the following is not a subset of $\{1, 2, 3\}$? (a) $\{1\}$ (b) $\{1, 2\}$ (c) $\{1, 2, 3\}$ (d) $\{1, 3, 4\}$
	Choose from the below options for A-R Questions. (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A). (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A). (c) Assertion (A) is true, but Reason (R) is false. (d) Assertion (A) is false, but Reason (R) is true.
15.	Assertion (A): $A = \{3, 5, 7, 9\}$, then $\{7\} \notin A$

	Reason(R): $\{7\}$ is not an element of set A but a subset of A.
16.	Assertion (A): The roster form of $B = \{x : x \text{ is a letter of the word "MADAM"}\}$ is $\{A, M, D\}$. Reason (R): The order of arrangement of elements in a set does not matter.
17.	Write the following sets in the roster form. (i) $A = \{x : x \text{ is a positive integer less than } 10 \text{ and } 2^x - 1 \text{ is an odd number}\}$ (ii) $C = \{x : x^2 + 7x - 8 = 0, x \in \mathbb{R}\}$ OR Given that $N = \{1, 2, 3, \dots, 100\}$, then (i) Write the subset A of N, whose elements are odd numbers. (ii) Write the subset B of N, whose elements are represented by $x + 2$, where $x \in N$.
18.	Write down the power set of the set $\{a, b\}$.
19.	Write the following sets in roster form: (i) $A = \{x : x \text{ is an integer and } -3 \leq x < 7\}$ (ii) $B = \{x : x \text{ is a natural number less than } 6\}$
20.	In a group of 400 people, 250 can speak Hindi and 200 can speak English. How many people can speak both Hindi and English?
21.	Let $U = \{1, 2, 3, 4, 5, 6, 7\}$, $A = \{2, 4, 6\}$, $B = \{3, 5\}$, $C = \{1, 2, 4, 7\}$ Draw the Venn diagram and then find (i) $A \cup (B \cap C')$ (ii) $(B - A) \cup (A - B)$
CASE BASED QUESTION	
22.	In a group of 80 people: 45 know English (E), 35 know Hindi (H), 30 know Sanskrit (S), 15 know $E \cap H$, 10 know $H \cap S$, 12 know $E \cap S$, 5 know all three. Based on the above information answer the following People knowing exactly two languages: A) 22 B) 27 C) 32 D) 17 People knowing only English: A) 23 B) 25 C) 20 D) 18 People knowing at least one language: A) 68 B) 70 C) 72 D) 75 People knowing none: A) 12 B) 10 C) 8 D) 5
23.	In a class of 50 students: <ul style="list-style-type: none"> • 28 study Mathematics, • 20 study Physics, • 18 study Chemistry, • 10 study both Mathematics and Physics, • 8 study both Physics and Chemistry, • 5 study both Mathematics and Chemistry, • 3 study all three subjects. Using a Venn diagram, answer the following: (i) How many students study only Mathematics? (ii) How many students study exactly two subjects? (iii)(A) How many students study at least one subject?