

**SAINIK SCHOOL GOPALGANJ**  
**SUB: MATHEMATICS**  
**CLASS - XI**  
**ASSIGNMENT**

**Chapter 1: Sets**

**(Q1 to Q10) There are four options against each question. Choose the option which you consider the most appropriate as your answer.**

1. If  $a \in N$ ,  $N$  is set of natural numbers such that  $aN = \{ ax : x \in N \}$  then  $3N \cap 7N =$   
(a)  $10N$  (b)  $4N$  (c)  $21N$  (d) none
2.  $A$  and  $B$  are two sets with  $n(A) = 16$ ,  $n(B) = 14$  and  $n(A \cup B) = 25$  then  $n(A \cap B) =$   
(a) 30 (b) 5 (c) 6 (d) 2
3. For any two sets  $A$  and  $B$ ,  $A \cup B = A$  iff,  
(a)  $B \subseteq A$  (b)  $A \subseteq B$  (c)  $B \neq A$  (d)  $A = B$
4. For any set  $A$ ,  $A \cup A = A$  is called  
(a) Idempotent Law (b) Associative Law (c) Identity Law (d) none
5.  $A = \{x : x \text{ is a prime number } < 10\}$  and  $B = \{y : y \text{ is an odd number } < 10\}$  then  
(a)  $A \subseteq B$  (b)  $B \subseteq A$  (c)  $A = B$  (d) none
6. In throw of a dice Which one of the following is a null set:  
(a)  $A = \{x : x \text{ is prime outcome}\}$   
(b)  $B = \{y : y \text{ is an odd outcome}\}$   
(c)  $C = \{z : z \text{ is a divisor of } 7\}$   
(d)  $D = \{u : u \text{ is a multiple of } 7\}$
8. If  $X = \{1, 2, p, 4, q\}$  the cardinality of  $P(X)$  is=  
(a) 32 (b) 16 (c) 64 (d) 15
9. Two finite sets have  $m$  and  $n$  elements. The number of elements in power set of first is 48 more than number of elements in power set of the other, values of  $m$  and  $n$  are:  
(a) 7, 6 (b) 6, 3 (c) 4, 6 (d) 7, 4
10. If  $A = \{1, 3, 5, B\}$  and  $B = \{4, 6, 5\}$  then  
(a)  $4 \subset A$  (b)  $4 \in A$  (c)  $\{4\} \subset A$  (d) none

11. Write the following in set builder form  
 (a)  $\{7, 14, 21, 28, \dots\}$  (b)  $\{1, 4, 9, 16, 25, \dots, 100\}$
12. Write in tabular/Roster Form  
 (a)  $B = \{x : x \text{ is a letter from word MATHEMATICS}\}$   
 (B)  $X = \{a : a \text{ is a month of year not having 31 days}\}$
13. Define Equal, Equivalent, Universal and Power sets.
14. Represent the following by Venn diagram for sets A, B and C  
 (a)  $A - B$  (b)  $A \cap B'$  (c)  $A \cup B$  (d)  $A \cap B$  (e)  $A \cap B \cap C$
15. Show that  $A - B = A \cap B'$
16. In a committee 50 people speak Spanish, 10 speaks both Spanish and French, how many speak at least one of the two languages?
17. Let A, B & C are three sets such that  $A \cup B = A \cup C$  and  $A \cap B = A \cap C$ , then show that  $B = C$  ..
18. If  $A \subset B$ , then  $C - B \subset C - A$
19. Show that  $A = B$ , if  $A \cap X = B \cap X = \phi$  and  $A \cup X = B \cup X$  .
20. In a survey it was found that 21 people like product A, 26 like product B and 29 like product C. If 14 like product A and B, 12 like product C and A, 14 like B and C and 8 like all three product. How many like product B o

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