SETS

PRACTICAL PROBLEMS ON UNION & INTERSECTION

EXERCISE

Q.1	Which of the following statements is accurate?			
	(a) $n (A \cup B) = n (A) + n (B) + n (A \cap B)$			
	(b) $n (A \cup B) = n (A) - n (B) - n (A \cap B)$			
	(c) $n (A \cup B) = n (A) + n (B) - n (A \cap B)$			
	(d) $n (A \cap B) = n (A) + n (B) + n (A \cup B)$			
Q.2	What is the union of sets A and B when they are mutually exclusive?			
	(a) n (A) + n (B)		(b) n (A) – n (B)	
	(c) n (B) – n (A)		(d) n (A) * n (B)	
Q.3	If set A contains 10 elements, set B has 20 elements, and 5 elements are common to both, determine the number of elements in the union of sets X and Y.			
	(a) 10	(b) 15	(c) 20	(d) 25
Q.4	In a family of 10 members, 7 individuals enjoy either tea or coffee, with 4 of them			
	favoring tea and 5 of them preferring coffee. How many of them appreciate both tea and coffee?			
	(a) 1	(b) 2	(c) 7	(d) 9
Q.5	In a family of 10 members, 7 individuals enjoy either tea or coffee, with 4 of them			
	favoring tea and 5 of them preferring coffee. How many of them do not have a preference for either tea or coffee?			
	(a) 1	(b) 2	(c) 3	(d) 4

- Q.6 In a family of 10 members, 7 individuals enjoy either tea or coffee, with 4 of them favoring tea and 5 of them preferring coffee. How many of them exclusively like tea?
 (a) 2 (b) 3 (c) 4 (d) 5
- Q.7 In a family of 10 members, 7 individuals enjoy either tea or coffee, with 4 of them favoring tea and 5 of them preferring coffee. How many of them exclusively like coffee?
 - (a) 2 (b) 3 (c) 4 (d) 5
- Q.8 In a city with a population of 1000, where all residents read newspapers, 600 people read Hindustan Times, and 700 people read Times of India. How many people read both newspapers?
 - (a) 100 (b) 300 (c) 1000 (d) 1300
- Q.9 In a city with a population of 1000, where all residents read newspapers, 600 people read Hindustan Times, and 700 people read Times of India. How many people exclusively read Hindustan Times?
 - (a) 100 (b) 200 (c) 300 (d) 600
- **Q.10** In a city with a population of 1000, where all residents read newspapers, 600 people read Hindustan Times, and 700 people read Times of India. How many people exclusively read Times of India?
 - (a) 200 (b) 400 (c) 600 (d) 700

Q.11 In a committee, if 50 individuals speak French, 20 speak Spanish, and 10 speak both languages, then how many people speak at least one of the two languages?
(a) 10
(b) 20
(c) 50
(d) 60

- **Q.12** A survey of 100 consumers by a group revealed that 72 like apples and 45 like oranges. What is the minimum number of consumers who must have liked both products?
 - (a) 14 (b) 15 (c) 16 (d) 17

Q.13 In a population of 1000 individuals, 700 people play football, 600 play cricket, and 100 play both. Is the information accurate?

(a) True (b) False

Q.14 In a group of students, 100 students are familiar with Hindi, 50 are familiar with English, and 25 are familiar with both. Each student is knowledgeable in either Hindi or English. How many students are there in the group?

(a) 75 (b) 100 (c) 125 (d) 175

Q.15 Is the data accurate if 200 people like tea, 300 people like coffee, and 250 people like both?

(a) True (b) False

ANSWER KEY

- **1.** (c)
- **2.** (a)
- **3.** (d)
- **4.** (b)
- **5.** (c)
- **6.** (a)
- **7.** (b)
- **8.** (b)
- **9.** (c)
- **10.** (b)
- **11.** (d)
- **12.** (d)
- **13.** (b)
- **14.** (c)
- **15.** (b)