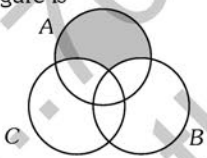


1. Which of the following is the empty set
- $\{x : x \text{ is a real number and } x^2 - 1 = 0\}$
 - $\{x : x \text{ is a real number and } x^2 + 1 = 0\}$
 - $\{x : x \text{ is a real number and } x^2 - 9 = 0\}$
 - $\{x : x \text{ is a real number and } x^2 = x + 2\}$
2. Given the sets $A = \{1, 2, 3\}$, $B = \{3, 4\}$, $C = \{4, 5, 6\}$, then $A \cup (B \cap C)$ is
- $\{3\}$
 - $\{1, 2, 3, 4\}$
 - $\{1, 2, 4, 5\}$
 - $\{1, 2, 3, 4, 5, 6\}$
3. If $A = \{2, 3, 4, 8, 10\}$, $B = \{3, 4, 5, 10, 12\}$, $C = \{4, 5, 6, 12, 14\}$ then $(A \cap B) \cup (A \cap C)$ is equal to
- $\{3, 4, 10\}$
 - $\{2, 8, 10\}$
 - $\{4, 5, 6\}$
 - $\{3, 5, 14\}$
4. If A and B are two sets, then $A \cap (A \cup B)'$ is equal to
- A
 - B
 - ϕ
 - None of these
5. The shaded region in the given figure is
- $A \cap (B \cup C)$
 - $A \cup (B \cap C)$
 - $A \cap (B - C)$
 - $A - (B \cup C)$
- 
6. Let A and B be two sets such that $n(A) = 0.16$, $n(B) = 0.14$, $n(A \cup B) = 0.25$. Then $n(A \cap B)$ is equal to
- 0.3
 - 0.5
 - 0.05
 - None of these
7. In a class of 100 students, 55 students have passed in Mathematics and 67 students have passed in Physics. Then the number of students who have passed in Physics only is
- 22
 - 33
 - 10
 - 45
8. If A , B and C are any three sets, then $A - (B \cap C)$ is equal to
- $(A - B) \cup (A - C)$
 - $(A - B) \cap (A - C)$
 - $(A - B) \cup C$
 - $(A - B) \cap C$
9. In a class of 30 pupils, 12 take needle work, 16 take physics and 18 take history. If all the 30 students take at least one subject and no one takes all three then the number of pupils taking 2 subjects is
- 16
 - 6
 - 8
 - 20
10. Consider the following relations :
- $A - B = A - (A \cap B)$
 - $A = (A \cap B) \cup (A - B)$
 - $A - (B \cup C) = (A - B) \cup (A - C)$
- which of these is/are correct
- 1 and 3
 - 2 only
 - 2 and 3
 - 1 and 2

11. Of the members of three athletic teams in a school 21 are in the cricket team, 26 are in the hockey team and 29 are in the football team. Among them, 14 play hockey and cricket, 15 play hockey and football, and 12 play football and cricket. Eight play all the three games. The total number of members in the three athletic teams is
- (a) 43 (b) 76
(c) 49 (d) None of these
12. Let $S = \{0, 1, 5, 4, 7\}$. Then the total number of subsets of S is
- (a) 64 (b) 32
(c) 40 (d) 20
13. The smallest set A such that $A \cup \{1, 2\} = \{1, 2, 3, 5, 9\}$ is
- (a) $\{2, 3, 5\}$ (b) $\{3, 5, 9\}$
(c) $\{1, 2, 5, 9\}$ (d) None of these
14. If A and B are two sets, then $A \cup B = A \cap B$ iff
- (a) $A \subseteq B$ (b) $B \subseteq A$
(c) $A = B$ (d) None of these
15. In a town of 10,000 families it was found that 40% family buy newspaper A , 20% buy newspaper B and 10% families buy newspaper C , 5% families buy A and B , 3% buy B and C and 4% buy A and C . If 2% families buy all the three newspapers, then number of families which buy A only is
- (a) 3100 (b) 3300
(c) 2900 (d) 1400