

Name : Set Algebra Chapter : Sets Grade : ICSE Grade VIII License : Non Commercial Use

1. Which of the following are true?

a) A  $\cup$  A' =  $\mu$ b) A  $\cup$  A' = A c) A  $\cap$  A' =  $\mu$ d) A  $\cap$  A' = Ae) A  $\cap$  A' =  $\emptyset$ f) A  $\cup$  A' =  $\emptyset$ (i) {a,e} (ii) {d,f,a} (iii) {c,e} (iv) {b,e,a} (v) {b,a}

2. Which of the following are true with respect to set operations?

- a) Intersection is associative
- b) Intersection distributes over union
- c) Union does not distribute over intersection
- d) Union distributes over intersection
- e) Intersection is not associative
- (i)  $\{a,b,d\}$  (ii)  $\{c,a\}$  (iii)  $\{c,e,d\}$  (iv)  $\{e,b\}$  (v)  $\{c,a,b\}$
- 3. Which of the following are true with respect to set operations?
  - a) Intersection is commutative
  - b) Union is not commutative
  - c) Union is associative
  - d) Intersection is not commutative
  - e) Union is commutative

(i) {b,a,c} (ii) {b,a} (iii) {d,c} (iv) {a,c,e} (v) {b,d,e}

4. Which of the following are true?

```
a) A' \cap B' = (A \cap B)'

b) A' \cap B' = A' \cup B'

c) A' \cap B' = (A \cup B)'

d) A' \cup B' = (A \cup B)'

e) A' \cup B' = (A \cap B)'
```

(i) {d,a,c} (ii) {b,e} (iii) {a,c} (iv) {c,e} (v) {b,e,c}

5. Which of the following are true?

```
a) A \cap (B \cup C) = (A \cap B) \cup (A \cap C)

b) (A \cap B) \cap C = A \cap (B \cap C)

c) (A \cup B) \cup C = A \cup (B \cup C)

d) A \cup (B \cap C) = (A \cup B) \cap (A \cup C)

e) A \cap (B \cup C) = (A \cup B) \cap (A \cup C)

f) A \cup (B \cap C) = (A \cap B) \cup (A \cap C)
```

(i)  $\{e,d,a\}$  (ii)  $\{f,b\}$  (iii)  $\{e,f,c\}$  (iv)  $\{a,b,c,d\}$  (v)  $\{e,a\}$ 

```
6. If A = \{4,3,8,5,2\}, which of the following are true?
    a) {5,3} ⊂ A
    b) A⊃8
    c) 8⊂A
    d) 8∈A
    e) 8∉A
    (i) {c,d,a} (ii) {b,a} (iii) {a,d} (iv) {c,d} (v) {e,b,a}
7. If A and B are disjoint sets, which of the following are true?
    a) A \cap B = \emptyset
    b) A \cup B = A
   c) A \subset B
   d) A \cap B = A
    e) B \subset A
    (i) {c,a} (ii) {d,e,a} (iii) {b,a} (iv) {a}
8. If A = \{b,t,w,l,x\}, which of the following are true?
    a) x∉A
    b) \{b,l\} \subset A
    c) A⊃x
   d) x⊂A
    e) x \in A
    (i) \{b,e\} (ii) \{d,a,b\} (iii) \{c,e,b\} (iv) \{a,b\} (v) \{c,e\}
9. Given sets A, B and C, where A \subset B \subset C, which of the following are true?
    a) C \supset B
    b) C \subset A
   c) B ⊂ A
    d) \emptyset \subset B
    e) B ⊃ A
    (i) \{b,a,d\} (ii) \{a,d,e\} (iii) \{c,d\} (iv) \{b,c,e\} (v) \{b,a\}
10. Which of the following are true?
     a) A \cap \emptyset = A
     b) A \cup A = A
     c) A \cup A = \emptyset
     d) A \cup \emptyset = A
     e) A \cup \emptyset = \emptyset
      (i) {e,a,b} (ii) {b,d} (iii) {c,d} (iv) {c,d,b} (v) {a,b}
11. If A \subset B, then which of the following are true?
     a) A' = B
     b) A = B
     c) B \supset A
     d) A' \subset B
     e) B \subset A
      (i) {a,c} (ii) {b,c} (iii) {c} (iv) {d,e,c}
```

```
12. If A \subset B, then which of the following are true?
    a) A \cap B = A
     b) A \cup B = A
    c) A \cap B = B
    d) A \cup B = Ø
    e) A \cup B = B
     (i) {c,e} (ii) {b,a} (iii) {a,e} (iv) {d,b,a} (v) {c,e,a}
13. If A \subset B, then which of the following are true?
     a) A \cup B = Ø
     b) A - B = \emptyset
    c) B - A = B
    d) B - A = A
     e) A - B = B
     (i) {c,b} (ii) {d,e,b} (iii) {b} (iv) {a,b}
    Given 5 sets A = \{3,6,5,1\}, B = \{5,6,3,1\}, C = \{5,4,8,10,6,7,1\},
14. D = \{17, 19, 11, 14, 13, 16, 15\} and E = \{9, 6, 4, 10, 5, 8, 2, 3, 1, 7\},
     which of the following are true?
     a) A ↔ C
    b) C = D
    c) A \subset C
    d) A = B
    e) C ↔ D
     (i) {b,e} (ii) {d,e} (iii) {b,e,d} (iv) {c,a,d} (v) {a,d}
15. For any two non-empty sets A and B, which of the following are true?
    a) A \cap B = B \cap A
     b) A \cap B = B \cup A
     c) A \cup B = B \cap A
    d) A \cup B = Ø
    e) A \cup B = B \cup A
```

(i)  $\{a,e\}$  (ii)  $\{b,a\}$  (iii)  $\{c,e\}$  (iv)  $\{d,b,a\}$  (v)  $\{c,e,a\}$ 

Assignment Key					
1) (i)	2) (i)	3) (iv)	4) (iv)	5) (iv)	6) (iii)
7) (iv)	8) (i)	9) (ii)	10) (ii)	11) (iii)	12) (iii)
13) (iii)	14) (ii)	15) (i)			

Copyright © Small Systems Computing Pvt. Ltd.