

- 1. If  $\mu = \{-6, -1, -8, 2, -9, 4, 3, 6, 8, 1, -7, -5, 5\}$ ,  $A = \{-6, -1, -8, 2, -9\}$  and  $B = \{-1, 4, 3, 6, 8\}$ , find B A(i)  $\{3, 4, 8\}$  (ii)  $\{3, 6, 4, 8\}$  (iii)  $\{4, 3, -7, 8, 6\}$  (iv)  $\{6, -7, 3, 8\}$  (v)  $\{\}$
- 2. If A = {-1,-8,4,-6,-3,-4,8} and μ = {-1,-8,4,-6,-3,-4,8,3,7,-7,-9}, find A υ μ
  (i) {-1,2,-7,-8,-6,8,-9,1,3,4,-3,7,-4} (ii) {-4,4,-7,-6,8,-1,3,-8,7,-3} (iii) {-7,-1,-3,4,1,-6,-8,8,3,7,-9}
  (iv) {0,7,-13,8,1,-6,-9,-3,-7,3,-4} (v) {-1,-3,3,4,-4,8,7,-6,-9,-8,-7}
- 3. If A = {4,-7,8,-1,-4,0,-6} and  $\mu$  = {4,-7,8,-1,-4,0,-6,-3,-2,3,2}, find A  $\cap$  A (i) {-4,-1,-7,8,0,4,-6} (ii) {4,-8,-4,8,-1,-6,0} (iii) {4,8,-6,-4,-1,-3,0} (iv) {4,8,-4,-7,-1,0} (v) {5,-7,0,-4,2,-6,4,8,-1}
- 4. If  $\mu = \{-4, -6, 4, -1, 0, 5, -5, 7, 1, -3, 9\}$ ,  $A = \{-4, -6, 4\}$  and  $B = \{-1, -6, -4, 0, 5, -5\}$ , find  $n(A \cap B)$ (i) 1 (ii) 2 (iii) 3 (iv) 5 (v) (-1)
- 5. If  $\mu = \{0,-3,9,2,5,-9,4,-1,-8,3,-2\}$ ,  $A = \{0,-3,9,2\}$  and  $B = \{5,0,-9,-3\}$ , find  $(A \cup B) (A \cap B)$ (i)  $\{-9,9,-8,5,2\}$  (ii)  $\{4,-9,5,9\}$  (iii)  $\{9,2,-9\}$  (iv)  $\{9,-9,5\}$  (v)  $\{-9,9,2,5\}$
- 6. If A = {2,-2,-9,4,0} and  $\mu$  = {2,-2,-9,4,0,-7,5,3}, find A  $\cup \oslash$ (i) {-9,-2,0,5,-1,2,4} (ii) {-2,4,-9,0} (iii) {} (iv) {0,-13,4,-2,2} (v) {2,-2,-9,0,4}
- 7. Which of the following is the power set of A = {0,8}?
  (i) {2,0,8} (ii) {{}{0}{8}{0,8}} (iii) {{}{0}{8}{0,8}} (iii) {{}{0}{8}{0,8}{2}} (iv) {{}{0}{8}{0}} (v) {{}{0}{8}}
- 8. If A = {11,8,9} , B = {10,14,7} and C = {6,3,8,12} , then A  $\cup$  (B  $\cup$  C) =
  - (i) {12,10,8,14,9,6,3,7}
    (ii) {6,12,3,7,10,11,9,8}
    (iii) {6,11,14,7,12,9,8,10}
    (iv) {11,9,10,3,6,8,14,7,12}
    (v) {6,9,11,3,8,14,10,17,7,12}
- 9. Which of the following is an infinite set?
  (i) {} (ii) {0,1,2,3,...} (iii) {4} (iv) {1,-3,7} (v) {6,4}
- 10. If  $\mu = \{-3, 6, -1, 2, -2, -6, -9, 1, -5, -7, 9\}$ ,  $A = \{-3, 6, -1, 2\}$  and  $B = \{-1, 6, -2, -3\}$ , find n((A B)') (i) 11 (ii) 10 (iii) 9 (iv) 13 (v) 7
- 11. Which of the following are disjoint sets?
  - (i)  $\{8,4\},\{13,18\}$  (ii)  $\{\},\{8,2,4,15,3,1\}$  (iii)  $\{8,2,4,15,3,1\},\{3,2,13,15,18,1\}$
  - (iv)  $\{8,2,4,15,3,1\},\{8,2,4,15,3,1\}$  (v)  $\{8,2,4,15,3,1\},\{\}$
- 12. If  $\mu = \{7, 8, 9, -7, -5, 4, 1, -6, -8, 2, -4, -9, 0, -2, 6\}$ ,  $A = \{7, 8, 9, -7, -5, 4, 1\}$  and  $B = \{1, -7, 9, -6\}$ , find n(A') (i) 8 (ii) 7 (iii) 9 (iv) 5 (v) 11

13. If  $\mu = \{-8, -3, -6, -1, -7, -9, -4, 8, -5, 0, 7, 2, -2, 4, 3, 9\}$ ,  $A = \{-8, -3, -6, -1, -7, -9, -4\}$  and  $B = \{-1, -6, 8, -5, 0\}$ , find A (i) {-1,-9,-4,-6,-8,-7} (ii) {-2,-1,-3,-4,-9,-8,-7} (iii) {-9,-6,-4,-8,-7,-3} (iv) {-8,-6,-4,9,-1,-7,-9,-3} (v) {-9,-7,-1,-3,-6,-4,-8} 14. What is the cardinality of an empty set? (i) 4 (ii) 0 (iii) 5 (iv) 2 15. If  $A = \{2,1,6,9\}$  and  $B = \{7,9,3,6\}$ , then  $B \cup A =$ (i) {3,14,6,2,9,1} (ii) {3,15,1,9,7,2,6} (iii) {2,9,3,7,6} (iv) {2,6,9,3,1} (v) {6,3,9,2,1,7} 16. Given sets A, B and C, where  $A \subset B \subset C$ , which of the following are true? a)  $B \subset A$ b) C  $\supset$  B c)  $\emptyset \subset B$ d)  $B \supset A$ e) C  $\subset$  A (i) {a,b,c} (ii) {a,b} (iii) {b,c,d} (iv) {e,c} (v) {a,e,d} 17. If A =  $\{9,7,14\}$ , B =  $\{9,2,8\}$  and C =  $\{13,4,5,9\}$ , then C  $\cup$  (A  $\cup$  B) = (i) {13,9,14,5,7,8,4,2,18} (ii) {2,7,14,5,13,9,4} (iii) {2,13,7,5,14,9,8} (iv) {4,2,5,8,7,14,13,9} (v) {2,13,7,9,5,4,8} 18. Which of the following are true? a) A  $\cup \emptyset = A$ b)  $A \cap \emptyset = A$ c)  $A \cup A = A$ d) A  $\cup \emptyset = \emptyset$ e) A  $\cup$  A = Ø (i) {e,b,a} (ii) {d,c} (iii) {b,a} (iv) {d,c,a} (v) {a,c} 19. If A = {9,-4,-7,4,-2,1} and  $\mu$  = {9,-4,-7,4,-2,1,0,-8,-5,-3}, find (A')' (i) {-5,1,-4,9,-2,4} (ii) {9,0,4,-3,-4,-7} (iii) {-2,-4,5,-7,1,9,3,4} (iv) {-2,-4,4,9,1,-7} (v) {-2,9,-4,-7,4} 20. If A =  $\{9,0,7\}$ , B =  $\{1,2,9\}$  and C =  $\{1,3,2\}$ , then A  $\cup$  (B  $\cup$  C) = (i) {2,1,3,0,7,9} (ii) {} (iii) {1,0,9,18,3,2,7} (iv) {3,7,1,2,9} (v) {2,0,7,9,1} 21. Find the number of subsets of  $A = \{1,0,2,4,3\}$ (i) 29 (ii) 32 (iii) 33 (iv) 31 (v) 34 22. Which of the following symbols represent the set of Real numbers ? (i) N (ii) R (iii) Z (iv) W (v) Q 23. Which of the following is a null set? (i)  $\{\emptyset\}$  (ii)  $\{empty\}$  (iii)  $\{o\}$  (iv)  $\emptyset$  (v)  $\{0\}$ 24. If  $\mu = \{-3,2,-8,7,-6,6,-7,5,-1,9,0,4,3,-4\}$ ,  $A = \{-3,2,-8,7,-6,6,-7\}$  and  $B = \{-3,5,-1\}$ , find n((B - A)')(i) 10 (ii) 12 (iii) 13 (iv) 15 (v) 11

- 25. Which of the following is a subset of  $A = \{3,14,6,8,5,9,11,0,12\}$ ?
  - (i)  $\{5,9,6,3,14,0,11,15,12\}$  (ii)  $\{8,9,6,11,5,4,3,14,12\}$  (iii)  $\{11,3,9,12,6,8,14,5\}$
  - (iv) {5,3,6,12,14,1,4,11,9,8} (v) {15,1,4}

| Assignment Key |          |          |           |          |          |
|----------------|----------|----------|-----------|----------|----------|
| 1) (ii)        | 2) (v)   | 3) (i)   | 4) (ii)   | 5) (v)   | 6) (v)   |
| 7) (ii)        | 8) (iv)  | 9) (ii)  | 10) (ii)  | 11)(i)   | 12) (i)  |
| 13) (v)        | 14) (ii) | 15) (v)  | 16) (iii) | 17) (iv) | 18) (v)  |
| 19) (iv)       | 20) (i)  | 21) (ii) | 22) (ii)  | 23) (iv) | 24) (ii) |
| 25) (iii)      |          |          |           |          |          |

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