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class - VII

Sec - B

Exercise 13(C)

1. Fill in the blanks:

i) If each element of set P is also an element of set Q the P is said to be subset of Q and Q is said to be super-set of P.

ii) Every set is a subset of itself

iii) The empty set is a subset of every set.

iv) If A is proper subset of B then n(A) subset n(B)

2. If A = {5, 7, 8, 89} then which of the following are subset of A.

i) B = {5, 8} = B ⊂ A

ii) C = {0} = C ⊄ A

iii) D = {7, 9, 10} = D ⊄ A

iv) E = { } = E ⊂ A

v) F = {8, 7, 9, 5} = F ⊂ A

3) If P = {2, 3, 4, 5} then which of the following are proper subset of P?

i) A = {3, 4}

ii) B = { }

iii) C = {23, 45} =

iv) D = {6, 5, 5} =

v) F = {0}

A and B are proper subset of P

4) If A = {even number less than 12}
B = {2, 4}
C = {1, 2, 3}
D = {2, 6}
E = {4}
State which of the following statements are true.

i) B ⊂ A True

ii) C ⊆ A Flase

iii) D ⊂ C Flase

iv) D ⊄ A Flase

v) E ⊇ B Flase

vi) A ⊇ B ⊇ E true

5. Given A = {a, c}, B = {p, q, n} and C = set of digits used to form the number 1351. Write all the subsets of set A, B and C

A = {}, {a}, {c} and {a, c}

B = {}, {p}, {q}, {n}, {p, q} {p, n}, {q, n} and {p, q, n}

C = {}, {1}, {3}, {5}, {1, 3}, {1, 5}, {3, 5} and {1, 3, 5}

6. i) If A = {p, q, n} then number of subsets of A = $2^3 = 8$

ii) If B = {5, 4, 6, 8} the the number of proper set of B = $2^n - 1 = 2^4 - 1 = 15$

iii) If C = {0} then number of subset of C = $2^1 = 2$

iv) If N = {x : x ∈ N and x < 3} then N has ____ proper set.
$2n - 1 = 2^2 - 1 = 3$

7. For the universal set {4, 5, 6, 7, 8, 9, 10, 11, 12, 13} find its subsets A, B, C, D such that:

i) A = {even numbers} = {4, 6, 8, 10, 12}

ii) B = {odd numbers greater than 8} = {9, 11, 13}

iii) C = {prime numbers} = {5, 7, 11, 13}

iv) D = {even numbers less than 10} = {4, 6, 8}