

Time: 60 min

Marks Obtained:

MATHS TEST Ch-1 SETS

Q-1 If $U = \{1,2,3,4,\dots,10\}$ is the universal set for the sets $A = \{2,3,4,5\}$ and $B = \{1,2,3,4,5,6\}$, then verify that $(A \cup B)^c = A^c \cap B^c$. **(2Marks)**

Q-2 If $A = \{1, 2, 3, 4, 5\}$, $B = \{1, 3, 5, 8\}$, $C = \{2, 5, 7, 8\}$, verify that $A - (B \cup C) = (A - B) \cap (A - C)$. **(2 marks)**

Q-3 Which type of set is the set of odd natural numbers divisible by 2? **(1 mark)**

Q-4 Out of 20 members in a family, 11 like to take tea and 14 like coffee. Assume that each one likes at least one of two drinks. How many like, only tea and not coffee? **(2 Marks)**

Q-5 Decide, among the following sets are subsets of one and another:

$A = \{x : x \in \mathbb{R} \text{ and } x \text{ satisfy: } x^2 - 4x + 3 = 0\}$

$B = \{1, 3\}$, $C = \{1, 3, 5\}$, $D = \{4, 5, 6\}$ **(2 Marks)**

Q-6 A market research group conducted a survey of 1000 consumers and reported that 720 consumers like product A and 450 consumers like product B. What is the least number that must have liked both products? **(2 Marks)**

Q-7 Let A and B be two finite sets such that $n(A - B) = 30$, $n(A \cup B) = 180$, $n(A \cap B) = 60$, find $n(B)$. **(2 marks)**

Q-8 Write the set $A = \{x : x \in \mathbb{N} \text{ and } x^2 < 25\}$ in roster form. **(1 mark)**

Q-9 In a survey it was found that 21 people liked product A, 26 liked product B and 29 liked C. If 14 people liked products A and B, 12 people liked products C and A, 14 people liked products B and C and 8 liked all the three products. Find how many liked (i) Product C only (ii) Product A and C but not product B (iii) at least one of three products. **(5 Marks)**

Q-10 Draw Venn diagram for $(A \cap B)^c$ **(2 Marks)**

Q-11 In a survey of 60 people, it was found that 25 people read newspaper H, 26 read newspaper T, 26 read newspaper I, 9 read both H and I, 11 read both H and T, 8 read both T and I, 3 read all three newspapers. Find: (i) the number of people who read at least one of the newspapers (ii) the number of people who read exactly one newspaper. **(5 marks)**

Q-12 In a committee, 50 people speak French, 20 speak Spanish and 10 speak both Spanish and French. How many speak at least one of these two languages? **(2 Marks)**

Parents Signature: