XI Math's Worksheet

Time: 60 min **Chapter#1 : Sets** **Full Marks:**

Q.1	If U = {1,2,3,4,……..,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∪B)" = A"∩B".
Q.2	If A = {1, 2, 3, 4, 5}, B = {1, 3, 5, 8}, C = {2, 5, 7, 8}, verify that A– (B U C) = (A–B) ∩ (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?
Q.5	Decide, among the following sets are subsets of one and another : A={x : x ∈ R and x satisfy : x^2 - 4x + 3 = 0} B = {1,3}, C = {1,3,5}, D = {4,5,6}.
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 leastnumber that must have liked both products?
Q.7	Let A and B be two finite sets such that n(A – B) = 30, n (A U B) = 180, n(A ∩ B) = 60, find n(B). (2 marks)
Q.8	Write the set A = {x : x $\in$ N 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.
Q.10	If A × B = {(p,q),(p,r),(m,q),(m,r)}, find A and B.
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: (5 marks) (i) the number of people who read at least one of the newspapers. (ii) the number of people who read exactly one newspaper.
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?
Q.13	In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee? (3 marks)
Q.14	If A = {x : x is a prime number $\forall$ x $\in$ N}, then find A^c. (1 mark)
Q.15	If X and Y are two sets such that n(X) = 17, n(Y) = 23 and n(XUY) = 38, find n(X∩Y).
Q.16	From the sets given below, select equal sets : A={2,4,8,12}, B={1,2,3,4}, C={4,8,12,14}, D={3,1,4,2}, E={-1,1}, F={0,a}, G={1,-1}, H={0,1}.

Q.17	Draw appropriate Venn diagram for each of the following: (3 marks) (i) $(A \cup B)'$ (ii) $A' \cap B'$ (iii) $(A \cap B)'$ (iv) $A' \cup B'$
Q.18	Show that A ∩ B = A ∩ C need not imply B = C. (2 marks)
Q.19	Let U = {1,2,3,4,5,6,7,8,9,10} and A = {1,3,5,7,9}. Find A''''.
Q.20	In a town of 840 persons, 450 persons read Hindi, 300 read English and 200 read both. Find the number of persons who read neither. (2 marks)