Class XI – Mathematics (SETS)

1. Describe the set in Roster form

   $\{$ *x: x* is a two digit number such that the sum of its digit is 8 $\}$

2. Are the following pair of sets equal? Give reasons.
   A = {x: x is a letter in the word FOLLOW}
   B = {y: y is a letter in the word WOLF}

3. Write down all the subsets of the set {1,2,3}

4. Let A = {1, 2, {3, 4,}, 5} is $\{\{3,4\}\} \Leftarrow$A is incorrect. Give reason.

5. In a survey of 400 students in a school, 100 were listed as taking apple juice, 150 as taking orange juice and 75 were listed as taking both apple as well as orange juice. Find how many students were taking neither apple juice nor orange juice.

6. A survey shows that 73% of the Indians like apples, whereas 65% like oranges. What % Indians like both apples and oranges?

7. For any two sets A and B prove by using properties of sets that:

   $(A \cap B) \cup (A - B) = A$

8. In a class of 25 students, 12 have taken mathematics, 8 have taken mathematics but not biology. Find the no. of students who have taken both mathematics and biology and the no. of those who have taken biology but not mathematics each student has taken either mathematics or biology or both.

9. These are 20 students in a chemistry class and 30 students in a physics class. Find the number of students which are either in physics class or chemistry class in the following cases. (i) Two classes meet at the same hour (ii) The two classes met at different hours and ten students are enrolled in both the courses.

10. In a survey of 25 students, it was found that 15 had taken mathematics, 12 had taken physics and 11 had taken chemistry, 5 had taken mathematics and chemistry, 9 had taken mathematics and physics, 4 had taken physics and chemistry and 3 had taken all three subjects. Find the no. of students that had taken (i) only chemistry (ii) only mathematics (iii) only physics (iv) physics and chemistry but not mathematics (v) mathematics and physics but not chemistry (vi) only one of the subjects (vii) at least one of the subjects (viii) none of the subjects.