Department of Computer Applications

23MX11 – MFCS – Holiday Homework Sheet -1

1. In a class of 80 students, 50 students know English, 55 know French and 46 know German language. 37 students know English and French, 28 students know French and German, 25 students know English and German and 7 students know none of the languages. Find the following.

   a) How many students know all the 3 languages?
   b) How many students know exactly 2 languages?
   c) How many know only one language?

Only Handwritten

2. A survey of 85 students asked them about the subjects they liked to study. 35 students liked mathematics, 37 liked history, and 26 liked physics. 20 liked mathematics and history, 14 liked mathematics and physics, and 3 liked history and physics. 2 students liked all three subjects.

   i) How many of these students like math or physics?
   ii) How many of these students did not like any of the three subjects?
   iii) How many of these students liked math and history but not physics?

3. In a survey it was found that 21 people liked product A, 26 liked product B and 29 liked product 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 product C only

4. A survey in 1986 asked households whether they had a VCR, a CD player or cable TV. 40 had a VCR. 60 had a CD player; and 50 had cable TV. 25 owned VCR and CD player. 30 owned a CD player and had cable TV. 35 owned a VCR and had cable TV. 10 households had all three. How many households had at least one of the three?

5. In a class of 120 students numbered 1 to 120, all even numbered students opt for Physics, whose numbers are divisible by 5 opt for Chemistry and those whose numbers are divisible by 7 opt for Math. How many opt for none of the three subjects?

6. In a class of 106 students, each student studies at least one of the three subjects Maths, Physics and Chemistry. 48 of them study Maths, 51 study Physics and 53 study Chemistry. 16 study Maths and Physics, 17 study Maths and Chemistry and 18 study Physics and Chemistry. Find the following:

   i) The number of students who study exactly two subjects.
   ii) The number of Students who study more than two subjects.
   iii) The number of students who study all the three subjects.
   iv) The number of students who exactly study one subjects.
   v) The number of students who study Physics and Maths but not Chemistry

Last Date
31st August, 2023, 5.00 PM

7. A total of 200 candidates who were interviewed for a position at a call centre, 100 had a two wheeler, 70 had a credit card and 140 had a mobile phone. 40 of them had both, a two-wheeler and a credit card, 30 had both, a credit card and a mobile phone and 60 had both, a two wheeler and mobile phone and 10 had all three. How many candidates had none of the three?

8. There are 350 farmers in a large region. 260 farm beetroot, 100 farm carrot, 70 farm radish, 40 farm beetroot and radish, 40 farm carrot and radish, and 30 farm beetroot and carrot. Let B, C, and R denote the set of farms that farm beetroot, carrot and radish respectively. Determine the number of farmers that farm beetroot, carrot, and radish.

9. In a class 40% of the students enrolled for Maths and 70% enrolled for Economics. If 15% of the students enrolled for both Maths and Economics, what % of the students of the class did not enroll for either of the two subjects?