WEEK 1 PRACTICE PROBLEMS

Conditional Statements

SL	Problem statement
1	**Write a C program to check whether a number is divisible by both 5 AND 11 or not.** **Input:** 55 **Output:**55 is divisible by 5 and 11
2	**Write a C program to check whether a number is divisible by 5 OR 11 or not.** **Input:** 50 **Output:**5 is divisible by 5
3	**Write a C program that takes the three angles of a triangle as input, and determine whether the angles are valid or not.** **Input:** 90 45 45 **Output :** Valid **Note :** The user may accidentally enter negative angles or angles more than 180 degrees.
4	**Write a C program that takes the three sides of a triangle as input. Determine whether the triangle is equilateral , isosceles or scalene.** **Input:** 90 45 45 **Output :** Equilateral
5	**Write a C program to input any alphabet and check whether it is vowel or consonant or whether it is not an alphabet.** **Input:** A **Output:** Vowel **Input:** 1 **Output:** Not an alphabet **Input:** c **Output:** A consonant
6	**Write a C program to input electricity unit consumed and calculate total electricity bill according to the given condition:** For the first 50 units Tk. 0.50/unit For next 100 units Tk. 0.75/unit For next 100 units Tk. 1.20/unit For units above 250 Tk. 1.50/unit **An additional charge of 20% is added to the bill** **Input:** 250 **Output:** 264
7	**Write a c program to find the roots of a quadratic equation.** The roots of a quadratic equation $ax^2 + bx + c = 0$ are found using $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ → Quadratic Formula b^2-4ac=0 , then there will be only 1 root b^2-4ac is +ve , then there will be two real roots b^2-4ac is -ve , then there will be two imaginary number roots **Input : 2, 10, 2** **x1=−0.208712** **x2=−4.79129**

8	**In a factory there are three categories of employees: X, Y, Z. The manager announced a bonus for the employees who have :** **➢ 12 years or more work experience and more than 5 family members,** **OR** **➢ Less than 1000.50 BDT total family income per month** **He is also generous to his bonus deprived employees who have a larger family. Thus, He has declared the bonus for** **➢ For the employees of 'Y' and 'Z' categories who have more than 8 family members and has less than 1100.78 BDT total family income per month.** **➢ However, if an employee is from 'X' category, he can avail the bonus having more than 5 family members.** **Now you need to automate the system by writing a program to take following inputs from user (employee) and notify him whether he is eligible for the bonus or not.** **➢ Category (character)** **➢ Years of work experience (integer)** **➢ Number of family members (integer)** **➢ Total family income per month (float)** **Sample input** X 11 6 1500 Y 6 9 1500 **Sample output** Will Receive the Bonus Will Not Receive the Bonus
9	**Develop a calculator that can perform the operations + - * / using the switch case operator.**