21CSC201T – Object Oriented Design and Programming
Week - 1 – Tutorial Questions

1. Write a C++ program to multiply the two given integers. The program should display the product and also the count of the number of digits in the product.

   Sample Input: 15 20

   Sample Output: Product - 300

                                          Count of digits - 3

2. The activity director at Ocean Breeze Resort, wants to suggest appropriate activities to guests based on the temperature conditions. Help him to perform the task with a simple C++ program.

   temp >= 80 → swimming

   60 <= temp < 80 → tennis

   40 <= temp < 60 → golf

   temp < 40 → skiing

3. Write a program that continually calculates the cube of a number until the user enters a number that is divisible by both 2 and 3.

   Sample Output:

   Enter a number: 3

   Cube of 3 is: 27

   Enter a number: 2

   Cube of 2 is: 8

   Enter a number: 12

   EXIT

4. Two fractions, a/b and c/d, are multiplied using the given formula. Write a C++ program that encourages the user to enter two fractions, and then displays their sum in fractional form. (Don't need to reduce it to lowest terms). Formula:

$$\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$$

   The interaction with the user might look like this:

   Enter first fraction: 1/2

   Enter second fraction: 2/5

   Product = 2/10

5. Formulate statements to perform the following:

    a. Print the number 45.6789 in a field of width 10, right-justified, with three decimal places.

    b. Display the number 0.00034567 in scientific notation with six decimal places.

    c. Print the decimal number 255 as a hexadecimal number in uppercase format.

    d. Print the number 987.654321 as a fixed-point number rounded to four decimal places.

    e. Display the number –123.456 as an exponential and with four decimal spaces.