ICDT 1201Y

COMPUTER PROGRAMMING

LABSHEET 4

1. Write a program that asks the user for a number. If the number is even print 'Even', else print 'Odd'.
2. Write a Python program to sum two integers. However, if the sum is between 15 and 20 it will return 20.
3. Write a program that displays the sum of all multiples of 5 between 0 and 100 inclusive.

4. Write a program that allows you to input an integer value n. If n is greater than 100, it displays the message 'Wrong Input', otherwise it displays all factors of n.

5. Write a Python program to calculate the surface area of a sphere. The program should prompt the user to enter the radius of a sphere and then calculate the surface area of the sphere. The surface area of a sphere is given by the formula, area = $4\pi r2$. (Use $\pi = 3.14$). The program should only accept non-zero positive values for the radius and display an error message if the user tries to input a zero or negative value.

6. Write a Python program to convert temperatures to and from Celsius and Fahrenheit. [Formula: c/5 = f-32/9 [where c = temperature in Celsius and f = temperature in Fahrenheit]. *Expected Output* :
   60°C is 140 in Fahrenheit
   45°F is 7 in Celsius

7. Write a Python program to calculate a dog's age in dog years.
   Note: For the first two years, a dog year is equal to 10.5 human years. After that, each dog year equals 4 human years.
   Expected Output:

   Input a dog's age in human years: 15

   The dog's age in dog's years is 73

8. A country calculates annual income-tax payable, by an income earner, as follows:
   - A salary earner is allowed a personal allowance (not taxable) depending on the number of dependents, as per the table below. A person is allowed to claim up to four or more dependents.

Number of Dependents	personal allowance (Rs)
1	110 000
2	190 000
3	275 000
4 or more	355 000

   - From his/her annual salary, the personal allowance is deducted.
   - On the remaining amount, the income tax is calculated as follows:

Remaining Amount	% Income Tax
First 50000	15 %
Next 70000	20 %
Remaining Amount	25%

Write a program that allows as input the annual income of a person and outputs the tax payable by the person.

9. Write a program that asks the user his/her year of birth and calculates his/her age. If he/she is below 18 years old, the program must display "You are a child aged *<age>*!". Otherwise, it must display "You are an adult aged *age* years old!". (Assume that the age is calculated based on the year only)

> **Sample input:**
> Input your year of Birth: 2000
>
> **Output:**
> You are a child aged 24
>
> **Sample input:**
> Input your year of Birth: 1994
>
> **Output:**
> You are an adult aged 30