Computational Thinking with Programming (ECSE103L)

Tutorial 2

Operator Precedence-

Operator	Description
()	Brackets
**	Exponentiation (raise to the power)
~ + -	Complement, unary plus and minus (method names for the last two are +@ and -@)
* / % //	Multiply, divide, modulo and floor division
+ -	Addition and subtraction
>> <<	Right and left bitwise shift
&	Bitwise 'AND'
^ |	Bitwise exclusive `OR' and regular `OR'
<= < > >=	Comparison operators
<> == !=	Equality operators
= %= /= //= -= += *= **=	Assignment operators
in not in	Membership operators
not or and	Logical operators

1. Calculate following expression:

a. 20*10%2**2
b. (5+5)*2**(2*2)
c. 10&5|10^10
d. (20>>3)/8+5%10
e. 20+5|2>>2**2%3
f. (3 and 4) ** (0 or 2)

2. Make a flowchart to find given number is even or odd. Then write python program for the same.
3. Number conversion
    a. $(32)_{10} = (?)_{2}$ # decimal to binary
    b. $(32)_{10} = (?)_{8}$ #decimal to octal
    c. $(45)_{10} = (?)_{16}$ # decimal to hexadecimal
    d. $(1010)_{2} = (?)_{10}$ #binary to decimal
    e. $(24)_{8} = (?)_{10}$ #octal to decimal
    f. $(12A)_{16} = (?)_{10}$ #Hexadecimal to decimal

4. Write python code for to solve question 3.

5. Make a flow chart for following:

    First asks the user to enter a number between 1 and 10. Verify that the number is between 1 to 10. Print an error message if not so. Once verified, print the cube of the number if it is odd, or multiply it by 5 if it is even

6. Write a python program for question 5.