Assignment -1

Q1. Write a python program to display following messages.
"Hello "ITERIAN""
Welcome to Siksha 'O' Anusandhan family.
Welcome to "Introduction to computer Laboratory"
Python is fun for All!!

Program:

```
print ('Hello "ITERIAN"')
print('Welcome to "Siksha 'O' Anusandhan family"')
print('Welcome to "Introduction to computer Laboratory"')
print(" python is fun for All!!")
```

output:

```
Hello "ITERIAN"
Welcome to "Siksha 'O' Anusandhan Family"
Welcome to "Introduction to computer Laboratory"
python is fun for All!!
```

Q2. Write a python program to store your Bank ac.no, name and balance in three different variables and display their value on the screen as given;
My name is Amit Kumar bearing account number 123456 having balance 7654.98.

Program:

```
name = " Amit Kumar"
ac_No = 123456
balance = 7654.98
print("My name is ",name,
      my account no is", ac_No,
      and the account balance is",
      balance,)
```

output: My name is Amit Kumar, My account no is 123456 and the account balance is 7654.98.

Name:_____ Regd. Number:_____

Q3. Write a python program to exchange the values of two variables of integer type X and Y

Program:

```
a = 10
b = 12
print("Before swap The value of a is", a,
      "and the value of b is ", b)

a = a+b
b = a-b
a = a-b
print(" After swap the value of a is", a,
      " The value of b is", b)
```

Output:

Before swap The value of a is 10 and the value of b is 12.
After swap the value of a is 12 The value of b is 10.

Q4. Write a python program to exchange the value of 4 variables W,G,K,A such that the value of W will move to A, A to K, K to G and finally G to W. Exchange using with and without using extra variables

Program:

```
A=10
K=20
G=30
W=40
print("The values of A,K,G,W:", A,K,G,W)
A,K,G,W = W,G,K,A
print("After exchange the values W,G,K,A:",
      W,G,K,A)
```

Output: The values of A,K,G,W: 10 20 30 40
After exchange the values W,G,K,A: 10 20 30 40

Name:_____ Regd. Number:_____

Q5. What do each of the following print?

program:

```
print(5)                    #a
print(float(25)/6)          #b
print(float(25/6))          #c
print(5/4)                  #d
print(5//4)                 #e
print(5.0//4)               #f
print(5//4.0)               #g
print(25//6.7)              #h
# print(5+'6') - Error (int + str not supported)
# print(5+7+'9') - Error
# print("92"+7+5) - Error
# print(2+"9") - Error.
  print("2"+"bc")           #m
# print(2+3+"b") - Error
  print("(2+3)"+"bc")       #o
  print("bc"+'(2+3)')       #p
# print("bc"+"2"+3)         - Error
  print('b')                #q
  print('b'+'c')            #r
  print(str(4))             #s
  print(ord('c'))
# print(str('a'+4))         - Error.
```

Output:- valid ones:

```
5
4.166666666666667
4.166666666666667
1.25
1
1.0
1.0
3.0
2bc
(2+3)bc
bc(2+3)
b
bc
4
99
```

Name:_____ Regd. Number:_____

Q6. Suppose a = 3.14159. what do each of the following print?

Program:

```
a=3.14159
print(a)
print(a+1)
print(8/int(a))
print(8/a)
print(int(8/a))
```

output:

```
3.14159
4.14159
2.6666666666666665
2.5464812403910124
2.
```

Q7. Evaluate expressions with given A and B.

program:

```
A,B = 2,6
print((A>B) and (A<B))  #a

A, B =7,6
print((A>B) and not (A<B))  #b

A,B = 9,6
print((A==B or A>=B))  #c
```

output:

```
False
True
True.
```

Name:_____ Regd. Number:_____

Q8. Find output.

program:

```
print(10 != 9 and not 29 >= 29)
print('hi' > 'hio' and 'hi' > 'hello')
print(10 != 9 and not 29 >= 29 and 'ME' >
      or 'you' < 'yap' and 8 <= 4.3)
```

output:

```
False
False
False
```

Q9. Evaluate the following expressions.

Program:

```
print(-3 % -10 + 10 < 50 and 29 >= 29)
print(7 ** 2 <= 5 // 9 % 3 or 'bye' < 'Bye')
print(3 % -10 < 8 and -25 > 1 * 8 // 5)
print(5 ** 2 // 2 + 7 > 8 or 9 != 10)
print(2 // 3 < 6 and 'I am doing MCA' > 'I am not doing
      MCA')
print(10 + 6 * 2 ** 2 != 9 // 4 - 3 and 29 >= 29 / 9)
print('hello' * (5 - 1) > 'hello' and 'college' < 'collin')
print(4 % 10 + 5 // 6 > 20 % 6)
```

Output:

```
True
False
False
True
False
True
True
True
```

Name:_____ Regd. Number:_____

Q10. Use 2 print statements to print in one line.

Program:

```
print("My name is sitara.", end=" ")
print("My section number is B.")
```

output:

My name is Sitara. My section number is B.

Q11. Calculate the multiplication and sum of two numbers.

Program:

```
a, b = 5, 3
print ("sum =", a+b)
print ("Multiplication =", a*b)
```

output:

sum = 8
Multiplication = 15

Q12. Calculate Net Salary.

Program:

```
basic = 7000
hra = 0.20 * basic
da = 0.50 * basic
ta = 0.20 * basic
net_salary = basic + hra + da + ta
print("Net Salary =", net_salary)
```

Output:

Net Salary = 13300.0

Q13. print true if a given number is greater than another.

Program:

```
num1, num2 = 25, 15
print(num1 > num2)
```

output:

True.

Q14. print the pattern without using loops.

Program:

```
print("*")
print("* *")
print("* * *")
print("* * * *")
```

output:

```
*
* *
* * *
* * * *
```

Q15. String concatenation problem.

Program:

```
str = "1"
print(str1)
str2 = str1 + "2" + str1
print(str2)
str3 = str2 + "3" + str2
print(str3)
str4 = str3 + "4" + str3
print(str4)
```

Output:

```
1
1 2 1
1 2 1 3 1 2 1
1 2 1 3 1 2 1 4 1 2 1 3 1 2 1
```

Name:_____ Regd. Number:_____

Q1. Input distance (in km) and convert in meter, centimetre, and inches.

Program:

```
km = float(input("Enter distance in km: "))
meter = km * 1000
cm = km * 100000
inches = km * 39370.1
print("Distance in meters:", meter)
print("Distance in centimetres:", cm)
print("Distance in inches:", inches)
```

Output:

```
Enter distance in km: 22
Distance in meters: 22000.0
Distance in centimetres: 2200000.0
Distance in inches: 866142.2
```

Q2. Input 5 subject marks of a student and find total marks and percentage.

Program:

```
sub1 = int(input("Enter marks:"))
sub2 = int(input("Enter marks:"))
sub3 = int(input("Enter marks:"))
sub4 = int(input("Enter marks:"))
sub5 = int(input("Enter marks:"))
total_m = sub1 + sub2 + sub3 + sub4 + sub5
per = total_m / 5
print("Total marks of the student:", total m)
print("percentage obtained by the student:", per
```

Output:

```
Enter marks: 65
Enter marks: 56
Enter marks: 54
Enter marks: 85
Enter marks: 96
Total marks of the student: 356
percentage obtained by the student: 71.2
```

Name:_____ Regd. Number:_____

Q3. Input principal, rate, time and calculate simple interest.

Program:

```
P = float(input("Enter principal:"))
R = float(input("Enter Rate of Interest:
T = float(input("Enter Time: (year) "))

SI = (P * R * T) / 100
print("Simple Interest:
```

Output:

```
Enter principal: 25000
Enter Rate of Interest: 7
Enter Time: (year) 3
Simple Interest: 5250.0
```

Q4. Calculate BMI from weight (pounds) and height (inches).

Program:

```
weight_P = float(input("Enter weight in pounds: "))
height_i = float(input("Enter height in inches: "))
weight_kg = weight_P * 0.45359237
height_M = height_i * 0.0254
BMI = weight_kg / (height_M ** 2)
print("BMI is:", BMI)
```

Output:

```
Enter weight in pounds: 95.5
Enter height in inches: 50
BMI is: 26.8573
```

Name:_____ Regd. Number:_____

Q5. Read an integer (100-999) and add all the digit.

Program:

```
num = int(input("Enter an integer between 100 and 999:"))
hundred_d = num // 100
tens_d = (num//10) % 10
ones_d = num % 10
digits_sum = hundred_d + tens_d + ones_d
print(f"Sum of digits: {digit_sum}")
```

output:

```
Enter an integer between 100 and 999: 213
Sum of digits: 6
```

Q6. Enter base and height of a right angled triangle and display its area.

Program:

```
base = float(input("Enter base: "))
height = float(input("Enter height: "))
area = 0.5 * base * height
print("Area of triangle =", area)
```

output:

```
Enter base: 10
Enter height: 5
Area of triangle = 25.0
```

Q7. Find the largest of three numbers:

Program:

```
a = input("Enter first no: ")
b = input("Enter second no: ")
c = input("Enter third no: ")
print("Largest number is", max(a, b, c))
```

Output:

```
Enter first no: 20
Enter second no: 10
Enter third no: 60
Largest number is 60
```

Q8. Check given number is odd or even.

Program:

```
num = int(input("Enter a number: "))
if num % 2 == 0:
    print(num, "is even")
else:
    print(num, "is odd")
```

Output:

```
Enter a number: 3/6
3 is odd / 6 is even
```

Q9. Take two positive integers and prints true if either evenly divides the other.

Program:

```
a = int(input("Enter first num: "))
b = int(input("Enter second num: "))
if a % b == 0 or b % a == 0:
    print(True)
else:
    print(False).
```

Output:

```
Enter first num: 12
Enter second num: 6
True
```

Q10. Calculate roots of quadratic equation $ax^2 + bx + c = 0$.

Program:

```
import math
a = float(input("Enter value a: "))
b = float(input("Enter value b: "))
c = float(input("Enter value c: "))

discriminant = b**2 - 4*a*c

if discriminant > 0:
    root1 = (-b + math.sqrt(discriminant))/(2*a)
    root2 = (-b - math.sqrt(discriminant))/(2*a)
    print("Two real roots:", root1, "and", root2)

elif discriminant == 0:
    root = -b/(2*a)
    print("One real root:", root)

else:
    print("No real roots for the given equation!")
```

Output:

1. (discriminant > 0)

```
Enter value a: 1
Enter value b: 3
Enter value c: 2
Two real roots: 2.0 and 1.0
```

2. (discriminant = 0)

```
Enter value a: 1
Enter value b: -2
Enter value c: 1
one real root: 1.0
```

3. (discriminant < 0)

```
Enter value a: 1
Enter value b: 2
Enter value c: 5
No real roots for the given equation.
```

Name:_____ Regd. Number:_____