Guru Gobind Singh Public School

STD : XI **SUBJECT : Computer Science Assignment 2019**

1 i) What do mean by binary language? How it is represented?

ii) Which of the following is not a Python legal string operation?

a)'xyz' +'xyz'

b) 'abc' * 3

c) 'xyz' + 3

d) 'abc'.lower()

iii) Write one advantage and one disadvantage of python language

iv) What are difference between an interpreter and compiler?

v) Out of the following operators, which ones can be used with strings?

=, -, *, /, //, %, >, <>, in, not, <=

2 i) What is the problem with the following code fragment?

```
a = 7
   print(a)
b = 3
   print(b)
s = a + b
   print(s)
```

ii) What is the difference between a simple statement and a compound statement in Python?

iii) What is mutable and immutable?

iv) What is the difference between while() and for() loop.

v) What is data type? Write the name of any four data types.

vi) What do you mean comments? How are they written in Python?

3 i) Predict the output of the following:

```
x ,y = 20, 60
y, x, y = x, y – 10, x + 10
print(x, y)
```

ii) Differentiate between mutable and immutable data types in Python.

iii) What is operator precedence?

If a = 5, b = -3, c = 25, d = -10

What will be the result of the following expression

a + b + c < a + c – b * d

iv) Differentiate between implicit and explicit type conversion.

v) Write a program in Python to check if a number entered by the user as input is odd or even.

4 i) Write a program in Python to enter two numbers as input and print all the numbers between them as output

ii) What will be the difference in outputs of the following code fragments:

```
for i in range(1,16):
   if (i % 3 == 0):
      print (i, end="-")
```

```
for i in [1,16]:
   if (i % 3 == 0):
      print (i, end="-")
```

iii) Can we say that strings are character lists? Explain.

iv) What is the result of following statement, if the input is 'Fun'?

Print(input("…") + "trial" + "Ooty" *3

v) What will be the output produced by the following code fragment:

```
y = str (123)
x = "Hello" * 3
print(x, y)
x, y = y, x
x = len(y)
print(x, y)
```

5 i) Give 2 minuses/demerit of Python.

ii) What will be the outputs of the following code fragments?

(a)
```
a = va = 3
b = va = 3
print (a, b)
print(a is b)
```

(b)
```
a = 3
b =3.0
print (a == b)
```

iii) **int('a')** produces error but the following expression having **int('a')** in it, does not return error. Why?
len('a') + 2 or int('a')

iv) Write a program which asks the user to input his/her name. Then the program asks the user to input a character. If user enters
C → Program prints name in capital letters
S → Program prints name in small letters
Any other character : Program prints name as entered
e.g.
Enter your name: Jai Prakash
Press C for Capital and S for Small letters: C
Name in capital letter: JAI PRAKASH

6 i) Predict the output of given code

```
print("The loop with 'break' produces output as:")
for i in range(1,11):
    if (i % 3 = = 0):
        break
    else:
        print(i)
```

ii) Predict the output of given code

```
print("The loop with 'break' produces output as:")
for i in range(1,11):
    if (i % 3 = = 0):
        continue
    else:
        print(i)
```

iii) Draw flowchart for displaying first 10 odd numbers.

iv) Write a program to input a number and check whether it is an Armstrong number or not. **eg. 153;** **{** $1^{3+}5^3+3^3 = 153$}

v) Write a program to read a string and display it in reverse order.
eg: Enter a string: PrachiRitika
output: Reverse of string is- akitiRihcarP

7 i) Write a program to input year and check whether it is leap year or not.

ii) What is following code doing? What would it print for input as 3 ?

```
n= int (input( "Enter an integer : "))
if (n<1):
    print("Invalid value")
else:
    for(i in range(1, n+1):
        print(i*i)
```

iii) What is a string slice? How is it useful?

iv) Write a program to input a number and check whether it is a palindrome or not.

v) Consider the following code. what will be the output produced, if the input is
(a) aabbcc (b) aaccbb (c) abcc

```
string =input("Enter a string")
count=3
while (True):
  if (string[0] =='a'):
     string = string[2:]
elif (string[-1] == 'b'):
     string = string[:2]
```

```
    else:
cout += 1
      break
print(string)
print(count)
```

vi) what will be the output produced by given below code, if the input is
(a) 1bzz (b) 1a (c) abc (d) 0xy (e) xyz

```
Inp = input("Please enter a string  ")
while (len(Inp) <= 4):
   if (Inp[-1] == 'z'):              #condition 1
Inp = Inp[0:3] + 'c'
elif ('a' in Inp):                  #condition 2
Inp = Inp[0] + 'bb'
elif not(int(Inp[0])):              #condition 3
Inp = '1' + Inp[1:] + 'z'
   else:
Inp = Inp + '*'
print(Inp)
```

vi) Write a program that reads a string and checks whether it is a palindrome string or not.

8 Write python script to print the following patterns

a

```
    1
   1 1 1
  1 1 1 1 1
 1 1 1 1 1 1 1
```

B

```
1
12
123
1234
```

C

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

D

```
    1
   12
  123
 1234
12345
```

9 Given a string **s** = "12345". Can you write an expression that gives sum of all the digits shown inside the string **s**.i.e., the program should be able to produce the result as **15** (1+ 2 +3 + 4 + 5).

10 Write a program that reads a number of seconds and prints it in form: minutes and seconds,.Eg. 200 seconds are printed as 3 minutes and 20 seconds.

11 Write a python program to calculate factorial of a number.

12 Write a python program to take input of number and prints its reverse. Eg- enter a number: 38
Reverse of entered number is : 83

13 Write a python program to print all odd numbers between to different numbers.
Eg. 22 to35 then [23, 25, 27, 29 …….]

14 Write a python program to add the odd numbers upto a given value N land print its result.

15 Write a python program to print first ten Mersenne number.
Hint: numbers in the form of $2^n - 1$ are called Mersenne number.
Eg. 2^1-1 = 1, 2^2 -1=3, 2^3 -1=7 ……

16 Write a program to input N numbers and then print the second largest number.

17 Write a program to take **N** (N>20) as an input from the user. Print numbers from 11 to N. when the number is a multiple of 3, print "Tipsy", when it is a multiple of 7, print "Topsy". When it is multiple of both, print "TipsyTopsy"

18 Write a program to input a number and check whether it is perfect number or not.
[**Hint:**a positive integer that is equal to the sum of its proper divisors.
eg. 6, which is the sum of 1, 2, and 3]

19 Write a programme to take input of a number and check whether it is a prime number or not.