INDIAN SCHOOL AL WADI AL KABIR
Worksheet, 2021-22

Class: XII	SUB: Computer Science	Date of Completion:
Worksheet No:1	TOPIC : Functions	04.05.2021

Q.I General questions:

1. Why python functions are useful?
2. Differentiate between functions and procedure.
3. Compare recursion and iteration.
4. Including a main () function is not mandatory in python. Justify

Q.II Subject oriented:

1. Find the errors in following function definitions :
   (a) def main()
       print("Hello")
   (b) def fun2(a*b):
       print(a * 2 + b * 5)
   (c) def compute()
       print(x * x)
   (d) Cube(a)
       return a * a * a

2. If return statement is not used inside the function, the function will return:
   a) 0   b) None Object   c) an arbitrary integer   d) Error: Functions must have return statement

3. Which of the following keyword marks the beginning of the function block?
   a)func   b) define   c) def   d) function

4. What is the difference between the formal parameters and actual parameters? What are their alternate names? Also, give a suitable Python code to illustrate both.

5. What is the difference between a global variable and a local variable? Also give a suitable example to illustrate both.

6. From the program code given below, identify the parts mentioned below:
   ```
   def processNumber(x):      #statement1
       x = 72                 #statement2
       return x + 3           #statement3
   y = 54
   res = processNumber(y)     #statement4
   ```

7. Trace the following code and predict output produced by it.

```
1.  def power(b,p):
2.      y = b ** p
3.      return y
4.
5.  def calcCube(x):
6.      a = power(x,3)
7.      return a
8.  pass
9.  N = 5
10. Result = calcCube(N) + power (3,3)
11. print (Result)
```

8. Consider a function with following header:
   def info (object, spacing =10, collapse=1):
   Here are some function calls given below. Find out which of these are correct function invoke and which of these are incorrect state reasons:
   a. info(obj1)   b.   info(spacing=20)   c. info(obj2,12)   d. info(obj11,object=obj12)
   e. info()   f.   info(collapse=0,obj3)   g. info(spacing=15,object=obj4)

9. What will following code print?

```
def addEm (x, y, z):
        print(x+y+z)
def prod (x, y, z):
        return x*y*z
a = addEm(6,16,26)
b = prod(2,3,6)
print(a,b)
```

10. Following code intends to add a given value to global variable a. What will the following code produce?

```
1. def increase(x):
2.     global a
3.     a = a + x
4.     return
5.
6. a = 20
7. b = 5
8. increase(b)
9. print(a)
```

11. Which names are local, which are global and which are built-in in the following code fragment?

```
invaders = "Big names"
pos = 200
level = 1
def play ():
    max_level = level + 10
    print(len(invaders) == 0)
    return max_level
```

```
res = play ()
print(res)
```

12. Predict the output of the following code fragment?
```
def func (message, num = 2):
    print (message * num)
func('Python')
func('Easy',5)
```

13. Write User defined function prime () to check whether the input argument N is Prime No. or not.

14. Write a user defined functions to find out the No. of values divisible by 5 in a list of elements passed as an argument.

15. Write a user defined functions to replace all the multiples of 4 as triple of its values in a list of elements passed as an argument.

16. Write a Python function palindrome () that checks whether a passed string str is palindrome or not.

17. Guess the output:
```
  def alter (m, n=50):
      m=m+n
      n=m-n
      print (m,'@', n)
      return m
a,b=200,100
a=alter(a,b)
print(a,'#',b)
b=alter(b)
print (a,'@', b)
```

18.Guess the output:
```
  def one ():
      print("hello")
  def two ():
      pass
  def three ():
      print ("three")
      one ()
      print(("back")
      two ()
  three ()
```

19. Predict the output.
```
  s=0
  def calc (x, *p):
      x=x+10
      print(x)
      s=0
      for i in p:
          s=s+i
```

```
    print(s)
  calc (10,20,30,40)
```

20. What is the output displayed?
```
   def check1(a1,b1,c1):
       d1=a1+b1+c1*2
       return d1
   x=check1(c1=20,a1=10,b1=30):
   print(x)
```

21.Read a sentence str like "we are learning python", pass it to the function zipper (). A list L1 accepts it's 4 numbers elements in the function body. It zips the first word to first number and second word second number and so on. Function prints the zipped answer.

22. Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have scored marks above 75. Pass the directory D1 to the function fun_d()

Note: Please write the answers to the Q13,14,15,16,21 and 22 in your record book. (F/S2QR)