### WORKSHEET – FUNCTIONS

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<tr>
<td>1</td>
<td>Function name must be followed by _________</td>
<td>Ans</td>
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<td>2</td>
<td>_____ keyword is used to define a function</td>
<td>Ans</td>
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<td>3</td>
<td>Function will perform its action only when it is _________</td>
<td>Ans</td>
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| 4 | **Write statement to call the function.** | def `Add()`:
    
    ```python
    X = 10 + 20
    print(X)
    _______ #statement to call the above function
    ``` | Ans | Add() |
| 5 | **Write statement to call the function.** | def `Add(X,Y)`:
    
    ```python
    Z = X+Y
    print(Z)
    _______ #statement to call the above function
    ``` | Ans | `Add(10,20)` # Parameter value is user dependent |
| 6 | **Write statement to call the function.** | def `Add(X,Y)`:
    
    ```python
    Z = X+Y
    return Z
    _______ #statement to call the above function
    ``` | Ans | `C = Add(10,20)` # Parameter value is user dependent |
| 7 | **Which Line Number Code will never execute?** | def `Check(num)`:  
    
    ```python
    if num%2==0:  
        print("Hello")  
        return True  
        print("Bye")  
        return False  
    else:
        return False
    ``` | Ans | Line 5 |
| 8 | **What will be the output of following code?** | def `Cube(n)`:
    
    ```python
    print(n*n*n)
    ``` | Ans | 1000  
    |   | 1000  
    |   | None  

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9. What are the different types of actual arguments in function? Give example of any one of them.

**Ans**
1. Positional
2. Keyword
3. Default
4. Variable length argument

Example : (Keyword argument)
def Interest(principal,rate,time):
    return (principal*rate*time)/100

R = Interest(rate=.06, time=7, principal=100000)

10. **What will be the output of following code:**

def Alter(x, y = 10, z=20):
    sum=x+y+z
    print(sum)
Alter(10,20,30)
Alter(20,30)
Alter(100)

**Ans**
60
70
130

11. Ravi a python programmer is working on a project, for some requirement, he has to define a function with name CalculateInterest(), he defined it as:

def CalculateInterest(Principal, Rate=.06, Time):
    # code
But this code is not working, Can you help Ravi to identify the error in the above function and what is the solution.

**Ans**
Yes, here non-default argument is followed by default argument which is wrong as per python’s syntax.

Solution:
1) First way is put Rate as last argument as:
   def CalculateInterest(Principal, Time, Rate=.06):
2) Or, give any default value to Time also as:
   def CalculateInterest(Principal, Rate=.06, Time=12):

12. **Call the given function using KEYWORD ARGUMENT with values 100 and 200**
def Swap(num1,num2):
    num1,num2=num2,num1
    print(num1,num2)

Swap(_____ , _____)

**Ans**
Swap(num1=100,num2=200)
### 13 Which line number of code(s) will not work and why?

```python
def Interest(P,R,T=7):
    I = (P*R*T)/100
    print(I)

Interest(20000,.08,15)    #Line 1
Interest(T=10,20000,.075)  #Line 2
Interest(50000,.07)      #Line 3
Interest(P=10000,R=.06,Time=8)  #Line 4
Interest(80000,T=10)     #Line 5
```

**Ans**

- Line 2: Keyword argument must not be followed by positional argument
- Line 4: There is no keyword argument with name 'Time'
- Line 5: Missing value for positional argument ‘R’

### 14 What will be the output of following code?

```python
def Calculate(A,B,C):
    return A*2, B*2, C*2

val = Calculate(10,12,14)
print(type(val))
print(val)
```

**Ans**

```python
<class 'tuple'>
(20, 24, 28)
```

### 15 What is Local Variable and Global Variables? Illustrate with example

**Ans**

Local variables are those variables which are declared inside any block like function, loop or condition. They can be accessed only in that block. Even formal argument will also be local variables and they can be accessed inside the function only. Local variables are always indented. Lifetime of local variables is created when we enter in that block and ends when execution of block is over.

Global variables are declared outside all block i.e. without any indent. They can be accessed anywhere in the program and their lifetime is also throughout the program.

**Example:**

```python
count = 1  #Global variable count
def operate(num1, num2):  # Local variable num1 and num2
    result = num1 + num2  #Local variable result
    print(count)
operate(100,200)
count+=1
operate(200,300)
```

### 16 What will be the output of following code?

```python
def check():
    num=50
    print(num)
    num=100
    print(num)
check()  
```

**Ans**

```
100
50
100
```
17 **What will be the output of following code?**
```python
def check():
    global num
    num=1000
    print(num)
num=100
print(num)
check()
print(num)
```
**Ans**
```
100
1000
1000
```

18 **What will be the output of following code?**
```python
print("Welcome!")
print("Iam __name__")
```
**Ans**
```
Welcome!
Iam __main__
```

19 Function can alter only Mutable data types? (True/False)
**Ans** True

20 A Function can call another function or itself? (True/False)
**Ans** True

21 **What will be the output of following code?**
```python
def display(s):
    l = len(s)
    m=""
    for i in range(0,l):
        if s[i].isupper():
            m=m+s[i].lower()
        elif s[i].isalpha():
            m=m+s[i].upper()
        elif s[i].isdigit():
            m=m+"$"
        else:
            m=m+"*"
    print(m)
    display("EXAM20@cbse.com")
```
**Ans** exam$$*CBSE*COM

22 **What will be the output of following code?**
```python
def Alter(M,N=50):
    M = M + N
    N = M - N
    print(M,"@",N)
    return M
```
A=200
B=100
A = Alter(A,B)
print(A,"#",B)
B = Alter(B)
print(A,"@",B)

Ans  300 @ 200
     300 # 100
     150 @ 100
     300 @ 150

23  What will be the output of following code?

```python
def Total(Number=10):
    Sum=0
    for C in range(1,Number+1):
        if C%2==0:
            continue
        Sum+=C
    return Sum

print(Total(4))
print(Total(7))
print(Total())
```

Ans  4
    16
    25

24  What will be the output of following code?

```python
X = 100
def Change(P=10, Q=25):
    global X
    if P%6==0:
        X+=100
    else:
        X+=50
    Sum=P+Q+X
    print(P,'#',Q,'$',Sum)
Change()
Change(18,50)
Change(30,100)
```

Ans 10 # 25 $ 185
    18 # 50 $ 318
    30 # 100 $ 480

25  What will be the output of following code?

```python
a=100
def show():
    global a
    a=200
```

def invoke():
    global a
    a=500
show()
invoke()
print(a)

Ans 500

26 What will be the output of following code?
def drawline(char='$',time=5):
    print(char*time)
drawline()
drawline('@',10)
drawline(65)
drawline(chr(65))

Ans $$$$$$
@@@@@@@@@@@@
325
AAAAAA

27 What will be the output of following code?
def Updater(A,B=5):
    A = A // B
    B = A % B
    print(A,'$',B)
    return A + B
A=100
B=30
A = Updater(A,B)
print(A,'#',B)
B = Updater(B)
print(A,'#',B)
A = Updater(A)
print(A,'$',B)

Ans 3 $ 3
6 # 30
6 $ 1
6 # 7
1 $ 1
2 $ 7

28 What will be the output of following code?
def Fun1(num1):
    num1*=2
    num1 = Fun2(num1)
    return num1
def Fun2(num1):
    num1 = num1 // 2
    return num1

n = 120
n = Fun1(n)
print(n)

Ans 120

29 What will be the output of following code?
X = 50
def Alpha(num1):
    global X
    num1 += X
    X += 20
    num1 = Beta(num1)
    return num1
def Beta(num1):
    global X
    num1 += X
    X += 10
    num1 = Gamma(num1)
    return num1
def Gamma(num1):
    X = 200
    num1 += X
    return num1

num = 100
num = Alpha(num)
print(num, X)

Ans 420 80

30 What will be the output of following code?

```python
def Fun1(mylist):
    for i in range(len(mylist)):
        if mylist[i] % 2 == 0:
            mylist[i] = mylist[i] / 2
        else:
            mylist[i] *= 2

list1 = [21, 20, 6, 7, 9, 18, 100, 50, 13]
Fun1(list1)
print(list1)
```

Ans [42, 10.0, 3.0, 14, 18, 9.0, 50.0, 25.0, 26]

For any explanation/query write to me at: vinodexclusively@gmail.com