

HOMEWORK –CHAPTER :FUNCTIONS

Type A : Short Answer Questions/Conceptual Questions

1. A program having multiple functions is considered better designed than a program without any functions. Why ?
2. What all information does a function header give you about the function ?
3. What do you understand by flow of execution ?
4. What are arguments ? What are parameters ? How are these two terms different yet related ? Give example.
5. What is the utility of :
 - (i) default arguments,
 - (ii) keyword arguments ?
6. Explain with a code example the usage of default arguments and keyword arguments.
7. Describe the different styles of functions in Python using appropriate examples.
8. Differentiate between fruitful functions and non-fruitful functions.
9. Can a function return multiple values ? How ?
10. What is scope ? What is the scope resolving rule of Python ?
11. What is the difference between local and global variables ?
12. When is *global* statement used ? Why is its use not recommended ?
13. Write the term suitable for following descriptions :
 - (a) A name inside the parentheses of a function header that can receive a value.
 - (b) An argument passed to a specific parameter using the parameter name.
 - (c) A value passed to a function parameter.
 - (d) A value assigned to a parameter name in the function header.
 - (e) A value assigned to a parameter name in the function call.
 - (f) A name defined outside all function definitions.
 - (g) A variable created inside a function body.

Type B : Application Based Questions

1. What are the errors in following codes ? Correct the code and predict output :

```
(a) total = 0;
    def sum( arg1, arg2 ):
        total = arg1 + arg2;
        print("Total :", total)
    return total;
    sum( 10, 20 );
    print("Total :", total)
```

```
(b) def Tot(Number) #Method to find Total
    Sum = 0
    for C in Range (1, Number + 1) :
        Sum += C
    RETURN Sum
    print (Tot[3]) #Function Calls
    print (Tot[6])
```

[CISE D 2019]

2. Consider the following code and write the flow of execution for this. Line numbers have been given for your reference.

```
1 def power(b, p):
2     y = b ** p
3     return y
4
5 def calcSquare(x):
6     a = power(x, 2)
7     return a
8
9 n = 5
10 result = calcSquare(n)
11 print(result)
```

3. What will the following function return ?

```
def addEm(x, y, z):
    print(x + y + z)
```

4. What will the following function print when called ?

```
def addEm(x, y, z):
    return x + y + z
    print(x + y + z)
```

5. What will be the output of following programs ?

```
(i) num = 1
    def myfunc():
        return num
    print(num)
    print(myfunc())
    print(num)
```

```
(ii) num = 1
    def myfunc():
        num = 10
        return num
    print(num)
    print(myfunc())
    print(num)
```

```
(iii) num = 1
    def myfunc():
        global num
        num = 10
        return num
    print(num)
    print(myfunc())
    print(num)
```

```
(iv) def display():
    print("Hello", end = ' ')
    display()
    print("there!")
```

6. Predict the output of the following code :

```
a = 10
y = 5

def myfunc():
    y = a
    a = 2
    print("y =", y, "a =", a)
    print("a + y =", a + y)
    return a + y

print("y =", y, "a =", a)
print(myfunc())
print("y =", y, "a =", a)
```

7. What is wrong with the following function definition ?

```
def addEm(x, y, z):
    return x + y + z
    print("the answer is", x + y + z)
```

8. Write a function namely fun that takes no parameters and always returns None.

9. Consider the code below and answer the questions that follow :

```
def multiply(number1, number2):
    answer = number1 * number2
    print(number1, 'times', number2, '=', answer)

    return(answer)

output = multiply(5, 5)
```

(i) When the code above is executed, what prints out ?

(ii) What is variable output equal to after the code is executed ?

10. Consider the code below and answer the questions that follow :

```
def multiply(number1, number2):
    answer = number1 * number2
    return(answer)
    print(number1, 'times', number2, '=', answer )

output = multiply(5, 5)
```

(i) When the code above is executed, what gets printed ?

(ii) What is variable output equal to after the code is executed ?

11. Find the errors in code given below :

(a)

```
def minus(total, decrement)
    output = total - decrement
    print(output)
    return (output)
```

(b)

```
def check()
    N = input ("Enter N: ")
    i = 3
    answer = 1 + i ** 4 / N
    Return answer
```

```

(c) def alpha (n, string = 'xyz', k = 10) :
    return beta(string)
    return n

def beta (string)
    return string == str(n)

print(alpha("Valentine's Day"))
print(beta (string = ' true '))
print(alpha(n = 5, "Good-bye") :)

```

12. Draw the entire environment, including all user-defined variables at the time line 10 is being executed

```

1.  def sum(a, b, c, d):
2.      result = 0
3.      result = result + a + b + c + d
4.      return result
5.
6.  def length():
7.      return 4
8.
9.  def mean(a, b, c, d):
10     return float(sum (a, b, c, d))/length()
11.
12. print(sum(a, b, c,d), length(), mean(a, b, c, d))

```

13. Draw flow of execution for above program.

14. In the following code, which variables are in the same scope ?

```

def func1():
    a = 1
    b = 2
def func2():
    c = 3
    d = 4
e = 5

```

15. Write a program with a function that takes an integer and prints the number that follows after it. Call the function with these arguments :

4, 6, 8, 2 + 1, 4 - 3 * 2, -3 -2

16. Write a program with non-void version of above function and then write flow of execution for both the programs.

17. What is the output of following code fragments ?

```

(i) def increment(n):
    n.append([4])
    return n
L = [1, 2, 3]
M = increment(L)
print(L, M)

```

```

(ii) def increment(n):
    n.append([49])
    return n[0], n[1], n[2], n[3]
L = [23, 35, 47]
n1, n2, n3, n4 = increment(L)
print(L)
print(n1, n2, n3, n4)
print(L[3] == n4)

```

Type C : Programming Practice/Knowledge based Questions

- Write a function that takes amount-in-dollars and dollar-to-rupee conversion price; it then returns the amount converted to rupees. Create the function in both void and non-void forms.
- Write a function to calculate volume of a box with appropriate default values for its parameters. Your function should have the following input parameters :
(a) length of box ; (b) width of box ; (c) height of box.
Test it by writing complete program to invoke it.
- Write a program to have following functions :
(i) a function that takes a number as argument and calculates cube for it. The function does not return a value. If there is no value passed to the function in function call, the function should calculate cube of 2.
(ii) a function that takes two char arguments and returns True if both the arguments are equal otherwise False.
Test both these functions by giving appropriate function call statements.
- Write a function that receives two numbers and generates a random number from that range. Using this function, the main program should be able to print three numbers randomly.
- Write a function that receives two string arguments and checks whether they are same-length strings (returns True in this case otherwise false).
- Write a function namely `nthRoot()` that receives two parameters x and n and returns n th root of x i.e., $\sqrt[n]{x}$.
The default value of n is 2.
- Write a function that takes a number n and then returns a randomly generated number having exactly n digits (not starting with zero) e.g., if n is 2 then function can randomly return a number 10-99 but 07, 02 etc. are not valid two digit numbers.
- Write a function that takes two numbers and returns the number that has minimum one's digit.
[For example, if numbers passed are 491 and 278, then the function will return 491 because it has got minimum one's digit out of two given numbers (491's 1 is < 278's 8)].
- Write a program that generates a series using a function which takes first and last values of the series and then generates four terms that are equidistant e.g., if two numbers passed are 1 and 7 then function returns 1 3 5 7.

COMPLETE

Sumita Arora Solved & Unsolved questions from the chapter Revision Tour

Previous Years CBSE Question papers-Python questions from the chapters Revision tour and Functions.

CBSE Sample Question papers –Python questions from the chapters Revision tour and Functions