

Answer Sheet

I'D : 12755

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Subject : Data Science

Each question carry equal marks.

Please answer briefly.

Question 1:

a. Why Functions are used discuss in detail?

Answer: FUNCTION:

A block or organized, reusable code that is used to perform a single or multiple related actions is called function.

USE OF FUNCTION:

In Python, a function is used to describe a set of statements to perform a specific task. Function helps to break our program into smaller data pieces. As, the program becomes larger and complex, functions make it easy to manage and organize it in a well-off manner. Function also avoids repetition and makes the code re-usable.

TYPES OF FUNCTION:

There are three types of functions in Python:

1. Built in functions, such as help, min and print.
2. User Defined Functions (UFDs), are the functions that user create for themselves.
3. Anonymous Functions also called lambda functions because they are not clearly defined.

b. How arguments are used in function, write a simple program in Python?

Answer: ARGUMENTS:

Information that is passed to functions is called an argument.

They are specified inside a function name inside a parenthesis and many arguments can be added by the addition of comma.

EXAMPLE 1:

```
In [1]: print("hello everyone","how are you all")
hello everyone how are you all
```

EXAMPLE 2:

```
In [2]: print("how is everybody doing","in","lockdown")
how is everybody doing in lockdown
```

Question 2:

a. Why .upper (), .lower (), .capitalize () and .swap case () function are used?

Answer: USES OF FUNCTIONS:

Following are the uses of these functions:

1. UPPER():

This function in python converts the string into upper case alphabets.

2. LOWER():

This function in python converts the string into lower case alphabets.

3. CAPITALIZE():

This function in python capitalizes the first word in the string.

4. SWAPCASE():

This function in python converts the uppercase letters into lowercase and lowercase into uppercase in the string.

b. Write a program in which the discussed functions are used.

Note: Q2 part a functions.

Answer: EXAMPLE:

```
In [1]: my_name= "Saqib Yaqoob"  
print(my_name.lower())  
print(my_name.upper())  
print(my_name.capitalize())  
print(my_name.swapcase())  
print(my_name.title())
```

```
saqib yaqoob  
SAQIB YAQOOB  
Saqib yaqoob  
sAQIB yAQOOB  
Saqib Yaqoob
```

Question 3:

a. What are the rules for defining the function?

Answer: FUNCTION:

A block or organized, reusable code that is used to perform a single or multiple related actions is called function.

RULES FOR DEFINING A FUNCTION:

1. The function block begins with word **def** which is followed by the function name and parenthesis.
2. Any parameter or argument must be placed within this parenthesis.
3. Function name can contain letters, numbers or underscore.
4. The code within every function starts with a colon and space must be given.
5. The end of the function is denoted by returning to no indentation.

b. Write a suitable program of our defined function in Python?

Answer: EXAMPLE 1:

```
In [1]: def saqib_yaqoob():
        print("how are you doing?")
        print("what are your past time hobbies?")

        saqib_yaqoob()

        how are you doing?
        what are your past time hobbies?
```

EXAMPLE 2:

```
In [2]: def code_num():
        print(51)
        print(76)
        print(35)
        print(116)

        code_num()

        51
        76
        35
        116
```

Question 4:

a. What are the rules for defining the function and parameter passing to the function?

Answer: RULES FOR DEFINING A FUNCTION

The function block begins with word **def** which is followed by the function name and parenthesis.

1. Any parameter or argument must be placed within this parenthesis.
2. Function name can contain letters, numbers or underscore.
3. The code within every function starts with a colon and space must be given.
4. The end of the function is denoted by returning to no indentation.

PARAMETER PASSING TO THE FUNCTION:

A function only gives it a name, parameters are specified that are to be included in the function and the code is hence organized.

There are two ways in which a parameter is used:

1. PASS BY VALUE:

It means that a copy of data is made and stored by the name of the parameter.

2. PASS BY REFERENCE:

It refers to the original data in the parameter calling function.

b. Write a suitable program of our defined function by parameter passing in Python?

Answer:

EXAMPLE 1:

```
In [1]: def in_world(clause):  
        print(clause)  
        in_world("it is pretty hard to say goodbye")  
  
it is pretty hard to say goodbye
```

EXAMPLE 2:

```
In [2]: def labour_force(title="dignified personalities"):  
        print(title.upper() + "!")  
  
labour_force("buidling blocks of a nation")  
labour_force()  
  
BUIDLING BLOCKS OF A NATION!  
DIGNIFIED PERSONALITIES!
```

Question 5:

a. What are return values to a Function discuss in detail?

Answer: RETURN VALUE:

In return statement, we let a function return a value. The statements which are written after return statements are not executed.

In return statement, the repetition of value usually occurs like by putting the values such as double, triple etc. The sentence is repeated by the same amount of value which has been used.

b. Write a suitable program of a Function with returning value?

Answer: EXAMPLE 1:

```
In [1]: def double_info(last):
        double = last + " " + last
        return double
        info_2x = double_info("last words")
        print(info_2x)

last words last words
```

In this example, the word double is used to tell us the amount of value repetition such as for last the repetition is two times used in the end.

EXAMPLE 2:

```
In [2]: def triple_announcement(farewell):
        triple = farewell + " " + farewell + " " + farewell
        return triple
        announcement_3x = triple_announcement("farewell students")
        print(announcement_3x)

farewell students farewell students farewell students
```

However in this example, the word triple is used to tell us the amount of value repetition such as farewell students, the repetition is three times used in the end.