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5TH SEMESTER

Q1(a):

A: Functions are used in programming to bundle set of instructions that you want to use repeatedly or that because of their complexity, are better self-contained in a sub-program and called when needed. That means that a function is a piece of code written to carry out a specified task. To carry out that specified task the function might or might not need multiple inputs. When the task is carried out the function can or can not return one or more values.

Built in function(such as print(), min() etc)

User Defined Functions(that users create to help them out)

Anonymous functions(lambda functions)

(b):

```
In [4]: ▶ print("Hammad works", "very neatly")  
Hammad works very neatly
```

Q2(a):

A: We used these functions to return new values. These functions formats the given string into a nicer output. They allows multiple

substitutions and value formatting. This methods let us concatenate elements with a string through positional formatting.

For e.g:

.capitalize() : capatilizes the first character of a string.

.lower(): all characters of a string are made lowercase.

.upper(): all characters of a string are made upper case.

.swapcase(): all characters of a string are made to switch case upper becomes lower and lower becomes upper.

(b):

```
In [7]: ▶ programming_language="Python"
print(programming_language.lower())
python
```

```
In [8]: ▶ programming_language="python"
print(programming_language.upper())
PYTHON
```

```
In [9]: ▶ programming_language="python"
print(programming_language.capitalize())
Python
```

```
n [10]: ▶ programming_language="python"
print(programming_language.swapcase())
PYTHON
```

Q3(a):

A: RULES FOR DEFINING THE FUNCTION:

1. def function() : use the def statement when creating a function.
2. Use a function name that starts with a letter or underscore.
3. Function names can contain letters, numbers or underscore.
4. Parenthesis() follow the function name.
5. A colon : follows the parenthesis.
6. The code for the function is indented under the function defining (4 spaces) def function():
7. # code the function tasks indented here.
8. The end of the function is denoted by returning to no indentation.

(b):

```
In [22]: ▶ def my_func():
          x = 10
          print("Value inside function:",x)

          x = 20
          my_func()
          print("Value outside function:",x)

Value inside function: 10
Value outside function: 20
```

Q4(a):

A: RULES:

1. Function blocks begin with the keyword `def` followed by the function name and parenthesis(`)`.
2. Any input parameters or arguments should be placed within these parenthesis. You can also define parameters inside these parenthesis.
3. The first statement of a function can be an optional statement the documentation string of the function or docstring.
4. The code block within every function starts with a colon `:` and is indented.
5. The statement `return` expression exist a function, optionally passing back an expression to the caller. A `return` statement with no arguments is the same as `return none`.

(b):

```
In [42]: ▶ def my_function(sentence):  
          print(sentence)  
          my_function("python is a programming language")
```

```
python is a programming language
```

Q5(a):

A: A return statement is used to end the execution of the function call and “returns” the result (value of the expression following the return keyword) to the caller. The statements after the return statements are not executed . If the return statement is without any expression, then the special value none is returned. Return statement cannot be used outside the function.

(b):

```
In [2]: ▶ def double_words(alphabets):  
         double= alphabets+ " " + alphabets  
         return double  
         words_two=double_words("abc gha")  
         print(words_two)
```

abc gha abc gha