**Instructions:**

1. Students are given 1 hour to complete this test.
2. For the duration of the test, teachers are not allowed to help the students with the answer.
3. Students are to score at least 70% on the test to pass. If they fail, they will have to redo the test again in the next lesson.

|  |  |
| --- | --- |
| Section A – MCQ | / 10 |
| Section B – Complete the Code | / 10 |
| Section C – Short Answer Question | / 10 |
| Section D – Open ended Question | / 20 |
|  | / 50 |

**Section A: (10 marks)**

**This is a multiple-choice answer section.** Write your answer is the bottom right of each question.

Question 1:

In Module 2, we introduced a new loop that repeats itself a certain number of times. What is it called?

**A) For Loop**

B) And Loop

C) By Loop

D) When Loop

|  |
| --- |
|  |

Question 2:

How many lines of output can we expect from the following code?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Code | | | 1 | for num in range(5): | | 2 | print(num) | |  |

A) 6

**B) 5**

C) 0

D) 1

|  |
| --- |
|  |

**Section A: (10 marks)**

Question 3:

What values will num take in the following code?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Code | | | 1 | for num in range(7): | | 2 | print(num) | |  |

A) 1 to 7

B) 1 to 6

C) 0 to 6

D) 0 to 7

|  |
| --- |
|  |

Question 4:

The following code has 5 outputs. What is the value of x?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Code | | | 1 | for num in range(x): | | 2 | print(num) | |  |

A) 0

B) 4

C) 5

D) 6

|  |
| --- |
|  |

**Section A: (10 marks)**

Question 5:

How many outputs can we expect in the following code?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Code | | | *1* | def funct(a): | | *2* | for num in range(a): | | *3* | print(a) | | *4* |  | | *5* | funct(5) | |  |

A) 4

B) 0

C) 5

D) 6

|  |
| --- |
|  |

Question 6:

When using the range function, we can input up to 3 values in the Round Brackets (). What are their order?

A) Start:Stop:Step

B) Start:Step:Stop

C) Step:Start:Stop

D) Stop:Start:Step

|  |
| --- |
|  |

**Section A: (10 marks)**

Question 7:

Which of the following represents the correct way of writing a for loop?

A) for num in 10:

B) for num range(10):

C) for num in range(10):

D) for range(10):

|  |
| --- |
|  |

Question 8:

What values will num take in the following code?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Code | | | *1* | for num in range(5,11): | | *2* | print(num) | |  |

A) 5 to 11

B) 5 to 10

C) 4 to 10

D) 4 to 11

|  |
| --- |
|  |

**Section A: (10 marks)**

Question 9:

What is the output?

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Code | | | 1 | list1 = [1,2,3,4,5,6,7] | | 2 | for numbers in list1: | | 3 | print(numbers) | |  |

A) 0,1,2,3,4,5,6

B) 0,1,2,3,4,5,6,7

C) 1,2,3,4,5,6,7

D) 1,2,3,4,5,6

|  |
| --- |
|  |

Question 10:

What is the output?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Code | | | 1 | list1 = [1,2,3,4,5,6,7] | | 2 | print(len(list1)) | |  |

A) Error

B) 7

C) 5

D) 0

|  |
| --- |
|  |

**Section B: (10 marks)**

**This is the debugging section.** In the next few questions, there are **bugs in the code giving an incorrect output**. **The scenarios are shown in each question. Read the requirements carefully.**

Identify the bugs and correct them in the table on the right. Each correctionis worth 2 marks.

Question 11: (4 Marks)

The function *pattern()* is supposed to take in 1 argument and display a pattern***.***

|  |  |
| --- | --- |
| **Sample Function Call** | **Expected Output** |
| pattern(3) | 1  12  123 |
| pattern(5) | 1  12  123  1234  12345 |

Find the **2 mistakes** and correct them. You may introduce more lines.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Faulty Code | | | 1 | make pattern(n): | | 2 | p = ‘’ | | 3 | for i in pattern: | | 4 | p += i | | 5 | print(p) | | 6 | pattern(3) | | 7 | pattern(5) | | |  |  | | --- | --- | | Corrected Code | | | 1 | def pattern(n): | | 2 | p = '' | | 3 | for i in range(1,n+1): | | 4 | p += str(i) | | 5 | print(p) | | 6 | pattern(3) | | 7 | pattern(5) | |

**Section B: (10 marks)**

Question 12: (6 marks)

The function *addition()*  is supposed to take in 2 arguments *n & a* and display the *n* multiplication table ranging from 1 to *a* (inclusive).

|  |  |
| --- | --- |
| **Sample Function Call** | **Expected Output** |
| addition(3,5) | 3 + 1 = 4  3 + 2 = 5  3 + 3 = 6  3 + 4 = 7  3 + 5 = 8 |
| addition(5,3) | 5 + 1 = 6  5 + 2 = 7  5 + 3 = 8 |

Find the **3 mistakes** and correct them. You may introduce more lines.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Faulty Code | | | 1 | def addition(n,a): | | 2 | ans++ | | 3 | for i in range(n): | | 4 | print(i) | | 5 | addition(3,5) | | 6 | addition(5,3) | | |  |  | | --- | --- | | Corrected Code | | | 1 |  | | 2 |  | | 3 |  | | 4 |  | | 5 |  | | 6 |  | |

**Section C: (10 marks)**

**This section is a short coding question section.** Write the python function as stated in the questions.

Each function is worth 5 marks.

Question 13: (5 Marks)

Ronald is given the assignment to write a python function to calculate volume of regular cubes.

Write a **python function** that prints the all the volumes of cube given the list of lengths.

The function should be called *getVolume()* with the parameters – *lst*

|  |  |
| --- | --- |
| **Sample Function Calls** | **Sample Output** |
| getVolume([2]) | Cube **1** has a length of **2** and volume of **8** |
| getVolume([2,3]) | Cube **1** has a length of **2** and volume of **8**  Cube **2** has a length of **3** and volume of **27** |

Question 14: (5 marks)

John is given an inventory of items with their name and quantity. The item description is stored by its name & quantity in a **string** format.

Write a **python function** to count the total quantity of items.

The function should be called *countItems()* with the parameters – *lst*

|  |  |
| --- | --- |
| **Sample Function Calls** | **Sample Output** |
| countItems([“pens 80”, “pencils 20”, “erasers 40”]) | There are **140** items |
| countItems([“pens 80”]) | There are **80** items |

**Section D: (20 marks)**

**This section is a long coding question section.**

Marks are allocated in the question.

Question 15: (20 marks)

Oliver has a group of **5** students who took an exam with a max score of **50**. His students scored 15, 37, 25, 28, 44. Oliver wants to know the percentage score of his students as well as the class average over 50.

Write a **python code** to calculate the following. **You do not need to write a function.**

1. Percentage score of students – 10 marks
2. Class Average – 10 marks

|  |  |
| --- | --- |
| **Sample Inputs** | **Sample Output** |
| raw\_scores = [15, 37, 25, 28, 44]  max\_score = 50 | The percentage scores of students are **[30, 74, 50, 56, 88]**  The class average is **29.8** |