CMPT 120 D300 Midterm

Veronica Diaz Lopez

TOTAL POINTS

182 / 252

QUESTION 1

1 Q1 **12 / 20**

QUESTION 2

2 Q2 **28 / 40**

QUESTION 3

3 Q 3.1 **5 / 5**

QUESTION 4

4 Q 3.2 **5 / 5**

1 There shouldn't be a space between strings. The middle '.' looks like you inserted a space after it.

QUESTION 5

5 Q 3.3 **0 / 5**

QUESTION 6

6 Q 3.4 **0 / 5**

QUESTION 7

7 Q 3.5 **5 / 5**

QUESTION 8

8 Q 3.6 **5 / 5**

QUESTION 9

9 Q 3.7 **5 / 5**

QUESTION 10

10 Q 3.8 **5 / 5**

QUESTION 11

11 Q 4.1 **18 / 25**

QUESTION 12

12 Q 4.2 **18 / 25**

QUESTION 13

13 Q 4.3 **19 / 25**

QUESTION 14

14 Q 4.4 **23 / 25**

QUESTION 15

15 Q 4.5 **21 / 25**

QUESTION 16

16 Q 4.6 **11 / 25**

QUESTION 17

17 Q 5 **2 / 2**

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SIMON FRASER UNIVERSITY

School of Computing Science

Midterm Exam, Spring 2023

CMPT 120 Introduction to Computing Science and Programming

Exam Duration: 110 minutes

Name: Veronica Diaz Lopez

Student Number: 301575755

Exam Conditions:

- Print your name and student number clearly above.
- This is a paper-based and a closed-book examination.
- The exam duration is 110 minutes.
- No electronic aids are permitted e.g. laptops, or phones.
- One blank scrap paper is permitted.
- Questions in this exam implicitly refer to the Python programming language.
- You must record all your answers in the spaces provided in this document.
- Use the white space on page 11 to write an answer only if needed and by adding a note in the original place.

Question	Mark
1	20
2	40
3	40
4	150
5	2
Total	250 + 2

Part 1 (20 points)
For each of the following statements, indicate whether it is TRUE or FALSE.

1.1) Variable names in Python can start with a letter or an underscore.

1.2) Multiplication, exponential and addition operators have the same level of priority.

1.3) When we give only one parameter, the `range` function generates numbers starting from 0 to one less than the given number.

1.4) Division by zero causes a *syntax* error.

1.5) When the function completes, it returns to the point where it was called.

1.6) Two different modules can not have functions with the same name.

1.7) Not all the elements of a list have to be of the same type.

1.8) A dictionary key must be of a type that is immutable such as integer, float, string.

1.9) The values in a dictionary are with indices.

1.10) The `read()` function returns the entire contents of the file.

Part 1 - Answers

1.1 False.
1.2 FALSE
1.3 TRUE
1.4 True
1.5 True
1.6 True
1.7 True
1.8 False
1.9 False.
1.10 True.

Part 2 (40 points)
Select the correct answer.

2.1) Assume you have defined a variable called x with an integer value. Now, which expression has the wrong syntax?

a) print(x ** x)
b) print (1 + x + 5)
c) print(xx)
d) print (x, x)

2.2) What is the output of the following code segment?

a) 0
b) 1.0
c) 2.0
d) 3.0

```
a = 2
b = 3
c = a // a
b = b / b
c += b
print(c)
```

2.3) What is the output of the following code segment?

a) Hi
b) HiHi
c) Hi1
d) HiHi * (3-2)

```
message = "HiHi" * (3 - 2)
print(message)
```

2.4) What is the output of the following code segment?

a) 6
b) 2
c) 3
d) 5

```
x = 2
y = 5
if x < y:
    if x == y:
        print(x)
    else:
        print(x + 1)
else:
    print(y)
```

2.5) What is the output of the following code segment?

a) 0
b) 16
c) 29
d) 14400

```
total = 0
for i in range(2, 4):
    for j in range(4, 6):
        total = total * i * j
print(total)
```

2.6) What is the output of the following code segment?

a) 2
b) 4
c) 6
d) 8

```
def some_function(a, b):
    t = 1
    return t + a + b
x = 1
y = some_function(2, 3)
print(x * y)
```

2.7) How many *True* will be printed after executing the following code segment?

a) 0
b) 1
c) 18
d) 19

```
for ch in "Life is beautiful!":
    print(ch == '!' or ch == '?')
```

2.8) What is the output of the following code segment?

a) [1, 2, 3, [1, 2, 3]]
b) [[1, 2, 3], [1, 2, 3]]
c) [1, 2, 3]
d) [1, 2, 3, 1, 2, 3]

```
list1 = [1, 2, 3]
list1.extend([1, 2, 3])
print(list1)
```

2.9) What is the output of the following code segment?

a) 7
b) 9
c) 10
d) 11

```
d = {1: {2: 3}, 4: {5: 6}}
x = d[1]  {2:3}
y = d[4]  {5:6}
t = x[2] + y[5]
      3      6
print(t)
       9
```

2.10) What is the content of the file 'sample.txt' after executing the following code?

a) 123
b) 123123
c) 1:'1', 2:'2', 3:'3'
d) '1"2"3'

```
d = {1:'1', 2:'2', 3:'3'}
f = open('sample.txt', 'w')
for k in d.keys():
    f.write(str(k))
f.close()
```

Part 2 - Answers

2.1 - b and d.
2.2 - c
2.3 - b
2.4 - c
2.5 - a
2.6 - c
2.7 - b
2.8 - b
2.9 - b
2.10 - d

Part 3 (40 points)
What is the output of the following code segment?

Question 3.1

```
print(10 - (4 ** 2) / 4)
```

10 - (16 / 4)

10 - 4

Answer 3.1

6.

Question 3.2

```
print(str(5.6) + '.' + str(7.8))
```

Answer 3.2

5.6.7.8

1

Question 3.3

```
for num in range(2, 4):
    print("x")
```

Answer 3.3

xx

Question 3.4

```
print([x for x in
       'Life is beautiful!'.split()
       if len(x) > 2])
```

Answer 3.4

Life
is
beautiful!

Question 3.5

```
s = "Life is beautiful!"
print(s[2:30])
```

Answer 3.5

fe is beautiful!

Question 3.6

```
s = "_c_d_"
print(s.replace('_', 'k'))
```

Answer 3.6

kckdk

Question 3.7

```
list1 = [1, 2]
list2 = list1
list2.append(3)
print(len(list1) + len(list2))
```

3 3

Answer 3.7

6

Question 3.8

```
d = {1: 2, 2: 3, 3: 4}
total = 0
for i in d.keys():
    total = total + i
print(total)
```

0 + 1 + 2
3 + 3
6

Answer 3.8

6

Part 4 (150 points)

Question 4.1) Given a string of *even* length, write a program to print out the second half. So, the string "Awsome" yields "ome".

Answer 4.1

```
def even_str(s1)
    half = len(s1)//2
    for achar in range(half, len(s1)+1):
        second = " "  #empty string
        second = second + s1[achar]
    print(second)
```

Question 4.2) Write a program that reads the numbers stored in separate lines of a file named *words.txt* and prints the summation of those numbers.

Answer 4.2

```
file = open('words.txt', 'r')
num_list = [ ] #empty list
numbers = file.read()
for i in numbers
        num_list = num_list.append(numbers.split())
        sum = 0
        for j in num_list
            sum = sum + num_list[j]
print(sum)
```

Question 4.3) Write a function called `num_counter` to receive a list of positive integers. Then, return 0 if the count of the even numbers is greater than the count of odd numbers in the given list, and return 1 otherwise. For instance, if the given list is [2, 4, 7] the function returns 0. And if the given list is [6, 8, 5] the function returns 0.

Answer 4.3

```
def num_counter (numlist):
    for number in numlist:
        countodd = 0
        counteven = 0
        if number // 2 == 0:
            count_even += 1
        else:
            count_odd += 1
    if count_even > countodd:
        print ("1")
    else:
        print ("0")
```

→ Indent 1

Question 4.4) Write a program to receive *n* numbers from the user in separate lines and print the sum of them.

Answer 4.4

```
n = Tnput(" ")
for T in range (n):
    number = Tnt(input(" "))
    sum = sum + number
Print(sum)
```

Question 4.5) Write a function called `rev_str` to receive a string and print the reverse of it.

Answer 4.5

```
def rev_str (s1)
    for achar in s1 :
        reverse = ""  #empty string.
        reverse = s1[achar] + reverse
    print (reverse)
```

Question 4.6) Write a program to create a dictionary where the keys are numbers between 1 and 10 (both included) and the values are the square of the keys.

Answer 4.6

```
dictionary: { } #empty
for i in range (1, 11):
    K = i
    V = i**i
    dictionary = dictionary + (K:V)
```

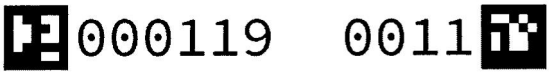
Part 5 (2 points)

Bonus question: What is your favorite emoji? 

Answer 5

skull emoji

END OF EXAMINATION



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