UNAM
UNIVERSITY OF NAMIBIA

FACULTY	**AGRICULTURE, ENGINEERING AND NATURAL SCIENCES**		
DEPARTMENT	**ENVIRONMENTAL SCIENCE**		
SUBJECT	**GEOSCRIPTING I**		
SUBJECT CODE	**GRS3531**		
DATE	**May 2022**		
DURATION	**3 HOURS**	**MARKS**	**100**

SPECIAL/SUPPLIMENTARY EXAMINATION

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Internal Moderator: **Prof M. Hipondoka**

INSTRUCTIONS

1. Work in an orderly manner and present your work as neatly as possible.
2. While most of the marks will be awarded for content, candidates must bear in mind the importance of presentation, i.e. insight and critical thinking.
3. Number your questions correctly and clearly.
4. This paper consists of three (3) pages (excluding this front page).
5. Answer all questions in Sections A, B and C.

SECTION A: **Total marks: 40**

Answer the following multiple choice questions. Choose one correct answer.

1. A variable is... **[4]**
   (a) A string (b) Data value (c) A number
   (d) A function (e) None of the above

2. Which of the following is a data type used in python? **[4]**
   (a) String (b) Integer (c) All except d
   (d) Double (e) Boolean (f)_Only a and b

3. What is the expected output of the following expression 7*+5? **[4]**
   (a) 75 (b) "23" (c) 12
   (d) 35 (e) Error (f) None of the above

4. Which one of these is a description of tuple syntax? **[4]**
   (a) ( ) (b) { } (c) (...)
   (d) [ ] (e) '...' (f) None of the above

5. Suppose you run the following code in python:

   print("My name is", 'Python')

   What would be the output? **[4]**

   (a) My name is, Python (b) "My name is", Python
   (c) Error (d) My name is Python (e) None of the above

6. All keywords in Python are in... **[4]**
   (a) Lower case (b) UPPER CASE
   (c) Capitalized (d) None of the above (e) Either lower or upper case

7. Which is the correct operator for power(xy)? **[4]**
   (a) X^y (b) X**y
   (c) X^^y (d) None of the above

8. What is the output of expression, 50 % 6? **[4]**
   (a) 8 (b) 1 (c) Error
   (d) 0 (e) 2 (f) None of the above

9. Suppose A = (5, 90, 60), and B =(5, 10, 100). What would A + B results into in Python? **[4]**
   (a) [10, 100, 160] (b) (5,90,60,5,10,100) (c) (50, 1800, 12000)
   (d) Error (e) None of the above

10. Suppose B = [4, 8]. What would B + 4 results into in Python? **[4]**
    (a) [8, 12] (b) [4,8,4,8,4,8,4,8] (c) [4, 8]
    (d) Error (e) None of the above

SECTION B: **Total marks: 30**

1. Study the Python codes (**code A**, **code B**, and **code C**) below.
   a) Which code would print the highest number of i values? **[3]**
   b) Which code would print the lowest number of i values? **[3]**

Code A

```
for i in range (0, 10):
    if i ==3:
        break
    else:
        print(i)
```

Code B

```
for e in range (0, 10):
    if e != 8:
        print(e)
```

Code C

```
for e in range (0, 10):
    if e != 8:
        print(e)
    else:
        break
```

2. Suppose **b** = ((34, 82, 78, 2)) and **a** = [[24, 21, 23, 19]]

(a) In Python, what data structure is **a** and what is the length of **a**? **[2]**
(b) Write a Python *while loop* that adds **b** and **a** to obtain **d**, such that **d** has the structure similar to **a.** **[8]**

3. Suppose **x** = [[[6, 8], [3, 2], [9, 11]], [[4, 5], [7, 5], [2, 5]]]

(b) Write a Python *while loop* that adds 31 to each element in **x** then subtract **6.** Make sure a new variable has a structure similar to **x.**
[10]
(c) Translate your code in (b) above into a **generic Python function** that can still achieve the same results as the code in (b). **[4]**

SECTION C: **Total marks: 30**

1. Suppose **w** = [2, 7, 8, 10, 8, 13, 7, 90, 8] and **m** = [2, 7, 8, 10, 8, 13, 7, 90, 8].

(a) Write a Python code that adds 8 to elements in **w** at position 2, 6, 8, and at the same time subtract 5 from element in m at the same positions (2, 6, 8).
[10]
(b) Write a Python code that iterates over **w**, and only prints 7s and 8s in **w**. **[8]**
(c) After appending 9 and 11 to **w**, write a python code that removes 2s and 7s from **w.** **[2]**

(d) Write a *generic Python function that* adds **w** and **m** together.
[10]

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