**Test 2 – Paper and Pencil part**

**Have you:**

* **Successfully completed** and committed ***all the programming exercises from Session 13*?**
* Checked your ***paper-and-pencil* exercises from Session 13** against the answers online?

***If not, DO NOT BEGIN THIS EXAM! Instead,*** see your instructor to find out what to do.

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

***Honesty Pledge:***

Included in this test is an ***Honesty Pledge*** that is exactly the same as the one which you should have read before the exam. Re-read the Honesty Pledge at the beginning of the exam.

***When you are finished with this test, email your instructor saying either:***

* I agree with what the Honesty Pledge says, OR
* I ***do NOT agree*** with what the Honesty Pledge says ***and will talk with you privately soon after the test.***

***Two parts (this is Part 1 – Paper-and-Pencil):***

**For this part, the ONLY external resource you may use is a single 8½ by 11-inch sheet of paper,** with whatever you want on it, typed or handwritten or a combination of the two. You may use BOTH sides of the sheet. You must have prepared the sheet *before* beginning the exam.

|  |  |  |  |
| --- | --- | --- | --- |
| **Problem** | **Points Possible** | **Points Earned** | **Comments** |
| **1** | **6** |  |  |
| **2** | **8** |  |  |
| **Total (of 100 on the test)** | **14** |  |  |

***Communication:***

For both parts of the exam, ***you must not communicate with anyone*** except your instructor and his assistants, if any. In particular:

* + - You must not talk with anyone else or exchange information with them during the test.
    - ***You must NOT use email***, *chat* or the like during the test.

***Time limit:***

You have ***3 hours*** to complete the entire exam – its *paper part* and its *computer part*. Do the paper part first (using only your prepared 1-page-front-and-back sheet). Do not return to the paper part after you begin work on the computer part.

1. (6 points) Consider the code snippet below. It is a contrived example with poor style, but it will run without errors. What does it print when *main* runs?

Write your answer in the box to the right.

def **main**():

numbers = [6, 50, 30, [3, 2, 1]]

print(*'****Before:****'*)

**print\_them**(numbers)

x = **foo**(numbers)

numbers[3] = x

print()

print(*'****After:****'*)

**print\_them**(numbers)

def **print\_them**(sequence):

for k in range(len(sequence)):

print(k, sequence[k])

def **foo**(sequence):

sequence[1] = 999

return 88

**Output:**

**Before:**

**After:**

1. (8 points) Consider the code in the box below. To the right of the box of code, draw the ***box-and-pointer diagram*** for what happens when ***main*** runs. In the space at the bottom, show what the code would ***print*** when ***main*** runs.

def **main**():

a = 33

b = [5, 40, 77]

c = [40, 20, 100]

d = *'square'*

**blah**(a, b, c, d)

print(*'A.'*, a)

print(*'B.'*, b)

print(*'C.'*, c)

print(*'D.'*, d)

def **blah**(x, y, b, d):

x = 999

y[0] = 88

b[1] = 53

d = *'donuts'*

y = [1, 1, 1, 1]

y[2] = 66

print(*'1.'*, x)

print(*'2.'*, y)

print(*'3.'*, b)

print(*'4.'*, d)

**Draw box-and-pointer diagram below here**

What prints when ***main*** runs?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ B. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ D \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_