EXAMINATION INSTRUCTIONS

This examination has 9 pages. If your copy is missing a page, let one of the course staff know. Before starting this test, students should put his or her SUNY/UB card out on the desk so that course staff can check attendance.

This examination has 8 questions. Answer all questions.

You have 60 minutes to complete this examination. Use your time accordingly.

READ AND OBSERVE THE FOLLOWING RULES:

► Names are pre-printed on the exam booklets. Ensure that you have YOUR exam.
► Sign, using your usual signature, in the space provided on the back cover.
► All of your writing must be handed in. This booklet must not be torn or mutilated in any way and cannot leave the examination room.
► For your answers to earn credit, you must show all of your work in arriving at an answer. Partial credit will be earned as appropriate.
► Students can talk to proctors only in cases of supposed errors or question ambiguity. Proctors will not answer any other questions during this exam.
► Candidates guilty of any dishonest practices will be immediately dismissed from the examination and shall be liable for disciplinary action. Examples of dishonest practices include:
  ♦ Having books, papers, calculators, computers, cellphones, or other memory aid or electronic device out without explicit authorization by the proctors.
  ♦ Speaking or communicating with other students.
  ♦ Purposely exposing their work where other students could view it. Claims that the exposure was accidental or due to forgetfulness will not be accepted.

--------------------------- DO NOT WRITE BELOW THIS LINE! ---------------------------

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<thead>
<tr>
<th>MODULE 1</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Subtotal</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>/20</td>
<td>/20</td>
<td>/20</td>
<td>/20</td>
<td>/80</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>MODULE 2</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Subtotal</th>
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<tbody>
<tr>
<td></td>
<td>/20</td>
<td>/20</td>
<td>/20</td>
<td>/20</td>
<td>/80</td>
</tr>
</tbody>
</table>

Total /160
Module 1 - Question 1 [20 points, 4 points each]
The code given below is syntactically correct.

Circle, and identify by number, **EXACTLY 1** example of each of the following items in the code below. If the code below does not contain an example of an item, write “**no example**” next to that item in the list. To show you how I want the question answered, the first one is done for you.

0. numeric literal
1. parameter listing
2. variable whose value is a **str**
3. **str** literal **no example**
4. function call
5. boolean expression **no example**

```python
def countLetters(filename):
    retVal = {}
    with open(filename) as f:
        for line in f:
            for letter in line:
                retVal[letter] = retVal.get(letter, 0)
    return retVal
```

Module 1 - Question 2  [20 points total, 10 each part]

[  ] 10 points: perfect
[  ] 3 points: clearly wrong, some correct elements
[  ] 7 points: essentially correct but with small mistakes
[  ] 0 points: for anything else

Study the following code, then answer the question which follows.

```python
def module1question2(param) :
    retVal = '*'
    if param < 20 :
        return "V"
    if param - 1 < 19 :
        retVal = retVal + "lo"
    elif param > 23:
        retVal = retVal + "hi"
    if param == 50 :
        retVal = retVal + 'L'
    elif param > 45 :
        retVal = retVal + "XVL"
    else :
        retVal = retVal + "M"
    return retVal
```

[10 points] What does the following statement print?

```
print(module1question2(65))
```

Write your answer below:

*hiXVL*

[10 points] Write the statement that calls `module1question2` and results in the function returning "*hiXVL". Write your answer below:

```python
module1question2(x), where x is any value 46 or higher and not 50
```
Module 1 - Question 3  [20 points total]

Read this description of how to convert a rubric score into a traditional grade:

_The rubric consisted of 4 separate pieces. The minimum score for each of the pieces is 1 and the maximum score for each piece is 6. This created rubric scores ranging from a minimum of 4 and a maximum of 24. Grades are traditionally reported as a number between 0 and 100, however. This conversion requires two separate steps. First, the score is adjusted to start at 0 by subtracting 4. Then the range is adjusted to be from 0 to 100 by multiplying the adjusted score by 5._

Define a Python function named `rubric2Grade` which converts a rubric score to a traditional grade, as explained above. Your function should take a rubric score as its only input and return the traditional grade to which it is equal.

Write your answer below:

```python
def rubric2Grade(rubricScore) :
    adjustedScore = rubricScore - 4
    grade = adjustedScore * 5
    return grade
```
Module 1 - Question 4 [20 points total]

Consider a function named `classLevel` which will be called with one argument (you can assume that it will be called only with a float value representing the number of credits a student has earned). This function will compute and return a `str` representing that student’s class level, according to this table:

<table>
<thead>
<tr>
<th>Credits</th>
<th>Class Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 120</td>
<td>Super-Senior</td>
</tr>
<tr>
<td>&gt; 89 and &lt;= 120</td>
<td>Senior</td>
</tr>
<tr>
<td>&gt; 59 and &lt;= 89</td>
<td>Junior</td>
</tr>
<tr>
<td>&gt; 29 and &lt;= 59</td>
<td>Sophomore</td>
</tr>
<tr>
<td>&lt;= 29</td>
<td>First-Year</td>
</tr>
</tbody>
</table>

Describe briefly what a test case is: [ 8 points total ]

[ ] 8 points: perfect  [ ] 3 points: clearly wrong, some correct elements
[ ] 5 points: essentially correct but with small mistakes  [ ] 0 points: for anything else

A test case is a possible input together with the corresponding correct output.

Give two distinct test cases: [ 12 points total, 6 points each ]

[ ] 6 points: perfect  [ ] 2 points: clearly wrong, some correct elements
[ ] 4 points: essentially correct but with small mistakes  [ ] 0 points: for anything else

Test case #1:

```
classLevel(120) \rightarrow "Senior"
```

Test case #2:

```
classLevel(16) \rightarrow "First-Year"
```
Module 2 - Question 1 [20 points, 4 points each]
The code given below is correct: it compiles without errors. I have added some extra spacing to make this question easier to answer.

Circle, and identify by number, one and only one example of each of the following items in the code below. If you believe no example exists, write “no example” next to that item in the list. To show you how I want the question answered, the first one is done for you.

0. numeric literal
1. conditional statement (entire statement)
2. looping statement (entire statement)
3. empty dictionary literal
4. loop header
5. use of a dictionary key

```python
def countLetters ( filename ) :
    retVal = {}  # 3
    with open ( filename ) as f :
        for line in f :
            for letter in line :
                if letter in retVal :
                    retVal[ letter ] = retVal[ letter ] + 1  # 4
                else :
                    retVal [ letter ] = 1
    return retVal
```

0. numeric literal: `1` in the elif block.
2. looping statement: `for letter in line :`.
3. empty dictionary literal: `retVal = {}`.
4. loop header: `for line in f :`.
Module 2 - Question 2  [20 points total]

Consider a JavaScript function named `sumLarger` which has two parameters. The first parameter is an array of numbers and the second parameter is a number. The function calculates the sum of all the numbers in the array that is larger than the second parameter. If all of the numbers in the array are less than or equal to the second parameter, the function can return 0.

Part 1 [1 point]
What value does `sumLarger( [ 0 ], 2 )` return?

0

Part 2 [1 point]
What value does `sumLarger( [ 9, 23, 12 ], 12 )` return?

23

Part 3 [1 point]
What value does `sumLarger( [ 9, 23, 12 ], 1 )` return?

44. (=9 + 23 + 12)

Part 4 [17 points]
[ ] 17 points: perfect  [ ] 6 points: clearly wrong, some correct elements
[ ] 12 points: essentially correct but with small mistakes  [ ] 0 points: for anything else

Define, in JavaScript, the function `sumLarger`:

```javascript
function sumLarger(arr, num) {
    var retVal = 0;
    for (var ent of arr) {
        if (ent > num) {
            retVal = retVal + ent
        }
    }
    return retVal;
}
```
Module 2 - Question 3  [20 points total]

[ ] 20 points: perfect  [ ] 7 points: clearly wrong, some correct elements
[ ] 14 points: essentially correct but with small mistakes  [ ] 0 points: for anything else

Define a Python function named `doubleStr` with one parameter. The parameter for this function will be a List of `str`. Define the function so it returns a new List that contains two copies of each entry in the parameter. The original List must not be modified.

For example,

    `doubleStr(['sue', 'amy', 'bob'])`

would return a new List with: `['sue', 'sue', 'amy', 'amy', 'bob', 'bob']`, whereas

    `doubleStr(['fran', 'fran'])`

must return a new List like this:

    `['fran', 'fran', 'fran', 'fran']`

Write your answer below:

    ```python
    def doubleStr(lst) :
        retVal = []
        for ent in lst :
            retVal.append(ent)
            retVal.append(ent)
        return retVal
    ```
Module 2 - Question 4  [20 points total]
[ ] 20 points: perfect  [ ] 7 points: clearly wrong, some correct elements
[ ] 14 points: essentially correct but with small mistakes  [ ] 0 points: for anything else

Study the following code:

```python
import csv

def secrets(filename):
    with open(filename, "r") as f:
        reader = csv.reader(f)
        for line in reader:
            if line[0] == "F":
                print(line[1] + " :: " + line[2])
            else:
                print(line[2] + " :: " + line[1])
        print("Done")
secrets("007.csv")
```

Give possible contents for the file `007.csv` which would cause the above to print:

```
7 :: 49
64 :: 8
8675309 :: Jenny
Done
```

Give your answer below:

```
F, 7, 49
F, 64, 8, more allowed
tommy tutone, Jenny, 8675309
```