EXAMINATION INSTRUCTIONS

This examination has 9 pages. Check that you have a complete paper.
Each candidate should be prepared to produce, upon request, his or her SUNY/UB card.

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 must not be taken from the examination room.
► Show all of your work in arriving at an answer, unless instructed otherwise. Partial credit will be awarded as appropriate.
► Candidates are not permitted to ask questions of the invigilators, except in cases of supposed errors or ambiguities in examination questions.
► CAUTION – Candidates guilty of any of the following, or similar, dishonest practices shall be immediately dismissed from the examination and shall be liable to disciplinary action.
  ♦ Making use of any books, papers or memoranda, calculators or computers, audio or visual cassette players, or other memory aid devices, other than those explicitly authorized by the examiners.
  ♦ Speaking or communicating with other candidates.
  ♦ Purposely exposing written papers to the view of other candidates. The plea of accident or forgetfulness shall not be received.

DO NOT WRITE BELOW THIS LINE!

<table>
<thead>
<tr>
<th>MODULE 1</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Subtotal</th>
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<tbody>
<tr>
<td></td>
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<tr>
<th>MODULE 2</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Subtotal</th>
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<td></td>
<td>/20</td>
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<td>/80</td>
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</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, 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. parameter name
2. a string literal
3. assignment statement
4. a function call
5. an argument list

def find_max_key ( dictionary ) :
    max_value = 0
    max_key = ""
    for key in dictionary :
        value = len ( dictionary [ key ] )
        if value > max_value :
            max_value = value
            max_key = key
    return max_key
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.

```javascript
function whatDoesThisDo(x) {
    result = "CAT";
    if (x > 165) {
        return "dog";
    }
    if (x < 51) {
        result = result + "pig";
    } else if (x < 95) {
        result = result + "dog";
    }
    if (x < 47) {
        result = result + "!";
    } else if (x > 59) {
        result = result + "?";
    } else {
        result = result + "$";
    }
    return result;
}
```

[10 points] What does the following statement print?
```javascript
console.log(whatDoesThisDo(65));
```
Write your answer below:

CATdog?

[10 points] Give a value for x so that when whatDoesThisDo(x) is called the function returns "CATpig$". Write your answer below:

47 (any of the values 47, 48, 49 or 50 is acceptable)
Module 1 - Question 3 [20 points total]

Read this description of how to compute the score on a fictional test:

The exam consists of 50 questions. The minimum score for each question is 1, and the maximum score is 6. The possible raw score range is therefore 50 to 300. However, the score will be reported as a number between 500 and 1000. The conversion happens in two steps. First, the raw score is scaled to cover a range of 500 points by multiplying the raw score by 2. Next, the resulting scaled score is translated to the range 500 to 1000 by adding 400 to the scaled score.

Define a Python function named ‘finalScore’ which converts a raw test score to a scaled and translated test score, as explained above. The function must accept a test score in raw form and return the corresponding scaled and translated score.

Write your answer below:

```python
def finalScore(x):
    return (x*2) + 400
```
Module 1 - Question 4 [20 points total]

Consider a function named ‘courseGrade’ which will be called with one argument (you can assume that it will be called only with an integer value representing a course grade) that computes a string value representing the corresponding letter grade, according to this table:

<table>
<thead>
<tr>
<th>Course grade (%)</th>
<th>Course grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 85</td>
<td>Outstanding</td>
</tr>
<tr>
<td>&gt; 75 and &lt;= 85</td>
<td>Very good</td>
</tr>
<tr>
<td>&gt; 65 and &lt;= 75</td>
<td>Good</td>
</tr>
<tr>
<td>&gt; 50 and &lt;= 65</td>
<td>Acceptable</td>
</tr>
<tr>
<td>&lt;= 50</td>
<td>Not sufficient</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 set of possible inputs 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:

Input: 60, output: "Acceptable"

Test case #2:

Input: -34, output "Not sufficient"
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. a relational operator
4. the body of a for statement
5. a dictionary lookup

```
def find_max_key ( dictionary ) :
    max_value = 0
    max_key = ""
    for key in dictionary :
        value = len ( dictionary [ key ] )
        if value > max_value :
            max_value = value
            max_key = key
    return max_key
```
Module 2 - Question 2 [20 points total]

Consider a Python function named ‘negativesInList’ which has one parameter. The function will be called with a list of integers and will return a new list of all the negative integers in the list (an integer is negative if it is strictly less than zero), in the same relative order that they appeared in the original list.

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

Part 2 [1 point]
What value does negativesInList( [ -7, 3, -5, -2, 4 ] ) return?

Part 3 [1 point]
What value does negativesInList( [ ] ) return?

Part 4 [17 points]

Define, in Python, the function negativesInList:

```python
def negativesInList(x):
    answer = []
    for v in x:
        if v < 0:
            answer.append(v)
    return answer
```
Module 2 - Question 3 [20 points total]

Define a Python function named makeList with two parameters. Assume the function will be called with a list of strings and an integer. Define the function so it returns a new list containing all the strings from the original list whose lengths are greater than the integer, in the same relative order. The original list must not be modified.

For example,

makeList(['cat', 'dog', 'pig'], 3)

must return a new list like this: [], whereas

makeList(['cat', 'kitten', 'bird', 'dog', 'rhino'], 3)

must return a new list like this:

['kitten', 'bird', 'rhino']

Write your answer below:

```python
def makeList(x, y):
    result = []
    for i in x:
        if len(i) > y:
            result.append(i)
    return result
```
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 mystery(filename):
    with open(filename, "r", newline='') as f:
        reader = csv.reader(f)
        for line in reader:
            print(line[0] + " * " + line[3])
        print("Finished")

mystery("f.csv")
```

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

Kaylee * Frye
Malcolm * Reynolds
River * Tam
Finished

Give your answer below:

Here's one possible solution. There are many others:

"Kaylee", 0, 0, "Frye"
"Malcolm", 0, 0, "Reynolds"
"River", 0, 0, "Tam"