BGMT404 Midterm Exam Section 0101 Spring 2016

Name: UID:

You have 1 hour and 15 minutes to complete this exam (it should take much less time than that).

- You may use 1 page (one side, A4 paper) of handwritten notes
- You may not use any computers.
- Also, you may not communicate with any other person during this exam, (except the professor or the TA).
- Make sure you have answered all of the questions in the exam. It isn't over until it says "END EXAM".
- Do not forget to write your name and UID.

As strategies for completing the questions on this exam, please keep in mind the following:

- If you find a question ambiguous, please explain your confusion.
- You are more likely to get partial credit for a wrong answer if you show your work.
- However, be careful not to get carried away and run over the time limit. In other words, plan ahead.
- It is a good idea to work on questions with smaller points first (they are easier) and work harder questions later.

1. Please put your answer in the parenthesis. (20 points)

1.1( ) True or False: the following is a legal variable name: A_good_grade_is_A+

1.2( ) The output after executing the following 2 statements: (1) x = "9/4" (2) print x

1.3( ) The value of the following expression: 16 – 3*7 // 4 % 2

1.4( ) True or False: the value of the expression: 5*3 > 10 and 4+6==11

1.5( ) The output after executing the following statement: s= ' helloworld' print s[2:5]

1.6( ) The output after executing the following statement: print max(range(2,7)) + len(range(5))

1.7 The output after executing the following statements:

```
myDict = {'id': '1001', 'name': 'alice', 'age': 20}
for k in myDict.keys():
        print myDict[k]
```

Output:

1.8 Is there any errors here? If so, please specify what causes errors.
s = (12,) s += (12,15) s[1] = 13

1.9( ) The output of the following statement: lambda a=3, b=4: print a+b

1.10 The output after executing the following statements:

```
lst = [1, 3, 5, 7, 8, 10]
for k in range(1,4):
        print lst[k]
```

Output:

2. Please read the following program and answer questions. (15 points)

```
nums = range(10)
i = 0
while i < len(nums):
        print nums[i]    # (S1)
        i += 1           # (S2)
print i                  # (S3)
```

(a) how many times the statement S1 was executed?

(b) what is the output for statement S3?

3. Please read the following program and answer questions. (20 points)

```
nums = range(10, 20)
for i in range(10):
        if i%2 == 0:
                print nums[i]
        else:
                if i == 5:
                        break
                else:
                        print nums[i]*2
```

Please write down the output of this program:

4. Please read the following program and answer questions. (20 points)

```
stars = 5
width = stars*2
for i in range(5):
        s = (i+1)* '*'
        s += (stars - (i + 1))*2* '-'
        s += (i+1)* '*'
        print s
```

Please write down the output of this program:

5. Please read the following program and answer questions. (25 points)

```
mydict = {"cat":12, "dog":6, "elephant":23, "bear":20, "tiger":23, , "monkey":12}
anotherdict = {}
for i in mydict:
        v = mydict[i]
         if v in anotherdict:
                lst = anotherdict[v]
                lst = lst.append(i)
        else:
                lst = [i]
                anotherdict[v] = lst

for k, v in anotherdict.items():
        print k, ":", v
```

Please write down the output of this program:

(Bonus question: optional) (**20 points**)

END EXAM