CS177 Spring 2015
Midterm 1 - February 19, 8pm-9pm

• There are 25 True/False and multiple choice questions. Each one is worth 4 points.
• Answer the questions on the bubble sheet given to you.
• Only the answers on the bubble sheet will be counted.
• The questions will be discarded.
• This exam contains 18 pages (including this cover page)

Remember to fill in the following bubble card fields:

• student ID: use the 10 digit ID number on your student ID card. DO NOT USE YOUR SOCIAL SECURITY NUMBER! If you forget to write your student ID in the bubble card, you may get a 0.

• Last Name and First Name

• Instructor: put your RECITATION INSTRUCTOR’S LAST NAME given in the table below

• Test/Quiz: put 01

• Course: 177

• Section number: find your recitation section in the table below and put in the bubble card the last column of the table below

<table>
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<tr>
<th>Recitation section</th>
<th>Time</th>
<th>TA</th>
<th>Section number</th>
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</thead>
<tbody>
<tr>
<td>R01</td>
<td>Thursday, 07:30 am-08:20 am</td>
<td>Rohit Bhatia</td>
<td>001</td>
</tr>
<tr>
<td>R02</td>
<td>Thursday, 09:30 am-10:20 am</td>
<td>Ruby Tahboub</td>
<td>002</td>
</tr>
<tr>
<td>R03</td>
<td>Friday, 07:30 am-08:20 am</td>
<td>Ajay M S</td>
<td>003</td>
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<td>R04</td>
<td>Friday, 10:30 am-11:20 am</td>
<td>Haining Chen</td>
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<td>R05</td>
<td>Friday, 12:30 pm-01:20 pm</td>
<td>Rohit Bhatia</td>
<td>005</td>
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<td>R06</td>
<td>Friday, 02:30 pm-03:20 pm</td>
<td>Adib Rastegarnia</td>
<td>006</td>
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<td>R07</td>
<td>Friday, 04:30 pm-05:20 pm</td>
<td>Sait Celebi</td>
<td>007</td>
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• Distance Learning Students

<table>
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<tr>
<th>Section</th>
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<tr>
<td>Y01</td>
<td>Distance Learning</td>
<td>Wei Chuang</td>
<td>008</td>
</tr>
</tbody>
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Student Last Name: ________________
Student First Name: ________________
1. What is the output of the following Python program?
   ```python
   x = list(range(7,1,-2))
   print(x[-2])
   ```
   A. 1
   B. 2
   C. 3
   D. 5 ★
   E. 7

2. What is the result of evaluating the following expression $2 ** 4 + 9 / 3 * 2 - 2$?
   A. 2.166666666666667
   B. 14.666666666666668
   C. 20.0 ★
   D. 36.0
   E. 256.0

3. What is the output of the following Python program?
   ```python
   def testFun(a,b,c):
       print(a+b+c)

   testFun(11,12,'13')
   ```
   A. 36
   B. 2313
   C. '2313'
   D. 23+'13'
   E. TypeError ★
4. What is the output of the following Python program?

```python
def test():
    x = 7
    if 10 < x:
        print('Alligator')
    else:
        print('Cat')
        if 2 > x:
            print('Dog')
            print('Lion')
        print('Tiger')
    test()
```

A. Cat
   Tiger

B. Alligator
   Tiger

C. Cat
   Dog
   Lion
   Tiger

D. Alligator

E. Cat
   Lion
   Tiger ★
5. What is the output of the following Python program?

```python
def func(x, y):
    y = y * 2
    x = x + y
    return x

print(func('1', '2'))
```

A. 5  
B. 23  
C. 14  
D. 122 ★  
E. 211

6. What is the output of the following Python program?

```python
def main():
    s = "Python is cool"
    myFunc(s)

def myFunc(s):
    for i in range(-1, -len(s), -1):
        print(s[i], end='')

main()
```

A. Python is cool  
B. looc si nohtyp  
C. looc si nohty ★  
D. cool is Python  
E. Error
7. What is the output of the following Python program?

```python
def main():
    var1 = "Hello"
    for i in range(0,10):
        var1[i] = 'i'
    print(var1)

main()
```

A. 0123456789
B. 012345678910
C. Hello01234
D. Hello012345
E. TypeError

8. What is the output of the following Python program?

```python
s1 = "spamandeggs"
x = s1.find('and')
print(x)
print(s1[0:1], s1[5:7])
```

A. 5
  s nd
B. 4
  s nd ⭐
C. 5
  sp nde
D. 4
  sp nde
E. 5
  s nde
9. What is the output of the following Python program?

```python
def testFun(varB):
    varB.append(9)
    if 5 in varB:
        varB = [11, 12]
    else:
        varB.append(14)

varA = [5, 6]
testFun(varA)
print(varA)
```

A. [5, 6]
B. [5, 6, 9] ★
C. [11, 12]
D. [5, 6, 9, 14]
E. [9, 14]

10. What is the output of the following Python program?

```python
def getX(y):
    if (y>0):
        return 1
    else:
        return 0

z=getX(getX(getX(getX(1)-1)+1)-1)
print(z)
```

A. TypeError
B. 0 ★
C. '0'
D. 1
E. '1'
11. Assume we have `mylib.py` as the following,

```python
def sayHello():
    print('Hello..')
```

Which of the following Python program is a correct way to call `sayHello()` function from `mylib.py`?

A. `import mylib
   sayHello()`

B. `import mylib as X
   mylib.sayHello()`

C. `from mylib import *
   mylib.sayHello()`

D. `from mylib import sayHello
   mylib.sayHello()`

E. `from mylib import sayHello
   sayHello() ★`

12. What is the output of the following Python program?

```python
myList = ["Apple", "Ball", "Cat"]
myList.append("Dog")
myList.reverse()
myList[0] = ["Dog",1]
print(myList[0][−1])
```

A. Dog
B. D
C. 1 ★
D. A
E. Error
13. Which of the following function returns a sequence $-2, -1, 0, 1, 2$?
   A. `list(range(-2, 2))`
   B. `list(range(-3, 3))`
   C. `list(range(-2, 3))` ★
   D. `list(range(-3, 3, 2))`
   E. `list(range(-2, 3, 2))`

14. What is the output of the following Python program?

   ```python
   x = 6
   y = 8
   z = x + y // 5 * (x % 4)
   print(z)
   ```

   A. 1
   B. 4
   C. 6
   D. 8 ★
   E. 14
15. What is the output of the following Python program?

```python
y = 0
x = 200
for i in range(20, 1, -3):
    y = y + i
    x = x - i
print(x, ",", y)
```

A. 77,123
B. 123,77 ★
C. 120,80
D. 80,120
E. 100,100

16. What is the output of the following Python program?

```python
a = True
b = False
if not a:
    result = True
elif not b:
    result = not not b and not a
else:
    result = False
print(result)
```

A. True ★
B. False
17. The following code will print the string “one banana”:

```python
def myFunc(arg):
x = arg
x = arg + 10
if x > 20:
    return "one apple"
    print("one banana")
else:
    return "one banana"

print(myFunc(20))
```

A. True
B. False ★

18. What is the output of the following python program?

```python
myList = [[1, 2, 3], [4, 5], [7, 8, 9], []]
for x in myList:
    print(len(x))
```

A. 3
B. 4
C. [1,2,3]
D. 3
2
3
E. 3
2
3
0 ★
19. What is the output of the following Python program?

```python
def Balance(money):
    money = money - 10
    if (money < 70):
        print("I'm poor!")
    else:
        print("I'm rich!")

def main():
    myMoney = 70
    Balance(myMoney)
    if (myMoney < 70):
        print("I'm poor!")
    else:
        print("I'm rich!")

main()
```

A. I’m rich!
   I’m poor!

B. I’m poor!
   I’m rich! ★

C. I’m rich!
   I’m rich!

D. I’m poor!
   I’m poor!

E. I’m rich!
20. What is the output of the following Python program?

```python
def utilityFunction(varA):
    sum = 0
    count = 0
    for i in varA:
        sum += i
        count += 1
    average = sum / count
    return sum, count, average

def getValues(n):
    x = []
    for i in range(n):
        x.append(i)
    varB = utilityFunction(x)
    return varB

m, n, o = getValues(10)
print(m, '/', n, '=', o)
```

A. 4.5/10=45
B. 50/10=5
C. 45/10=4.5 ★
D. 5/10=50
E. 45/9=5
21. Assume we have the following Python program,

```python
from graphics import *

win = GraphWin("My window", 500, 500)
win.setCoords(0, 0, 500, 500)

rect = Rectangle(Point(100,150), Point(450,350))
rect.draw(win)

win.getMouse()
win.close()
```

Which of the following circle will be COMPLETELY outside of the rectangle(rect)?

A. `cir = Circle(Point(100,100), 20)` ★
B. `cir = Circle(Point(300,150), 50)`
C. `cir = Circle(Point(190,190), 50)`
D. `cir = Circle(Point(350,350), 50)`
E. `cir = Circle(Point(150,150), 100)`
22. We have the following Python program,

```python
from graphics import *

def main():
    win = GraphWin('My window', 300, 300)
    rect = ?
    line1 = ?
    line2 = ?
    rect.draw(win)
    line1.draw(win)
    line2.draw(win)
    win.getMouse()

main()
```

What should be rect, line1, and line2 to have the above output?

A. `rect = Rectangle(Point(100,100), Point(200,200))`
   `line1 = Line(Point(100,100), Point(150,20))`
   `line2 = Line(Point(150,20), Point(200,100))` ★

B. `rect = Rectangle(Point(100,100), Point(200,200))`
   `line1 = Line(Point(200,100), Point(280,150))`
   `line2 = Line(Point(280,150), Point(200,200))`

C. `rect = Rectangle(Point(100,100), Point(200,200))`
   `line1 = Line(Point(200,200), Point(150,280))`
   `line2 = Line(Point(150,280), Point(100,200))`

D. `rect = Rectangle(Point(100,100), Point(200,200))`
   `line1 = Line(Point(100,100), Point(20,150))`
   `line2 = Line(Point(20,150), Point(100,200))`

E. `rect = Rectangle(Point(100,100), Point(200,200))`
   `line1 = Line(Point(100,100), Point(200,200))`
   `line2 = Line(Point(100,200), Point(200,100))`
23. What is the output of the following Python program?

```python
from graphics import *

def main():
    win = GraphWin('My window', 300, 300)
    win.setCoords(300,300,0,0)
    rect = Rectangle(Point(50, 50), Point(100, 100))
    rect.draw(win)
    win.getMouse()

main()
```

A. 

B. 

C. 

D. 

E. 

F. 

G. 

H. 

I. 

J. 

K. 

L. 

M. 

N. 

O. 

P. 

Q. 

R. 

S. 

T. 

U. 

V. 

W. 

X. 

Y. 

Z. 

`
24. What is the output of the following Python program?

```python
from graphics import *

win = GraphWin('My window', 500, 500)
rect = Rectangle(Point(100, 100), Point(200, 200))
rect.draw(win)

for i in range(10):
    rect.move(10, 15)

print(rect.getP1().getX(), rect.getP2().getY())

win.getMouse()
win.close()
```

A. 190 220
B. 200 190
C. 190 335
D. 200 350 ★
E. 210 365
25. Given the contents of the text file `a.txt` as:

```
Janurary
Feburary
March
April
...
December
```

Consider the following Python program:
```
myFile = open("a.txt", "r")
a = myFile.readline()
myFile.close()

myFile = open("a.txt", "r")
b = myFile.readlines()
myFile.close()
```

Which of the following is true?
A. `a[1]` is 'J'
B. `b[1]` is 'J
C. `a[1]` is 'Feburary'
D. `b[1]` is 'Feburary'
E. `b[0]` is 'Janurary

★