CIS 210 Winter 2018 Midterm 1 Practice Questions

Note: These questions are not a comprehensive study guide! They are given here to provide a sense of the types of questions that may be on the midterm 1 exam.

To prepare thoroughly for the exam you should review projects and project solutions, lab exercises, class notes, and readings from the text.

The exam will be in-class, multiple choice questions (Scantron), along with questions where you will write Python code according to the usual CIS 210 style guidelines. No outside resources are allowed during the exam, with the exception of one index card of handwritten notes.

1-2. Given the Python statement

\[\text{greeting} = 'Hello, \text{CIS 210}.'\]

1. \text{greeting} is a Python

a. variable       b. algorithm       c. operator       d. function

2. 'Hello, \text{CIS 210}.' is a(n)

a. expression       b. string literal       c. neither of these       d. both of these

3. To use the \texttt{sqrt()} function, you must first use the following Python statement:

a. \texttt{use math}       b. \texttt{import math}       c. \texttt{math::sqrt()}       d. \texttt{return sqrt()}

4. Given the following Python code:

\[
1. >>> \text{name} = 'Roy G Biv'
2. >>> \text{i} = \text{name}[1]
3. >>> \text{i}
4. >>> \text{m} = \text{name}[4]
5. >>> \text{m}
6. >>> \text{name}[-1]
\]

What is printed after lines 3, 5, and 6?

a. 'R', 'G', 'v'

b. 'R', ',', 'v'

c. 'o', 'G', 'i'

d. 'o', 'G', 'v'

5 – 6. Given the following Python code:
for i in range(10):
    print('check')

5. How many times will check be printed?
   a. 0     b. 1     c. 9     d. 10

6. What will be the value of i the last time the loop is executed?
   a. 0     b. 1     c. 9     d. 10

7. We've heard from the client who requested the federal income tax estimator. Recall that the estimated tax is calculated as taxable income (gross income minus the sum of the standard deduction and the exemption amount * number of exemptions) multiplied by the tax rate:

   exemption = 4050
   std_deduction = 10000
   tax_rate = .20

   taxable_income = gross_income - std_deduction
   exempt_adjust = exemption * number_exempt
   taxable_income = taxable_income - exempt_adjust
   estimated_tax = taxable_income * tax_rate

   They forgot to mention that if the gross income is less than the sum of the standard deduction and exemption adjustment, the function should return an estimated tax of zero (not a negative number, as it currently does).

   To implement this new functionality, we will need to use
   a. math module     b. random module     c. conditional statement     d. for loop

8-10. Given the following Python code:

def mysqrt(n, k):
    '''(integer, integer) -> ??-8
       Generates k successive, better approximate square roots of n, a positive integer.
    
    The approximate square root is ??-9.
    
    >>> mysqrt(25, 5)
    5.000023178253949
    '''
    # A(n) ??-10 process calculates approximate square root
    approx_val = 1
    for ctr in range(k):
        approx_val = .5 * (approx_val + n/approx_val)
return approx_val

8.  
a. integer b. float c. string d. None

9.  
a. returned b. printed c. returned and printed d. neither returned nor printed

10. 
a. iterative b. Monte Carlo c. cipher d. infinite loop
11-12. Given the following Python code:

```python
def qx1(a):
    '''Midterm 1'''
    a += 1
    return a

def qx2(a):
    '''Midterm 1'''
    a += 1
    print(a)
    return a

def qx3(x):
    '''Midterm1'''
    result = qx1(x) + qx2(x)
    return result

a += 1
result = qx1(x) + qx2(x)
return 100
```

11. Which is correct?

a.  

b.  

c.  

d.  

```
>>> a = 5
>>> a = 5
>>> a = 5
>>> a = 5
>>> qx1(a)
>>> qx1(a)
>>> qx1(a)
>>> qx1(a)
6
5
5
5
>>> a
>>> a
>>> a
>>> a
5
5
6
6
```

12. Which is correct?

a.  

b.  

c.  

d.  

```
>>> qx3(0)
>>> qx3(0)
>>> qx3(0)
>>> qx3(0)
0
1
2
101
200
```

13. Given the following Python code:

```python
def q13(s1):
    '''midterm func'''
    s2 = ''
    for ch in s1:
        if ch not in s2:
            s2 += ch

    return s2
```

Which is correct?

a.  

b.  

c.  

d.  

```
>>> q13('123456')
'123456'

>>> q13('999999')
'999999'

>>> q13('123456')
'123456'

>>> q13('999999')
'999999'
```