CIS 122 Spring 2017 Example Midterm 2 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 exam.

To prepare thoroughly for the exam you should review projects and project solutions, midterm 1/key, your own and posted class and lab notes, and readings and exercises from the text.

The midterm exam will be in-class, multiple choice questions (Scantron). *No outside resources* are allowed during the exam, with the exception of one index card of *handwritten* notes.

(1 and 2) Given the following Python code:
```python
def q1(anum):
    '''(number) -> number

    midterm function
    
    >>> q1(3)
    ??
    ...
    return anum + 1
```

(1) What is the name of this function?

a) def  
   b) q1  
   c) anum  
   d) midterm function  
   e) none of these

(2) What is the value of x after the following code is executed?

```none
>>> x = 3
>>> x = q1(x)
>>> x += x
```

a) 3  
   b) 4  
   c) 5  
   d) 8  
   e) none of these

(3) Given:

```python
x = 10
y = x // 5
z = x % 2
```

What will be the result of executing the following code?

```none
>>> (x < y) or (x <= z)
```

a) None  
   b) True  
   c) False  
   d) True or False  
   e) none of these
(4-8) Given:

```python
def race(time):
    '''(number) -> number
    midterm function
    >>> race(3)
    ??
    ...
    time = float(input('what is your time?'))
    time = 4.5
    return time
```

What will be the result of executing the following code, assuming the user enters 3.5 when asked for their input?

```python
>>> race(3)
```

a) None  
b) 3  
c) 3.5  
d) 4.5  
e) none of these

(5-8) Given:

```python
def report(time):
    '''(number) -> str
    midterm function
    >>> report(3.2)
    ??
    ..
    if time <= 3.5:
        post = 'qualifier'
    elif time <= 4.3:
        post = 'great job'
    else:
        post = 'finisher'
    return post
```

(5) What is/are the function parameter(s)?

a) def  
b) report  
c) time  
d) time and number  
e) none of these
(6) What type of value will the function evaluate to (i.e., return)?

a) number  b) float  c) string  d) None  e) none of these

(7) What is the result of executing the following code:

```python
>>> report(3.2)
```

a) 'qualifier'  b)'great job'  c)'finisher'  d) None  e) none of these

(8) ```python
>>> report(race(2))
```

a) 'qualifier'  b)'great job'  c)'finisher'  d) None  e) none of these

(9-11) Given the following Python code:

```python
def q9(balance):
    '''(number) -> ??

    Midterm function.
    
    >>> q9(100)
    ??
    '','
    bal_pay = balance * .10
    gen_pay = 15.0
    min_pay = max(gen_pay, bal_pay)
    min_pay = min(min_pay, balance)
    print(min_pay)
    return None
```

(9) What is needed to complete the type contract (i.e., replace the ?? in the type contract)?

a) number  b) float  c) string  d) None  e) none of these

(10) Example of local variables in this function include

a) gen_pay, min_pay  b) number, 15.0  c) bal_pay, float  d) min_pay, None  e) none of these
(11) What will be printed when the following code is executed:

```python
>>> q9(100)
```

a) 10   b) 15   c) 15.0   d) 100   e) none of these

(12-13) Given:

```python
def q12(word):
    '''(str) -> Boolean

    midterm function
    '''
    for ch in word:
        if ch == 'E':
            return False
        if ch == 'e':
            return False
    return True
```

(12) What will be the result when the following code is executed:

```python
>>> q12('Deschutes')
```

a) 'E'   b) 'e'   c) True   d) False   e) "true"

(13)
```python
>>> q12('Villard')
```

a) 'E'   b) 'e'   c) True   d) False   e) "true"

(14)
A(n) _______ is a type-specific function.

A(n) _______ associates a name/label with a value.

a) method, expression  b) method, assignment  c) assignment, string  
d) boolean, string  e) none of these
Given:

```python
import random
from turtle import *

def rover_loc(r):
    '''(integer) -> integer

    Midterm function.

    >>> rover_loc(100)
    ??
    
    n = random.randint(-r, r)
    return n

def mars_explore():
    '''() -> None

    Midterm function.

    >>> mars_explore()
    ??
    
    r = 100
    x = rover_loc(r)
    y = rover_loc(r)

    print('(' + str(x) + ', ' + str(y) + ')')
    
    return None
```

(15) Which could be printed when the following code is executed:

```python
>>> mars_explore
```

a) `<function mars_explore at 0x103d2ed40>`  
b) None  
c) 0.0  
d) error  
e) none of these

(16) `>>> mars_explore()`

a) `<function mars_explore at 0x103d2ed40>`  
b) None  
c) 100  
d) `(-99, 65)`  
e) c) and d)
(17) Given the following Python code:

```python
def q17(greeting, name):
    '''(str, str) -> str

    Midterm function.
    
    >>> q17('ciao', 'ducks')
    ...'''
    greeting = greeting.upper()
    name = name.capitalize()
    sayit = greeting + ', ' + name
    return sayit
```

What is the result after the following code is executed?

```python
>>> q17('ciao', 'ducks')
```

a) None  b) 'CIAO'  c) 'Ciao, Ducks'  d) 'sayit'  e) 'CIAO, Ducks'

(18) Given:

```python
def q18(amount, rate):
    '''(number, number) -> int

    Midterm function.
    
    q18(0, 10)
    ...'''
    t = 0
    orig_amount = amount

    while amount < (2 * orig_amount):
        amount += (rate * .01) * amount
        t += 1

    return t
```

What value is returned after the following Python code is executed?

```python
>>> q18(0, 10)
```

a) None  b) 0  c) 1  d) 2  e) error
(19) Given:

def f(x):
    '''(number) -> number
    Midterm function.
    >>> f(4)
    ??
    '...'
x = 2 * x
    return x

What is the value of z after the following Python code is executed:

>>> z = 1
>>> z = f(z + 1) + f(z + 2)

a) None  b) 2  c) 10  d) 12  e) error