CIS 122 Winter 2022 Midterm 1 Example 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, your own and posted class and lab notes, and readings 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.

(1-4) Given the following Python code:

```python
>>> x = 25 / 5
>>> x
```

(1) `>>> x = 25 / 5` is a Python

a) expression  
b) assignment statement  
c) built-in function  
d) user-defined function  
e) error message

(2) `>>> 25 / 5` is a Python

a) expression  
b) assignment statement  
c) built-in function  
d) user-defined function  
e) error message

(3) What value is returned and printed in the Shell when `x` is evaluated?

a) `x`  
b) 5  
c) 5.0  
d) 125  
e) none of these

(4) What is the type of `x`?

a) integer  
b) float  
c) string  
d) function  
e) all of these
Given the following Python code:

```python
given
```y = 'CIS 122'
y
```

(5) What value is returned and printed in the Shell when y is evaluated?

a) 'CIS 122'  b) 'CIS122'  c) 'CIS'  d) '122'  e) error

(6) What is the type of y?

a) integer  b) float  c) string  d) function  e) all of these

(7) Which of these Python code snippets is (are) correct?

1
```y = 10 / 4
```2
```y = 10 // 3
```3
```y = 10 % 3
```4
```4 ** 2
```

a) 1, 2  b) 3, 4  c) 2, 3, 4  d) all are correct  e) none are correct

(8) What is the value of x after the following code is entered into the Python shell?

```x = 10
```x = x + 1
```x = x + 1
```x
```

a) 10  b) 11  c) 12  d) 13  e) none of these

(9-10) After the following Python code is executed

```a = 2
```b = a
```a = 10 // b
```

(9) What is the value of a

a) 0  b) 2  c) 5  d) 10  e) 20

(10) What is the value of b

a) 0  b) 2  c) 5  d) 10  e) 20
(11) What is the result when the Python expressions are evaluated?

```python
>>> (10 * 5) + 3
>>> 10 * 5 + 3
```

- a) same result: 53  
- b) same result: 80  
- c) same result: 0  
- d) different results: 53, 80  
- e) different results: 80, 53

(12) What is printed after the following Python code is executed?

```python
a = 10
b = 20
c = a + b
c = c + b
print(a, b, c)
```

- a) 10, 20, 30  
- b) 10, 20, 40  
- c) 10, 20, 50  
- d) 50, 50, 50  
- e) none of these

(13) What is the result when the following Python code is executed?

```python
>>> x === 5
```

- a) TypeError  
- b) NameError  
- c) SyntaxError  
- d) 5

(14) What is the result when the following Python code is executed?

```python
>>> hello
```

- a) TypeError  
- b) NameError  
- c) SyntaxError  
- d) IndexError  
- e) 'hello'

(15) What is the result when the following Python code is executed?

```python
>>> len(97403)
```

- a) TypeError  
- b) NameError  
- c) SyntaxError  
- d) IndexError  
- e) 5
A customer at the Duckstore has $75 and is buying some green tshirts that cost $10 each, and some yellow tshirts that cost $5 each. They would like some help determining how many yellow tshirts they can buy if they have already purchased \( g \) green tshirts.

```python
>>> start_cash = 75
>>> greent_cost = 10
>>> yellowt_cost = 5
>>> g = 4
>>> cash_for_yellowt = start_cash - (greent_cost * g)
>>> y = cash_for_yellowt // yellowt_cost
>>> left = cash_for_yellowt % yellowt_cost
>>> print('You have enough left for', y, 'yellow tshirts.')
>>> print('You will have', left, 'dollars left.')
```

What is the value of each variable after the above Python code has been executed?

16. `yellowt_cost`
   a) 0  
   b) 4  
   c) 5  
   d) 7  
   e) 35

17. `g`
   a) 0  
   b) 4  
   c) 5  
   d) 7  
   e) 35

18. `cash_for_yellowt`
   a) 0  
   b) 4  
   c) 5  
   d) 7  
   e) 35

19. `y`
   a) 0  
   b) 4  
   c) 5  
   d) 7  
   e) 35

20. `left`
   a) 0  
   b) 4  
   c) 5  
   d) 7  
   e) 35

21-27) Given the following Python code:

```python
def q1(anum):
    '''
    midterm function
    >>> q1(3)
    300
    '''
    print(anum * 100)
    return
```
(21) What is the name of this function?
   a) def       b) q1      c) anum      d) q1 and  anum
e) none of these

(22) What is/are the function parameter(s)?
   a) def       b) q1     c) anum       d) midterm and  function
e) none of these

(23) def is an example of a Python
   a) primitive element       b) identifier       c) keyword
d) built-in function       e) all of these

(24) print is an example of a Python
   a) primitive element       b) identifier       c) keyword
d) built-in function       e) all of these

(25) def q1(anum): is the
   a) file header       b) function body       c) docstring       d) function header

(26) 
   >>> q1(3)
   300

is the
   a) file header       b) function body       c) docstring       d) function header

(27) Which of these will cause the function to be executed?
   a) q1       b) q1()       c) q1(100)       d) q1(anum)
e) none of these
(28-32) Given the following Python code:

```python
1 def credit_card(balance):
2     '''
3     Midterm function.
4     >>> credit_card(100)
5     ??
6     '''
7     ten_percent = balance * .10
8     min_pay = max(15, ten_percent)
9     min_pay = min(min_pay, balance)
10    print(min_pay)
11    return
```

(28) Local variables in `credit_card` include

a) min_pay, balance  

b) return, 15

c) ten_percent, float  
d) print, min  
e) none of these

(29) Python built-in functions called in `credit_card` include

a) min_pay, balance  

b) return, 15

c) ten_percent, float  
d) print, min  
e) none of these

(30) When the following code is executed

```python
>>> credit_card(100)
```

The value 100 is a(n)

a) parameter  
b) argument  
c) identifier  
d) keyword

(31) The value of `balance` at line 8 is

a) 10  
b) 15  
c) 100  
d) balance  
e) NameError

(32) What will be printed after the following code is executed:

```python
>>> credit_card(100)
```

a) 10  
b) 15  
c) 15.0  
d) 100  
e) none of these
(33) You wish to buy a t-shirt as an appreciation gift for a number of individuals. Green t-shirts cost $20 each and yellow t-shirts cost $15 each. You will buy green shirts for half the group and yellow for the other half – but being frugal, if the split is not even, you will buy one more yellow shirt than green.

The following lines of Python code will solve the problem – but some of the code is scrambled.

```python
1 ttl_shirts = 128
2 cost_green = 20
3 cost_yellow = 15

# scrambled code starts here
4 ttl_cost = ttl_yellow_cost + ttl_green_cost
5 print('The total cost is ', ttl_cost)
6 ttl_yellow = ttl_shirts - ttl_green
7 ttl_green_cost = ttl_green * cost_green
8 ttl_yellow_cost = ttl_yellow * cost_yellow
9 ttl_green = ttl_shirts // 2
```

Choose the answer that correctly orders the lines of code:

a) 5, 6, 2, 4, 8, 9
b) 8, 6, 4, 7, 9, 5
c) 9, 7, 6, 8, 4, 5
d) 4, 5, 9, 8, 6, 7

(34) Which Python expression(s) correctly calculate(s) the number of seconds in 42 minutes and 42 seconds? Seconds per minute has already been defined (spm = 60).

1) \(\text{answer} = (42 \times \text{spm}) + 42\)
2) \(\text{answer} = 42 \times 42 + \text{spm}\)
3) \(\text{answer} = 42 + \text{spm} \times 42\)
4) \(\text{answer} = 42 \times (\text{spm} + 42)\)
5) \(\text{answer} = 42 \times \text{spm} + 42\)

a) 1, 2       b) 1, 3       c) 1, 5       d) 2, 4       e) 1, 2, 3, 4, 5

(35) Which are steps of a structured approach to computational problem solving?

1) thoroughly understand task or problem
2) use, revise, or develop (an) algorithm(s) to solve the problem
3) write code that implements the algorithm(s)
4) test and clean up code
5) execute code to achieve desired outcome

a) 1, 2       b) 1, 3       c) 1, 3, 4, 5       d) 2, 4       e) all of these
(36) What would be the result of executing the following Python code:

```
1 def secret_number(n):
2     '''
3     midterm 1
4     '''
5     print(n)

6     return

7 def display_number(x):
8     '''
9     midterm 1
10    '''
11    secret_number(x)
12    secret_number(x)

13    return

14 display_number(122)
```

a) 122 b) '122' c) 122 d) none of these

(37) What line(s) of code would need to be changed so that the `secret_number` function could print two secret numbers (n and m)?

a) 1 b) 5 c) 7 d) 11 e) 12 f) 14 g) all of these

(38-39) Given the following Python code:

```python
>>> import math
>>> result = math.ceil(26.4)
```

(38) `math` is a Python

a) keyword b) standard library module c) built-in function d) expression

(39) `import` is a Python

a) keyword b) standard library module c) built-in function d) expression