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) Given the following Python code:

```python
>>> x = 5 * 2
>>> x
```

What is the value of the expression x?

a) x  

b) 10  

c) 25  

d) all of these  

e) none of these

(2) Which is (are) correct?

(1)

```python
>>> 4 // 3
```

1.3

(2)

```python
>>> 4 ^ 2
```

16

(3)

```python
>>> 4 % 3
```

1.0

(4)

```python
>>> 4 ** 2
```

16

a) 1, 2  

b) 3, 4  

c) 4  

d) all are correct  

e) none are correct

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

```python
>>> x = 1
>>> x = x + 1
>>> x = x + 1
>>> x
```

a) 1  

b) 2  

c) 3  

d) 4  

e) none of these

(4) What are the values of a, b, and c after the following code is entered into the Python shell?
```python
>>> a = 101
>>> b = a
>>> c = b // 10
>>> a += 1
```

```
a) 101, 101, 10  
b) 102, 101, 10  
c) 1, 100, 10.0  
d) 0, 0, 0  
e) none of these
```
(5) What is the result when the Python expressions are evaluated?

```python
>>> 1 / 3 * 15
>>> 1 // 3 * 15
```

a) 5.0, 0  b) 5.0, 5  c) 5.0, 5.0  d) 5, 5  e) none of these

(6) What is the result when the Python expressions are evaluated?

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

a) 3, 53  b) 80, 80  c) 53, 80  d) 53, 53  e) none of these

(7) Given the following Python code, what is printed?

```python
a = 10
b = 20
c = a + b
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

(8) Given the following Python code, what is printed?

```python
a = 10
b = 20
a = b
b = 15
a += b

print(a, b)
```

a) 15, 15  b) 30, 20  c) 35, 15  d) 30, 15  e) none of these

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

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

a) TypeError  b) NameError  c) SyntaxError  d) IndexError  e) 5

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

a) TypeError    b) NameError    c) SyntaxError    d) IndexError

e) 'hello'

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

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

a) TypeError    b) NameError    c) SyntaxError    d) IndexError

e) 5

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

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

a) TypeError    b) NameError    c) SyntaxError    d) IndexError

e) 5

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

```python
>>> greeting = 'hi'
>>> greeting = greeting / 2
```

a) TypeError    b) NameError    c) SyntaxError    d) IndexError

e) 'h'

(14) Which of the following is/are a(n) valid Python assignment statements? (You may assume that all variables have been previously defined.)

(1) x + 1    (2) x += 1    (3) s    (4) 2 = 1 + 1    (5) x = 5

a) 1, 2    b) 3, 4, 5    c) 2, 5    d) 4, 5    e) none are valid assignments

(15) Given the following Python code, what will be printed?

```python
y = 3.14
z = abs(round(y))
print(y, z)
```

a) 3.14, 3.14    b) 3, 3    c) 3.14, 3    d) 3, 3.14    e) none of these

Given the following Python code (questions 16 through 21):
>>> president = 'Prince Lucien Campbell'

What is the result when the following Python code is executed?

(16) >>> president

a) president  b) 'president'  c) 'Prince Lucien Campbell'
d) NameError  e) none of these

(17) >>> print(president)

a) president  b) 'president'  c) 'Prince Lucien Campbell'
d) 'Prince Lucien Campbell'  e) none of these

(18) >>> 'president'

a) president  b) 'president'  c) 'Prince Lucien Campbell'
d) 'Prince Lucien Campbell'  e) none of these

(19) >>> len('president')

a) 21  b) 22  c) 8  d) 9  e) none of these

(20) >>> len(president)

a) 21  b) 22  c) 8  d) 9  e) none of these

(21) >>> president[7:13]

a) 'Lucien'  b) 'Lucien '  c) 'Lucien'  d) ' Lucien '  e) none of these

(22) Given the following Python code:

x = 'H20' * 2
y = 'C02' * 0

What are the values of x and y?

a) 'H20', 'C02'  b) 'H20H20', 'C02C02'  c) 'H20', ''
d) 'H20H20', ''  e) none of these
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 = int(input('How many green tshirts have been purchased? '))
>>> 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? Assume the user enters 4 when asked for the number of green tshirts that have been purchased.

(23) >>> yellowt_cost
a) 0 b) 4 c) 5 d) 7 e) 35

(24) >>> g
a) 0 b) 4 c) 5 d) 7 e) 35

(25) >>> cash_for_yellowt
a) 0 b) 4 c) 5 d) 7 e) 35

(26) >>> y
a) 0 b) 4 c) 5 d) 7 e) 35

(27) >>> left
a) 0 b) 4 c) 5 d) 7 e) 35

(28) Given the following Python code, what is printed?

```python
astr = 'Johnson'+'Chapman'
mylen = 0
for letter in astr:
    mylen += 1

print(mylen)
```

a) 7 b) 14 c) 15 d) 'Johnson' e) none of these
Everyone stand up.
Assign yourself the number 1.
While the number of standing students is greater than 1:
   Partner with the closest person
   Add your numbers.
   One person is assigned the sum.
   The other person sits down.
Report the total.

is an example of

a) a computer program       b) Python       c) an algorithm       d) all of a, b, c
       e) none of these

(30) (Challenge) Given the following Python code, what is printed?

```python
x = 1,000,000
print(x)
```

a) 1,000,000       b) 1000000       c) (1, 0, 0)       d) '1,000,000'
       e) none of these