Write your answer in the blank line next to each question.

1. Which of the following statements are true?
   a) An if statement must have an else statement.
   b) An if statement must have an elif statement.
   c) An if statement must have both an elif and an else statement.
   d) An else statement must have a matching if statement.

2. Which of the following would remove the first character and last character from the string s and return the string between the first and last characters?
   a) s[2:0]  b) s[1:0]  c) s[1:-1]  d) s[2:-2]

3. Which of the following Python statements is invalid?
   a) if x != 4:  b) if x = 4:  c) if x == 4:  d) if 2 < x < 4:

4. If you want to use the sin function in the math library, as x = math.sin(3.14), how should you write the import statement?
   a) An import statement is not needed.  b) import sin
   c) import math  d) from math import sin

5. How many rows would a truth table for a and b and c have and how many true values would there be in the result?
   a) 3 rows with 1 true value.  b) 6 rows with 1 true value.
   c) 8 rows with 1 true value.  d) 8 rows with 2 true values.

6. How many rows would a truth table for a or b or c have and how many true values would there be in the result?
   a) 3 rows with 2 true values.  b) 6 rows with 2 true values.
   c) 8 rows with 4 true values.  d) 8 rows with 7 true values.

7. If you want to use the sin function in the math library, as x = sin(3.14), how should you write the import statement?
   a) An import statement is not needed.  b) import sin
   c) import math  d) from math import sin

8. Which of the following best describes what an object is?
   a) It is a group of data.
   b) It is a group of methods.
   c) It is a group of data along with methods for operating on that data.
   d) It is a geometric shape.
9. Which of the following statements about string comparisons is true?
   a) Shorter strings are less than longer strings.
   b) Strings that begin with the letter 'A' are less than strings that begin with the letter 'a'.
   c) Strings that begin with the letter 'a' are less than strings that begin with the letter 'A'.
   d) Strings cannot be compared; only numbers may be compared.

10. What data type does the string’s split method return?
   a) A string.  
   b) A list of strings.  
   c) None.  
   d) An int.

11. What variable names does a function have access to?
   a) All variables used in a program.
   b) Only variables created in the function.
   c) Only the arguments passed to the function.
   d) Arguments that are passed to the function and any variables created in the function.

12. How do you determine which argument to assign to each parameter?
   a) The names of the parameters must match.
   b) The order of the parameters indicates how they are assigned.
   c) You can only pass one argument to a function.
   d) You manually assign each argument at the beginning of the function.

13. What would the following Python program output?
    ```python
    for s in "the quick fox":
        print(s)
    ```
    a) Output the on the first line, quick on the second line, and fox on the third line.
    b) Output the quick fox on one line.
    c) Output each of the characters (excluding the spaces) in the string with one character per line.
    d) Output each of the characters (including the spaces) in the string with one character per line.

14. What would the following Python program output?
    ```python
    items = "the,quick,fox".split(",")
    for s in items:
        print(s)
    ```
    a) Output the on the first line, quick on the second line, and fox on the third line.
    b) Output the, on the first line, quick, on the second line, and fox, on the third line.
    c) Output the quick fox on one line.
    d) Output each character in the string, excluding the commas, with one character per line.
15. (3 pt) What would be the final value of total for the following program?

```python
total = 0
for i in range(10):
    for j in range(10):
        total = total + 1
```

16. (3 pt) What is output by the following code: `sum(14, 12)`

```python
def sum(value1, value2):
    max = []

    if value1 > value2:
        max = max + [value1]
    else:
        max = max + [value2]
    return max
```

17. (3 pt) What is the output of the following code?

```python
x = 2
while x <= 3:
    y = 3
    while y <= 12:
        y = y + 2
    x = x + 1
print(x, y)
```

18. (3 pt) What is output by the following code:

```python
x = 12
y = 20
if x % 4 or y % 2:
    x = x + 3
    print(x, y)
else:
    y = y + 2
    print(x, y)
```