CS 8

Final Exam Practice
(Conceptual Portion)

Name: _____

1. No books, notes, computers, or other electronic devices may be used during this portion of the exam.

2. The concepts portion of the exam and the programming portion will be equally weighted.

Multiple Choice, True/False, and Short Evaluation
(1 point each, unless stated otherwise)

1. What kind of data does the `input` function return?

   a) string

   b) int

   c) float

   d) it depends on the value the user entered

2. From the snippet of code below, what is printed to the screen? Select all that are printed.

```
majority_pct = 73

if 66.67 <= majority_pct:
    print("Two-third majority")
elif 50 < majority_pct:
    print("Simple majority")
else:
    print("No majority")
```

   a) `Two-third majority`

   b) `Simple majority`

   c) `No majority`

   d) *None of the above*

3. If your program is located at (and run at):
   `CS8/midterm/src/load/program10.py`
   and the data that program10.py wants to access is at:
   `CS8/midterm/data/info.dat`
   which of the following is the correct relative location for the data file:

   a) `info.dat`

   b) `../info.dat`

   c) `../data/info.dat`

   d) `../../data/info.dat`

e) `../data/../info.dat`

4. Which of the following is used to create an exception handling environment (also called try-catch or try-except block)?

   a) catch

   b) except

   c) try

   d) raise

5. Which of the following is a special variable that receives a value when a function is called?

   a) argument

   b) parameter

   c) method

   d) scope

6. **True** or **False**: A variable in a method can be accessed and used outside of that method

7. What is the name of a function that belongs to a class?

   a) Encapsulation

   b) Field

   c) Method

   d) Object

   e) Property

8. What keyword is used to create a class?

   a) class

   b) create

   c) def

   d) object

9. Which of the following is the name of the method for comparing two objects for equality?

   a) __eq__

   b) operator==

   c) ==

   d) equals

10. Which of the following creates a dictionary?

   a) {}

   b) dict

   c) dictionary

   d) zip

11. Which dictionary method returns all of the keys and values in a dictionary?

   a) items

   b) get

   c) keys

   d) values

12. Which of the following function headers accept var-positional arguments? (Select all that apply)

   a) def funcA(val1, val2)

   b) def funcB(val1, val2=13)

   c) def funcC(val1, val2, val3, val4, val5, …)

   d) def funcD(val1, *val2)

   e) def funcE(val1, **val2)

Short Answer:

For this section:
- If a program prompts the user for input, take on the role of the user and provide the input (underline the user's input).
- If the program throws an error/exception, indicate that (including the line on which the error occurs).
- In the output, make it clear whether or not there are spaces.
- Any illegible writing will be assumed to be incorrect.

1. Briefly explain why we should *not* use the equality operator when comparing floats.

2. How is a property like a field?

3. How is a property like a method?

4. When do you use `ValueError`? How do you use it?

5. What does it mean for something to be immutable?

6. What is the output of the following code?

```
def digital_sum(number):
    number = str(number)
    total = 0
    for c in number:
        total += int(c)
    return total


print('Digital sum of 138 is', digital_sum(138))
print('Digital sum of -45 is', digital_sum(-45))
```
Output:

7. How does a module differ from a source code file? How are they the same?

8. How does one create a private variable in Python?

9. What is `self`?

10. What is data aggregation (also called compoud object)? What are the concerns over using data aggregation? What are the advantages/reasons for using data aggregation?

11. What is the result of the following code?

```
def add_5(values):
    values.append(5)
    return values


numbers = [1, 2, 3, 4, 6]
new_numbers = add_5(numbers)
print(numbers)
print(new_numbers)
```

Output: