1. Create an assert statement that throws an AssertionError if the variable spam is a negative integer.

**Ans: assert spam >= 0, ‘The spam value is less than 0’**

1. Write an assert statement that triggers an AssertionError if the variables eggs and bacon contain strings that are the same as each other, even if their cases are different (that is, 'hello' and 'hello' are considered the same, and 'goodbye' and 'GOODbye' are also considered the same).

**Ans: assert eggs.lower() != bacon.lower(), ‘The eggs and bacons have same value’**

1. Create an assert statement that throws an AssertionError every time.

**Ans: assert False, ‘This assertion always triggers’**

1. What are the two lines that must be present in your software in order to call logging.debug()?

**Ans: We should have these two lines**

**import logging**

**logging.basicConfig(level=logging.DEBUG, format = ‘ %(asctime)s - %(levelname)s - %(message)s’)**

1. What are the two lines that your program must have in order to have logging.debug() send a logging message to a file named programLog.txt?

**Ans: These two lines**

**Import logging**

**Logging.basicConfig(filename=’programLog.txt’, level=logging.DEBUG, format=’ %(asctime)s - %(levelname)s - %(message)s’)**

1. What are the five levels of logging?

**Ans: DEBUG, INFO, WARNING, ERROR and CRITICAL**

1. What line of code would you add to your software to disable all logging messages?

**Ans: logging.disable(logging.CRITCAL)**

1. Why is using logging messages better than using print() to display the same message?

**Ans: We can create logging messages. Logging messages also provides timestamp. We can choose logging levels and also disable the logging information.**

1. What are the differences between the Step Over, Step In, and Step Out buttons in the debugger?

**Ans: Step Over quickly executes the function call without stepping into it. Step In button moves the debugger into a function call. The Step Out will quickly execute the rest of the code until it steps out of the function it currently is in.**

1. After you click Continue, when will the debugger stop ?

**Ans: It stops when it has reached the end of the program or a line with a breakpoint.**

1. What is the concept of a breakpoint?

**Ans: It is a setting on the line of code that causes the debugger to pause when the program execution reaches that line.**