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

**Ans**. assert spam >=10, The spam variable is less than 10.

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 bacon variable are same!’, or asset eggs.upper()!=bacon.upper,’ The eggs and bacon variable are same

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

**Ans**. asset 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**. 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**. import logging

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

1. What are the five levels of logging?

**Ans**. Debug, warning, info, error and critical.

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

**Ans. logging.disable(logging.CRITICAL)**

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

**Ans**. One can disable the logging message without removing logging function call. One can selectively disable lower level logging messages. You can create logging messages. Logging messages provides the timestamp.

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

**Ans**. The step button removes the logging function call. The over button will quickly execute the function call without stepping into it. The step out executes the rest of the codes until it steps out the function it currently is in.

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

**Ans**. The debugger will only stop either it reached the end of the program or at debugging point.

**11**. What is the concept of a breakpoint?

**Ans**. It causes the debugger to pause the program when program execution reaches the line.