1. **Create an assert statement that throws an Assertion Error if the variable spam is a negative intege**r.

Ans – assert spam >= 0, “spam must be a non – negative integer”

**2. 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).**

**3. Create an assert statement that throws an Assertion Error every time.**

Ans – assert False, “ This assert statement always throws an AssertionError.

**4. 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)

5**. 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?**

import logging

logging.basicConfig(filename='programLog.txt', level=logging.DEBUG)

**6. What are the five levels of logging?**

Ans – The five levels of logging are

1 – DEBUG : - detailed information , typically useful for debugging purposes.

2- INFO – General information about the programme excecution and important events.

3- WARNING – Indicates a potential issue or a non critical problem that might cause unexpected behaviour.

4- ERROR – Indicates a more severe issue or error that caused a sepcific operation to fail

5- CRITICAL – Indicates a critical error or a asevere issue that may result in the programs termination.

**7. 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?**

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

Ans - **Step Over**: Executes the next line of code in the current function and avoids stepping into called functions.

**Step In**: Steps into the next line of code, including any called functions, pausing at the first line of the called function.

**Step Out**: Continues execution until the current function returns and then pauses at the calling line, effectively stepping out of the current function's conte

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

Ans -

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

Ans - The concept of a breakpoint is an essential feature in debugging tools that allows you to pause the execution of a program at a specific line or location. It provides a way to examine the program's state, inspect variables, evaluate expressions, and step through the code to understand its behavior.