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

**Ans:**

spam=-1

assert spam>0

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).

**Ans:**

eggs='to'

bacon='go'

def get\_string():

return eggs

assert get\_string()==bacon

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

**Ans:**

assert False, "Always return error"

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?

**Ans:**

import logging

logging.basicConfig(level=logging.INFO, file='programLog.txt')

6. What are the five levels of logging?

**Ans:**

Debug, Info, Warning, Error, Critical

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

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

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

**Ans:** print can be a good option while implementing solutions on local and it can display any error/warning on console, however logging is best while solution is running on production, becoz every time no one can be available to see console for error messages and all, so the can be collected in a file so that later it can be used for debugging and error identification accordingly.

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

**Ans:**

Step over - This command lets the application execute the next action. If the action involves a call to an operation, it does not step into its implementation (it steps over it instead).

Step In - This command lets the application execute the next action. If the action involves a call to an operation, it steps into its implementation and breaks the execution on the first action of that implementation.

Step out - This command lets the application execute until the currently executed operation implementation is returned.

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

**Ans:** if a breakpoint is placed then on breakpoint, else post execution of implementation.

11. What is the concept of a breakpoint?

**Ans:** Breakpoints are basically used to hold execution of normal implementation, so that programmer can check implementation on certain points accordingly.