Q1. What is the purpose of the try statement?

Ans: - The try statement in Python is used for exception handling to make the code cleaner and more readable. It simplifies the management of common resources like file streams. The try block is used to check some code for errors. The code inside the try block will execute when there is no error in the program. If any exception occurs, the try clause will be skipped and the except clause will run.

Q2. What are the two most popular try statement variations?

Ans: -
try/except: This is the most common variation where the try block contains the code that might raise an exception, and the except block contains the code that handles the exception.

try/except/else: In this variation, the else clause on the try/except block must be present after all the except clauses. The code enters the else block only if the try clause does not raise an exception.

Q3. What is the purpose of the raise statement?

Ans: - The raise keyword in Python is used to raise exceptions or errors. The raise keyword raises an error and stops the control flow of the program. It is used to bring up the current exception in an exception handler so that it can be handled further up the call stack.

Q4. What does the assert statement do, and what other statement is it like?

Ans: - The assert statement in Python is used to test assumptions about your code. It acts as a sanity check to ensure that certain conditions are met during the execution of a program. The assert statement takes a condition and an optional message. If the condition evaluates to True, nothing happens, and the program continues to execute. However, if the condition evaluates to False, an AssertionError is raised with the optional message. The assert statement is similar to the raise statement as both can be used to interrupt the program flow by throwing an exception.

Q5. What is the purpose of the with/as argument, and what other statement is it like?

Ans: - The with/as statement in Python is used for exception handling to make the code cleaner and more readable. It ensures proper acquisition and release of resources. The with statement replaces a try/except/finally block with a concise shorthand. More importantly, it ensures closing resources right after processing them. The with statement is similar to the try statement as both are used for exception handling.