1. A system accepts a password of length **6 to 12 characters**. Using equivalence partitioning, identify valid and invalid partitions and give one test case for each.
2. A software system accepts an integer input representing the age of a user, which must be between 18 and 60 inclusive. Using **equivalence partitioning**, identify the valid and invalid partitions and suggest one test case from each partition.

3. Define white-box testing and mention its main objective.
4. Explain **branch coverage** in white-box testing with one example.
5. How test cases are generated using **path coverage** in white-box testing?
6. Calculate the cyclomatic complexity of a program with 12 edges and 10 nodes, assuming a single connected component.
7. How does cyclomatic complexity help in determining the minimum number of test cases for a program?