# 39 Lecture - CS504

## Important Subjective

**1. What is White Box Testing, and how does it differ from Black Box Testing?**

**Answer**: White Box Testing is a software testing approach that examines the internal code structure. Testers have access to the source code. In contrast, Black Box Testing focuses on testing the functionality from an end-user's perspective without knowledge of the internal implementation.

**2. Explain the concept of code coverage in White Box Testing.**

**Answer**: Code coverage in White Box Testing measures the percentage of code that is executed during testing. It helps identify areas of the code that have not been tested, ensuring comprehensive test coverage.

**3. What are the main objectives of White Box Testing?**

**Answer**: The primary objectives of White Box Testing include ensuring code correctness, validating internal logic, identifying hidden errors, and achieving thorough test coverage.

**4. Describe the differences between Statement Coverage and Branch Coverage.**

**Answer**: Statement Coverage measures the percentage of code statements executed, while Branch Coverage measures the percentage of decision points or branches taken during testing. Branch Coverage provides more comprehensive testing as it considers decision outcomes.

**5. How is Cyclomatic Complexity used in White Box Testing?**

**Answer**: Cyclomatic Complexity is a metric that quantifies the complexity of the code and helps identify areas that require more thorough testing. Higher complexity values indicate the need for additional testing efforts.

**6. What is Path Coverage, and why is it important in White Box Testing?**

**Answer**: Path Coverage aims to validate all possible paths through the code. It ensures that every feasible path is executed at least once during testing, providing more in-depth test coverage and helping identify potential issues.

**7. What are the advantages of White Box Testing over Black Box Testing?**

**Answer**: White Box Testing allows testers to target specific areas of code, enables early detection of defects, and provides insight into the internal logic, leading to more effective and efficient testing.

**8. Explain the role of code reviews in White Box Testing.**

**Answer**: Code reviews are crucial in White Box Testing as they involve peer review of the code by developers. They help identify bugs, improve code quality, and ensure adherence to coding standards.

**9. How can data flow testing be performed in White Box Testing?**

**Answer**: Data flow testing aims to assess how data moves through the application. Testers analyze variables and their usage to detect potential data-related issues, such as uninitialized variables or data corruption.

**10. What is Loop Testing, and why is it important in White Box Testing?**

**Answer**: Loop Testing focuses on testing the various possibilities and iterations within loops. It ensures that loops execute correctly, don't lead to infinite loops, and handle loop boundaries effectively to avoid potential issues.