STQA Important Notes – SPPU MCA Semester 2

## Equivalence Partitioning (EP)

Divides input data into valid and invalid classes.  
Example: For input age 18–60,  
- Valid class: 18–60  
- Invalid classes: <18, >60

## Decision Table Testing

Technique for conditions and actions. Useful when combinations of inputs yield different results.  
Example Table:  
| Condition A | Condition B | Action |  
|-------------|-------------|--------|  
| True | False | X |  
| False | True | Y |

## Cyclomatic Complexity

Measures number of independent paths in code.  
Formula: M = E - N + 2P (E=edges, N=nodes, P=connected components)  
Useful for whitebox testing.

## Walkthrough vs Inspection

- Walkthrough: Informal review with author’s guidance  
- Inspection: Formal process led by moderator; defects logged

## Experience-Based Testing

Relies on tester’s intuition and experience.  
Types: Error guessing, exploratory testing

## V-Model of Testing

Development and testing activities occur in parallel.  
Each dev phase has a corresponding test phase:  
- Requirements ↔ Acceptance Testing  
- Design ↔ System Testing  
- Architecture ↔ Integration Testing  
- Coding ↔ Unit Testing

## Alpha vs Beta Testing

- Alpha: Internal testing by dev/test team  
- Beta: External testing by end-users

## Test Metrics Examples

- Defect Density = No. of Defects / Size of software  
- Test Case Efficiency = (Defects Detected / Total Test Cases) × 100

## Pesticide Paradox

Running same test cases repeatedly won’t uncover new bugs. Requires regular updates to test cases.

## Smoke vs Sanity Testing

- Smoke Testing: Basic build verification  
- Sanity Testing: Minor functionality check after bug fixes