

Software Testing and Quality Assurance

Unit 1

- Need for Software Testing
- Testing Terminology
- Seven Principles of Software Testing
- Fundamental Testing Process
- V Model
- Contents of a Test Policy Document
- Risk Management
- 11 Steps in Software Testing
- Risk Assessment Matrix
- Prepare thorough verification and validation strategy

Unit 2

- White Box Testing
- Basis Path Testing (Cyclomatic Complexity)
- Black Box Testing
- Mutation Testing
- Testing Web Apps
- Regression Testing
- Smoke Testing
- Usability Testing
- Accessibility Testing
- Equivalence Class Partitioning Test Cases

Unit 3

- Advantage of Software Test Automation
- Design and Architecture for Test Automation
- Generic Requirements for Test Tool / Framework
- Reasons to carefully Select Test Tool
- Criteria for Selecting Test Tools
- Steps for Tool Selection and Deployment
- Challenges in Automation
- Test Planning
- Test Estimation and Scheduling
- Test Management and Control

Test Process Activities

Unit 4

- Software Measurement Principles
- Need for Software Measurement
- Classification of Software Measurement
- 5 Steps in a Metrics Program
- Types of Metrics
- Project Metrics
- Test Defect Metrics
- Progress Metrics
- Development and Defect Metrics
- Productivity Metrics
- Function Point Metrics Sum
- Sums in Senior Sem Paper

Unit 5

- Definition of Test Maturity Model
- Levels of Test Maturity Model
- Difference between CMM and TMM
- Advantages of TMM
- 2 kinds of Quality
- Quality Management System & Benefits
- Role of an SQA Group
- Software Review
- Defect Amplification and Removal
- Collecting Software Engineering Data
- Six Sigma