

14/5/25

42) For what type of project, data flow diagram (DFD) is required?

DFD is required for structured or function-oriented projects where the focus is on data movement and processing.

43) What is sequencing in Use Case Diagram?

It refers to the order in which use cases are triggered based on user actions or system events.

44) How to apply inheritance for Object oriented Projects?

Inheritance is applied by creating a base class by identifying common features across modules, then extending it using subclasses that inherit and reuse those features.

45) What is testing?

Testing is the process of evaluating a software system to identify defects and ensure it meets the specified requirements.

46) Distinguish between Error, Fault, Defect and Failure.

Error	Fault	Defect	Failure
Human mistake in design or coding.	Flawed part of the software (bug)	Deviation from expected behaviour.	System doesn't perform as expected.
During development	After coding, due to error	Detected during testing	During execution

47) When and who will do Black Box testing?

Performed during the later stages of testing after white box testing has been performed, by the Software Tester.

48) List all types of White Box testing.

- Statement coverage
- Branch coverage
- Path testing
- Cyclomatic Complexity
- Path coverage
- Data-flow coverage
- Loop testing

49) Define BVA (Boundary Value Analysis).

BVA is a black box testing technique. It is a test case design method that complements equivalence partitioning, helping to detect errors at boundaries.

50) Can a fault be debugged? Justify.

Yes, debugging is figuring out what's causing a problem which leads to failure.

51) What is Regression Testing?

Regression Testing re-executes a small subset of tests that have already been conducted. It is applied to ensure that no side effects occur.

52) Define Smoke Testing.

It is an integration testing approach that is commonly used when product software is developed. It is designed as pacing mechanism for time-critical projects.

55) When to do Alpha Testing?

Alpha testing is done at the end of development, but before the product is released to external users.

56) Why to do Beta Testing?

Beta testing is done to gather real-world feedback from actual users in a live environment. Identifying usability issues and unexpected bugs and modify them before final release.

57) What is Cyclomatic Complexity?

Cyclomatic Complexity of a code section is the quantitative measure of the number of linearly independent paths in it. Used to indicate complexity of a program.

58) How to do flow path testing?

Flow path testing is done by identifying all independent execution paths in a control flow graph and designing test cases to cover each path.

59) Who is responsible for System Testing?

Performed by independent Quality Assurance (QA) team.

60) Distinguish between Function and Object Oriented Testings.

Function-Oriented Testing	Object-Oriented Testing
Tests modules/functions individually.	Tests objects, classes, and interactions.
Based on functional decomposition	Based on class hierarchy and object behavior.

61) What is Software Standardization?

It is the process of establishing and following defined norms, guidelines, and best practices in software development.

62) Define Software Reliability.

It is defined as the probability of failure-free operation of a computer program in a specified environment for a specified time.

61) How to estimate cost with ZIPP's law?

Using Zipp's Law, cost estimation is based on the frequency of software components or modules.

$$\text{Cost} \propto \log(\text{rank})$$

where,

rank \rightarrow position of a module based on its frequency of use.

62) What is Software metric?

Software metrics are the measurements for computer software. It helps in tracking progress, identifying issues, and improving the software process.

63) List the different phases of SEI-CCM.

- \rightarrow Initial
- \rightarrow Repeatable
- \rightarrow Defined
- \rightarrow Managed
- \rightarrow Optimizing.

64) Give the need for Six Sigma.

- \rightarrow Improve quality
- \rightarrow Enhance Customer Satisfaction
- \rightarrow Reduce Costs
- \rightarrow Eliminate Defects and Variations

65) What is the other name for Six Sigma?

DMAIC (define, measure, analyze, improve, and control)

66) How to manage risk?

- i) Risk Analysis
- ii) Risk Estimation
- iii) Risk Identification
- iv) Abatement Procedures

67) What is the advantage of Cost estimation using functional point?

- \rightarrow Specialization
- \rightarrow Good documentation
- \rightarrow Ease of staffing
- \rightarrow Helps identify errors earlier.

68) Define Delphi method.

It is a structured communication technique used to gather expert opinions and reach a consensus through multiple rounds of questionnaires.

69) How to ensure software quality?

- Standard development process is followed.
- Fixing bugs and errors
- Regular testing
- User feedback

70) For what type of software; ISO standardization is required?

ISO standardization is required for critical, large-scale, or commercial software where quality, safety, and interoperability are crucial.

71) When to schedule project time?

Project time should be scheduled during the planning phase (SRS), after defining scope and tasks, including deadline.

72) What is software maintenance? Justify with purpose.

It is the process of modifying software after deployment to fix bugs or improve performance.

Purpose: Ensures the software remains reliable, relevant, and functional over time.