

Unit III: Test management (weightage - 14 marks)

Q1 what is test plan? what are needs?
List test planning activities? (6/4m)

Test plan

- 1) Test plan is the project plan for the testing work to be done.
- 2) Test plan is detailed document that outlines test strategy, testing objectives, resources such as manpower, software, hardware, test schedule etc.
- 3) The test plan serves as blueprint to conduct software testing activities.

Need:

- ① Test plan ensures all functional and design requirements are implemented as specified in documentation.
- ② To provide a procedure for unit and system testing.
- ③ To identify the documentation process for unit and system testing.
- ④ To identify the test methods for Unit and System Testing.
- ⑤ It helps to understand the test details.
- ⑥ Provide test schedule for testing activities.
- ⑦ It helps in determining the quality

of software applications.

- ⑧ Test plan determines the time cost and effort.

Test plan activities

- ① To determine scope and the rules that need to be tested and that are not to be tested.
- ② Documenting Test strategy.
- ③ Deciding Exit & Entry criteria.
- ④ Evaluating the test estimate.
- ⑤ making sure the testing activities have been included.
- ⑥ Identifying test deliverables.
- ⑦ Identifying resource requirements.
- ⑧ Testing tasks: size & effort estimation

02 Advantages of Test Plan : (2m)

- ⇒ ① Resource allocation: Test plans help identify the resources need for project and allocate them efficiently.
- ② Schedule creation: A test plan estimates the duration of testing.
- ③ Role and responsibility definition: A test plan specifies the role and responsibilities of each team member.

~~expected~~ (2m)

~~(Q3)~~ Explain how test plan ~~is prepared~~ is prepared?

- 1) Clearly state what parts of system or product will be tested and what won't be included in testing process.
- 2) Break testing into smaller manageable task and decide on strategies or method you will use to test system.
- 3) Identify tools, people and equipment needed to complete the testing.
- 4) Create a schedule showing when each testing activity will be done.
- ⇒ List any potential risk or challenges you might face while planning or performing the testing.

~~(Q4)~~ Describe test deliverable in details. (4m)

→ Test deliverables are documents that describe the software testing process and are given to stakeholders during the software development Life cycle.

In simpler terms, they are document and report shared with stakeholder during different phases of software development process.

Different types (example) :-

- ↳ Test Case Document
- ↳ Test Plan.
- ↳ Testing strategy.
- ↳ Test Scripts
- ↳ Test Dciel.
- ↳ Defect Reports.
- ↳ Test results.
- ↳ Test Summary reports.

The test plan outlines how the system will be tested to ensure it meets specification and user needs, covering objectives, resources, schedule and methods.

Test case list specifies part of system to be tested and include detailed steps for verifying functionality.

Bug reports describe issues found during testing and are typically tracked in database.

Testing tools and automation include the tools used for testing, whether bought or created by the team. Metrics and summaries show the progress and results of testing using charts (graphs) or reports.

Q5 Explain Staffing and Resource Requirement in detail. (4 marks).

⇒ Staffing

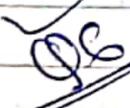
- 1) Staffing is done based on time available for the project for completion.
- 2) The people are assigned to tasks based on requirement of job skills and experience.
- 3) If people are not having skills for specific requirements of the job then appropriate training programs are needed.

Resource Requirements -

while planning for testing the project, the project manager should get estimates of hardware and software requirements.

Resources required are :-

- OS for execution.
- RAM - processor required for system under test.
- Appropriate no. of license of all the software.
- Test Automation tool if required.



Q6 Describe test infrastructure management. (4m).

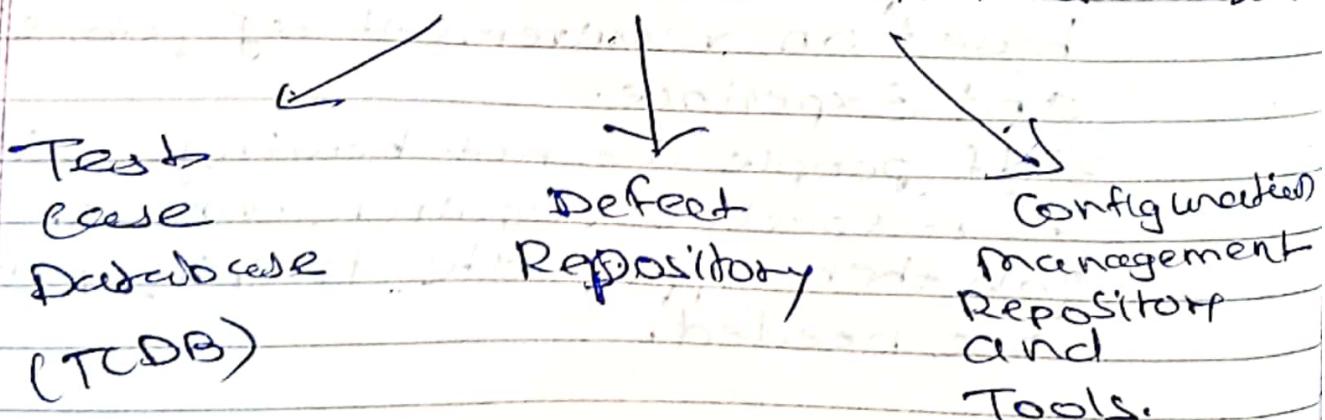


Test Infrastructure management -

Testing requires a robust infrastructure to be planned upfront.

This infrastructure is made up of three essential elements.

Essential Elements or Components of test Infrastructure



① A test case database (TCDB)

A test case database captures all the relevant information about the test cases in organisation. Some of entities and the attributes are given below.

<u>Entity</u>	<u>Purpose</u>	<u>Attributes</u>
Test case.	Records all the info about the tests.	1) Testcase ID 2) Name of test case 3) owner of test case 4) Status.
Test case product reference	Provides mapping between test case and corresponding feature of product.	1) Testcase ID 2) module ID
Test case run history	Provides history of of when test was running and what was result	1) Testcase ID 2) Run date 3) Time 4) Status of run.
Test case - defect cross reference	Details of test cases introduced to test certain defects detected in product	1) Testcase ID 2) Defect reference

② Defect Repository

It captures relevant details of defects.

It is tool of communication.

Defect matrices are derived from defect repository.

The information that defect repository includes.

↳ Defect details.

↳ Defect Test Detail.

↳ Fix details.

↳ Communication.

③ Configuration management (cm)

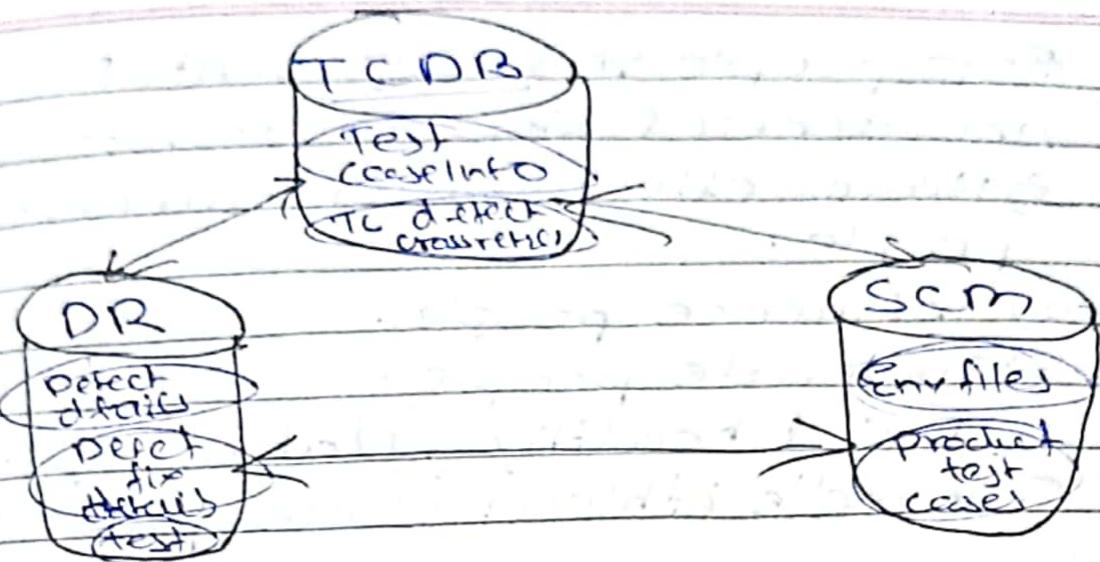
repository and tool.

Software Configuration management is process of managing and controlling changes in documents, codes, and other parts of software during development.

It keeps track of changes and file version.

Change control make sure:

- changes are approved before being made.
- Changes by one person aren't accidentally lost or overwritten by others.
- Each changes create a new version of file, which can be re-created later.
- Every one has latest version of files.



~~Q1~~ Desirable test management with test people management. (4m).

- ⇒ 1) People management is important of any project.
- 2) Managing people is very important in any project, especially in testing.
- 3) People working on project often rely on their own skills but may not know to work well with others.
- 4) Good people management includes hiring, motivating, and keeping right team members.
- 5) Team-building activities should happen regularly, not just once.
- 6) These activities need to be updated often to keep everyone working well together.
- 7) Everyone on team should understand and share the same goals for success.

For people management Following are general steps taken:

- 1) Have effective communication with people.
- 2) Influence people.
- 3) Motivate people.
- 4) Build healthy relationships.
- 5) Handle ethical issues properly.

Good Peoples Helps in

- i) Achieving project target.
- ii) Communicating more effectively.
- iii) Co-operate effectively.

~~Q8~~ Explain Test Case Specification. (4m)

Test Case Specification In software testing is document that describes exactly how to test specific part of software to make sure it works correctly.

It's like set of instruction for tester to follow.

- 1) Test Case ID: A unique identifier for test case, usually number or code.
- 2) Test Case Name: A descriptive name that explains purpose of test case.
- 3) Test Description: A short explanation of what you're testing such as check if login works.

- 4) Test steps: Detailed steps you need to follow to perform test.
- 5) Test Data: Any specific information you need for the test, like username & password.
- 6) Expected Result: What should happen if everything works correctly.
- 7) Actual Result: What actually happens when you do the test.
- 8) Pass/Fail criteria: the test case is considered successful or not.

~~Q9~~ State the contents of "Test Summary Report". Used in test reporting. (4m)

or

Describe the process of preparing summary report in test planning.

- ⇒ 1) At the completion of test cycle, a test summary report is produced.
- 2) This report gives insights to the senior management about the fitness of the product for release.
- 3) Test summary report is important deliverable which is prepared at the end of Testing project or rather after testing is completed.
- 4) Summary report template provide is useful guideline for what goes into such a report.

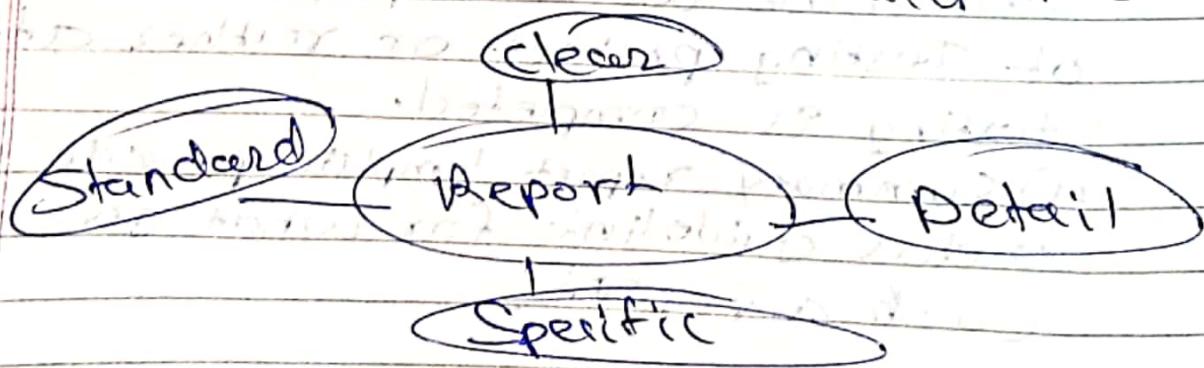
incident report
cycle report
summary report

- 5) In addition to include the kind of charts and table shown earlier, you might discuss important events that occurred during testing, the objectives of testing and whether they are achieved, the best strategy followed and how well it worked, and the overall effectiveness of test effort.

Test summary Report Template

Test Summary Report
Test summary-report identifies:
Evaluation:
Summary:
Variance:
Summary of activities:
Approach:
Comprehensive assessment:
Summary of result:

Good Test Reports should be



Q10 Explain and describe concept of Executing Test cases.

- 1) The prepared test case has to be executed at appropriate times during the project.
- 2) ~~care~~ Test case execution is process of running test cases on the software to ensure that it meets the specified requirements.
- 3) During the Test Case execution, the defect repository (DR) must be updated with:
 - a) Defects that are fixed currently
 - b) New defects are found.
- 4) Test team communicates with the development team with the help of defect repository.
- 5) Test should be run when entry criteria for test gets satisfied and should be accomplished only when exit criteria satisfied.

Expected Define Test Reporting. (2m)

A test report is summary of testing objectives, activities and results to help stakeholders better understand both testing and product quality.

Test reporting contains a summary of the test, including what was tested, when and how it was tested, and testing environment utilized.

Ques. 3

- Q3. Explain concept of Baseline Testing (UML2.0) in Test Plan.
- It is a type of Non-functional testing which means it has nothing to do with testing of functionality of an application.
- Rather testing of documents is done where whole create solid foundation of work to be done in future.
- A baseline is formal document that acts as a base document for future work.
- Example, for making building you require a base.
- Same things applies to test. we need to create Baseline, from which further testing is done.

Explain Define Test Process (2m)

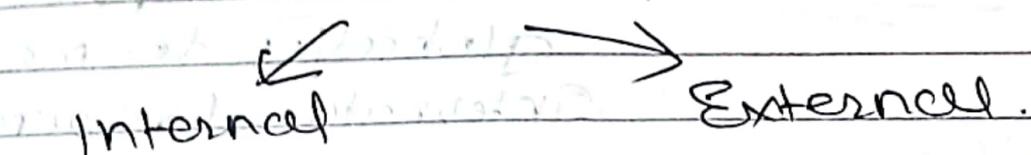
- Test is not single activity. Instead, it is set of process.
- It starts with test planning then designing test case, execution, evaluation and at end test closure.

Steps: Test Planning, Test analysis & design, Test Implementation & Design, Execution of test, and test reporting
→ Test closure activities.

(Q12) Describe standards included in Test management. (4marks).

→ standards in test management are guidelines and best practice to ensure consistency, efficiency, and quality in testing process.

Standards: Internal & External



Internal standards

① Naming and Storage Conventions:

Ensure meaningful names for easy identification of test artifacts (e.g. mol.sh)

② Documentation standards:

Use clear header comments, inline comments, and maintain an up-to-date change history.

③ Test coding standards:

Ensure proper initialisation, consistent naming, reusable artefacts, and standard interfaces.

④ Test Reporting standards:

Provide consistent, timely test progress reports with standard format and details.

External standards

- ① Customer standards: Defined by customer requirements.
- ② National standards: Defined by country's regulatory entities.
- ③ International standards: Applicable globally to meet international requirements.

End

Practical exercise

~~Answer~~