Fundamentals of Software Testing – MCQ 1 – DAY1

1. Consider the following activities:
   (i) Implementing an automated test case
   (ii) Performing the review of the architectural design
   (iii) Checking grammar and spelling of a user manual
   (iv) Planning test activities
   (v) Designing a test case
   Select all the activities that are part of the testing process.
   (A) (i), (iv), and (v)
   (B) (ii) and (v)
   (C) (i), (iii), and (iv)
   (D) **(i), (ii), (iii), (iv), (v)**

2. Choose the correct sequence of events.
   (A) **A mistake results in defect, which in turn may result in a failure.**
   (B) A defect results in mistake, which in turn may result in a failure.
   (C) A failure results in a mistake, which in turn may result in a defect.
   (D) A defect results in failure, which in turn may result in a mistake

3. A tester, together with a developer, architect, and test manager, participates in the inspection of an architectural design of a component. The design was done by the architect. During the inspection, the test manager finds an error in the design. After the inspection, the tester creates the new, corrected version of the design. Using the new design, the developer implements the component.
   Who performed the debugging?
   (A) **Tester**
   (B) Developer
   (C) Architect
   (D) Test manager

4. Recently, your organization outsourced the test team for conducting the performance testing. You talk with a developer, who told you that it was a very good idea, because now they—developers—do not need to care so much about the performance issues, as they will be found by the test team. This is an example of
   (A) Benefit of test independence, as developers may focus on other activities
   (B) Benefit of test independence, as the outsourced testing team may see other and

different defects and is unbiased
(C) Drawback of test independence, as the outsourced team is isolated from the developers
(D) **Drawback of test independence, as some of the team members may lose a sense of responsibility for quality**

5. A tester prioritizes testing modules that previously had more bugs. Which principle applies?
a) Pesticide Paradox
b) **Defect Clustering**
c) Early Testing
d) Context Dependence

6. Which of the following can be the root cause of the fact that a developer implemented an ineffective algorithm?
(A) Poor performance of the system
(B) Acceptance testing done by testers in the client's location, not by client
(C) **Developer's lack of education in the area of algorithms and complexity**
(D) Memory leaks that occurred after a long time of the software operation

7. Select the right relation between quality assurance, quality control, and testing.
(A) Testing is a synonym of quality assurance, which is a part of quality control.
(B) **Testing is a form of quality control, which is a part of quality assurance.**
(C) Quality control is a form of quality assurance, which is a synonym for testing.
(D) Quality control is a synonym of quality assurance, which is a part of testing.

8. Testers may test the software more efficient than developers, because:
(A) Testers may have programming skills.
(B) Testers usually do not have programming skills.
(C) Developers' responsibility is to write code, not to test it.
(D) **Developers have the emotional attitude to their code.**

9. Which of the following is a clear advantage of static testing over dynamic testing?
(A) Static techniques can locate defects other than dynamic techniques.
(B) Static techniques are cheaper than dynamic techniques.
(C) **Static techniques can detect defects earlier than dynamic techniques.**
(D) Static techniques can detect failures, while dynamic techniques are only able to find defects.

10. In which moment of a project's life cycle should the test planning occur?
(A) At the beginning. All further activities should be done according to that plan.
(B) **It is a continuous activity, as feedback from different test activities may impact the plans and force us to change them.**
(C) During the test analysis phase, because planning is an analytical activity.
(D) In sequential models, planning should occur through the whole project's life cycle, while in the iterative models, planning should be generally avoided.
11. To overcome the pesticide paradox, we should:
(A) Use test techniques to derive a finite number of test cases for a potentially infinite number of combinations of input values.
(B) Start testing activities as early as possible.
(C) Align the test strategy to the context.
(D) **Review and update tests on a regular basis.**

12. Choose the correct sentence about defects, failures, and errors.
(A) A failure is caused by one or more errors, which are caused by one or more defects.
(B) Code review can reveal a failure.
(C) **Executing a defect in code during testing may result in actual result being equal to the expected result.**
(D) A root cause of every failure is one or more human errors

13. Consider the following criterion: "there are no failures with high severity." What type of a criterion can it be?
(A) Entry criterion for the "test design" phase
(B) Entry criterion for the "test implementation" phase
(C) **Exit criterion for the "test execution" phase**
(D) Exit criterion for the "test completion" phase

14. Which of the following is not a typical tester's task?
(A) Preparing test data
(B) Automating the tests
(C) **Supporting the selection of test tools**
(D) Reviewing and contributing to test plans

15. What is the direct consequence of communicating defects by a tester to other team members in an unconstructive way?
(A) Decreasing the team effectiveness

(B) **Conflict in the team**
(C) Increasing the team effectiveness
(D) Losing a sense of responsibility for quality

16. Analyzing defects in order to propose preventive actions so that this defect's reoccurrence can be avoided is a process that is called:
(A) **Root cause analysis**
(B) Debugging
(C) Review
(D) Dynamic testing

17. Evaluating testability of the test basis and test items takes place during which phase of the testing process?
(A) Test design
(B) Test planning, monitoring, and control
(C) **Test analysis**
(D) Test implementation

18. Choose a good example of why testing is necessary.
(A) It allows software development process to be aligned with the testing process.
(B) It fixes defects detected in software.
(C) **It allows to detect and prevent from contradictions in the requirements.**
(D) It allows to manage better the testing process.

19. Why are the validation activities examples of a positive role of testing?
(A) They help to detect defects in the early phases of the software life cycle.
(B) They help to prevent ambiguities in requirements.
(C) They help to reduce the risk of logic or calculation errors within the code and test cases, because they enforce testers to work closely with developers.
(D) **They help to ensure that the system meets the client's expectations.**

20. A support in setting up adequate configuration management of testware for traceability is the responsibility of which project role?
(A) Tester
(B) Test automation engineer
(C) Developer
(D) **Test manager**

21. Confirmation by examination and through provision of objective evidence that specified requirements have been fulfilled is called:
(A) Validation
(B) Debugging
(C) **Verification**
(D) Root cause analysis

22. Which of the following is not an example of a test objective?
(A) **Correcting the defect found**
(B) Preventing from defect occurrence
(C) Gaining confidence about the system quality
(D) Providing to stakeholders an information about system quality

23. In order to implement effective monitoring and control, it is critical to:
(A) **Establish traceability between the test basis and the various test work products.**
(B) Understand where we are at any time in the project.
(C) Provide the basis for relating testing work products to stakeholders in terms that they can understand.
(D) Evaluate the test coverage against requirements.

24. What is the difference between static and dynamic techniques, with respect to their objectives?
(A) Static techniques directly detect defects, while dynamic techniques directly detect failures.
(B) Static techniques are usually applied at the early SDLC phases, while dynamic techniques at the later phases.
(C) **There is no difference, because they both try to detect defects as early as possible.**
(D) Static techniques require programming skills, while dynamic techniques don't.

25. Which of the following skills is the least important one in testing?
(A) **Programming skills**
(B) Curiosity
(C) Attention to detail
(D) Communication skills

26. Pareto rule says that a small number of causes are responsible for the major part of the effects. This rule is a basis of which testing principle?

(A) **Defect clustering**
(B) Early testing
(C) Pesticide paradox
(D) Exhaustive testing is impossible

27. Which of the following best describes the test basis?
(A) Information used as the basis for achieving specific test objective
(B) Information used as the basis for test monitoring and control
(C) Information used as the basis for the oracle when determining the expected result
(D) **Information used as the basis for test analysis and design**

28. Typically, the person responsible for fixing the defect in the artifact under test is:
(A) **Artifact's author**
(B) Tester
(C) Debugger
(D) Client

29. Which of the following is an example of an error?
(A) One of the source code instruction is 'x :¼ x + 1', but it should be 'x :¼ y + 1'.
(B) **A tester makes a mistake and introduces a defect into the test script.**
(C) A software crashes because of overheating of the processor
(D) An ATM machine should dispense $10, but it dispended $20

30. Choose the best example of a failure that results from the following root cause: '"a low quality of a functional requirement specification."
(A) Functional requirement specification cannot be a subject to a review process.
(B) **A bank system incorrectly calculates interest rate.**
(C) System response time is too long when more than 100 users are logged to the system at the same time.
(D) The requirement id number does not follow the numbering rules accepted and used in the organization.

31. Select the correct statement about the objectives of testing.
(A) **Testing objectives may vary depending upon the context of the system under test.**
(B) One of the testing objectives is to correct defects raised during the development process.
(C) During the acceptance testing, the main objective is to cause as many failures as

possible.
(D) During the acceptance testing, the main objective is to gain confidence in the system.
32. Which of the following is the best example of a quality assurance activity not related to the quality control?
(A) **Defining requirement engineering process in a way that ensures the requirements are defined at the proper level of detail**
(B) Measuring the product to give information about its quality, so that managers can undertake conscious decisions about the product and project
(C) Conducting the inspection for an architectural design to detect as many architectural defects as possible
(D) Raising a defect report through the defect management system

33. You are involved as a tester in the project X, Your manager decided to move you for one week to another project Y in order to support testing in that project, because the project Y is short on testing stuff. The manager also decided that system tests in project X will be done by one of the developers. What can you say about this decision from the Foundation Level Syllabus point of view?
(A) **It is not forbidden, because different people may take over the role of tester.**
(B) It is a bad decision, because developer cannot take over the responsibilities of another role.
(C) It is a bad decision, because the better idea would be to give the responsibility of system testing in project X to some other tester moved to project X from project Y.
(D) It is not forbidden, because it is manager who is responsible for the project, and thus, he can make any decision he want.

34. Comparing with static testing, which of the following problems can be easier to found through dynamic testing?
(A) Performance requirement saying that “the system should work efficiently” is ambiguous.
(B) High coupling and cyclomatic complexity of a component will cause maintainability problems.
(C) **The system allows to obtain the admin rights by an unauthorized user.**
(D) Developers do not follow the variables naming standard while writing code.

35. A tester raised a bug in the program that calculates the mean value of a set of variables: when the input set of variables is empty, the software crashes. Developer

found that this is caused by the division by 0 in the instruction:

```
meanValue := SumOfVariables / NumberOfVariables
```

He changed this instruction into the following code:

```
IF (NumberOfVariables> 0) THEN
  meanValue := SumOfVariables / NumberOfVariables
ELSE
  meanValue := 0
```

The developer's activity in this scenario is:
(A) Inspection
(B) **Debugging**
(C) Testing
(D) Code review

36. In computability theory, the halting problem is the problem of determining, whether the program will finish or continue to run forever for a given input. In 1936 Alan Turing proved that a general algorithm to solve the halting problem for all possible program-input pairs cannot exist. This is a formal proof of which of the Seven Testing Principles?
(A) Absence-of-errors fallacy.
(B) Exhaustive testing is impossible.
(C) **Testing shows presence of defects.**
(D) Pesticide paradox.

37. Choose the correct sentence about the developer's and the tester's mindsets.
(A) They are different, because a tester's primary goal is to raise bugs, and a developer's primary task is to debug and fix them.
(B) **They are different, because a developer's primary goal is to design and build a product and a tester's primary task is to verify its quality.**
(C) They are the same, because the primary goal for both of them is to care about the highest possible product quality.
(D) They are the same, because tester and developer are just the project roles and any person can fulfill both these roles.

38. Which of the following activities is related to quality control?
(A) Redefining the testing process in the organization
(B) **Performing the code review**
(C) Organizing a training for developers about good programming practices
(D) Improving the testing process in the organization

39. Testing is a constructive activity, but it may be perceived as a destructive one. What is the reason of this phenomenon?
(A) Testing is an expensive process and may be perceived as the one that does not bring any added value.
(B) **Identifying failures during testing may be perceived as a criticism against the product or developers.**
(C) Independent testers may be perceived as a “bottleneck” in the testing process.
(D) Testers who do not have programming skills may be perceived as the useless team members.

40. In which phase of the test process are entry and exit criteria defined?
(A) **Test planning, monitoring, and control**
(B) Test analysis
(C) Test design
(D) Test implementation