

**Swedish Software Testing Board (SSTB)  
International Software Testing Qualifications Board (ISTQB)**

# **Foundation Certificate in Software Testing Version 2018**

## **Examination Questions 2018-07-23**

**Time allowed: 1:00  
(For non-native English speakers 1:15)**

**There are 40 questions, each question 1 point  
You need 26 points or more to pass**

**You have to follow directives given to you by the invigilator during the whole exam**

**Mark your answers in the provided answer sheet. Try to answer all 40 questions.  
Select one option per question if nothing else indicated. Erase any answer you  
decide to change and mark your new chosen answer clearly.**

**You are not allowed to keep the questionnaire, other documents or notes. All papers  
must be handed back to the invigilator at the end of the exam.**

9999

1.	<p><b>Which one of the following is the <u>BEST</u> description of statement coverage?</b></p> <ul style="list-style-type: none"><li>a) It is a metric, which is used to calculate and measure the percentage of statements in the source code which have been executed</li><li>b) It is a metric that give a true/false confirmation if all statements are covered or not</li><li>c) It is a metric which is used to calculate and measure the percentage of test cases that have been executed</li><li>d) It is a metric, which is used to calculate and measure the number of statements in the source code which have been executed by test cases that are passed</li></ul> <p>Please select exactly 1 option</p>
2.	<p><b>An employee's bonus is to be calculated.</b> It cannot be negative, but it can be calculated down to zero. The bonus is based on the length of employment. The categories are: less than or equal to 2 years, more than 2 years but less than 5 years, 5 or more years, but less than 10 years, 10 years or longer. What is the minimum number of test cases required to cover all valid equivalence partitions for calculating the bonus?</p> <ul style="list-style-type: none"><li>a) 3</li><li>b) 4</li><li>c) 2</li><li>d) 5</li></ul> <p>Please select exactly 1 option</p>

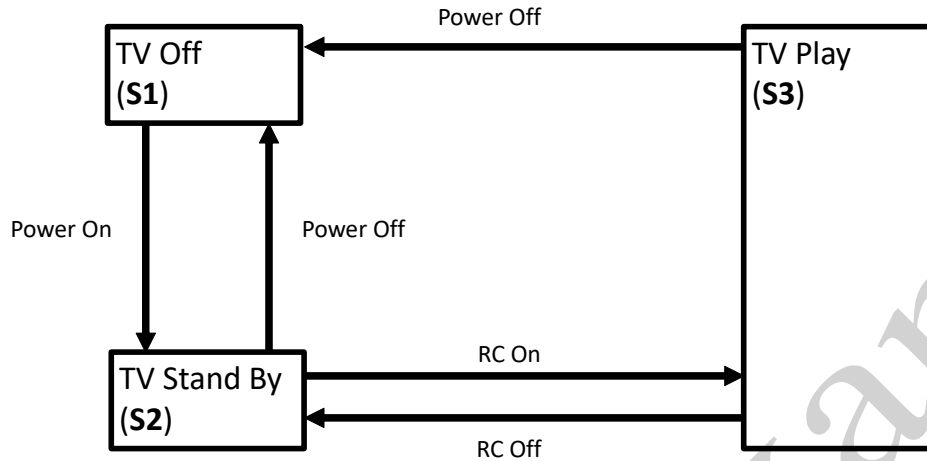
<p><b>3.</b></p>	<p><b>You are testing a new version of software for a coffee machine.</b></p> <p>The machine can prepare different types of coffee based on four categories. i.e. coffee size, sugar, milk and flavor.</p> <p>The criteria are as follows:</p> <ul style="list-style-type: none"> <li>• Coffee size (small, medium, large),</li> <li>• Sugar (none, 1 unit, 2 units, 3 units, 4 units),</li> <li>• Milk (yes or no),</li> <li>• Coffee flavor (none, caramel, hazelnut, vanilla).</li> </ul> <p>You are now writing a defect report with the following information:</p> <p><b>Title:</b> Low coffee temperature.</p> <p><b>Short summary:</b> When you select coffee with milk, the time for preparing coffee is too long and the temperature of the beverage is too low (less than 40 °C )</p> <p><b>Expected result:</b> The temperature of coffee should be standard (about 75 °C).</p> <p><b>Degree of risk:</b> Medium</p> <p><b>Priority:</b> Normal</p> <p>What valuable information is <b><u>MOST</u></b> likely to be omitted in the above defect report?</p> <ol style="list-style-type: none"> <li>Ideas for improving the test case</li> <li>Data identifying the tested coffee machine</li> <li>The actual test result</li> <li>Status of the defect</li> </ol> <p>Please select exactly 1 option</p>
<p><b>4.</b></p>	<p><b>What is checklist-based testing?</b></p> <ol style="list-style-type: none"> <li>A test technique in which tests are derived based on the tester's knowledge of past failures, or general knowledge of failure modes</li> <li>An experience-based test technique whereby the experienced tester uses a high-level list of items to be noted, checked, or remembered, or a set of rules or criteria against which a product must be verified</li> <li>An approach to testing where the testers dynamically designs and executes tests based on their knowledge, exploration of the test item and the results of previous tests</li> <li>Procedure to derive and/or select test cases based on an analysis of the specification, either functional or non-functional, of a component or system without reference to its internal structure</li> </ol> <p>Please select exactly 1 option</p>

5.	<p><b>A speed control and reporting system has the following characteristics:</b>          If you drive 50 km/h or less, nothing will happen.          If you drive faster than 50 km/h, but 55 km/h or less, you will be warned.          If you drive faster than 55 km/h but not more than 60 km/h, you will be fined.          If you drive faster than 60 km/h, your driving license will be suspended.</p> <p>Which would be the most likely set of values (km/h) identified by two-point boundary value analysis?</p> <p>a) 50, 51, 55, 56, 60, 61          b) 50, 55, 60          c) 0, 49, 50, 54, 59, 60          d) 49, 50, 54, 55, 60, 62</p> <p>Please select exactly 1 option</p>
6.	<p><b>Which one of the following is the characteristic of a metrics-based approach for test estimation?</b></p> <p>a) Average of calculations collected from business experts          b) Budget which was used by a previous similar test project          c) Overall experience collected in interviews with test managers          d) Overall estimate agreed with the developers</p> <p>Please select exactly 1 option</p>
7.	<p><b>Which <u>TWO</u> of the following statements about the relationship between statement coverage and decision coverage are true?</b></p> <p>a) Statement coverage is stronger than decision coverage          b) Decision coverage can never reach 100%          c) 100% decision coverage guarantees 100% statement coverage          d) Decision coverage is stronger than statement coverage          e) 100% statement coverage guarantees 100% decision coverage</p> <p>Please select exactly 2 options</p>

8.	<p><b>Which TWO of the following statements about static testing are <u>MOST</u> true?</b></p> <ul style="list-style-type: none"> <li>a) It makes it possible to find run-time problems early in the lifecycle</li> <li>b) It makes dynamic testing less challenging</li> <li>c) A cheap way to detect and remove defects</li> <li>d) Early validation of user requirements</li> <li>e) When testing safety-critical system, static testing has less value because dynamic testing finds the defects better</li> </ul> <p>Please select exactly 2 options</p>
9.	<p><b>A video application has the following requirement:</b> The application shall allow playing a video on the following display sizes:</p> <ul style="list-style-type: none"> <li>1. 640x480.</li> <li>2. 1280x720.</li> <li>3. 1600x1200.</li> <li>4. 1920x1080.</li> </ul> <p>Which of the following list of test cases is a result of applying the Equivalence Partitioning test technique to test this requirement?</p> <ul style="list-style-type: none"> <li>a) Verify that the application can play a video on any one of the display sizes in the requirement (1 test)</li> <li>b) Verify that the application can play a video on each of the display sizes in the requirement (4 tests)</li> <li>c) Verify that the application can play a video on a display of size 640x480 and 1920x1080 (2 tests)</li> <li>d) Verify that the application can play a video on a display of size 1920x1080 (1 test)</li> </ul> <p>Please select exactly 1 option</p>
10.	<p><b>Which of the following metrics would be MOST useful to monitor during test execution?</b></p> <ul style="list-style-type: none"> <li>a) Percentage of planned test cases prepared</li> <li>b) Percentage of work done in test environment preparation</li> <li>c) Percentage of executed test cases</li> <li>d) Percentage of work done in test case preparation</li> </ul> <p>Please select exactly 1 option</p>

11.	<p><b>Which one of the following is the <u>BEST</u> description of a test condition?</b></p> <ul style="list-style-type: none"><li>a) The capability of the software product to provide functions which meet stated and implied needs when the software is used under specified conditions</li><li>b) An attribute of a component or system specified or implied by requirements documentation</li><li>c) The percentage of all single condition outcomes that independently affect a decision outcome that have been exercised by a test case suite</li><li>d) An aspect of the test basis that is relevant to achieve specific test objectives</li></ul> <p>Please select exactly 1 option</p>
12.	<p><b>Which of the following should <u>NOT</u> be a trigger for maintenance testing?</b></p> <ul style="list-style-type: none"><li>a) Decision to test the maintainability of the software</li><li>b) Decision to test the system after migration to a new operating platform</li><li>c) Decision to test after "hot fixes"</li><li>d) Decision to test if archived data is possible to be retrieved</li></ul> <p>Please select exactly 1 option</p>

13. Which of the following statements about the given state transition diagram and table of test cases is TRUE?



Test Case	1	2	3	4	5
Start State	S1	S2	S2	S3	S3
Input	Power On	Power Off	RC On	RC Off	Power Off
Expected Final State	S2	S1	S3	S2	S1

- a) The given test cases represent only some of the valid transitions in the state transition diagram
- b) The given test cases represent all possible valid transitions in the state transition diagram
- c) The given test cases represent sequential pairs of transitions in the state transition diagram
- d) The given test cases can be used to cover both valid and invalid transitions in the state transition diagram

Please select exactly 1 option

14.	<p><b>Which of the following describes the main activities of a formal review?</b></p> <ul style="list-style-type: none"> <li>a) Individual review, issue communication and analysis, rework, closure, follow-up, root cause analysis</li> <li>b) Initiation, backtracking, individual review, issue communication and analysis rework, follow-up</li> <li>c) Planning, initiate review, individual review, issue communication and analysis, fixing and reporting</li> <li>d) Planning, individual review, issue communication and analysis, rework, closure, follow-up</li> </ul> <p>Please select exactly 1 option</p>
15.	<p><b>Which of the following statements <u>CORRECTLY</u> describes one of the seven key principles of software testing?</b></p> <ul style="list-style-type: none"> <li>a) With sufficient effort and tool support, exhaustive testing is feasible for all software</li> <li>b) By using automated testing, it is possible to test everything</li> <li>c) It is impossible to test all input and precondition combinations in a system</li> <li>d) The purpose of testing is to prove the absence of defects</li> </ul> <p>Please select exactly 1 option</p>
16.	<p><b>Which of the following are typical exit criteria from testing?</b></p> <ul style="list-style-type: none"> <li>a) Reliability measures, degree of tester's independence, and product completeness</li> <li>b) Reliability measures, test cost, schedule and unresolved defects</li> <li>c) Reliability measures, test cost, availability of testable code, time to market, and product completeness</li> <li>d) Time to market, residual defects, tester qualification, degree of tester independence and test cost</li> </ul> <p>Please select exactly 1 option</p>
17.	<p><b>Which of the below tasks is performed during the test analysis activity of the test process?</b></p> <ul style="list-style-type: none"> <li>a) Creating test suites from test scripts</li> <li>b) Identifying any required infrastructure and tools</li> <li>c) Analyzing lessons learned for process improvement</li> <li>d) Evaluating the test basis for testability</li> </ul> <p>Please select exactly 1 option</p>



<b>18.</b>	<p><b>Which one of the following is <u>NOT</u> included in a test summary report?</b></p> <ul style="list-style-type: none"><li>a) Evaluation of the quality of the test item</li><li>b) Deviations from the test approach</li><li>c) Defining pass/fail criteria and objectives of testing</li><li>d) Measurements of actual progress against exit criteria</li></ul> <p>Please select exactly 1 option</p>
<b>19.</b>	<p><b>In what way can testing be part of Quality assurance?</b></p> <ul style="list-style-type: none"><li>a) It reduces the level of risk to the quality of the system</li><li>b) It ensures that standards in the organization are followed</li><li>c) It measures the quality of software in terms of number of executed test cases</li><li>d) It ensures that requirements are detailed enough</li></ul> <p>Please select exactly 1 option</p>
<b>20.</b>	<p><b>Which of the following statements is a valid objective for testing?</b></p> <ul style="list-style-type: none"><li>a) To find as many failures as possible so that defects can be identified and corrected</li><li>b) To determine whether enough component tests were executed within system testing</li><li>c) To prove that any remaining defects will not cause any failures</li><li>d) To prove that all possible defects are identified</li></ul> <p>Please select exactly 1 option</p>

21.

**The design of a newspaper subscriptions system is being reviewed.**

The expected system users are:

- Subscribers
- Technical support team
- Billing department
- Database administrator

Each type of user logs into the system through a different login interface (e.g. subscribers login via a web page; technical support via an application). Different reviewers were requested to review the system’s login flow from the perspective of the above user categories.

Which of the following review comments is **MOST LIKELY** to have been made by all reviewers?

a) The log in flow is un-intuitive since it requires entering the password first, before the user name can be keyed-in

b) After logging-in to the database application, there is no log-out function

c) The login to access the billing information should also allow access to subscribers’ information and not force a second login session

d) The login page on the web is cluttered with too much advertisement space. As a result, it is hard to find the "forgot password?" link

Please select exactly 1 option

22.

**A company's employees are paid bonuses if they work more than a year in the company and achieve individually agreed targets.**

The following decision table has been designed to test the logic for paying bonuses:

		T1	T2	T3	T4	T5	T6	T7	T8
<b>Condi- tions</b>									
Cond1	Employment for more than 1 year?	YES	NO	YES	NO	YES	NO	YES	NO
Cond2	Agreed target?	NO	NO	YES	YES	NO	NO	YES	YES
Cond3	Achieved target?	NO	NO	NO	NO	YES	YES	YES	YES
<b>Action</b>									
	Bonus payment?	NO	NO	NO	NO	NO	NO	YES	NO

Which test cases could be eliminated in the above decision table because the test case wouldn’t occur in a real situation?

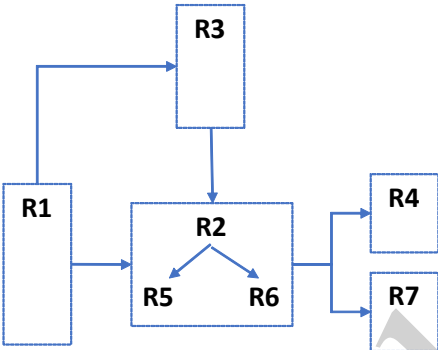
a) T5 and T6

b) T3 and T4

c) T7 and T8

d) T1 and T2

Please select exactly 1 option

23.	<p><b>Which <u>TWO</u> of the following can affect and be part of test planning?</b></p> <ul style="list-style-type: none"> <li>a) Budget limitations</li> <li>b) Test log</li> <li>c) Test objectives</li> <li>d) Use case</li> <li>e) Failure rate</li> </ul> <p>Please select exactly 2 options</p>
24.	<p><b>The following diagram shows the logical dependencies between a set of seven requirements, where a dependency is shown by an arrow.</b> For example, "R1 -&gt; R3" means that R3 depends on R1.</p>  <pre> graph LR     R1 --&gt; R3     R1 --&gt; R2     R3 --&gt; R2     R2 --&gt; R5     R2 --&gt; R6     R5 --&gt; R7     R6 --&gt; R7     R4   </pre> <p>Which one of the following options structures the test execution schedule according to the requirement dependencies?</p> <ul style="list-style-type: none"> <li>a) R1 -&gt; R2 -&gt; R5 -&gt; R6 -&gt; R3 -&gt; R4 -&gt; R7</li> <li>b) R1 -&gt; R3 -&gt; R1 -&gt; R2 -&gt; R5 -&gt; R6 -&gt; R4 -&gt; R7</li> <li>c) R1 -&gt; R3 -&gt; R2 -&gt; R5 -&gt; R2 -&gt; R6 -&gt; R4 -&gt; R7</li> <li>d) R1 -&gt; R3 -&gt; R2 -&gt; R5 -&gt; R6 -&gt; R4 -&gt; R7</li> </ul> <p>Please select exactly 1 option</p>
25.	<p><b>Which one of the following options is categorized as a black-box test technique?</b></p> <ul style="list-style-type: none"> <li>a) Techniques based on analysis of the architecture</li> <li>b) Techniques based on formal requirements</li> <li>c) Techniques checking that the test object is working according to the technical design</li> <li>d) Techniques based on the expected use of the software</li> </ul> <p>Please select exactly 1 option</p>

26.	<p><b>The following statement refers to decision coverage:</b>          “When the code contains only a single “if” statement and no loops or CASE statements, any single test case we run will result in 50% decision coverage”.          Which of the following sentences is correct?</p> <ul style="list-style-type: none"> <li>a) The sentence is false. A single test case can only guarantee 25% decision coverage in this case</li> <li>b) The sentence is true. Any single test case provides 100% statement coverage and therefore 50% decision coverage</li> <li>c) The sentence is true. Any single test case would cause the outcome of the “if” statement to be either true or false</li> <li>d) The sentence is false. The statement is too broad. It may be correct or not, depending on the tested software</li> </ul> <p>Please select exactly 1 option</p>
27.	<p><b>How can white-box testing be applied during acceptance testing?</b></p> <ul style="list-style-type: none"> <li>a) To check if large volumes of data can be transferred between integrated systems</li> <li>b) To check if all code statements and code decision paths have been executed</li> <li>c) To check if all work process flows have been covered</li> <li>d) To cover all web page navigations</li> </ul> <p>Please select exactly 1 option</p>
28.	<p><b>Which of the following BEST describes how tasks are divided between the test manager and the tester?</b></p> <ul style="list-style-type: none"> <li>a) The test manager plans testing activities and chooses the standards to be followed, while the tester chooses the tools and controls to be used</li> <li>b) The test manager plans, organizes, and controls the testing activities, while the tester specifies and executes tests</li> <li>c) The test manager plans and organizes the testing and specifies the test cases, while the tester prioritizes and executes the tests</li> <li>d) The test manager plans, monitors, and controls the testing activities, while the tester designs tests and decides about automation frameworks</li> </ul> <p>Please select exactly 1 option</p>

29.	<p><b>Which of the following options are roles in a formal review?</b></p> <ul style="list-style-type: none"> <li>a) Developer, Moderator, Review leader, Reviewer, Tester</li> <li>b) Author, Moderator, Manager, Reviewer, Developer</li> <li>c) Author, Moderator, Review leader, Reviewer, Scribe</li> <li>d) Author, Manager, Review leader, Reviewer, Designer</li> </ul> <p>Please select exactly 1 option</p>
30.	<p><b>Differentiate the following test work products,1-4, by mapping them to the right description, A-D.</b></p> <ul style="list-style-type: none"> <li>1. Test suite.</li> <li>2. Test case.</li> <li>3. Test script.</li> <li>4. Test charter.</li> </ul> <ul style="list-style-type: none"> <li>A. A group of test scripts or test execution schedule.</li> <li>B. A set of instructions for the automated execution of test procedures.</li> <li>C. Contains expected results.</li> <li>D. An event that could be verified.</li> </ul> <ul style="list-style-type: none"> <li>a) 1D, 2B, 3A, 4C</li> <li>b) 1A, 2C, 3B, 4D</li> <li>c) 1D, 2C, 3B, 4A</li> <li>d) 1A, 2C, 3D, 4B</li> </ul> <p>Please select exactly 1 option</p>
31.	<p><b>Which one of the following is <u>TRUE</u>?</b></p> <ul style="list-style-type: none"> <li>a) The purpose of regression testing is to check if the correction has been successfully implemented, while the purpose of confirmation testing is to confirm that the correction has no side effects</li> <li>b) The purpose of regression testing is to check if the new functionality is working, while the purpose of confirmation testing is to check if the originally defect has been fixed</li> <li>c) The purpose of regression testing is to detect unintended side effects, while the purpose of confirmation testing is to check if the system is still working in a new environment</li> <li>d) The purpose of regression testing is to detect unintended side effects, while the purpose of confirmation testing is to check if the original defect has been fixed</li> </ul> <p>Please select exactly 1 option</p>

32.	<p><b>Which of the following statements correctly describes the difference between testing and debugging?</b></p> <ul style="list-style-type: none"> <li>a) Testing removes faults; debugging identifies the causes of failures</li> <li>b) Testing shows failures caused by defects; debugging finds, analyzes, and removes the causes of failures in the software</li> <li>c) Testing identifies the source of defects; debugging analyzes the defects and proposes prevention activities</li> <li>d) Testing prevents the causes of failures; debugging removes the failures</li> </ul> <p>Please select exactly 1 option</p>
33.	<p><b>Which one of the following is <u>MOST</u> likely to be a benefit of using test execution tools?</b></p> <ul style="list-style-type: none"> <li>a) It is easy to maintain version control of test assets</li> <li>b) It is easy to run regression tests</li> <li>c) It is easy to design tests for security testing</li> <li>d) It is easy to create regression tests</li> </ul> <p>Please select exactly 1 option</p>
34.	<p><b>Which of the following situations is <u>NOT</u> suited for using exploratory testing?</b></p> <ul style="list-style-type: none"> <li>a) When only new and inexperienced testers are available</li> <li>b) When there is time pressure, and/or the requirements are incomplete or inapplicable</li> <li>c) When the main part of the application can be tested only at the customer's site</li> <li>d) When the system is developed and tested incrementally</li> </ul> <p>Please select exactly 1 option</p>
35.	<p><b>Which one of the following is the <u>BEST</u> definition of an incremental development model?</b></p> <ul style="list-style-type: none"> <li>a) Defining requirements, designing software and testing are done in a series with added pieces</li> <li>b) Testing is viewed as a separate phase which takes place after development has been completed</li> <li>c) Testing is added to development as an increment</li> <li>d) A phase in the development process should begin when the previous phase is complete</li> </ul> <p>Please select exactly 1 option</p>

36.	<p><b>Which of the following statements comparing component testing and system testing is <u>TRUE</u>?</b></p> <ul style="list-style-type: none"> <li>a) Test cases for component testing are usually derived from component specifications, design specifications, or data models, whereas test cases for system testing are usually derived from requirement specifications, or use cases</li> <li>b) Component testing is the responsibility of the testers, whereas system testing typically is the responsibility of the users of the system</li> <li>c) Component testing verifies the functionality of software modules, program objects, and classes that are separately testable, whereas system testing verifies interfaces between components and interactions between different parts of the system</li> <li>d) Component testing only focuses on functional characteristics, whereas system testing focuses on functional and non-functional characteristics</li> </ul> <p>Please select exactly 1 option</p>
37.	<p><b>Which one of the statements below describes a failure discovered during testing or in production?</b></p> <ul style="list-style-type: none"> <li>a) The product crashed when the user selected an option in a dialog box</li> <li>b) The developer misinterpreted the requirement for the algorithm</li> <li>c) The computation algorithm used the wrong input variables</li> <li>d) The wrong version of one source code file was included in the build</li> </ul> <p>Please select exactly 1 option</p>
38.	<p><b>There are several test strategies.</b> Which strategy (1-4) is characterized by which description (A-D) below?</p> <ul style="list-style-type: none"> <li>1. Analytical</li> <li>2. Methodical</li> <li>3. Model-based</li> <li>4. Consultative</li> </ul> <ul style="list-style-type: none"> <li>A. Tests are based on a state diagram of a required aspect of the product</li> <li>B. Tests are designed and prioritized based on the level of risk</li> <li>C. Systematic use of some predefined set of test conditions</li> <li>D. Tests are chosen based on the views of business domain experts</li> </ul> <ul style="list-style-type: none"> <li>a) 1D, 2B, 3A, 4C</li> <li>b) 1B, 2C, 3A, 4D</li> <li>c) 1D, 2C, 3B, 4A</li> <li>d) 1A, 2C, 3D, 4B</li> </ul> <p>Please select exactly 1 option</p>

<b>39.</b>	<p><b>Which test tool is characterized by the classification below?</b></p> <ol style="list-style-type: none"><li>1. Tool support for management of testing and testware</li><li>2. Tool support for static testing</li><li>3. Tool support for test execution and logging</li><li>4. Tool support for performance measurement and dynamic analysis</li></ol> <p>A. Coverage tools B. Configuration management tools C. Review tools D. Monitoring tools</p> <p>a) 1A, 2B, 3D, 4C b) 1B, 2C, 3D, 4A c) 1A, 2C, 3D, 4B d) 1B, 2C, 3A, 4D</p> <p>Please select exactly 1 option</p>
<b>40.</b>	<p><b>Which of the review types below is the <u>BEST</u> option when the review must follow a formal process based on rules and checklists?</b></p> <p>a) Inspection b) Walkthrough c) Informal Review d) Technical Review</p> <p>Please select exactly 1 option</p>



**Please return this questionnaire and all your notes together with your answer sheet at the end of the examination.**