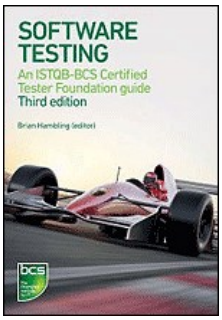

Software Testing: An ISTQB-BCS Certified Tester Foundation Guide, Third Edition

by Brian Hambling

Chapter 7: The Examination

THE EXAMINATION

The Examination Structure

The Certified Tester Foundation Level (CTFL) examination is a one-hour examination made up of 40 multiple choice questions. There are five main aspects to the examination's structure:

- The questions are all equally weighted.
- Questions are set from learning objectives stated in each section.
- The number of questions associated with each section of the syllabus is in proportion to the amount of time allocated to that section of the syllabus, which roughly translates into:
    - Section 1, seven questions.
    - Section 2, six questions.
    - Section 3, three questions.
    - Section 4, twelve questions.
    - Section 5, eight questions.
    - Section 6, four questions.

These proportions are approximate and the precise breakdown is not mandatory, but examinations will be structured along these lines and as close to these relative proportions as possible.

- The number of questions at each level of understanding will be as follows:
    - K1 50 per cent, that is 20 questions.
    - K2 30 per cent, that is 12 questions.
    - K3 and K4 20 per cent, that is 8 questions.

The breakdown of K3 and K4 questions is not defined in the exam structure, but there is only a single K4 learning objective (LO-4.4.4) and this deals with statement and decision coverage. There will therefore be no more than two K4 questions and more likely only one, and the topic will be assessing statement and/or decision coverage for completeness with respect to defined exit criteria.

This is a mandatory requirement and examinations will adhere more strictly to these proportions than to those related to the syllabus section.

Since the majority of K3 questions will be likely to be based on section 4 of the syllabus, it is likely that all or most K3 questions will be about applying test design techniques. All K4 questions will be related to statement and decision coverage.

- The pass mark is 26 correct answers and there are no penalties for incorrect answers.

The Question Types

All questions will contain a ‘stem’, which states the question, and four optional answers. One and only one of the optional answers will be correct. The remainder can be expected to be plausibly incorrect, which means that anyone knowing the correct answer will be unlikely to be drawn to any of the incorrect answers, but anyone unsure of the correct answer will be likely to find one or more alternatives equally plausible.

Questions will be stated as clearly as possible, even emphasising keywords by emboldening or underlining where this will add clarity. There should be very few negative questions (e.g. which of the following is **not** true?) and any negative questions included will be worded so that there is no ambiguity. Questions will be set to test your knowledge of the content of the topics

covered in the syllabus and not your knowledge of the syllabus itself.

There are no absolute rules for question types as long as they are appropriate to the level of understanding they are testing, but there are some common types of questions that are likely to arise.

As a general rule, K1 questions will be of the straightforward variety shown in the next box.

EXAMPLE OF A K1 QUESTION

(This one is taken from **Chapter 3**.)

What do static analysis tools analyse?

a. Design.

b. Test cases.

c. Requirements.

d. Program code.

(The correct answer is d.)

K2 questions may be of the same type as the K1 example but with a more searching stem. The more common form of K2 question, however, is known as the Roman type. This is particularly well suited to questions involving comparisons or testing the candidate's ability to identify correct combinations of information. The example in the next box is a K2 question of the Roman type.

EXAMPLE OF A K2 QUESTION

(This one is taken from **Chapter 3**.)

Which of the following statements are correct for walkthroughs?

i. Often led by the author.

ii. Documented and defined results.

iii. All participants have defined roles.

iv. Used to aid learning.

v. Main purpose is to find defects.

a. i and v are correct.

b. ii and iii are correct.

c. i and iv are correct.

d. iii and iv are correct.

(The correct answer is c.)

K3 questions test the candidate's ability to apply a topic, so the most common form of these is related to test design techniques (though this is not the only topic that can be examined at the K3 level). The next box gives a typical example of a techniques question.

EXAMPLE OF A K3 QUESTION

A system is designed to accept values of examination marks as follows:

Fail	0–39 inclusive
Pass	40–59 inclusive
Merit	60–79 inclusive
Distinction	80–100 inclusive

Which of the following sets of values are all in different equivalence partitions?

a. 25, 40, 60, 75

b. 0, 45, 79, 87

c. 35, 40, 59, 69

d. 25, 39, 60, 81

(The correct answer is b.)

K4 questions test a candidate's ability to analyse information and decide on a course of action. In this examination, K4 questions will be used to test ability to decide whether defined exit criteria have been met.

EXAMPLE OF A K4 QUESTION

A software component has the code shown below:

```
Program Biggest

A, Biggest: Integer
Begin
Read A
Biggest = 10
While A > 0
Do
      If A > Biggest
      Then Biggest = A
      Endif
Read A
Enddo
End
```

The component has exit criteria for component testing that include 100 per cent statement coverage. Which of the following test cases will satisfy this criterion?

a. 0

b. 10, 0

c. 10, 5, 0

d. 10, 11, 0

(The correct answer is d.)

Remember that K1, K2, K3 and K4 do not equate to easy, moderate or hard. The K level identifies the level of understanding being tested, not the difficulty of the question. It is perfectly possible to find K2 questions that are more difficult (in the sense of being more challenging to answer) than a K3 question. It is, however, true that K1 questions will always be the most straightforward and anyone who knows the material in the syllabus should have no difficulty in answering any K1 question. Every question has the same value; any 26 correct answers will guarantee a pass.

Remember, too, that topics can be examined at any level up to the maximum identified in the syllabus for that topic, so a K3 topic can be examined at the K1 or the K2 level.

Questions in the examination are not labelled by the K level they are testing, but the example questions at the end of each chapter of this book include examples of K1, K2, K3 and K4 questions, and these are labelled by level for your guidance.

The Sample Examination

A sample examination paper is available from the **ISTQB website**. It is designed to provide guidance on the structure of the paper and the 'rubric' (the rules printed on the front of the paper) of the real examination. The questions in the sample paper are not necessarily typical, though there will be examples of the various types of questions so that candidates are aware of the kinds of questions that can arise. Any topic or type of question in the sample paper can be expected to arise in a real examination at some time. For example, the sample paper may contain an example of a question testing the application of decision testing to a program with a looping structure in it; the existence of this question can be taken to imply that questions involving programs with looping structures may appear in the real examination. Bear in mind that the sample paper may change from time to time to reflect any changes in the syllabus or to reflect any changes in the way questions are set.

Examination Technique

In a relatively short examination there is little time to devote to studying the paper in depth. However, it is wise to pause before beginning to answer questions while you assimilate the contents of the question paper. This brief time of inactivity is also a good opportunity to consciously slow down your heart rate and regulate your breathing; nervousness is natural, but it can harm your performance by making you rush. A few minutes spent consciously calming down will be well repaid. There will still be time enough to answer the questions; a strong candidate can answer 40 questions in less than 45 minutes.

When you do start, go through the whole paper answering those questions that are straightforward and for which you know the answer. When you have done this you will have a smaller task to complete and you will probably have taken less than a minute for each question that you have already answered, giving you more time to concentrate on those that you will need more time to answer.

Next, turn to those you feel you understand but that will take you a little time to work out the correct answer, and complete as many of those as you can. The questions you are left with now should be those that you are uncertain about. You now know how long you have to answer each of these and you can take a little more time over each of them.

REVISION TECHNIQUES

There are some golden rules for exam revision:

- Do as many example questions as you can so that you become familiar with the types of questions, the way questions are worded and the levels (K1, K2, K3, K4) of questions that are set in the examination.
- Be active in your reading. This usually means taking notes, but this book has been structured to include regular checks of understanding that will provide you with prompts to ensure you have remembered the key ideas from the section you have just revised. In many cases information you need to remember is already in note form for easy learning.
- One important way to engage with the book is to work through all the examples and exercises. If you convince yourself you can do an exercise, but you do not actually attempt it, you will only discover the weakness in that approach when you are sitting in the examination centre.
- Learning and revision need to be reinforced. There are two related ways to do this:
    - By making structured notes to connect together related ideas. This can be done via lists, but a particularly effective way to make the connections is by using a technique known as mind mapping.
    - By returning to a topic that you have revised to check that you have retained the information. This is best done the day after you first revised the topic and again a week after, if possible. If you begin each revision section by returning to the 'Check of understanding' boxes in some or all of the chapters you worked with in previous revision sessions it will help to ensure that you retain what you are revising.
    - Read the syllabus and become familiar with it. Questions are raised directly from the syllabus and often contain wording similar to that used in the syllabus. Familiarity with the syllabus document will more than repay the time you will spend gaining that familiarity.

REVIEW

The layout, structure and style of this book are designed to maximise your learning: by presenting information in a form that is easy to assimilate; by listing things you need to remember; by highlighting key ideas; by providing worked examples; and by providing exercises with solutions. All you need for an intense and effective revision session is in these pages.

The best preparation for any examination is to practise answering as many realistic questions as possible under conditions as close to the real examination as possible. This is one way to use the ISTQB sample paper, or you can construct a sample paper of your own from the questions included in this book. However, the best check of your readiness of tackling the real examination would be to attempt the mock exam that is contained in **Appendix A1**. All the answers are provided in **Appendix A2** so that you can see how well you did, and a full commentary is provided in **Appendix A3** so that you can identify where you went wrong in any questions.

Good luck with your Foundation Certificate examination.