

**Sample Exam  
ISTQB® Expert Level  
Improving the Test Process  
Part 1: Assessing Test Processes  
2016**

Version 1.1

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International Software Testing Qualifications Board

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## Revision History

Version	Date	Remarks
V1.0	October 23 <sup>rd</sup> 2015	Released at ISTQB GA Shanghai
V1.1	March 18 <sup>th</sup> 2016	Updated version with minor changes in the justification for multiple choice questions 13 and 19

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## 0. Introduction

### 0.1 Purpose of this document

This document contains a the justifications for the full sample exam for the expert level module Improving the Test Process, part 1: Assessing Test Processes, following the rules described in the ISTQB Expert Level Exam Structure and Rules document.

The justifications in this document have been created by a team of subject matter experts and experienced question writers with the aim of assisting ISTQB® member boards and exam boards in their question writing activities as well as people planning to take the ISTQB Expert Level Improving the Test Process, module Assessing Test Processes examination.

These questions cannot be used as-is in any official examination, but they should serve as guidance for question writers. Given the wide variety of formats and subjects, these sample questions should offer many ideas for the individual Member Boards on how to create good questions and appropriate answer sets for their examinations. Furthermore training providers can use these questions as part of their training to prepare participants for the examination.

### 0.2 Instructions

The justifications in this document are organized in the following way:

- Question number
- Learning Objective and K-level
- Indication of correct answer
- Justifications of correctness or incorrectness per answer
- Point value of question

## 1. Part 1: Assessing Test Processes - Sample Questions

### Question 1

EITP 2.1.1 (K2) Give examples of the typical reasons for test improvement

**Justification:**

- A. Incorrect. Option ii, Increasing the efficiency of writing software programs will have no real impact on testing.
- B. Incorrect. Option iv, Testing is not directly related to sales objectives.
- C. Correct. As stated in syllabus, option iii, the requirement for organizations that provide third party support to meet client requirements for their suppliers to be at a particular capability level, option v, the desire to reduce the costs of failure by improving testing and option i, the need to show compliance to applicable standards.
- D. Incorrect. See A and B.

**Point Value:** 1

### Question 2

EITP 2.2.1 (K2) Understand the different aspects of testing, and related aspects, that can be improved

**Justification:**

- A. Incorrect. These aspects are recommended, but part of the development process. Besides this, the aspects mentioned are processes themselves.
- B. Incorrect. Dynamic and static testing can be performed at various test levels, however this is largely still based on processes. It does not take into account infrastructure, organization and people issues as stated in answer C.
- C. Correct. As stated in syllabus par. 2.2., during test improvement, processes, infrastructure, organization and people issues (tester's skills) can be addressed.
- D. Incorrect. Risks are a main on how to run a test project, they can also as part of lessons learned influence test process improvement. However, they are not as such an aspect that needs to be part of a test process improvement project

**Point Value:** 1

### Question 3

EITL 2.4.2 (K2) Compare two generic methods (Deming Cycle and IDEAL framework) for improving processes

**Justification:**

- A. Incorrect - Both models can be broadly applied for process improvement, although the IDEAL framework was initially developed by the SEI to focus especially on software process improvement. IDEAL can also be applied to test process improvement but is not specifically focused on test process improvement.

- B. Correct - The PDCA method states that management is involved in defining targets, but does not have a detailed management phase such as the IDEAL phase “Initiating” which addresses for example build sponsorship or setting up a project board.
- C. Incorrect - Within the PDCA method after finishing the Act-phase the Plan-phase is re-entered. During this step feedback has to be gathered from the stakeholders and thus the evaluation of improvement steps takes place.
- D. Incorrect - Only in the PDCA method the use of statistical methods plays a role, there is no mentioning of statistical method within the IDEAL framework

**Point Value:** 1

**Question 4**

EITP-2.5.1 (K2) Compare the characteristics of a model-based approach with analytical and hybrid approaches

**Justification:**

- A. Incorrect – Not so effective in this case. Model-based approach is effective when identifying improvements to a test process should take place. The approach itself is much more generic.
- B. Correct - Analytical-based improvement provide more focused approach for helping specific problems; in this case it will be possible to analyze the defects being found during system testing and do a causal analysis to identify root causes.
- C. Incorrect – Not so effective in this case. A hybrid approach can be applied in projects which have already been developed to a higher level of process maturity.
- D. Incorrect – Not so effective in this case. The STEP methodology is based upon the idea that testing is a lifecycle activity that begins during requirements formulation and continues until retirement of the system.

**Point Value:** 1

**Question 5**

EITP-2.5.4 (K2) Understand how the introduction of test tools can improve different parts of the test process

**Justification:**

- A. Incorrect – see (C) for justification
- B. Incorrect – see (C) for justification
- C. Correct –
  - (1) (syllabus); Test tools are implemented with the intention of increasing test efficiency, increasing control over testing or increasing quality of deliverables
  - (1) (syllabus); The process improver can use tools to aid in gathering, analyzing and reporting data, including performing statistical analysis and process modeling
  - (2) (syllabus); Improvement of the tool selection and implementation process, for example following the causal analysis for problems during a tool implementation pilot”
  - (3) (syllabus) for example test management tools align working practices regarding the documentation of test cases and logging defects.
  - (4) (syllabus) The test improver can improve the tool selection and implementation process, for example following the causal analysis for problems during a tool implementation pilot .
  - (5) is false because there is no absolute need for the use of any tool in improvement activities.
- D. Incorrect – see (C) for justification

**Point Value:** 1

### Question 6

EITP-2.5.5 (K2) Understand how improvements may be approached in other ways, for example, by the use of periodic reviews during the software life cycle, by the use of test approaches that include improvement cycles (e.g., project retrospectives in SCRUM), by the adoption of standards, and by focusing on resources such as test environments and test data

**Justification:**

- A. Correct – Per syllabus: iterative life cycle models such as SCRUM expect a continuous improvement loop as part of the normal project process input, with a project retrospective and improvement of processes (including the test process) at the end of each iteration.
- B. Incorrect – Tools can indeed make the test process more efficient (when used and implemented appropriately), but are not specific only to the iterative life cycle.
- C. Incorrect – Standards can of course help, but again are not specific to an iterative life cycle. Some iterative life cycle models, e.g., Agile, are even standard adverse.
- D. Incorrect – Some iterative life cycle strongly advocate unit testing, but of course unit testing should also be performed with other life cycle models and is not specific to iterative life cycle models.

**Point Value:** 1

### Question 7

EITP-3.1.4 (K2) Compare the specific advantages of using a model-based approach with their disadvantages

**Justification:**

- A. Incorrect - This is much more the focus of analytical approaches, specifically causal analysis.
- B. Incorrect – This is a risk of model-bases approaches, where people start following models without further thinking, so-called “model blindness”..
- C. Correct – In syllabus.
- D. Incorrect –This is typical for analytical approaches and specifically when using the GQM method

**Point Value:** 1

### Question 8

EITP-3.3.1 (K2) Summarize the background and structure of the TPI Next test process improvement model

**Justification:**

- A. Incorrect – TPI Next uses the term key area not process to cover specific aspects of testing processes. There is no grouping of those, but a clustering of checkpoints according to the business goals of the assessed organizational unit. Moreover TPI Next uses a continuous not

a staging representation, therefore the maturity of any key area can be achieved at several increasing levels.

- B.** Incorrect – TPI Next uses different checkpoints for each key area that are clustered to ensure a balanced process improvement. Maturity levels are a rating of each key area and an overall maturity level may also be attributed to the whole test process after the assessment. Planning, Acquisition and Measurements are the three groups of testing activities in STEP.
- C.** Incorrect – Generic and specific goals are terms from TMMi (or CMMI likewise). TPI Next uses the term key area to cover specific aspects of testing processes. There is no grouping of those, but a clustering of checkpoints according to the business goals of the assessed organizational unit.
- D.** Correct – TPI Next uses the term key area to cover specific aspects of testing processes. Maturity levels are a rating of each key area and an overall maturity level may also be attributed to the whole test process after the assessment.

**Point Value:** 1

## Question 9

EITP-3.3.4 (K2) Summarize the TMMi level 2 process areas and goals

**Justification:**

- A.** Incorrect – This is a TMMi level 3 process area.
- B.** Incorrect – This is a TMMi level 3 process area.
- C.** Correct – This is a TMMi level 2 process.
- D.** Incorrect – This is a TMMi level 4 process area.

**Point Value:** 1

## Question 10

EITP-3.3.8 (K3) Carry out an informal assessment using the TPI Next test process improvement model

**Justification:**

- A.** Incorrect – the model is intended to be used as a whole; the various key areas are not totally independent of others.
- B.** Incorrect – the idea is first to assess the current state and only then possibly use improvements implicit in checkpoints (or explicit in improvement suggestions).
- C.** Incorrect – TPI Next gives opportunity to weigh your approach towards your needs, so you should use the opportunity.
- D.** Correct – here you recognize that you might not understand your problems fully, and use the TPI Next model as it is meant to be used.

**Point Value:** 2

## Question 11

EITP-3.3.8 (K3) Carry out an informal assessment using the TPI Next test process improvement model

**Justification:**

- A. Incorrect - This is a quite a formal assessment, interviewing other project members and stakeholders, assessing all key areas, and also having a look at previous releases.
- B. Incorrect -TPI Next offers the opportunity to choose the key areas based on the business drivers, so based on the problem described you can use the clusters for improving only the key areas needed for solving the problem. However, the approach taken here to also do document study involve stakeholders outside the test team is too formal for the assignment.
- C. Incorrect - Based on business drivers and clusters it is possible not to assess all key areas but still do a formal assessment. Again the approach taken seems to more reflect a formal assessment than an informal low-cost assessment.
- D. Correct - This is an informal low-cost approach that can be done using the TPI Next model.

**Point Value:** 2

**Question 12**

EITP-3.3.9 (K3) Carry out an informal assessment using the TMMi test process improvement model

**Justification:**

SG 1 Establish a Test Policy

Score: 33% (Party Achieved)

SP1.1 Define and maintain test goals based on business needs and objectives

Ok: Yes

Justification: Test goals to be achieved are defined in cooperation with the business stakeholders.

SP1.2 A test policy, aligned with the business (quality) policy is defined based on the test goals and agreed upon by the stakeholders

Ok: No

Justification: Defined by test manager but not agreed with stakeholders

SP1.3 The test policy and test goals are presented and explained to stakeholders inside and outside of testing

OK: No

Justification: Only explained to the test team

SG 2 Establish a Test Strategy

Score: 100% (Fully Achieved)

SP2.1 A generic product risk assessment is performed to identify the critical areas for testing

Ok: Yes

Justification: The test team performs a risk assessment workshop with all stakeholders. This is used to identify the critical areas for testing.

SP2.2 A test strategy is defined that identifies and defines the test levels

Ok: Yes

Justification: There is a test strategy document which fully describes all the test levels.

SP2.3 The test strategy is presented and discussed with the stakeholders inside and outside of testing

OK: Yes

Justification: Explained to the test team first and then presented to the stakeholders.

SG 3 Establish Test Performance Indicators

Score: 0% (Not Achieved)

SP3.1 The test performance indicators are defined based on the test policy and goals including a procedure for data collection, storage and analysis

Ok: No

Justification: Test performance indicators are not defined.

SP3.2 Deploy the test performance indicators and provide measurement results addressing the identified test performance indicators to stakeholders

Ok: No

Justification: Test performance indicators are not defined.

**Legend:**

Not Achieved: the percentage of achievement scores in the range from 0 up to 15%

Partly Achieved: the percentage of achievement scores in the range from 15 up to 50%

Largely Achieved: the percentage of achievement scores in the range from 50 up to 85%

Partly Achieved: the percentage of achievement scores in the range from 85 up to 100%

- A. Correct – See above.
- B. Incorrect.
- C. Incorrect.
- D. Incorrect.

**Point Value: 2**

## Question 13

EITP-3.3.9 (K3) Carry out an informal assessment using the TMMi test process improvement model

**Justification:**

- A. Incorrect – see justification answer B.
- B. Correct – With TMMi the lowest score rating determines the overall rating. Since Test Environment is Not Applicable (most likely out of scope), the lowest is for Test Policy and Strategy being rate as Party Achieved.
- C. Incorrect – see justification answer B.
- D. Incorrect – see justification answer B.

**Point Value: 2**

## Question 14

EITP-3.4.2 (K2) Summarize the activities, work products and roles of the STEP model

**Justification:**

- A. Incorrect – This role is not identified within the STEP improvement model.
- B. Correct – According to the STEP model, the test analyst performs detailed planning, lists test objectives, does the analysis and performs test design and specification.
- C. Incorrect – According to the STEP model, the test manager performs planning, coordination and communication to stakeholders.
- D. Incorrect – According to the STEP model, the tester performs the implementation of test cases, executes test cases, checks results, log tests and reports problems.

**Point Value: 1**

## Question 15

EITP-4.2.2 (K2) Understand causal analysis during an inspection process

**Justification:**

- A. Incorrect – Based on syllabus. Defect Analysis: not about analyzing the defect it Analysis: this is more about improvement in skills and processes.
- B. Incorrect – Based on syllabus. Defect Analysis can be ok. Generic Analysis: Thi analysing trends in defects.
- C. Correct – In syllabus.
- D. Incorrect – Based on syllabus. Defect Analysis: ok. Generic Analysis is not abou

**Point Value:** 1

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**Question 16**

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EITP-4.2.5 (K2) Apply a causal analysis method on a given problem description

**Justification:**

- A. Incorrect - Investigating the accuracy of the test data used should not be the ne Input test data have already been updated for the specific flight characteristics c is possible but unlikely that this data is inaccurate.
- B. Correct - Investigating whether tests are being passed which should have failed as the next activity. The pass / fail criteria used in the test cases are based on p trials for *similar* aircraft, but not for *this* aircraft. We know the test data were upd specific aircraft (option A), but there is no mention that the pass/fail criteria were We also know that all tests passed, which would be a likely outcome if the pass were to be incorrect and allowing failures to go undetected.
- C. Incorrect - Investigating the procedures used for the audits should not be the ne Test case coverage of requirements is quite likely to be satisfactory as a result c There is a possibility that faulty procedures were used in the audit which lead to coverage of requirements by test cases. However, the likelihood of this is small, when compared to option B.
- D. Incorrect - Investigating configuration management procedures used for the test should not be the next activity because a production copy of the hardware and s used for the test environment.

**Point Value:** 1

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**Question 17**

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EITP-4.2.7 (K4) Select defects for causal analysis using a structured approach

**Justification:**

- A. Incorrect – although they may be frequent, most likely the (direct) impact is limit over time users may move to another website for ordering books.
- B. Incorrect – although it is alw environment problems, it dc analysis done at a later the current production problem
- C. Correct - this seems to be fr of revenue and customers s

```
ERROR: syntaxerror
OFFENDING COMMAND: --nostringval--

STACK:
```