Sample Exam
ISTQB® Expert Level
Improving the Test Process
Part 2: Implementing Test Process Improvement
2016

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International Software Testing Qualifications Board

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0. Introduction

0.1 Purpose of this document

This document contains a full sample exam for the expert level module Improving the Test Process, part 2: Implementing Test Process Improvement, following the rules described in the ISTQB Expert Level Exam Structure and Rules document.

The sample questions, answer set (in this document) and associated justifications (in related 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 Implementing Test Process Improvement 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 question and answer sets are organized in the following way:

- Learning Objective and K-level
- Question - including any scenario followed by the question stem
- Answer Set

The correct answers including justification of the answers are documented in a separate coherent document.

1. Sample Questions

Question 1 (K2)

Which of the following statements are true concerning the key elements of a test policy?

1. A test policy must define the ISTQB fundamental test process as the standard testing process.
2. The test process improvement initiatives are outlined in the test policy.
3. Objectives of testing are solely defined in the test strategy and therefore not included in the test policy.
4. Evaluation of testing effectiveness and efficiency are described in the test policy and further detailed in subsequent documents.
5. The value that the organization derives from testing is a core element of the test policy.

Answer Set:

A. Only 1, 2, 4 and 5 are true, 3 is false.
B. Only 2 and 5 are true, 1, 3 and 4 are false
C. Only 2, 4 and 5 are true, 1 and 3 are false.
D. All statements are true.

Question 2 (K2)

Which of the following is an activity that will typically be performed as part of the establishing phase of a test improvement cycle, based on the IDEAL framework?

Answer Set:

A. Decide whether to use a bottom-up or top-down implementation approach
B. Plan and perform an assessment
C. Perform a lessons learned session
D. Develop processes and templates

Question 3 (K4)

A test manager has proposed six recommendations for improving the test process in her project. She has asked for your help in identifying the three recommendations to be given the highest priority.

Analyse the information provided below and identify the three recommendations which you would assign the highest priority.

Background information

- The business favors more effective testing rather than well documented tests.
- There are budget constraints. Each recommendation must show a positive return on investment within 6 months.
- Available testing skills are limited to functional testing.
- The organization is currently rated as “initial” according to the TMMi maturity model
- There are over 5,000 test cases available.
- Testers and developers share the same environment

Recommendations

1. Use a defect taxonomy to identify the 100 test cases with the highest potential for finding defects
2. Perform training sessions to enable testers to do more effective exploratory tests
3. Capture all test cases in a test management tool
4. Automate 80% of the test cases.
5. Introduce a dedicated environment for testing
6. Gather metrics to enable the usage of testing techniques to be optimized

You may use the following checklist for your analysis.

Checklist of criteria for allocating priorities:

i. The improvement can be achieved within the required time period
ii. Ability of the organization to actually implement the improvement
iii. Level of return on investment
iv. A clear association can be made between the stated objectives of the business
v. Impact of improvement has on the specific objectives (e.g., high, medium, low)?
vi. The support provided for raising test maturity levels

Which three recommendations would you give the highest priority?

Answer Set:

A. Recommendations 1, 3 and 6
B. Recommendations 2, 4 and 5
C. Recommendations 3, 4 and 6
D. Recommendations 1, 2 and 5

Question 4 (K4)

Thomas, the leader of the quality improvement group of GetDailyBetter Inc., also wants to improve the testing processes and therefore has initiated a gap analysis performed by external consultants. Their assessment report contains many recommendations from which Thomas now needs to select the ones he wants to tackle first.

He has the following criteria / restrictions for selecting and prioritizing the recommendations:

- Quick-Wins should be started without any delay.
- Till the end of the fiscal year the resources have been mainly used for the assessment, so there is not that much left on resources:
  - US$: 10k
  - 2 persons each for 25% of their time, both with change management and test management skills. Both are involved as test managers in highly important projects (other than the potential pilot projects).
  - 1 person for 50% of her time with general quality management skills and some basic test management skills. This person also works as a moderator for FMEA sessions and as an inspection leader.
  - Fiscal year ends in four months from today.
- There are only two potential pilot projects, both will be started next week:
  - Project A: Maintenance of existing product, approximately 2% of software needs to be changed slightly to adhere to new / changed requirements, 2 fulltime-equivalents (FTEs) are involved. Testing mainly consists of regression testing done by a small testing team (1 test manager / tester, 1 automation tester, 1 experienced tester).
  - Project B: Adding a new component on a running project. 12 FTEs are involved. Regression testing will be done for integration testing with existing components; many new test cases need to be derived from the test basis. The test team is composed of 1 test manager, 5 testers and 2 automation testers.
- Management needs to be convinced as soon as possible that improvements in software testing are as important as quality improvements during production.
- The overall objective for test improvement is reducing the rate of defects in the field from 8% (the average rate for current products) to fewer than 5% within the next 12 months.

Here you will find the list of recommendations with their rationales.

1. Define a strategy regarding regression testing and retesting. Currently both are done by the author of a ticket (mostly the tester) according to their personal assumptions of criticality.
2. Define test levels and focus especially on test entry and exit criteria for each test level. Currently the only test levels defined are developer tests and test-group tests, distinguishing only between who does roughly what.
3. Let testers participate in reviews of the test basis, currently many requirements are detailed and revised in the test analysis activities when the code has already been delivered to the test team.
4. Analyze bugs of the past 4-5 years and determine where testing effort has to be intensified and where it can be reduced. Currently bugs are entered in the bug tracking system including a quite detailed bug taxonomy used, but nobody evaluates those data and uses them to scale tests.
5. Analyze the test basis and the history of bugs and determine which testing techniques are appropriate. Then train the testers accordingly. Currently testing techniques are selected by manual testers from a small set of what may be appropriate. Many testing techniques (esp.

state-based testing) are unknown to all interviewed testers, but seem to be vital (embedded software!).

6. Define a strategy what should be automated and when. Currently automation is done after manual testing depending on how easily the test automation people are able to script the test cases. 1/5 automated tests need to be changed with each and every regression and about 1/3 with each new project.
7. Explicitly assign the follow-up of bug-fixing to one person (i.e. the project manager). Currently there is no-one who measures when and how thoroughly bugs are fixed or if they are fixed at all.

Which of these recommendations would you select given the above stated constraints?

Answer Set:

- **A.** Recommendation 1, 3 and 7 should be selected and given priority
- **B.** Recommendation 2, 4 and 5 should be selected and given priority
- **C.** Recommendation 1, 3 and 6 should be selected and given priority
- **D.** Recommendation 2, 6 and 7 should be selected and given priority

Question 5 (K2)

Which of the following statements are features of a bottom-up improvement approach?

1. Ownership of the improvement process may be with a dedicated team.
2. The scope of improvement typically covers no more than one or two projects.
3. Presentation and negotiation skills are particularly relevant in achieving consensus on objectives and recommendations.
4. The selected approach is often less formal.
5. Detailed analysis of assessment results is required in order to find commonalities between the different projects.

Answer Set:

- **A.** 2 and 4 are true, 1, 3 and 5 are false.
- **B.** 1, 3 and 5 are true, 2 and 4 are false
- **C.** 1, 2 and 4 are true, 3 and 5 are false.
- **D.** All statements are true.

Question 6 (K2)

Which of the following would you expect to find in a test improvement plan?

Answer Set:

- **A.** Specific areas to be covered in each assessment interview
- **B.** A description of tasks to be performed, based on the recommendations.
- **C.** The scope of test process improvement
- **D.** General vision for the future of testing

Question 7 (K4)

Thomas, the leader of the quality improvement group of GetDailyBetter Inc., also wants to improve the testing processes and therefore has initiated a gap analysis performed by external consultants. Their assessment report contains many recommendations from which senior management has decided to undertake the following initiatives. Thomas now needs to select appropriate pilot projects.

There are only two potential pilot projects, that will start soon:

- Project A: Maintenance of existing product; approximately 2% of the software needs to be changed slightly to adhere to new / changing requirements, 2 fulltime-equivalents (FTEs) are involved, testing mainly consists of regression testing done by a small testing team (1 test manager / tester, 1 automation tester, 1 experienced tester).
- Project B: Adding new feature to an existing project in new component. 12 FTEs are involved. Regression testing will be done for integration testing with existing components; many new test cases need to be derived from the test basis. The testing team is composed of 1 test manager, 5 testers and 2 automation testers.

The following projects will start later:

- Project C: Starting in about 2 months, complete re-engineering of a technically outdated product still in market, will run for about 2 years. 34 FTEs involved, testing team not yet defined.
- Project D: Starting in about 4 months, new product similar to quite a lot of other products made by GetDailyBetter in the last three decades, will run for about 9 months. 15 FTEs involved, test manager already defined, budget allows for only five testers that are not yet selected.
- Project E: Start date sometime in next six months, duration between 18 and 24 months, completely innovative product. Development and test team not yet defined, but will be by the end of next month. Project manager and test manager already started on writing their plans.
- Project F: Has already been started last year, but was stopped because of more important projects. Should start again in two months from now. Staffing must still be defined but most probably will be nearly the same as before. Objective is building of a platform so future products are more easily and quickly implemented.

Which of the following statements is correct?

Answer Set:

A. Project A is a better pilot project for implementing a test automation strategy than Project D because it is a very typical project for GetDailyBetter Inc.

B. Project E is not a good project to pilot the usage of new testing techniques because innovations are always too risky.

C. Project F is ideal to pilot the new bug report forms and analysis tools because quality is very important when building platforms.

D. Project D is favored to projects B and C in piloting the definition of test levels with entry and exit criteria, new test level plans and usage of new metrics.

Question 8 (K2)

Why should a Test Process Group ultimately be established on a permanent basis?

Answer Set:

A. It can direct the testing of the project to be process-compliant
B. It can be used for experience sharing concerning testing
C. It can enable the institutionalization of changes to the testing process over a longer period of time
D. It can take on the coordinating of all process improvements in the organization

Question 9 (K4)

A company is planning its test process improvements and has asked for your advice on how best to organize the improvement. You are given the following background information:

- The company is experiencing test process problems within many of its projects
- Planned improvements to test automation shall be implemented at an off-shore location.
- The organization has not assigned responsibility for developing the test process

Which of the following organizational forms would you consider to be most appropriate?

Answer Set:

A. A Test Process Group is set up within a major in-house project and staffed from within the project. The Test Process Group implements improvements which are relevant to the project and reports to the project leader.
B. A Test Process Group is set up to co-ordinate improvement activities between the different projects. Staff from a discontinued in-house project are permanently assigned to the Test Process Group.
C. Establish a Management Steering Group (MSG) to coordinate test process improvements across the organization. The MSG has ownership of the test process. A Technical Working Group is set up to co-ordinate the test automation improvements and ensure good communication takes place.
D. Establish a Management Steering Group (MSG) to implement test process improvements across the organization. The MSG has ownership of the test process and manages the contractual issues with the off-shore company implementing the test automation.

Question 10 (K3)

Which one of the following statements is true regarding the impact of outsourcing on test improvement?

Answer Set:

A. Test improvement process and requirements are the same regardless of the location of the test team
B. Gathering information from outsourced off-shore test teams is more time consuming, but implementation of changes is the same for both on-site and off-shore test teams.
C. When gathering information from off-shore test teams, one has to be sensitive about political, cultural or contractual (mis)understandings.
D. Off-shore teams are a form of outsourcing, which must take care of its own test improvement.

Question 11 (K2)

Consider the following tasks with a test process improvement program:

- Perform document study and interviews
- Write the assessment report
- Propose improvements and show how these are linked to the business goals

Which one of the following roles would typically perform the tasks listed above?

Answer Set:

A. Test Process Improver
B. Lead-Assessor
C. Assessor
D. Test Manager

Question 12 (K3)

You are conducting interviews to understand the situation of a testing project in your company. You have decided to make notes using the mind-map technique. You have been asking questions concerning the state of the test environment in three different interviewees. Their responses were:

- Interviewee 1: I'm doing my best working with the test environments that have been provided to us. That's the way it always goes in this company.
- Interviewee 2: We have four test environments and they stated that this should be enough.
- Interviewee 3: My primary test environment is working just fine.

What would you document in your mind-map about the test environment topic?

Answer Set:

A. Interviewee 1: I do my best with test environments, which have been given to us.
Interviewee 2: We have four test environments and they must be enough.
Interviewee 3: My primary test environment is working just fine.

B. Quantity of environments: four,
Quality: potential risks, conflicting information, dig deeper,
Answers: 1 – Skeptical, 2 – Also a bit skeptical, 3 – could only be experiencing his personal work environment.

C. Interviewee 1: does her best
Interviewee 2: four environments
Interviewee 3: it's ok.

D. Interviewee 1: A hard worker, who will manage the test environments well and get results.
Interviewee 2: Explains there are four environments, and the budget doesn't allow more, so there might be a problem here.
Interviewee 3: Happy with his only test environment.

Question 13 (K3)

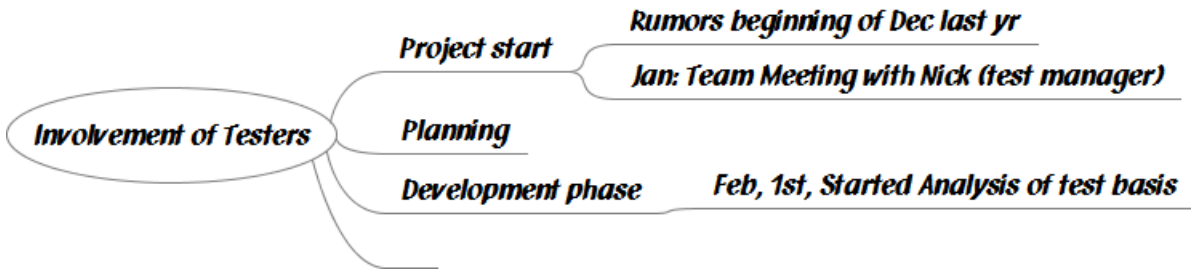
Richard wants to find out how early testers are involved in the overall project management. He thinks of testers as being part of the project planning phase, members of risk-management sessions, and reviewers of the test basis. Therefore he now interviews Sheila, a tester who has been working in that company for the last 5 years and is currently responsible for test analysis, design and execution in the GoForth-Project.

Here is the dialogue so far:

Richard: "Hello Sheila. My name is Richard and I want to ask you some questions about your job in GoForth. Is it ok if I record our interview so that I am better able to recall exactly what you said? As far as I understand, you have been a tester for quite a number of years. Could you please tell me, when and how you first heard of GoForth?"
Sheila (low voice): "Umm. I guess it was in the beginning of December last year. There were some rumors in the canteen."
Richard: "And then?"

Sheila: "Well, one day in January, Nick, our test manager, called us together and said, there would be a new product developed in a project called GoForth."
Richard: "What else were you told?"
Sheila (mumbling): "Oh, I don't remember."
Richard: "Ok. What happened then?"
Sheila: "Hmmm. Nothing?"
Richard: "And somewhat later?"
Sheila (squeaky voice): "What should have happened?"
Richard (calmly): "Well, sometime later, you started actually working on GoForth, didn't you?"
Sheila: "Yes."
Richard (smiling): "When was that?"
Sheila: "February, 1st"
Richard: "And how were you informed to now start? And what were your first tasks?"
Sheila: "Writing test cases, of course."
Richard: "Ok. Was there anything else you did?"
Sheila: "No? Execution of tests came later when there was some code to test. And that is all I'm involved in – writing and executing test cases for exactly 3 weeks."

Here are the notes, Richard took:



Here are some statements about interviewing, listening and note-taking skills. Which of these are correct?

1. Richard used open-ended questions in an appropriate way.
2. Richard seems to possess Emotional intelligence (EI).
3. Richard documents Sheila's codependent behavior.
4. Richard does a good opening.
5. Sheila acts like a "Critical Parent" and Richard notices it and reacts accordingly.
6. Richard is an active listener.
7. Richard uses the right note-taking tools.

Which of these statement are correct?

Answer Set:

A. Statements 1, 2, 3 and 6 are correct, 4, 5 and 7 are wrong.
B. Statements 1, 4, 6 and 7 are correct, 2, 3 and 5 are wrong.
C. Only Statement 1 is correct, all others are wrong.
D. All Statements are correct.

Question 14 (K4)

You have recently performed a test process assessment on a project, and noted that since 12 months ago, test cases are no longer being documented. After some further investigation, you have gathered some more information and are able make the following statements:

1. The number of hot-fixes has doubled in the last 12 months
2. Some senior test analysts stopped documenting test cases around 12 months ago
3. The number of tests performed has increased steadily over the last 12 months.
4. The number of defects reported has decreased by 50% in the last 12 months
5. A new test environment was introduced 12 months ago
6. In the last year the training program for testers and test analysts has been stopped

Regarding the observation about test case documentation, which of the above statements indicates a cause-effect relationship, which are simple correlations and which are coincidental?

Select one of the four answers shown in the following table.

Answer Set:

Statement	**Answer A**	**Answer B**	**Answer C**	**Answer D**
1	Correlation	Coincidence	Cause-Effect	Coincidence
2	Coincidence	Cause-effect	Coincidence	Correlation
3	Cause-effect	Correlation	Coincidence	Cause-effect
4	Cause-effect	Correlation	Correlation	Coincidence
5	Coincidence	Coincidence	Cause-Effect	Coincidence
6	Correlation	Cause-effect	Correlation	Cause-effect

Question 15 (K2)

Which of the following is a key element with presentation and reporting skills?

Answer Set:

A. Summarizing information
B. Active listening
C. Transactional analysis
D. Decision making

Question 16 (K2)

The fundamental change management process consists of eight steps. Which step is missing from the following sequence?

- Create a sense of urgency
- Pull together the guiding team
- Develop the change vision and strategy
- Empower others to act
- Produce short-term wins
- Don't let up
- Create a new culture

Answer Set:

A. Communicate for understanding and buy-in
B. Implement improvements one at a time
C. Lead from the front
D. Make an impact with management

Question 17 (K2)

What is true concerning human factors in change management?

Answer Set:

A. A standard process must be followed to accomplish an end state where everyone has the same opinion about the change
B. An individual's reaction to change depends on a number of things, e.g., their previous experience with implementation of changes
C. An individual's level of trust in the organization doesn't affect their attitude to change, only their motivation does
D. The change management process must allow for adequate time and budget for attitude training regarding change-resistant individuals

Question 18 (K4)

You are joining a project, where the test manager has recently started to implement some big changes. The changes are especially related to the way the whole team participates in testing. The test manager has analyzed agile practices and decided to implement a team-based approach even though most aspects of the project are not yet following agile practices and guidelines. The team-based approach means that all team members (programmers, business analyst and testers) share responsibility for quality and testing, and together fulfill all testing tasks. Most testers are very enthusiastic about the change, and also the other testers have started to work more closely with developers. Developers were very skeptical at first about the perceived added workload, but have now started picking up some new testing tasks.

Analyze the situation, and evaluate where the team is in regards to the Satir model. Which one of the following options refers to the correct stage regarding the team's situation based on the Satir model?

Answer Set:

- **A.** The team as a whole is in the transforming ideas stage, where they start seeing a way towards stability
- **B.** The developers are in the denial stage, where they would like to go back to the previous process, and testers are in the acceptance stage
- **C.** The team is in the new status quo – the new normal state, where things are done in a different way
- **D.** The team is in the acceptance stage, where the reality of the situation is accepted

Question 19 (K2)

What is the risk when not considering the maturity of the development process while doing test process improvement?

Answer Set:

- **A.** People will be de-motivated.
- **B.** Trying to improve a test process where the constraints are not yet in place.
- **C.** There is no clear objective and therefore improvements are not aligned.
- **D.** Large dependency on resources from software development for their improvements; these resources may not be available.

Question 20 (K2)

Study the following paragraph. “As test process improvers we may hear statements like “this is how we do things here” when, for example, referring to a particular analytical approach used. The “here” part of such statements often refers not simply to the organization or project, but also to the country. For example, some software process improvement models are favored in certain countries (e.g., CMMI is stronger in the USA and Asian countries than ISO/IEC15504). If we ignore these aspects, we may be making proposals which go against the improvement culture in that country.”

Which factor, being relevant for setting a culture for improvement, is discussed in the previous paragraph?

Answer Set:

- **A.** Organizational Relationships.
- **B.** Life Cycle Model.
- **C.** Business-driven over Model-Driven.
- **D.** Geographical location.

Question 21 (K2)

What are the main factors that influence how improvement is organized and structured in different situations, thereby making test improvement context-dependent?

Answer Set:

- **A.** The budget, time and targeted quality level.
- **B.** The lifecycle model, the time provided to those involved and experience of people in the organization.
- **C.** The management culture, the lifecycle model and the test approach.
- **D.** The experience of people, the test strategy and the targeted quality level.

Question 22 (K2)

Which one of the following statements best summarizes a typical test improvement approach for agile environments?

Answer Set:

- **A.** The test approach is built around exploratory testing
- **B.** Content-based and test improvement models, e.g., TMMi, cannot be used
- **C.** There is an emphasis on self-managing teams, who can change their own processes as needed
- **D.** There will be feedback loops for checking product and process conformance and suitability at all phase ends

Question 23 (K2)

Retrospective meetings are an important part of the improvement cycle with Agile software development. Which of the following statements are true with respect to retrospective meetings in Agile software development?

1. In exploratory testing, each test session is followed by an assessment of where best to focus the testing next.
2. The test closure phase is one of the principal phases where a retrospective meeting takes place.
3. SCRUM expects a continuous improvement loop, with a retrospective and improvement of processes (including the test process) at the end of each iteration.
4. A retrospective meeting is typically a time-boxed meeting with key stakeholders being present

Answer Set:

A. Statements 1, 3 and 4 are true, statement 2 is untrue.
B. Only statements 1 and 3 are true, statements 2 and 4 are untrue.
C. Only statements 3 and 4 are true, statements 1 and 2 are untrue.
D. All statements are true.

Question 24 (K2)

Which of the following statements correctly reflects the influence of iterative life cycle models on improvement context?

Answer Set:

A. Test process improvement models are intended for use with iterative models only.
B. After each iteration there is an opportunity for test process improvement.
C. Improvement activities focus mostly on knowledge skills of the testers.
D. There is more opportunity to address organizational improvements.

Question 25 (K2)

What is a typical example of where a test process improvement model needs to be adapted to be suitable for agile life cycles?

Answer Set:

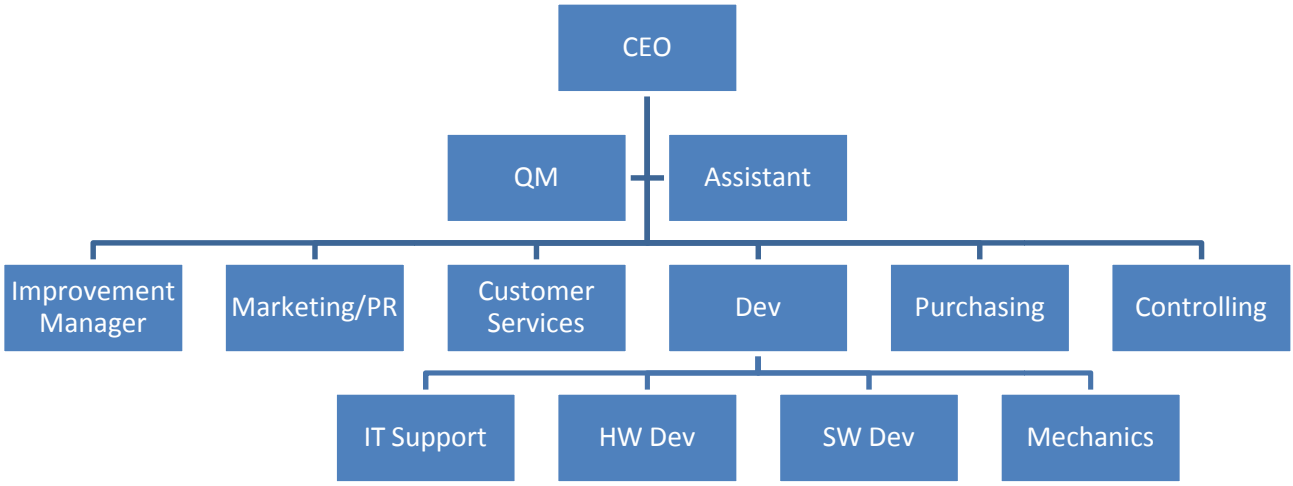
A. Level of testing required.
B. Number of testers required.
C. List of typical quality characteristics to be tested.
D. Level of documentation required.

Answer 2 of the following 3 essay questions.

Essay Question 1

MedoTech is a CMMI level 3 company providing systems for hospitals.

Orga MedoTech



Their newest product, which is currently developed, is for checking breathing organs. The project involves all departments and half of the staff of MedoTech and is the core project from last year and the next two years, so it's highly critical for MedoTech's future.

Four weeks ago (end of October), HospiCare bought MedoTech to enhance their product portfolio. HospiCare immediately changed top management and announced a change in quality policies. You were appointed chief of the quality improvement program and were given a team of twelve experts and the directive to reach TMMi level 3 by end of next year.

MedoTech up to now never has done any special test improvement initiative but half of your team already took part in a TMMi level 2 and 3 initiative at HospiCare in recent years. To support you an "Improvement Management Board" has been created which consists of the CEO, her assistant, the quality manager, departmental heads of development, software development, customer service and controller. The Improvement Management Board will assemble every month, but haven´t met yet.You were assigned a generous budget so money most probably won´t be an issue.

Your first task is, to arrange for a kick-off with the improvement management board and to report about the current status of your improvement program and the first activities your team planned or already started. The CEO already talked to you and emphasized that she wants to know everything which may be a risk regarding successfully achieving the goal in time.

Task 1: "Assess critical success factors" (maximum 30 points)

Assess critical success factors regarding starting this improvement initiative, and identify the possible risks (including rationale) related to the critical success factors.

Critical Success Factor	Analyses	Risk

Table 1: Answer template: Assess Critical Success Factors

Task 2: "Propose mitigation actions" (maximum 20 points)

Propose mitigation actions, including prioritization, for each of the risks identified during the assessment of critical success factors.

Critical Success Factor	Risk	Priority High/Medium/Low	Mitigation Action(s)

Table 2: Answer template: Mitigation actions

Essay Question 2

In this essay question you will be asked to do the following:

1. Create parts of a test improvement plan
2. Add tasks which consider the fundamental change process
3. Add tasks considering the culture of improvement

The Top-IT organization develops a wide range of financial applications for its large customer base. Its vision is to become a world player in financial software products within the next two years. However, currently Top-IT is losing market share to its competitors. To achieve its vision and improve (regain) its market share, Top-IT is focusing on improving the quality of its software products..

Twenty projects are currently involved in developing and maintaining the different applications. Five of these projects are the responsibility of the new off-shore part of the Top-IT organization in India.

Top-IT recently performed a test process assessment and selected the following four improvements for implementation:

	Improvements
#1	Introduce a more transparent test strategy based on product risks
#2	Increase the defect detection percentage from 60% to 85%
#3	Improve testing skills
#4	Improve the accuracy of test effort estimations.

Table 1: Improvements to be implemented

The improvements are applicable to all projects. The Top-IT management has stated that the initial focus shall be placed on quickly improving test effectiveness. The test process assessment identified the Top-Funds and Top-Cash projects as being good examples of projects which meet Top-ITs future vision.

Task 1: "Create a test improvement plan" (maximum 28 points)

- Outline a test improvement plan, identifying the major headings and describe their content.
- Identify two relevant tasks (including completion criteria) for each of four improvements to be identified.

  Note: Do not include tasks relating to the change management process or cultural issues at this stage; these will be asked for in parts 2 and 3 of the question.
- Assume that a Test Process Group has already been set up with all the skills required.
- Clearly state any assumptions you make.

Task 2: "Add steps and actions which consider change management" (maximum 16 points)

Suggest an additional task to be included in the test improvement plan for each of the four stages of the fundamental change management process.

- Briefly describe the task. Do not include tasks relating to cultural issues at this stage; these will be asked for in part 3 of the question.
- Identify the stage of the fundamental change management process which the described task relates to.
- Describe how this task will improve the implementation of the test improvement plan.

Task 1
Description **Stage in fundamental change process:** **Benefit**
Task 2
Description **Stage in fundamental change process:** **Benefit**

Task 3
Description **Stage in fundamental change process:** **Benefit**
Task 4
Description **Stage in fundamental change process:** **Benefit**

Table 3: Answer template: Test improvement plan - tasks relating to the fundamental change process

Task 3 "Add steps and actions which consider the culture of improvement" (maximum 6 Points)

Suggest two additional tasks to be included in the test improvement plan.

- Briefly describe the task.
- Describe how this task will benefit implementation of the test improvement plan.

Task 1
Description **Benefit**
Task 2
Description **Benefit**

Table 4: Answer template: Test improvement plan - tasks relating to cultural issues

Essay Question 3

VLS Bank is a medium sized financial organization specializing in financial services to the rich and famous. They handle personal finance matters for individuals and their privately owned businesses. The company has built its name on client confidentiality, exclusive service, and discretion. They trade on the stock exchange on behalf of clients and manage their investment portfolios as well as offering personal financial services.

The bank will start a challenging project to develop a new system, which will replace all existing client services into one single system. This new system must allow the bank to migrate all its existing client services without any disruption to those services, whilst also preserving the banks customer confidentiality requirements. Since this system will become the primary system of the bank a high level of quality (conformance to requirements) is essential. The system will have a protected front end accessible through different channels like computer, tablet or mobile phone, in order that customers will be able to view current account status 24/7. It is already clear that the deadline, defined by management, will not be easy to meet.

VLS does not have a great track record on IT projects. A recent assessment on their software development processes showed that they were a low maturity company. Testing has never been taken seriously in this organization. There are only few-trained professional testers; there is not a career path for them and their responsibilities are unclear. The position of testing is always under discussion in projects and within the organization in general. Management is aware that, with the challenging project in the years ahead, something must change if VLS wants to maintain high quality services to their customers and deliver a quality product. With the strict deadlines and limited resources, it is already clear that choices will need to be made regarding what to test and what not to test. Since internal testing expertise is lacking, certainly on test process improvement, management have contacted LMG to provide a senior test consultant to assist them.

Question 1

Since any improvement process starts by having clear (quality) goals and expectations, the test consultant has recommended starting the improvement process by defining a test policy.

Write a test policy for the VLS Bank identifying clear headings with appropriate content.
(Maximum 24 points)

Note, for this exercise you are allowed to make assumptions, but they need to be stated when made.

Question 2

After the discussion on the test policy LMG has suggested to perform an assessment to determine the current maturity of the test process. Management decided that TMMi will be used as a reference model and the assessment scope will be the process areas of TMMi levels 2 and 3. The assessment will be lead by the senior consultant of LMG. To assist the lead-assessor a test team member of VLS Bank will be added to the assessment team.

Four candidates have been suggested as assessment team members to the LMG consultant:

- **Erik** is one of the senior testers. He has been working for the company the longest and has a good network of contacts. He is confident and tries to bring other team members together to promote team discussions. He has a background in software engineering and a self-made

tester. He has experience in risk-analysis where he interviews stakeholders often using open questions and takes notes using mind-maps. He maintains eye-contact with the interviewee and waits until the interviewee is finished speaking before verifying if he understood correctly. He has experience in writing reports and presenting them to stakeholders. He sometimes jumps to conclusion too quickly, not analyzing the situation in detail.

- **Anne** is a senior tester. She always seems to be busy and often seems to have too much work to do. She is not a great team player. However, she gets her work done, regardless of what it takes. She is often inclined to worry more than necessary, interrupting other people and sometimes considered to be argumentative and blunt, e.g., when presenting to stakeholders. She has little experience in interviewing, but is known in the team for great analytical skills. During meetings, she never takes notes and relies on her memory. Anne has previously worked on the business side of VLS and therefore brings a lot domain knowledge to the team. She has recently also attended a test certification training course.

- **Tim** is a tester. He is team player, serious minded and often looks ahead. When he is given problems to solve he often looks at possible options before deciding. During test design he interviews stakeholders asking open-ended question to get as much information as possible. He has learned a method for note-taking using keywords and is practicing active listening. He often writes test reports and presents them to management. Tim is dedicated to testing, has attended an ISTQB Foundation course and will attend an ISTQB Advanced Test Analyst course next month. So far he is the only one, together with Anne, that has attended an official certification training course on testing (and passed!).

- **Lars** is a test analyst. He is the newest member of the team and has been employed for his automation skills. Lars has shown to be dedicated to automation, having spent the past 5 years developing the necessary skills in automation tools. He is an implementer, likes to keep things moving. He does not like to present, and when interviewing stakeholders he rushes to get things done asking mainly closed-ended questions. He does however tend to write everything down and take detailed notes. As many technical people he does not always look people in the eye, and does not verify his notes. His view on testing seems too limited; he believes automation is the only way forward.

Evaluate the description of the four test team members, and select the team member as assessor who has shown the best skills and knowledge. To select, use the scheme provided to evaluate each of the skills and knowledge areas for the four candidates. (Maximum number of points 26)

- Score 0 if the description indicates poor skills or knowledge
- Score 1 if the description indicates good skills or knowledge
- Justify your scores.

The maximum score which an assessor can achieve is 7.

Clearly state which team member is chosen to act as assessor.

	Erik	Anne	Tim	Lars
Interviewing skills				
Presentation & reporting skill				
Analytical skills				
Note-taking				
Listening skills				
Suitability personality type for assessment				
Testing knowledge				
Total number of points:				

Table 5: Answer template: Skills assessment