



TMap® Suite

Test Master

Sample Exam

Edition 201610



TMap® Suite

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Introduction

This is the sample exam TMap Suite® Test Master. The EXIN exam rules and regulations apply to this exam.

This sample exam consists of 40 multiple-choice questions. Each multiple-choice question has a number of possible answers, of which only one is the correct answer. This exam includes a case study (Appendix 22231).

The maximum number of points that can be obtained for this exam is 40. Each correct answer is worth 1 point. If you obtain 40 points or more you will pass.

The time allowed for this exam is 90 minutes.

Appendix 22231

Seabiscuit, from traditional to agile (from waterfall to scrum)

History of ZBO:

- Zachary Insurance: One of the oldest insurance companies, initially begun with car insurance and now market leader in car, travel and home insurance (including fire, buildings, contents, etc.).
- Barbon: Young, up and coming Internet insurance company, mainly dealing in life insurance.
- Oliver: Young, up and coming Internet insurance company, mainly dealing in health insurance.

After taking over Barbon and Oliver (B&O), Zachary (Z) Insurance became known as ZBO.

Cultural differences:

Zachary is slow and bureaucratic, Barbon & Oliver is fast and pragmatic. ZBO no longer works in fixed workplaces, but in flexible office spaces - so-called "walk in" spaces.

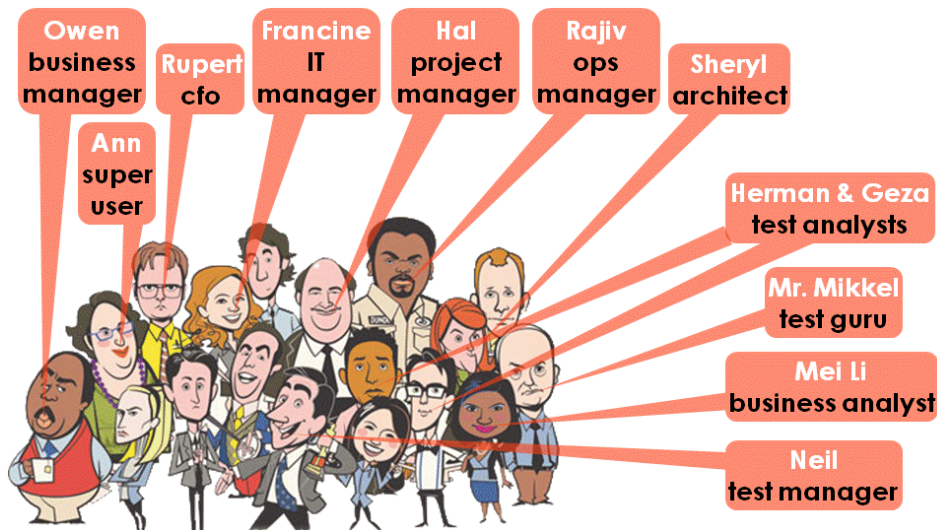
Competition:

Former CEOs of Barbon & Oliver started a competitor Internet insurance company.

Seabiscuit project members:

- Ann as super user
- Francine as IT manager
- Hal as project manager
- Herman and Geza as test analysts
- Mei Li as business analyst.
- Mr. Mikkell as test guru (oracle/coach for Neil)
- Neil as test manager (formerly project manager)
- Owen as business manager
- Rajiv as operations manager
- Rupert as (strict budget guarding) CFO
- Sheryl as architect

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Seabiscuit project approach and test assignment:

The project starts with a waterfall approach, but during the project becomes a scrum approach and has a fixed end date aimed at achieving revenue goals. However, the project is experiencing a 7-month delay.

The previous test manager always had too little time and saw too many risks, but no alternatives, and was replaced by Neil.

Francine’s Assignment for Neil: “Move the test activities as far away as possible from the critical path, establish the quality of the software deliverables, ensure that software suppliers resolve errors and report back to me about outstanding risks.”

The software suppliers conduct UT and ST. ZBO conducts FAT, UAT and PAT. ZBO estimates requiring a total test time of 6 weeks.

Seabiscuit test estimate:

In the waterfall situation, Neil is expected to prepare a test estimate. The only thing Neil has is the number of proposed web pages for the application. There is no estimate data available from previous projects.

Seabiscuit project:

The project uses the service model, which revolves around a centralized online portal. It needs to be accessible from any device. Functionalities such as requests, additions, amendments, expansions and deletions to/from insurance policies have to be submitted via the portal.

Continued on next page

All existing applications for insurance, such as healthcare, car, travel and home, have to be able to communicate with each other in order to share information. This means they cannot continue to operate as standalone applications. The flexible front-end comes from B&O and the rigid back-end from Z.

Research has shown that, when it comes to similar portals from other suppliers, customers will leave the portal if they feel it takes too long to respond. Owen (business manager) therefore wants to give this the highest priority. He also wants to have an app developed. The idea for this is, for example, that a travel insurance company can allow customers to fill in their own details, such as the month(s), country(ies), activity(ies) and partner(s) they require.

Seabiscuit documentation:

The documentation structure in the waterfall situation is not transparent and the documentation itself is inconsistent and incomplete. In addition, super user Ann has the entire system process 'in her head'.

Moving to the scrum approach would mean the requirements being captured as user stories. To create the user stories (mainly functional in nature), the following format is used: "As a <role> I want to <do something> so that <result>"

The initial master test plan comprises 77 pages with a lot of unnecessary text. Neil starts working on this and in any case wants to use approaches for the Product Risk and Benefits Analysis (PRBA), test strategy and the five TMap Human-Driven elements.

At the end of the testing process, Neil creates a generic test agreement (GTA) document.

Continued on next page

Part of the strategy table from the Seabiscuit master test plan:

Characteristic - Object part	RC	ST	FAT	UAT	PAT
Functionality					
- life	B.	●●	●●	●	●
- health	B.	●●	●●	●	●
- car	A.	●●●	●●●	●	●
- travel	B.	●●	●●	●	●
- home	B.	●●	●●	●	●
Performance					
- online	A.	●●●	●●●	●●	●●●
- back office	B.	●●	●●	●	●●
Usability					
- screens	B.	●●	●●	●	●●

Legend:

RC	=	risk class
A	=	high risk class
B	=	average risk class
C	=	low risk class
ST	=	system test
FAT	=	functional acceptance test
UAT	=	user acceptance test
PAT	=	production acceptance test
●●●	=	thorough dynamic test
●●	=	average dynamic test
●	=	light dynamic test

Seabiscuit management phase

After the project is finished, it is expected that there will be 4 releases each year, each release comprising six sprints, each of 2 weeks. The number of scrum teams working on a single release is still unclear. The UAT will need to be conducted by the users.

Sample exam

1/40

See appendix 22231 Seabiscuit.

The project's master test plan is made up of 77 pages and contains a great deal of unnecessary text.

How can unnecessary text in the plan be prevented?

- A. only include text when it is clear why and for whom it is written
- B. use bullet points to write the text
- C. have the project manager say what should and should not be written
- D. have the text written independently by all project members

2/40

See appendix 22231 Seabiscuit.

Test manager Neil wants to map the risks. He decides to carry out a risk analysis with the entire scrum team (this is carrying out a product risk analysis). Unfortunately, during the analysis, only super user Ann, business analyst Mei Li and the product owner and business manager Owen were present.

Which aspect of the risks may have been overemphasized, if only Ann, Mei Li and Owen brainstorm the risks?

- A. The chance factor of the product risks
- B. The chance factor of the project risks
- C. The damage factor of the product risks
- D. The damage factor of the project risks

3/40

See appendix 22231 Seabiscuit.

The scrum approach contains multiple sprints. Test manager Neil has doubts about how to use the PRA in this situation.

What does test guru Mr. Mikkel advise Neil to do in this situation?

- A. Conduct a PRA at the start of the project, using the scope of the system to be delivered
- B. Conduct a PRA at the start of the project using the scope of the system to be delivered, followed by an additional PRA per sprint
- C. Conduct a PRA at the start of the sprint with the sprint content as scope

4/40

See appendix 22231 Seabiscuit.

When the Waterfall approach was discontinued and a Scrum approach was adopted, a Sprint 0 was introduced first.

Why does a scrum approach often start with a Sprint 0?

- A. So the setting up activities can be carried out
- B. So a Go/No Go decision can be made about the project
- C. So a Proof of Concept (POC) can be created for the project
- D. It is the first event in the scrum approach

5/40

See appendix 22231 Seabiscuit.

Test manager Neil talks to business manager Owen (client) about formulating a strategy for the user acceptance test. The client will have to direct a number of aspects, while being involved in a number of other aspects.

Which aspect of the test strategy does the client direct?

- A. The client directs the risk analysis.
- B. The client directs the selection of test techniques.
- C. The client directs the test objectives.

6/40

See appendix 22231 Seabiscuit.

BDTM strikes the balance between covering risks and taking time to cover the risks. Test guru Mr. Mikkel thinks that this principle is applicable not only in waterfall situations, but also within scrum projects.

What other reasons does Mr. Mikkel give for why BDTM can also work well in a scrum project?

- A. In the BDTM approach, just as in a scrum project, the test manager determines which test techniques need to be used.
- B. In the BDTM approach, just as in a scrum project, there is an explicit focus on communication with non-IT scrum team members.
- C. In the BDTM approach, just as in a scrum projects, the focus is primarily on the 'Risk' aspect.

7/40

See appendix 22231 Seabiscuit.

Test manager Neil uses the five HD elements in Seabiscuit.

What is the element *industrialize* important for?

- A. Keeping testing activities small scale and clear
- B. Getting the correct skills and knowledge
- C. Optimizing testing and improving quality
- D. Making sure testing seamlessly matches the surrounding processes

8/40

See appendix 22231 Seabiscuit.

Project members ask test manager Neil what using HD elements will lead to.

What is the **most** important objective in using HD elements?

- A. Gaining trust in the developed solution
- B. Exhaustive testing of the developed solution
- C. Testing the developed solution as cheaply as possible
- D. Testing the solution as quickly as possible

9/40

See appendix 22231 Seabiscuit.

Test manager Neil and test guru Mr. Mikkell are brainstorming the characteristics of a quality-driven approach.

Which characteristic will they definitely state?

- A. The test at the end of the process will only be done to show a working solution.
- B. The test at the end of the process is the safety net for any underlying problems still within the solution.
- C. The test role should only be carried out by a professional tester.
- D. The test role should not be integrated with other project roles.

10/40

See appendix 22231 Seabiscuit.

Test manager Neil is dealing with a non-transparent documentation structure, as well as inconsistent and incomplete documentation. Within the framework of the quality-driven approach, Neil wants to create an action plan.

Which action related to the incomplete documentation will Neil definitely include in the action plan, so that the team can take advantage of this immediately?

- A. Have business analyst Mei Li ensure that all documentation is consistent and complete
- B. Have business manager Owen coach the test analysts
- C. Have test manager Neil organize a team retrospective
- D. Get super user Ann involved with the team on a daily basis

11/40

See appendix 22231 Seabiscuit.

The test plan (in the waterfall situation) contains the estimate of the number of hours for the UAT for the first release. Test manager Neil is expected to distribute the hours across the test phases in the UAT.

Why is estimation based on ratios the **most** suitable for this?

- A. It means that hours can be divided across test phases based on the test object size.
- B. It means that hours can be divided across test phases based on test point analysis.
- C. It means that hours can be divided across test phases based on extrapolation.
- D. It means that hours can be divided across test phases based on both experience and literature figures

12/40

See appendix 22231 Seabiscuit.

At the start of the project, the scrum team will poker all user stories. Based on this, test manager Neil will create a test estimate.

What makes the accuracy of this estimate still limited?

- A. The scope of the project may still change.
- B. In a multidisciplinary team, it is difficult to create an estimate for other disciplines.
- C. In a scrum project, it is not possible to create an initial estimate.

13/40

See appendix 22231 Seabiscuit.

The online portal should be accessible from any device and browser.

What test variety will test manager Neil choose to apply in this case?

- A. Crowd testing
- B. End-to-end test
- C. Performance test
- D. Security test

14/40

See appendix 22231 Seabiscuit.

Test manager Neil establishes that in the scrum approach, using user stories, little or no attention is given to performance criteria.

What might be the cause of this?

- A. In theory, user stories should not contain non-functional aspects such as performance criteria.
- B. User stories are created at the start of the sprint, before the performance criteria are known.
- C. User stories are only expanded upon with performance criteria after the sprint, so that the production environment is set up.
- D. User stories are mainly functional by nature, meaning that non-functional aspects like performance criteria can be disregarded.

15/40

See appendix 22231 Seabiscuit and the test strategy table below:

Item	Characteristic	RC	Intensity	Test design technique
Car	Suitability	B	●●	
	Functionality	A	●●●	

It is the job of the test manager (Neil) to assign the correct test design techniques to the combination of characteristic and intensity.

According to Neil, which test design technique is the **most** suited to test the combination of functionality/●●●?

- A. Elementary Comparison Test (ECT)
- B. Error Guessing (EG)
- C. Process Cycle Test (PCT)
- D. Usability Test (UT)

16/40

See appendix 22231 Seabiscuit.

Business manager Owen wants the test intensity, as set out in the test strategy table, to be demonstrably achieved. Test manager Neil and test analyst Geza do not agree on which approach to choose to do this. Neil suggests a coverage-based approach. Geza suggests an experience-based approach.

Why is Neil's approach the better option?

- A. This approach gives the tester the freedom to design test cases in advance of/during the test, meaning that it is easy to achieve the desired test intensity.
- B. This approach is the only one applicable to a waterfall situation.
- C. This approach is based on skills, intuition and experience on the part of the tester, meaning that it will always achieve the agreed coverage.
- D. This approach is based on demonstrably achieving the coverage agreed in the test strategy.

17/40

See appendix 22231 Seabiscuit.

Test manager Neil feels that the scrum approach does not always register defects.

Why can the scrum team nevertheless decide to register all of the defects?

- A. The defects are resolved on the same day.
- B. These are defects of the highest weighed severity.
- C. To establish the weighed severity of the defects during the sprint review.
- D. To build up metrics.

18/40

See appendix 22231 Seabiscuit.

During the defects meeting in a waterfall situation, defects are registered as 'known errors'.

What might be a reason for categorizing a defect as a 'known error'?

- A. An error in the test basis
- B. An error in the test result assessment
- C. An error in the test execution
- D. An error in the test case

19/40

See appendix 22231 Seabiscuit.

The FAT took longer than the planned two weeks. In the final week, many errors were resolved and retested.

What is the **best** thing for test manager Neil to do now?

- A. Check to make sure all of the tests have been run
- B. Have the ST carried out again
- C. Continue with the UAT
- D. Execute a regression test

20/40

See appendix 22231 Seabiscuit.

The strategy table for the master test plan is set up.

What characteristic could be used to expand the strategy table, in addition to functionality performance and usability?

- A. Manageability
- B. Connectivity
- C. Suitability
- D. Efficiency

21/40

See appendix 22231 Seabiscuit.

Test manager Neil makes agreements with operations manager Rajiv about the test environment. Rajiv is responsible for creating and managing the test environments.

What agreement will Neil definitely make with Rajiv?

- A. An agreement about the number of administrators joining in tests in the product acceptance test
- B. An agreement about training staff in the test environment
- C. An agreement about resolving production-disrupting errors vs. errors in the test environment
- D. An agreement about the speed of resolution of software errors during testing

22/40

See appendix 22231 Seabiscuit.

In a waterfall situation, setting up the test infrastructure takes place in the TMap phase Setting up and maintaining the Infrastructure. Test manager Neil is talking to test guru Mr. Mikkel about where in the scrum approach, compared with a waterfall situation, you should start to set up the test infrastructure.

At what point does setting up the infrastructure start in the scrum approach?

- A. Release planning
- B. Sprint planning
- C. Sprint 0
- D. Sprint 1

23/40

See appendix 22231 Seabiscuit and the image below:

The ST is executed by the software supplier, The FAT is executed by ZBO after the ST defects have been resolved. In both cases, the same test basis is used for testing. The test strategy shows that in both test types the same test intensity is used to test functionality. Test guru Mr. Mikkel and test manager Neil discuss the outcomes for the DDP _(ST after FAT).

$$DDP_{ST \text{ after FAT}} = \frac{\text{number of defects in ST}}{(\text{number of defects in ST}) + (\text{number of defects in FAT})}$$

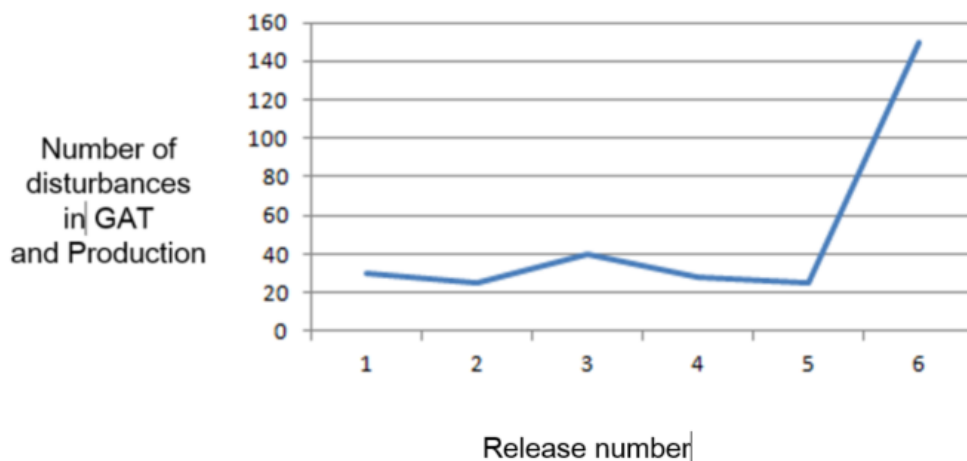
What do Mr. Mikkel and Neil expect in this situation with the DDP _(ST after FAT)?

- A. DDP is 0%
- B. DDP is between 0 and 30%
- C. DDP is between 30 and 70%
- D. DDP is between 70 and 100%

24/40

See appendix 22231 Seabiscuit and the image below:

After a number of releases have gone into production, release 6 seems to show that the number of defects in the UAT and in production has increased almost fivefold. This increase is almost entirely due to the results from the UAT. Test manager Neil asks test guru Mr. Mikkel what he thinks the possible cause of this is.



What will be the cause of the increasing number of defects according to Mr. Mikkel?

- A. The software supplier using new developers and testers at ZBO.
- B. In the UAT testing was done more thoroughly than before.
- C. Not resolving defects from the previous releases.
- D. The online portal has suddenly become very popular and is being used by many more users.

25/40

See appendix 22231 Seabiscuit.

Test manager Neil asks architect Sheryl to give a walkthrough to test analysts Herman and Geza in relation to the architecture of the interfaces between the various insurance applications.

Why did Neil ask for a walkthrough as a test technique?

- A. To transfer information
- B. To test whether or not the solution has been properly incorporated in an architectural overview
- C. To test whether or not the proposed architecture is achievable
- D. To look for a better architectural solution

26/40

See appendix 22231 Seabiscuit.

Test guru, Mr. Mikkel, tells Neil (test manager) that at least 71% of the software projects fail due to the poor quality of requirements. In response, Neil decides to ask his test analysts Herman and Geza to review the following requirement:

“The portal webpage needs to be built in line with the GUI standards of ZBO (including font, size and color) and has to be displayed to the webpage user within 2 seconds.”

What conclusion can Herman and Geza draw in each case?

- A. The requirement is not atomic.
- B. The requirement is not controllable.
- C. The requirement is not achievable.
- D. The requirements are inconsistent.

27/40

See appendix 22231 Seabiscuit.

Testing the app only takes one day per device. Therefore, project manager Hal does not think it is necessary for the test analysts to assess the test basis in advance. In his opinion, it costs more in time than it saves.

Why does test manager Neil think it is sensible, also in this situation, to conduct a testability review on the test basis?

- A. If the delivered system is not good enough for testing, then the entire project may experience delays.
- B. If the system is not sufficiently testable, then the agreements made in the test plan will not be met and the entire project may experience delays.
- C. If the test environment, test tools and work plans do not meet the demands and wishes, then the entire project may experience delays.

28/40

See appendix 22231 Seabiscuit.

Project manager Hal can see that in a waterfall situation, test manager Neil describes all of the test infrastructure activities in the setting up and maintaining the infrastructure phase, with the exception of the 'defining infrastructure' activity.'

Why is the infrastructure defined in the Planning phase?

- A. Defining the infrastructure is a test management activity, the others are test engineer activities.
- B. This is required so that an intake on the test infrastructure can be carried out in the Preparation phase.
- C. To be able to incorporate the planning and estimate for realizing the infrastructure into the master test plan.

29/40

See appendix 22231 Seabiscuit.

What is the advantage if test manager Neil and project manager Hal combine the quality plan, the test plan and the project plan into one plan?

- A. It means that test cases will be developed with sufficient depth.
- B. It improves the quality of the software.
- C. It makes a Generic Test Agreement document (GTA) unnecessary.
- D. It takes into consideration the required quality and test efforts.

30/40

See appendix 22231 Seabiscuit.

Test guru Mr. Mikkel compares the traditional Generic Test Agreement document (GTA) with the Definition of Done (DoD), that applies to the entire scrum project (release). He sees some things in these that match.

What is a match between the GTA and the DoD?

- A. GTA and DOD contain agreements about the quality to be delivered.
- B. GTA and DoD contain agreements about who will test what.
- C. GTA and DoD both apply to a release.
- D. GTA and DoD replace the master test plan.

31/40

See appendix 22231 Seabiscuit.

IT manager Francine wants her programmers to use the TDD approach.

What is the big advantage of using TDD?

- A. Fast feedback about the quality of the acceptance test cases.
- B. Fast feedback about the quality of the test basis.
- C. Fast feedback about the quality of testware.
- D. Fast feedback about the quality of the test object.

32/40

See appendix 22231 Seabiscuit.

IT manager Francine suggests using TDD as a development approach. Test manager Neil can see advantages in this for the traceability of unit test cases.

How does TDD contribute to traceability?

- A. With TDD, there is a clear correlation between test case and software.
- B. With TDD, an application integrator ensures the quality of the outgoing product and better traceability.
- C. With TDD, Pair Programming ensures knowledge exchange and better traceability.

33/40

See appendix 22231 Seabiscuit.

After completing the project, ZBO will have four releases per year. IT manager Francine suggests that, for the UAT, the test factory is the best type of organization.

Why does business manager Owen object to this?

- A. Users will be taken away from work (for a long period of time).
- B. It does not make test automation possible.
- C. New templates, standards and suchlike will need to be created for each new release

34/40

See appendix 22231 Seabiscuit.

Test manager Neil wants to implement the scrum approach and IT manager Francine suggests a permanent test organization (test factory) as test organization for the ST.

What does Neil think the proposed test organization is **not** suitable in this case?

- A. The users carrying out the ST in a test factory will be removed from the test line.
- B. The knowledge of Seabiscuit will be lost to ZBO.
- C. The scrum team as a whole is responsible for conducting the test.

35/40

See appendix 22231 Seabiscuit.

The project uses the DTAP model. Test manager Neil suggests using the A environment for retesting a production-disrupting problem.

Why is this a good choice?

- A. The A environment is the environment in which the programmers retest the amended programs.
- B. The A environment is the environment in which the production software operates.
- C. The A environment is a copy of the production environment.
- D. The A environment is most similar to the production environment.

36/40

See appendix 22231 Seabiscuit.

In the past, disruptive situations occurred on a regular basis, which meant that testing came to a standstill. Test manager Neil talks with operations manager Rajiv about finding a risk-limiting measure for such a situation. Rajiv proposes an alternative option in the form of a second logical test environment.

On which generic requirements to guarantee a reliable test implementation is this based?

- A. Continuity
- B. Flexibility
- C. Portability
- D. Representativeness

37/40

See appendix 22231 Seabiscuit.

CFO Rupert has a tight grip on the budget and wants test manager Neil to work with a test implementation tool.

What does Neil feel is the **primary** effect of using a test implementation tool?

- A. Insight into quality of the code
- B. Insight into test coverage
- C. Cost reduction
- D. Time saving

38/40

See appendix 22231 Seabiscuit.

Project manager Hal wants test manager Neil to use a test tool. Neil thinks that is a good idea. A good technical implementation is important for this to be successful.

What is another critical success factor?

- A. The tool users need the right knowledge and skills to use and maintain the test tool.
- B. The test tool has to be used independently of the development process.
- C. The test tool has to be changed as little as possible to meet the test object and test organization.

39/40

See appendix 22231 Seabiscuit.

In the waterfall situation, test manager Neil used to ask operations manager Rajiv) to set up the test infrastructure during the Preparation phase. Now they have started the scrum approach, Neil asks this during scrum event Sprint 0.

Why is this a sensible choice?

- A. The infrastructure will be available in Sprint 1
- B. The test basis will become available
- C. The Definition of Done will be set up
- D. The test object will be delivered

40/40

See appendix 22231 Seabiscuit.

The IT department at ZBO is transitioning from a waterfall approach to a scrum approach.

Which activities can test manager Neil conduct in both approaches, without coming into conflict with scrum theory?

- A. Advising about how to deal with quality responsibilities
- B. Checking adherence to the test approach
- C. Leading the test team
- D. Setting up the test estimate and designing test tasks

Answer Key

1/40

See appendix 22231 Seabiscuit.

The project's master test plan is made up of 77 pages and contains a great deal of unnecessary text.

How can unnecessary text in the plan be prevented?

- A. only include text when it is clear why and for whom it is written.
 - B. use bullet points to write the text
 - C. have the project manager say what should and should not be written
 - D. have the text written independently by all project members
-
- A. Correct. If it is not known for whom and why the plan is being written, including these subjects in the plan would seem unnecessary §2.5.
 - B. Incorrect. Using bullet points has an influence on the structure of the master test plan; items in the list can still seem excessive.
 - C. Incorrect. The project manager is not the test plan client and does not determine everything that is important within it.
 - D. Incorrect. This increases the chance of redundant and therefore unnecessary content.

2/40

See appendix 22231 Seabiscuit.

Test manager Neil wants to map the risks. He decides to carry out a risk analysis with the entire scrum team (this is carrying out a product risk analysis). Unfortunately, during the analysis, only super user Ann, business analyst Mei Li and the product owner and business manager Owen were present.

Which aspect of the risks may have been overemphasized, if only Ann, Mei Li and Owen brainstorm the risks?

- A. The chance factor of the product risks
 - B. The chance factor of the project risks
 - C. The damage factor of the product risks
 - D. The damage factor of the project risks
-
- A. Incorrect. The super user, business analyst and product owner will tend to have less insight into the chance of defects in product risks.
 - B. Incorrect. Risk poker (PRA) looks mainly into product risks and project risks are a by-product.
 - C. Correct. The super user, business analyst and product owner tend to estimate the damage of product risks to a greater degree than the chance of defects. §2.6
 - D. Incorrect. Risk poker (PRA) looks mainly into product risks and project risks are a by-product.

3/40

See appendix 22231 Seabiscuit.

The scrum approach contains multiple sprints. Test manager Neil has doubts about how to use the PRA in this situation.

What does test guru Mr. Mikkel advise Neil to do in this situation?

- A. Conduct a PRA at the start of the project, using the scope of the system to be delivered
 - B. Conduct a PRA at the start of the project using the scope of the system to be delivered, followed by an additional PRA per sprint
 - C. Conduct a PRA at the start of the sprint with the sprint content as scope
-
- A. Incorrect. Within Agile processes it is not possible to predict the scope of all iterations in advance. Additionally, the scope of the system to be delivered is not yet clear.
 - B. Correct. A PRA is initially carried out for the entire system and according as more information becomes available, an additional PRA is carried out per sprint or iteration. §4.1.4
 - C. Incorrect. An initial attempt is made to map what the product risks are for the entire system, after which an additional PRA is carried out per sprint or iteration.

4/40

See appendix 22231 Seabiscuit.

When the Waterfall approach was discontinued and a Scrum approach was adopted, a Sprint 0 was introduced first.

Why does a scrum approach often start with a Sprint 0?

- A. So the setting up activities can be carried out
 - B. So a Go/No Go decision can be made about the project
 - C. So a Proof of Concept (POC) can be created for the project
 - D. It is the first event in the scrum approach
-
- A. Correct. By starting the setting up activities earlier, the scrum team can get off to a flying start – e.g. by ensuring that the test environment is already in place. §4.1.4.
 - B. Incorrect. This is not part of Sprint 0.
 - C. Incorrect. This is not part of Sprint 0.
 - D. Incorrect. There is no Sprint 0 in the standard scrum approach, but lots of organizations find it helpful to prepare the first Sprint.

5/40

See appendix 22231 Seabiscuit.

Test manager Neil talks to business manager Owen (client) about formulating a strategy for the user acceptance test. The client will have to direct a number of aspects, while being involved in a number of other aspects.

Which aspect of the test strategy does the client direct?

- A. The client directs the risk analysis.
- B. The client directs the selection of test techniques.
- C. The client directs the test objectives.

- A. Incorrect. The client is involved in the risk assessment, but does not direct it.
- B. Incorrect. The client does not play a role in selecting test techniques.
- C. Correct. The client directs the test objectives. §4.1.3

6/40

See appendix 22231 Seabiscuit.

BDTM strikes the balance between covering risks and taking time to cover the risks. Test guru Mr. Mikkel thinks that this principle is applicable not only in waterfall situations, but also within scrum projects.

What other reasons does Mr. Mikkel give for why BDTM can also work well in a scrum project?

- A. In the BDTM approach, just as in a scrum project, the test manager determines which test techniques need to be used.
 - B. In the BDTM approach, just as in a scrum project, there is an explicit focus on communication with non-IT scrum team members.
 - C. In the BDTM approach, just as in a scrum projects, the focus is primarily on the 'Risk' aspect.
-
- A. Incorrect. In the waterfall approach it is often the test manager that decides upon the test techniques. In a scrum project, the persons with the test role decide about the test techniques themselves.
 - B. Correct. By avoiding IT jargon, communication with non-IT scrum team members is clearer and they are able to join in/direct. §4.1.3
 - C. Incorrect. In BDTM, four elements play a role: result, risk, time and cost. The balance between these is co-determined by the team. Risk does not necessary have to demand the most attention.

7/40

See appendix 22231 Seabiscuit.

Test manager Neil uses the five HD elements in Seabiscuit.

What is the element *industrialize* important for?

- A. Keeping testing activities small scale and clear
- B. Getting the correct skills and knowledge
- C. Optimizing testing and improving quality
- D. Making sure testing seamlessly matches the surrounding processes

- A. Incorrect. The *simplify* element best suits keeping testing activities small scale and clear.
- B. Incorrect. The *people* element best suits getting the correct skills and knowledge.
- C. Correct. Optimizing testing and improving quality is part of industrializing testing. §.1.2
- D. Incorrect. The *integrate* element best suits seamlessly matching to the surrounding processes.

8/40

See appendix 22231 Seabiscuit.

Project members ask test manager Neil what using HD elements will lead to.

What is the **most** important objective in using HD elements?

- A. Gaining trust in the developed solution
- B. Exhaustive testing of the developed solution
- C. Testing the developed solution as cheaply as possible
- D. Testing the solution as quickly as possible

- A. Correct. Confidence is the objective of all of the previous test activities. § 1.2
- B. Incorrect. The objective is to carry out as much testing within the given time to achieve confidence.
- C. Incorrect. Testing as cheaply as possible is not the objective of using the elements, it is confidence.
- D. Incorrect. Testing the developed solution as quickly as possible is not the objective of the elements, it is confidence.

9/40

See appendix 22231 Seabiscuit.

Test manager Neil and test guru Mr. Mikkell are brainstorming the characteristics of a quality-driven approach.

Which characteristic will they definitely state?

- A. The test at the end of the process will only be done to show a working solution.
 - B. The test at the end of the process is the safety net for any underlying problems still within the solution.
 - C. The test role should only be carried out by a professional tester.
 - D. The test role should not be integrated with other project roles.
-
- A. Correct. At the end of the process, testing is only required to show a working solution. Preventing and finding defects should already have been done. §2.17
 - B. Incorrect. Testing at the end of the process as a safety net is not quality-driven, as you must accept that there are always points that can be improved.
 - C. Incorrect. In a quality-driven approach, testing and quality have a role for everyone in the development process.
 - D. Incorrect. Integration of the test role is essential for creating confidence.

10/40

See appendix 22231 Seabiscuit.

Test manager Neil is dealing with a non-transparent documentation structure, as well as inconsistent and incomplete documentation. Within the framework of the quality-driven approach, Neil wants to create an action plan.

Which action related to the incomplete documentation will Neil definitely include in the action plan, so that the team can take advantage of this immediately?

- A. Have business analyst Mei Li ensure that all documentation is consistent and complete
 - B. Have business manager Owen coach the test analysts
 - C. Have test manager Neil organize a team retrospective
 - D. Get super user Ann involved with the team on a daily basis
-
- A. Incorrect. In theory, this ensures that the documentation will be properly done, but as a consequence, amending the documentation will be on the critical path and there is no time for this.
 - B. Incorrect. The business manager can help with completing the information, but coaching will have little effect. Moreover, testers are not the only ones to struggle with incomplete documentation, the developers will also suffer from this and will make mistakes as a result.
 - C. Incorrect. A retrospective is carried out after development and test and the results of poor documentation (faults in code and the test) have already been established.
 - D. Correct. Ann, as a key user, can give immediate feedback about which points are or are not correct in the documentation, which means that any gaps can be 'plugged'. §2.17

11/40

See appendix 22231 Seabiscuit.

The test plan (in the waterfall situation) contains the estimate of the number of hours for the UAT for the first release. Test manager Neil is expected to distribute the hours across the test phases in the UAT.

Why is estimation based on ratios the **most** suitable for this?

- A. It means that hours can be divided across test phases based on the test object size.
 - B. It means that hours can be divided across test phases based on test point analysis.
 - C. It means that hours can be divided across test phases based on extrapolation.
 - D. It means that hours can be divided across test phases based on both experience and literature figures
-
- A. Incorrect. Based on the test object size, estimates will provide a total number of hours. The number of hours is already known from the MTP. This technique is not suitable for hours across the phases.
 - B. Incorrect. Test Point Analysis requires a great deal of information. Based on the limited information in the case descriptions, test point analysis (TPA) cannot be used. Moreover, using TPA does not divide the hours across the test phases.
 - C. Incorrect. To be able to use extrapolation, part of the work in the UAT will already need to be complete. This is not the case.
 - D. Correct. The total number of hours for the UAT is known. Using ratios, the hours can now be divided across the phases. §4.1.3

12/40

See appendix 22231 Seabiscuit.

At the start of the project, the scrum team will poker all user stories. Based on this, test manager Neil will create a test estimate.

What makes the accuracy of this estimate still limited?

- A. The scope of the project may still change.
 - B. In a multidisciplinary team, it is difficult to create an estimate for other disciplines.
 - C. In a scrum project, it is not possible to create an initial estimate.
-
- A. Correct. The scope of the project is, in the first instance, only known in broad terms and can/will change throughout the project. §4.9
 - B. Incorrect. It is indeed difficult to create an estimate for other disciplines, but because multiple disciplines are working together, people are encouraged to look at the estimate from other points of view. This makes the estimate accurate.
 - C. Incorrect. A scrum project can involve an initial estimate. This will however have limited accuracy, given that the scope of the project (scope of the test object) can change.

13/40

See appendix 22231 Seabiscuit.

The online portal should be accessible from any device and browser.

What test variety will test manager Neil choose to apply in this case?

- A. Crowd testing
- B. End-to-end test
- C. Performance test
- D. Security test

- A. Correct. Crowd testing makes it possible to test software on a large number of devices, browsers and operating systems, meaning that all tests can be carried out in parallel §2.10 and 2.11
- B. Incorrect. An end-to-end test tests whether or not an application is working properly within the current application chain, not whether or not it can be accessed from any given device.
- C. Incorrect. A performance test tests whether or not the application reacts quickly enough to the user, not whether or not it is accessible from any given device.
- D. Incorrect. A security test tests whether or not the application is safe, not whether or not it is accessible from any given device.

14/40

See appendix 22231 Seabiscuit.

Test manager Neil establishes that in the scrum approach, using user stories, little or no attention is given to performance criteria.

What might be the cause of this?

- A. In theory, user stories should not contain non-functional aspects such as performance criteria.
 - B. User stories are created at the start of the sprint, before the performance criteria are known.
 - C. User stories are only expanded upon with performance criteria after the sprint, so that the production environment is set up.
 - D. User stories are mainly functional by nature, meaning that non-functional aspects like performance criteria can be disregarded.
-
- A. Incorrect. User stories can contain all kinds of criteria, as long as this is described from the user perspective.
 - B. Incorrect. Performance criteria can be created at any point.
 - C. Incorrect. There are no conditions for this.
 - D. Correct. This is the main problem with user stories. They are functional by nature, meaning that non-functional aspects are often under-exposed. It is at this point in many projects that problems arise and because the tester can play a valuable role in asking about non-functional aspects when creating/reviewing the user story. §2.8 and 4.1.4

15/40

See appendix 22231 Seabiscuit and the test strategy table below:

Item	Characteristic	RC	Intensity	Test design technique
Car	Suitability	B	●●	
	Functionality	A	●●●	

It is the job of the test manager (Neil) to assign the correct test design techniques to the combination of characteristic and intensity.

According to Neil, which test design technique is the **most** suited to test the combination of functionality/●●●?

- A. Elementary Comparison Test (ECT)
- B. Error Guessing (EG)
- C. Process Cycle Test (PCT)
- D. Usability Test (UT)

- A. Correct. The ECT is a thorough technique that, with the exception of system and acceptance tests, can also be used well in development testing. §3.2.6 and 4.3
- B. Incorrect. Error Guessing is indeed suited to the development test, but is a light technique.
- C. Incorrect. The PCT uses coverage type paths. The PCT mainly tests suitability (so not functionality) and is therefore often used in the UAT.
- D. Incorrect. This is not a test design technique.

16/40

See appendix 22231 Seabiscuit.

Business manager Owen wants the test intensity, as set out in the test strategy table, to be demonstrably achieved. Test manager Neil and test analyst Geza do not agree on which approach to choose to do this. Neil suggests a coverage-based approach. Geza suggests an experience-based approach.

Why is Neil's approach the better option?

- A. This approach gives the tester the freedom to design test cases in advance of/during the test, meaning that it is easy to achieve the desired test intensity.
- B. This approach is the only one applicable to a waterfall situation.
- C. This approach is based on skills, intuition and experience on the part of the tester, meaning that it will always achieve the agreed coverage.
- D. This approach is based on demonstrably achieving the coverage agreed in the test strategy.

- A. Incorrect. Designing test cases during testing is in fact a feature of an experience-based approach.
- B. Incorrect. Both approaches can be applied within a waterfall as well as an agile environment.
- C. Incorrect. That is in fact a feature of the experience based approach.
- D. Correct. A coverage-based approach focuses on achieving the agreed coverage. §3.2.3, §3.2.4, §3.2.5, §3.2.6

17/40

See appendix 22231 Seabiscuit.

Test manager Neil feels that the scrum approach does not always register defects.

Why can the scrum team nevertheless decide to register all of the defects?

- A. The defects are resolved on the same day.
- B. These are defects of the highest weighed severity.
- C. To establish the weighed severity of the defects during the sprint review.
- D. To build up metrics.

- A. Incorrect. This would in fact be a reason not to establish the defect.
- B. Incorrect. It is decided that all defects should be established, regardless of the level of severity. The level doesn't play a role.
- C. Incorrect. The sprint review is not the right place to establish the levels of severity.
- D. Correct. If the scrum team wants to build up metrics about the number of defects, all of the defects will need to be registered. §4.1.4

18/40

See appendix 22231 Seabiscuit.

During the defects meeting in a waterfall situation, defects are registered as 'known errors'.

What might be a reason for categorizing a defect as a 'known error'?

- A. An error in the test basis
- B. An error in the test result assessment
- C. An error in the test execution
- D. An error in the test case

- A. Correct. It could be that the defect came about due to an error in the test basis. In that case, the program will not work as it should have done and the test basis will need to be amended, but this will not have high priority. §4.7
- B. Incorrect. This is an error made by the tester, not a (known) error in the test object or test basis, and should not be considered to be a 'known error.'
- C. Incorrect. This is an error made by the tester, not a (known) error in the test object or test basis, and should not be considered to be a 'known error.'
- D. Incorrect. This is an error made by the tester, not a (known) error in the test object or test basis, and should not be considered to be a 'known error.'

19/40

See appendix 22231 Seabiscuit.

The FAT took longer than the planned two weeks. In the final week, many errors were resolved and retested.

What is the **best** thing for test manager Neil to do now?

- A. Check to make sure all of the tests have been run
- B. Have the ST carried out again
- C. Continue with the UAT
- D. Execute a regression test

- A. Incorrect. Checking to make sure all of the tests have been carried out is only of value if the system appears to be stable.
- B. Incorrect. The ST has already been carried out, as the software supplier has resolved the errors and carried out the ST again.
- C. Incorrect. It is not a good idea to continue onto the UAT, as the system appears to have been anything but stable over the past week.
- D. Correct. Due to the many resolved defects and the corresponding potential instability of the system, it would be sensible to execute a regression test. §4.4

20/40

See appendix 22231 Seabiscuit.

The strategy table for the master test plan is set up.

What characteristic could be used to expand the strategy table, in addition to functionality performance and usability?

- A. Manageability
- B. Connectivity
- C. Suitability
- D. Efficiency

- A. Incorrect. Manageability means: The ease with which the information system can be maintained in an operational state. This is about technical system management, ease of installation, etc. There is no hint about this in the case.
- B. Correct. All applications have to be able to communicate with each other, as stated in the case. This refers to connectivity and it is for this reason that it can be included in the strategy table. §4.3
- C. Incorrect. Suitability is to do with matching manual procedures to the automated system. There is no hint about this in the case.
- D. Incorrect. Efficiency is about the quantity of system resources. There is no hint about this in the case.

21/40

See appendix 22231 Seabiscuit.

Test manager Neil makes agreements with operations manager Rajiv about the test environment. Rajiv is responsible for creating and managing the test environments.

What agreement will Neil definitely make with Rajiv?

- A. An agreement about the number of administrators joining in tests in the product acceptance test
- B. An agreement about training staff in the test environment
- C. An agreement about resolving production-disrupting errors vs. errors in the test environment
- D. An agreement about the speed of resolution of software errors during testing

- A. Incorrect. Administrators joining in testing for the product acceptance test have nothing to do with the test environments.
- B. Incorrect. The operations manager has no authority over the staff using the application.
- C. Correct. It is important to have clear agreements about resolving errors in the test environment with the administrators conducting the tests directly responsible for the availability of the test environment. §4.3
- D. Incorrect. The operations manager does not get involved in resolving software errors.

22/40

See appendix 22231 Seabiscuit.

In a waterfall situation, setting up the test infrastructure takes place in the TMap phase Setting up and maintaining the Infrastructure. Test manager Neil is talking to test guru Mr. Mikkel about where in the scrum approach, compared with a waterfall situation, you should start to set up the test infrastructure.

At what point does setting up the infrastructure start in the scrum approach?

- A. Release planning
- B. Sprint planning
- C. Sprint 0
- D. Sprint 1

- A. Incorrect. Release planning is not an activity within the scrum approach (setting up is not started in a planning session).
- B. Incorrect. The sprint planning is a planning session and it is at this point that you start to set up the infrastructure.
- C. Correct. It is sensible in the preparatory sprint 0 to start setting up the infrastructure, so that this is ready at the moment at which the scrum team starts development. §4.3
- D. Incorrect. It is too late to start to set up your infrastructure in sprint 1 and, therefore, testing cannot yet be carried out in sprint 1.

23/40

See appendix 22231 Seabiscuit and the image below:

The ST is executed by the software supplier, The FAT is executed by ZBO after the ST defects have been resolved. In both cases, the same test basis is used for testing. The test strategy shows that in both test types the same test intensity is used to test functionality. Test guru Mr. Mikkel and test manager Neil discuss the outcomes for the DDP _(ST after FAT).

$$DDP_{ST \text{ after FAT}} = \frac{\text{number of defects in ST}}{(\text{number of defects in ST}) + (\text{number of defects in FAT})}$$

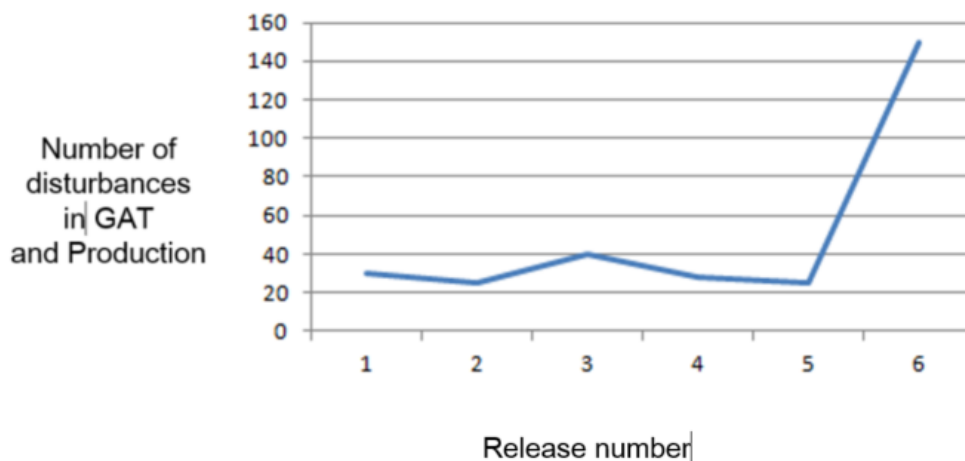
What do Mr. Mikkel and Neil expect in this situation with the DDP _(ST after FAT)?

- A. DDP is 0%
 - B. DDP is between 0 and 30%
 - C. DDP is between 30 and 70%
 - D. DDP is between 70 and 100%
-
- A. Incorrect. The same techniques are used in ST and FAT, as well as the same test basis for testing functionality. In both cases, the same errors are found, but because the errors are resolved after ST, the number of errors found in AT is almost 0, and definitely not 0 in the ST (which is the only way to get a 0%).
 - B. Incorrect. The same techniques are used in ST and FAT, as well as the same test basis for testing functionality. In both cases, the same errors are found, but because the errors are resolved after ST, the number of errors found in AT is almost 0, and definitely not much higher than in ST.
 - C. Incorrect. The same techniques are used in ST and FAT, as well as the same test basis for testing functionality. In both cases, the same errors are found, but because the errors are resolved after ST, the number of errors found in AT is almost 0, and not equal to the ST.
 - D. Correct. The same techniques are used in ST and FAT, as well as the same test basis for testing functionality. In both cases, the same errors are found, but because the errors are resolved after ST, the number of errors found in AT is almost 0, meaning that the DDP should move towards 100%. In any case, almost all errors were found and resolved. E.g.: 95 errors in ST and 5 errors in AT, then the DDP will be 95/100 – 95%. §4.10

24/40

See appendix 22231 Seabiscuit and the image below:

After a number of releases have gone into production, release 6 seems to show that the number of defects in the UAT and in production has increased almost fivefold. This increase is almost entirely due to the results from the UAT. Test manager Neil asks test guru Mr. Mikkel what he thinks the possible cause of this is.



What will be the cause of the increasing number of defects according to Mr. Mikkel?

- A. The software supplier using new developers and testers at ZBO.
 - B. In the UAT testing was done more thoroughly than before.
 - C. Not resolving defects from the previous releases.
 - D. The online portal has suddenly become very popular and is being used by many more users.
-
- A. Correct. Using new staff has led to an almost constant increase in defects because, in this case, both the subject matter knowledge and test knowledge has to be built up. Because the developers do not (yet) fully understand the material, errors can occur and because new testers do not (yet) have enough knowledge, they don't find these. §4.3
 - B. Incorrect. More thorough testing does not necessarily mean more results. A decline in software quality does.
 - C. Incorrect. If the defects were already in the previous releases, then the number of defects in release 5 would also be high and that is not the case.
 - D. Incorrect. For a larger number of users the number of errors found in production could increase, but not in the user acceptance test.

25/40

See appendix 22231 Seabiscuit.

Test manager Neil asks architect Sheryl to give a walkthrough to test analysts Herman and Geza in relation to the architecture of the interfaces between the various insurance applications.

Why did Neil ask for a walkthrough as a test technique?

- A. To transfer information
- B. To test whether or not the solution has been properly incorporated in an architectural overview
- C. To test whether or not the proposed architecture is achievable
- D. To look for a better architectural solution

- A. Correct. The walkthrough is largely a technique for transferring knowledge. §2.20 and.11
- B. Incorrect. To test if a solution works well, an inspection is a more suitable solution.
- C. Incorrect. The testers are unable to give any input as to the achievability of the architecture. Review and inspection are the most appropriate techniques for this when testing achievability.
- D. Incorrect. Herman and Geza are testers and will not be able to come up with a better architectural solution quickly. Review and inspection are the appropriate techniques for this when looking for better solutions.

26/40

See appendix 22231 Seabiscuit.

Test guru, Mr. Mikkel, tells Neil (test manager) that at least 71% of the software projects fail due to the poor quality of requirements. In response, Neil decides to ask his test analysts Herman and Geza to review the following requirement:

“The portal webpage needs to be built in line with the GUI standards of ZBO (including font, size and color) and has to be displayed to the webpage user within 2 seconds.”

What conclusion can Herman and Geza draw in each case?

- A. The requirement is not atomic.
- B. The requirement is not controllable.
- C. The requirement is not achievable.
- D. The requirements are inconsistent.

- A. Correct. The requirement is not atomic, but is made up of 2 requirements. Namely: “The portal webpage needs to be built in line with the GUI standards of ZBO (including font face, size and color)” and “The portal webpage has to be displayed to the webpage user within 2 seconds.” §2.20
- B. Incorrect. Both the GUI standards as well as performance requirements are clear and therefore controllable and testable.
- C. Incorrect. The requirement has no unachievable demands with regard to content and time.
- D. Incorrect. There is only one requirement (that shows no contradictions).

27/40

See appendix 22231 Seabiscuit.

Testing the app only takes one day per device. Therefore, project manager Hal does not think it is necessary for the test analysts to assess the test basis in advance. In his opinion, it costs more in time than it saves.

Why does test manager Neil think it is sensible, also in this situation, to conduct a testability review on the test basis?

- A. If the delivered system is not good enough for testing, then the entire project may experience delays.
- B. If the system is not sufficiently testable, then the agreements made in the test plan will not be met and the entire project may experience delays.
- C. If the test environment, test tools and work plans do not meet the demands and wishes, then the entire project may experience delays.

- A. Incorrect. This description relates to the test object review.
- B. Correct. In the Preparation phase, the testability review is used to assess the testability of the systems (by assessing the test basis). If the test basis is of an insufficient quality, the system is not, or is not sufficiently, testable, meaning that the agreements set out in the test plan cannot be met. §4.3
- C. Incorrect. This description relates to the test infrastructure review.

28/40

See appendix 22231 Seabiscuit.

Project manager Hal can see that in a waterfall situation, test manager Neil describes all of the test infrastructure activities in the setting up and maintaining the infrastructure phase, with the exception of the 'defining infrastructure' activity.'

Why is the infrastructure defined in the Planning phase?

- A. Defining the infrastructure is a test management activity, the others are test engineer activities.
- B. This is required so that an intake on the test infrastructure can be carried out in the Preparation phase.
- C. To be able to incorporate the planning and estimate for realizing the infrastructure into the master test plan.

- A. Incorrect. Managing infrastructure is a test management activity and, moreover, it makes no difference to the phasing whether or not it is an engineering or management activity.
- B. Incorrect. The intake on the test infrastructure is carried out in the Set up and infrastructure management phase.
- C. Correct. The end product of the Planning phase is the master test plan and in order to deliver proper test planning, it is necessary to know what the required test infrastructure is. §4.3

29/40

See appendix 22231 Seabiscuit.

What is the advantage if test manager Neil and project manager Hal combine the quality plan, the test plan and the project plan into one plan?

- A. It means that test cases will be developed with sufficient depth.
 - B. It improves the quality of the software.
 - C. It makes a Generic Test Agreement document (GTA) unnecessary.
 - D. It takes into consideration the required quality and test efforts.
-
- A. Incorrect. Combining the various plans does not have an influence on the degree of depth to which the test cases are developed.
 - B. Incorrect. Combining the test plan does not lead to improved quality of software. The quality will depend on what is actually in the plan.
 - C. Incorrect. The GTA would still be useful, for example, if multiple releases are to be delivered.
 - D. Correct. Combining the quality, test and project plan ensures that consideration is given to the required test and quality efforts. §2.15

30/40

See appendix 22231 Seabiscuit.

Test guru Mr. Mikkel compares the traditional Generic Test Agreement document (GTA) with the Definition of Done (DoD), that applies to the entire scrum project (release). He sees some things in these that match.

What is a match between the GTA and the DoD?

- A. GTA and DOD contain agreements about the quality to be delivered.
 - B. GTA and DoD contain agreements about who will test what.
 - C. GTA and DoD both apply to a release.
 - D. GTA and DoD replace the master test plan.
-
- A. Correct. In a GTA there is often a risk analysis, as well instructions about as how intensely changes relating to a certain product (area) should be tested. A DoD often states how intense testing should be. For example, minimum unit tests or certain test techniques. §2.15
 - B. Incorrect. Within a scrum team, team members determine themselves what tasks they take on (e.g. via a scrum board) and this is not the case in a DoD.
 - C. Incorrect. A GTA applies to multiple projects and releases, and the DoD also applies to multiple releases.
 - D. Incorrect. A GTA applies to projects, while a MTP contains project-specific information. A DoD contains criteria for assessing whether or not a backlog item is done (accepted). A MTP contains more than just acceptance criteria.

31/40

See appendix 22231 Seabiscuit.

IT manager Francine wants her programmers to use the TDD approach.

What is the big advantage of using TDD?

- A. Fast feedback about the quality of the acceptance test cases.
 - B. Fast feedback about the quality of the test basis.
 - C. Fast feedback about the quality of testware.
 - D. Fast feedback about the quality of the test object.
-
- A. Incorrect. The tests that the developers use during Test-Driven Development are not acceptance tests.
 - B. Incorrect. Conducting tests does also provide better insight into the quality of the test basis, however, the great advantage is the rapid feedback that people get about the quality of the test object.
 - C. Incorrect. Conducting tests does also provide better insight into the quality of the testware, however, the great advantage is the rapid feedback that people get about the quality of the test object.
 - D. Correct. In Test-Driven development, the test is conducted during development and therefore gives rapid feedback about the quality. This helps enormously in terms of discovering faults. §4.12

32/40

See appendix 22231 Seabiscuit.

IT manager Francine suggests using TDD as a development approach. Test manager Neil can see advantages in this for the traceability of unit test cases.

How does TDD contribute to traceability?

- A. With TDD, there is a clear correlation between test case and software.
 - B. With TDD, an application integrator ensures the quality of the outgoing product and better traceability.
 - C. With TDD, Pair Programming ensures knowledge exchange and better traceability.
-
- A. Correct. With TDD there is a clear correlation between test case and software; first, a test case is written and then the associated code is created. §4.12
 - B. Incorrect. An application integrator is responsible for the progress and quality of the outgoing product. This does not ensure better traceability. Moreover, an application integrator is not required within TDD.
 - C. Incorrect. Pair Programming is a good method for knowledge exchange and finding more defects, but does not necessarily make for better traceability. Also, Pair Programming does not have to be used in TDD.

33/40

See appendix 22231 Seabiscuit.

After completing the project, ZBO will have four releases per year. IT manager Francine suggests that, for the UAT, the test factory is the best type of organization.

Why does business manager Owen object to this?

- A. Users will be taken away from work (for a long period of time).
 - B. It does not make test automation possible.
 - C. New templates, standards and suchlike will need to be created for each new release
-
- A. Correct. By taking users away from work, a hiatus will be created in production and they will lose their link with the department in which the user works, thus making them become less suitable user-testers over time. §2.13
 - B. Incorrect. Only test activities are carried out in the test plant. As well as testers, test managers, users and others, there are also test automation experts. It's not the users that need to automate. The test automators can work more efficiently in the test plant, because the knowledge is central and can be (re)used across the release.
 - C. Incorrect. It is easier to create and manage templates, standard and suchlike from a test factory, so that they can be more easily reused.

34/40

See appendix 22231 Seabiscuit.

Test manager Neil wants to implement the scrum approach and IT manager Francine suggests a permanent test organization (test factory) as test organization for the ST.

What does Neil think the proposed test organization is **not** suitable in this case?

- A. The users carrying out the ST in a test factory will be removed from the test line.
 - B. The knowledge of Seabiscuit will be lost to ZBO.
 - C. The scrum team as a whole is responsible for conducting the test.
-
- A. Incorrect. The ST will not be carried out by users, but in general by professional testers.
 - B. Incorrect. A test factory is actually a good place to store knowledge.
 - C. Correct. By including testers in a separate part of the company, the team is split and the testing again becomes the unique responsibility of the testers and not of the rest of the scrum team. §2.4

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See appendix 22231 Seabiscuit.

The project uses the DTAP model. Test manager Neil suggests using the A environment for retesting a production-disrupting problem.

Why is this a good choice?

- A. The A environment is the environment in which the programmers retest the amended programs.
- B. The A environment is the environment in which the production software operates.
- C. The A environment is a copy of the production environment.
- D. The A environment is most similar to the production environment.

- A. Incorrect. The programmers test their amended programs in the O environment.
- B. Incorrect. The P environment is the environment in which the production software operates; the A environment contains the software that is ready for acceptance and therefore the step prior to production.
- C. Incorrect. This might be the case, but it does not have to be.
- D. Correct. The A environment is set up to be a production-like environment. § 4.5

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See appendix 22231 Seabiscuit.

In the past, disruptive situations occurred on a regular basis, which meant that testing came to a standstill. Test manager Neil talks with operations manager Rajiv about finding a risk-limiting measure for such a situation. Rajiv proposes an alternative option in the form of a second logical test environment.

On which generic requirements to guarantee a reliable test implementation is this based?

- A. Continuity
- B. Flexibility
- C. Portability
- D. Representativeness

- A. Correct. As there is a fallback environment available, the availability of the test environment will increase and a test environment will be available on a more continuous basis. §4.5
- B. Incorrect. A fallback environment makes the environment less flexible, as changes will need to be made within two environments at the moment at which a test environment is changed.
- C. Incorrect. Portability is not a requirement for the test environment.
- D. Incorrect. By adding a fallback environment the environment does not become more representative by definition.

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See appendix 22231 Seabiscuit.

CFO Rupert has a tight grip on the budget and wants test manager Neil to work with a test implementation tool.

What does Neil feel is the **primary** effect of using a test implementation tool?

- A. Insight into quality of the code
- B. Insight into test coverage
- C. Cost reduction
- D. Time saving

- A. Incorrect. A test implementation tool does not give insight into quality of the code.
- B. Incorrect. A test implementation tool does not give insight into the test coverage.
- C. Incorrect. A separate effect of using a test implementation tool is of course, cost reduction, but it is not the primary effect.
- D. Correct. Time saving in testing is the primary effect of a test implementation tool. §2.16

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See appendix 22231 Seabiscuit.

Project manager Hal wants test manager Neil to use a test tool. Neil thinks that is a good idea. A good technical implementation is important for this to be successful.

What is another critical success factor?

- A. The tool users need the right knowledge and skills to use and maintain the test tool.
- B. The test tool has to be used independently of the development process.
- C. The test tool has to be changed as little as possible to meet the test object and test organization.

- A. Correct. To use the test tool, it is essential that the users of the tool have the correct knowledge. §2.19
- B. Incorrect. Integrating a test tool into the development process is a precondition for using it successfully.
- C. Incorrect. Continuous adjustment to changes is required to continue to achieve the desired effects.

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See appendix 22231 Seabiscuit.

In the waterfall situation, test manager Neil used to ask operations manager Rajiv) to set up the test infrastructure during the Preparation phase. Now they have started the scrum approach, Neil asks this during scrum event Sprint 0.

Why is this a sensible choice?

- A. The infrastructure will be available in Sprint 1
 - B. The test basis will become available
 - C. The Definition of Done will be set up
 - D. The test object will be delivered
-
- A. Correct. Setting up the test infrastructure takes time and it is therefore sensible to start on this in a timely manner so that the infrastructure is ready when testing is done in sprint 1. §4.1.4
 - B. Incorrect. The test basis is only available once development has begun, in sprint 1.
 - C. Incorrect. The DoD is set up in sprint 1, but has no bearing on setting up the test infrastructure.
 - D. Incorrect. The test object is only available once development has begun, in sprint 1.

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See appendix 22231 Seabiscuit.

The IT department at ZBO is transitioning from a waterfall approach to a scrum approach.

Which activities can test manager Neil conduct in both approaches, without coming into conflict with scrum theory?

- A. Advising about how to deal with quality responsibilities
 - B. Checking adherence to the test approach
 - C. Leading the test team
 - D. Setting up the test estimate and designing test tasks
-
- A. Correct. In scrum, the test manager can advise as to how the quality responsibility can be distributed. §4.1.4
 - B. Incorrect. Checking adherence to the test approach in scrum is not the responsibility of the team manager, but of the team.
 - C. Incorrect. There is no separate test team in scrum, all tests are carried out within the scrum team; the test manager does not lead the test team.
 - D. Incorrect. There is no separate test estimate in scrum and there are no separate tests tasks.

Evaluation

Number	Answer	Number	Answer
1	A	21	C
2	C	22	C
3	B	23	D
4	A	24	A
5	C	25	A
6	B	26	A
7	C	27	B
8	A	28	C
9	A	29	D
10	D	30	A
11	D	31	D
12	A	33	A
13	A	33	A
14	D	34	C
15	A	35	D
16	D	36	A
17	D	37	D
18	A	38	A
19	D	39	A
20	B	40	A

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