IREB Examination

Certified Professional for Requirements Engineering Foundation Level

Practice Exam

Questionnaire:	Set_Public_EN_3.3.2
Syllabus:	CPRE Foundation Level 3

☐ Passed   ☐ Failed   Total number of points ☐

Explanation of the practice exam

This practice exam provides an example of an actual IREB Requirements Engineering Foundation Level exam. It can be used when preparing for the actual exam.

If you want to use this practice exam under realistic conditions, print out the exam and answer the questions without means such as training materials or books within a limit of 75 minutes. Make sure that you encounter as little disturbance as possible when answering the questions.

In order to pass this exam, just like in an actual examination, a mark of 70.00 percent must be achieved. This is 49.00 points out of a maximum 70 possible points for the practice exam at hand.

Evaluation of the results

In the document "Answers to the practice exam EN", you will find the correct answers. To determine the number of points you have achieved, please use the Excel sheet "CorrectionAidForThePracticeExam EN".

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1. Introduction and Overview of Requirements Engineering

1. Which of the following statements on quality requirements are true and which are false?

True	False			True	False
☐	☐	A)	Quality requirements refer to the process of creating software and not to the product.	☐	☒
☐	☐	B)	Quality requirements can complement *functional* requirements.	☒	☐
☐	☐	C)	Quality requirements are elicited after the *functional* requirements.	☐	☒
☐	☐	D)	Quality requirements can be substantiated with additional *functional* requirements.	☒	☐

2. Which of the following tasks is <u>NOT</u> a core task of the Requirements Engineer? (1 answer)

☐	A) Eliciting requirements	☐
☐	B) Formalizing requirements	☒
☐	C) Documenting requirements	☐
☐	D) Validating requirements	☐

3. Amongst other things, the customer demands the following from the contractor responsible for delivering an information system:

> *A) The contractor shall process a change request within five days.*
>
> *B) The test reports from the integration test must be disclosed for examination and the test report from the system test must be handed over.*
>
> *C) At any time, the system shall enable a throughput of 100 transactions per second.*
>
> *D) The Subversion tool must be used for configuration management.*
>
> *E) Under normal load, the response time must be no more than two seconds in 90 percent of the cases.*

Which two requirements refer to the system to be realized? (2 answers)

☐	A) Requirement A	☐
☐	B) Requirement B	☐
☐	C) Requirement C	☒
☐	D) Requirement D	☐
☐	E) Requirement E	☒

2.   Fundamental Principles of Requirements Engineering

4.   Which of the following statements does <u>NOT</u> represent a fundamental principle of Requirements Engineering? (1 answer)

A3205
1 Point
v3.0.0
EO 2.1.1

☐	A) Value orientation	☐
☐	B) Problem – requirement – solution	☐
☐	C) Regular retrospectives	☒
☐	D) Systematic and disciplined work	☐

5.   Shared understanding is a principle of Requirements Engineering. For each of the following statements about shared understanding decide, whether it is true or false.

K3206
2 Points
v3.3.0
EO 2.2.1

True	False			True	False
☐	☐	A) Achieving explicit shared understanding is one of the main goals of Requirements Engineering.		☒	☐
☐	☐	B) Without shared understanding, it is impossible to identify the relevant requirement sources.		☒	☐
☐	☐	C) Some degree of implicit shared understanding is crucial because it is impossible to specify everything explicitly.		☒	☐
☐	☐	D) Requirements Engineering in agile development does not work without relying on implicit shared understanding.		☒	☐

6. When defining the system boundary and the context boundary, which aspects need to be considered and which do not need to be considered?

K0202
2 Points
v3.3.0
EO 2.2.2

Needs to be considered	Does not need to be considered				
☐	☐	A) The system	☒	☐
☐	☐	B) The system context	☒	☐
☐	☐	C) The application domain	☒	☐
☐	☐	D) The interfaces between system and system context	☒	☐

7. During the Requirements Engineering process for an online database application, you find out that data protection regulations do not apply, as the data processed by the system is anonymized.

What will be influenced by this finding? (1 answer)

A0207
1 Point
v3.3.0
EO 2.2.2

☐	A) System boundary	☐
☐	B) Context boundary	☒
☐	C) System interfaces	☐
☐	D) Application boundary	☐

3. Work Products and Documentation Practices

8. Which of the following statements regarding work products is <u>NOT</u> correct? (1 answer)

☐	A) Any recorded information that is created during Requirements Engineering is a work product.	☐
☐	B) Recorded artifacts that describe gathered information as an intermediate or final result are work products.	☐
☐	C) User stories, activity diagrams, use cases and prototypes are work products.	☐
☐	D) Only final requirements documents that describe a fixed set of requirements are work products.	☒

9. Which of the following concepts <u>CANNOT</u> be found in UML class diagrams? (1 answer)

☐	A) Associations	☐
☐	B) States	☒
☐	C) Multiplicities	☐
☐	D) Attributes	☐

10. You want to design a requirements document in such a way that it is particularly well suited for the people who will work with the document in further phases of the development process.

From the following sentences, choose the two best combinations of the role and its criteria for the requirements. (2 answers)

☐	A) For the testers, it must be possible to realize the requirements.	☐
☐	B) For the developers, it must be possible to change the requirements easily.	☐
☐	C) For all people involved, the requirements in a work product have to be consistent.	☒
☐	D) For the project manager, the requirements have to be necessary.	☒
☐	E) For the maintenance staff, it must be possible to prioritize the requirements.	☐

11. A company wants to support its process of tender preparation with an information system. You are the Requirements Engineer responsible in this project. During initial discussions with different representatives, you discover, among other aspects, the following:

- You do not understand some of the company's terminology.
- It is obvious that the company representatives do not use consistent terminology.
- Your main contact person at the company described their ideas by telling you the expected interactions between specialists and the information system in the form of different flows of user actions and system reactions.

Which two of the following approaches are particularly well suited to eliciting and documenting the requirements in this case? (2 answers)

☐	A) Creating a statechart	☐
☐	B) Establishing a glossary	☒
☐	C) Eliciting and documenting the quality requirements	☐
☐	D) Creating a use case diagram and specifying the use cases	☒
☐	E) Creating and testing prototypes	☐

12. Which of the following statements on the choice of notations for the documentation of functional requirements apply and which do not apply?

K0418
2 Points
v3.3.0
EO 3.1.2

Applies	Does not apply			Applies	Does not apply
☐	☐	A)	Stakeholders should be able to read the notation used for a work product.	☒	☐
☐	☐	B)	Diagrams have to be applied in projects with object–oriented development.	☐	☒
☐	☐	C)	To ensure optimal communication, a notation that is aligned to the type of requirement should be used.	☒	☐
☐	☐	D)	Graphical notations are well suited for describing system requirements.	☒	☐

13. IREB defines quality criteria for work products. Which of the following statements about quality criteria are true and which are false?

K3423
2 Points
v3.3.0
EO 3.8.2

True	False			True	False
☐	☐	A)	A requirement specification is non–redundant if each requirement is documented only once and does not overlap with others.	☒	☐
☐	☐	B)	A use case diagram might be not consistent with an activity diagram even if both of them are non–redundant.	☒	☐
☐	☐	C)	A requirements specification is consistent if no single requirement contradicts with other requirements.	☒	☐
☐	☐	D)	A use case specification is conformant if it contains all relevant requirements for the final product.	☐	☒

14. A phrase template can be used to document natural-language requirements. You want to introduce such a template in your project and have to convince your project manager of the benefits.

P0510
2 Points
v3.0.0
EO 3.3.1

Which are the two best arguments? (2 answers)

☐	A) Phrase templates help to document well-structured requirements by providing a predefined syntactic structure.	☒
☐	B) Requirements formulated in accordance with a phrase template do not contain incomplete relationships.	☐
☐	C) Learning how to write requirements in accordance with a phrase template does not require much time.	☒
☐	D) Using a phrase template basically delivers a greater degree of information content.	☐
☐	E) Requirements written in accordance with a phrase template ensure that the quality criteria for requirements are met.	☐

15. You are given the following requirement: "The system Alpha should display all data sets in all submenus". What is the most severe issue in this requirement? (1 answer)

A0508
1 Point
v3.0.0
EO 3.2.1

☐	A) The requirement is written in the passive voice.	☐
☐	B) Universal quantifiers have been used.	☒
☐	C) The requirement has incomplete conditions.	☐
☐	D) Nominalizations have been used.	☐

16. Which of the following statements are true and which are false when working with template-based work products?

K3520
2 Points
v3.3.0
EO 3.3.1

True	False			True	False
☐	☐	A) Templates provide a blueprint for structuring single requirements, as well as whole specifications.		☒	☐
☐	☐	B) Template-based work products for single requirements can help to prevent incomplete formulation of requirements in natural language.		☒	☐
☐	☐	C) Template-based work products are inherently better in content than freely formulated requirements.		☐	☒
☐	☐	D) Templates are obligatory for all authors of a requirements specification.		☐	☒

17. A system needs to be developed for managing the fleet of a courier service. The system shall periodically transmit the geographical position of a vehicle to the central unit. The following requirements were documented:

A3521
1 Point
v3.0.0
EO 3.4.4

R1: "The system should be in operation as long as the ignition key is in the ignition lock."

R2: "The system should be in operation as long as a driver is seated in the driver's seat."

R3: "The system should switch to lost-signal if less than three satellites are available."

Which diagram best supports this type of requirement? (1 answer)

☐	A) State diagram	☒
☐	B) Class diagram	☐
☐	C) Context diagram	☐
☐	D) Use case diagram	☐

18. To support young actors and directors, a contest for short films is held. The three best films will be presented with an award. The films submitted must have a maximum length of 20 minutes and must take the constraints depicted in the following diagram into consideration.

K0619
2 Points
v3.0.0
EO 3.4.6

Actor		stars in ▶	Film		directed by ▶	Director
name			title			name
		1..10 0..*			1..3 1	

Do the following statements match the above diagram?

Matches	Does not match		Matches	Does not match
☐	☐	A) Three directors may direct a film collaboratively.	☐	☒
☐	☐	B) A film with only one actor may be submitted.	☒	☐
☐	☐	C) A director may direct two films submitted.	☒	☐
☐	☐	D) An actor may star in any number of films.	☒	☐
☐	☐	E) A film must have ten actors starring in it.	☐	☒

19. What is NOT depicted in a use case diagram? (1 answer)

A0620
1 Point
v3.0.0
EO 3.4.4

☐	A) The process steps of an application	☒
☐	B) The actors of an application	☐
☐	C) The boundary between an application and its environment	☐
☐	D) An application's functionality	☐

20. A company wants to introduce an authorization process for accessing confidential parts of the company's intranet by issuing time-limited passwords. For that reason a state diagram is modeled to express the possible states and state transitions for a user.

K3605
2 Points
v3.3.0
EO 3.4.5
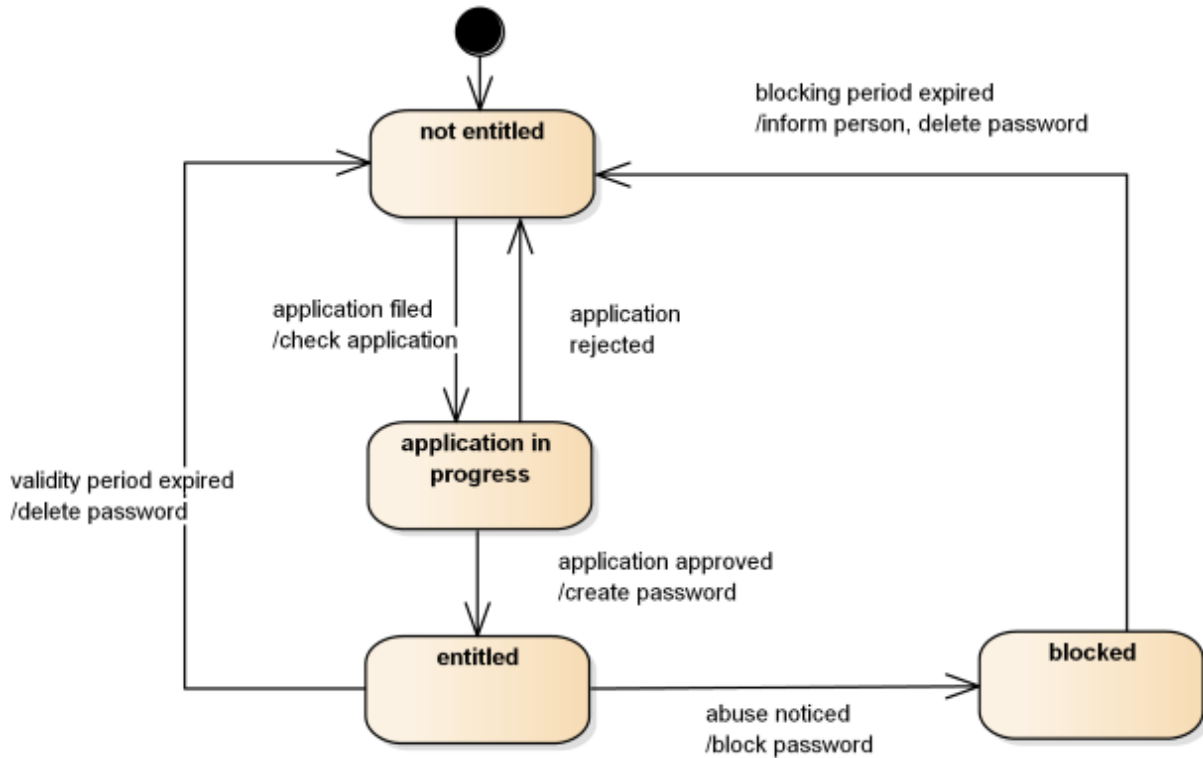
Determine which of the following requirements are modeled correctly in the state diagram above and which are modeled incorrectly or are not modeled at all.

Correctly modeled	Incorrect or not modeled			
☐	☐	A) Users in state *blocked* can be unblocked by resetting the user's password.	☐	☒
☐	☐	B) If abuse for an user in state *entitled* has been noticed, the user's password is *blocked*.	☒	☐
☐	☐	C) If the validity period for an user in state *entitled* has expired, the password is deleted and the user is set to state *not entitled*.	☒	☐
☐	☐	D) If an application request is approved, the user gets an approval mail.	☐	☒

21. The following activity diagram represents performing a measurement.
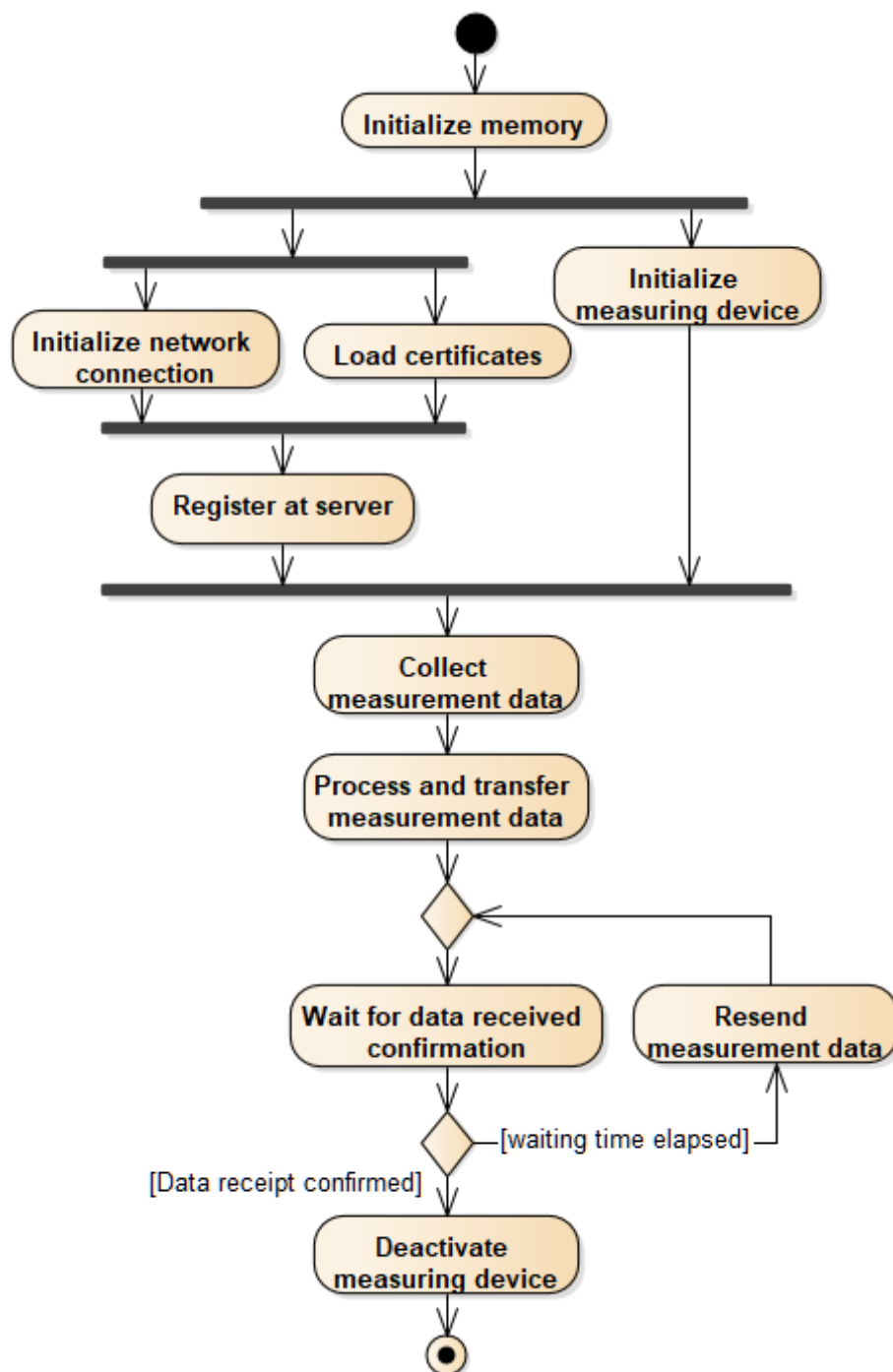
Do the following statements match the above diagram?

| Matches	Does not match			
☐	☐	A) *Initialize measuring device* must happen prior to *Register at server*.	☐	☒
☐	☐	B) *Register at server* happens as soon as *Load certificates* is ready.	☐	☒
☐	☐	C) *Initialize network connection* and *Load certificates* must finish at the same time.	☐	☒
☐	☐	D) *Deactivate measuring device* is executed as soon as *Data receipt confirmed* is true.	☒	☐

22. In Requirements Engineering, which two substantial advantages do graphical models (e.g., use case models or state machines) have over plain textual specifications in natural language? (2 answers)

P0623
2 Points
v3.0.0
EO 3.4.2

☐	A) Models often focus on specific aspects and reduce the cognitive load for understanding the requirements.	☒
☐	B) Models allow the complete description of requirements for a planned system.	☐
☐	C) Models can be checked more easily than natural language and have a restricted syntax that reduces possible ambiguities and omissions.	☒
☐	D) Models are created with tools using a repository. Therefore, models are better suited for managing requirements.	☐
☐	E) With proper tools, source code can be generated from models, thus saving the effort for testing.	☐

23. For each of the statements on the diagram below, decide whether it is true or false.
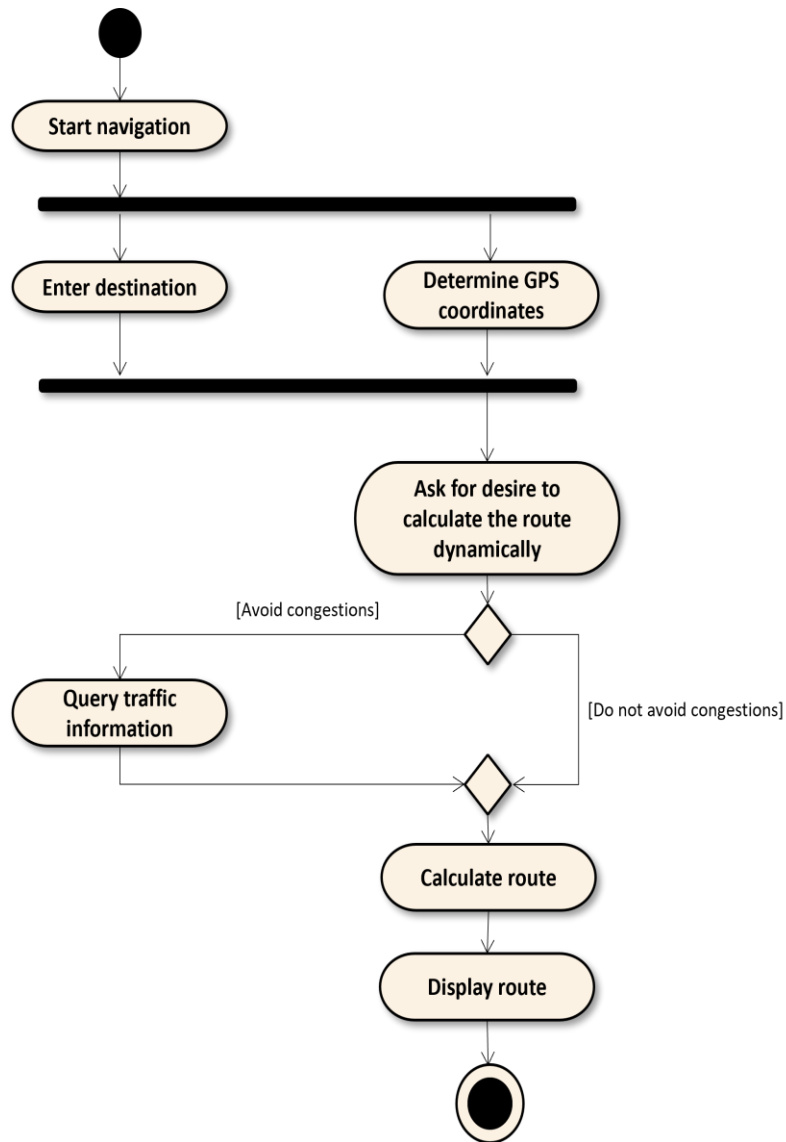
True	False				
☐	☐	A) A route can be calculated **without** querying traffic information.		☒	☐
☐	☐	B) A route can be calculated **after** querying traffic information.		☒	☐
☐	☐	C) The system can ask for the desire to calculate the route dynamically without having to determine the GPS coordinates first.		☐	☒
☐	☐	D) The order of Enter destination and Determine GPS coordinates is arbitrary.		☒	☐

24. You are modeling the requirements for a management system to be applied in universities. The steps for enrollment of a new student at a university are to be documented using a model-based approach. Which two of the following diagrams are best suited to this aim? (2 answers)

P0626
2 Points
v3.0.0
EO 3.4.4

☐	A) BPMN diagram	☒
☐	B) Laus-Ohl diagram	☐
☐	C) Activity diagram	☒
☐	D) Class diagram	☐
☐	E) Use case diagram	☐

25. When specifying a system, different aspects have to be considered. What is described in the *function and flow* aspect? (1 answer)

A0627
1 Point
v3.3.0
EO 3.1.4

☐	A) Portability of the system	☐
☐	B) Reaction of the system to an internal state transition	☐
☐	C) Structure of input and output data	☐
☐	D) Transformation of input data into output data	☒

4.   Practices for Requirements Elaboration

26. You have been appointed as a Requirements Engineer in a company and are in the process of eliciting detailed requirements for a use case. To do this, you run through a series of interviews with various stakeholders. In the interview follow-up, you notice an inconsistency in the statements about the arrangement of functions in the menu on the user interface. What is the best way to deal with this situation? (1 answer)

A3409
1 Point
v3.2.1
EO 4.3.2

☐	A) You discuss this finding with an available stakeholder and get a clear statement and record their advice.	☐
☐	B) You invite all stakeholders involved to a meeting and reach an agreement on this point.	☒
☐	C) Due to your experience with user interfaces you can solve the problem on your own, thus saving valuable time.	☐
☐	D) You forward the problem to the product owner and let them decide on this matter based on the evaluation of potential risks.	☐

27. Which two of the following statements best characterize the relationship between a Requirements Engineer and a stakeholder in the role of a tester? (2 answers)

P0309
1 Point
v3.3.0
EO 4.1.2

☐	A) The Requirements Engineer provides input for the stakeholder's work.	☒
☐	B) The Requirements Engineer's results are managed by the stakeholder.	☐
☐	C) The stakeholder can contribute to ensure the quality of the Requirements Engineer's work.	☒
☐	D) The stakeholder supervises the Requirements Engineer's work.	☐
☐	E) There is no relationship between the Requirements Engineer's work and the stakeholder role.	☐

28. The Kano model states that dissatisfiers (basic factors) are hard to elicit.

Which of the techniques mentioned below is the most effective elicitation technique for dissatisfiers? (1 answer)

A0312
1 Point
v3.3.0
EO 4.2.2

☐	A) Prototyping	☐
☐	B) Questionnaire	☐
☐	C) Field observation	☒
☐	D) Brainstorming	☐

29. Which two of the following aspects are the most important to consider when choosing suitable elicitation techniques? (2 answers)

P0313
2 Points
v3.3.0
EO 4.2.3

☐	A) The availability of the involved people.	☒
☐	B) The preferences of the requirements engineer.	☐
☐	C) The category of requirements based on Kano classification.	☒
☐	D) The complexity of the required tools.	☐
☐	E) The habitual use of a technique.	☐

30. Which of the following techniques is NOT suitable for resolving requirements conflicts? (1 answer)

A3410
1 Point
v3.0.0
EO 4.3.2

☐	A) Overruling	☐
☐	B) Definition of variants	☐
☐	C) Compromise	☐
☐	D) Sampling	☒

31. Which are the two most important attributes in a stakeholder list? (2 answers)

P3411
2 Points
v3.3.0
EO 4.1.4

☐	A) Their function/role	☒
☐	B) Their personal preferences	☐
☐	C) Their boss	☐
☐	D) Their relevance	☒
☐	E) Their previous projects	☐

32. What are the two key advantages of using questionnaires for requirements elicitation? (2 answers)

P0314
1 Point
v3.3.0
EO 4.2.2

☐	A) Questionnaires allow a high number of participants.	☒
☐	B) Questionnaires allow statistically relevant statements on requirements.	☒
☐	C) Questionnaires allow the participants' understanding to be validated.	☐
☐	D) Questionnaires allow to obtain the most insights on delighters (excitement factors).	☐
☐	E) Questionnaires allow to address the needs of individual stakeholders easily.	☐

33. Which of the following statements about elicitation techniques are true and which are false?

K0324
2 Points
v3.3.0
EO 4.2.2

True	False		Answer True	Answer False
☐	☐	A) An interview is a *gathering* technique.	☒	☐
☐	☐	B) An analogy technique is a *gathering* technique.	☐	☒
☐	☐	C) System archeology is an *observation* technique.	☐	☒
☐	☐	D) Apprenticing is an *observation* technique.	☒	☐

34. For a navigation system that is to be used internationally, a stakeholder demands a female voice only for the voice output. Another stakeholder considers this discriminatory and demands a male voice in addition.

Which of the following types of conflicts describes this conflict best? (1 answer)

A0720
1 Point
v3.0.1
EO 4.3.1

☐	A) Relationship conflict		☐
☐	B) Interest conflict		☐
☐	C) Structural conflict		☐
☐	D) Value conflict		☒

35. In your project, a new braking system for high speed trains is developed.

Which validation technique is most suitable for this situation, where the system requirements of a safety-critical component should be validated? (1 answer)

A0721
2 Points
v3.0.0
EO 4.4.3

☐	A) A/B testing	☐
☐	B) Prototype	☐
☐	C) Walkthrough	☐
☐	D) Inspection	☒

5. Process and Working Structure

36. Which two major facets below are the most important to consider when configuring an RE process? (2 answers)

☐	A) The time facet: linear vs. iterative	☒
☐	B) The budget facet: tight vs. large	☐
☐	C) The purpose facet: prescriptive vs. explorative	☒
☐	D) The methodology facet: structure-based vs. process-based	☐
☐	E) The interaction facet: team-driven vs. individual-driven	☐

37. Based on an analysis of the influencing factors, a suitable combination of process facets should be configured. In practice, some specific combinations of facets frequently occur.

Which one of the combinations mentioned below is <u>NOT</u> recognized as such? (1 answer)

☐	A) Product-oriented RE process (iterative, explorative, market oriented)	☐
☐	B) Human-oriented RE process (linear, process-based, individual)	☒
☐	C) Participatory RE process (iterative, explorative, customer specific)	☐
☐	D) Contractual RE process (linear, prescriptive, customer specific)	☐

6. Management Practices for Requirements

38. Which of the following statements about views on requirements are true and which are false?

True	False		
☐	☐	A) Not every stakeholder needs to have access to all requirements.	☒ ☐
☐	☐	B) Requirements that belong together can be grouped to support the review.	☒ ☐
☐	☐	C) Requirements can be hidden from unauthorized stakeholders.	☒ ☐
☐	☐	D) It is assured that several people can work on one specification at the same time.	☐ ☒

39. The traceability of requirements has several goals.

   Indicate the statement that is <u>NOT</u> correct. (1 answer)

☐	A) Traceability facilitates an impact analysis.	☐
☐	B) Traceability facilitates the verification of implementation.	☐
☐	C) Traceability facilitates exports from a requirements management tool.	☒
☐	D) Traceability facilitates finding a requirement's source.	☐

40. Additional information on requirements is managed using attributes. An example of such additional information is a unique identifier.

Which of the following statements regarding the purpose of unique identifiers are true and which are false?

Unique identifiers are helpful …

K0821
2 Points
v3.0.0
EO 6.5.2

True	False			True	False
☐	☐	A) … for estimating the overall size of a specification.		☐	☒
☐	☐	B) … for having an unambiguous basis for communication.		☒	☐
☐	☐	C) … for establishing references to other requirements.		☒	☐
☐	☐	D) … for establishing traceability to other development artifacts.		☒	☐

41. You have produced a requirements baseline and delivered it to development. In the meantime, stakeholders have submitted change requests for requirements of this baseline.

Which of the following answers represent correct change management for requirements? (2 answers)

P0838
2 Points
v3.2.0
EO 6.4.1

☐	A) Changes with regard to requirements that are part of the baseline are implemented through the creation of new versions of the requirements within this requirements baseline.	☐
☐	B) Prior to adjusting the requirements to the change requests, the impact of the changes has to be determined.	☒
☐	C) Change requests can be submitted at any time and may be considered for development when creating a future baseline.	☒
☐	D) Time-critical change requests are neither analyzed nor estimated but delivered directly to development.	☐
☐	E) If the development for changed requirements has not started yet, the change can easily be processed without creating a new baseline.	☐

42. Attributes are used to manage additional characteristics of requirements. Priority is one example of such a requirements attribute.

K0802
2 Points
v3.3.0
EO 6.8.1

Which of the following statements on the reason for prioritizing requirements are true and which are false?

A reason for prioritizing is ...

True	False		Answer True	Answer False
☐	☐	A) ... to decide which requirements are to be implemented in the next release.	☒	☐
☐	☐	B) ... to decide on which requirements to focus first in testing.	☒	☐
☐	☐	C) ... to document how much it would cost to implement a requirement.	☐	☒
☐	☐	D) ... to recognize which requirements can be reused.	☐	☒

43. Version and configuration management are used for managing requirements and requirements specifications. "Version" and "baseline" are two frequently used terms in this context.

A0804
1 Point
v3.0.0
EO 6.4.1

Select the best description of a baseline. (1 answer)

		Answer
☐	A) A version of a requirement	☐
☐	B) A released configuration of an individual requirement	☐
☐	C) A released configuration of requirements	☒
☐	D) A not yet released version of a requirements specification	☐

7.   Tool Support

44. As a Requirements Engineer for a company, you have to choose a tool to support your Requirements Engineering process.

    In this context, which of the following statements are true and which are false?

    K0910
    2 Points
    v3.3.0
    EO 7.2.1

True	False			Answer True	Answer False
☐	☐	A)	The tool has to support the artifacts demanded in the Requirements Engineering process applied.	☒	☐
☐	☐	B)	The choice of a tool should be left to the users of the tool.	☐	☒
☐	☐	C)	The tool has to assist users to set up their test cases as part of the Requirements Engineering process to support *shift–left testing*.	☐	☒
☐	☐	D)	The choice of a tool is influenced by the tool chain (e.g., configuration management tool) the tool is to be applied in.	☒	☐

45. Which of the following tasks is <u>NOT</u> a capability of a tool, that supports the management of requirements in the Requirements Engineering process? (1 answer)

    A0922
    1 Point
    v3.3.0
    EO 7.1.2

		Answer
☐	A) Tracking logical relationships between requirements	☐
☐	B) Modelling of requirements	☒
☐	C) Measuring and reporting of the Requirements Engineering process	☐
☐	D) Providing support for the prioritization of requirements	☐