**Capitalization – The first word of a sentence is capitalized & punctuated as usual. Each bullet point answer begins with capitalization and ends with a period. Bullet point answers that complete a sentence with the question above are not capitalized, but end with a period (…).**

IQSS01\_Lektion01\_Frage01

Software quality ...

* can be planned and controlled in a targeted manner. (1 pts)
* can only be determined on the basis of the specification.
* will be determined only after the development work has been completed.
* is reviewed during the process in exceptional cases.

IQSS01\_Lektion01\_Frage02

Early error detection ...

* also enables early troubleshooting only in rare cases.
* should occur during development, but cannot be supported by constructive quality management.
* can only be ensured by independent quality assurance, where developers are not involved in testing.
* can prevent errors from propagating into activities within the entire software process. (1 pts)

IQSS01\_Lektion01\_Frage03

Software tests ...

* are conducted to prove that software systems are free of errors.
* cannot be conducted until all test cases have been generated to fully test the system.
* can only reduce the probability of that the software is free of errors, but cannot prove that it is.
* are sampling methods for industrial information systems. (1 pts)

IQSS01\_Lektion01\_Frage04

Which of the following statements about software testing is/are correct?

* Repeated execution of software tests always leads to a greater probability of errors.
* Software tests must be created anew for each system, since they generally can only be reused to a limited extent or not at all. (1 pts)
* A software system for which no errors can be identified during testing will always result in a satisfied customer.
* As a rule, the software errors identified during testing are equally distributed across all software components.

IQSS01\_Lektion01\_Frage05

The costs for quality ...

* are the sum of the manufacturing costs and the costs for error prevention.
* can generally be precisely quantified at the beginning of a software project.
* result from the sum of the costs for error prevention and the costs for error correction. (1 pts)
* include the costs for analytical QM, but not for constructive QM.

IQSS01\_Lektion01\_Frage06

A cost-optimized quality of software systems ...

* can be achieved by full testing.
* is not desirable for economic reasons.
* includes a quality plan applicable to all projects.
* is achieved when the cost of preventing errors does not exceed the cost of correcting them. (1 pts)

IQSS01\_Lektion02\_Frage01

Quality management in the software process ...

* includes software quality assurance, but not quality improvement.
* can only be used to plan quality to a limited extent.
* includes activities correlated with the quality of the artifacts generated, as well as the quality of the software process. (1 pts)
* targets the activities, but not responsibilities, of roles within a very specific software process.

IQSS01\_Lektion02\_Frage02

Product-oriented software quality management ...

* examines the defined quality characteristics of specific software products.
* includes both constructive measures and physicalist measures.
* includes both review techniques and software testing. (1 pts)
* is used to control the quality of the software process.

IQSS01\_Lektion02\_Frage03

Quality objectives of software systems ...

* are always determined with the help of quality models.
* automatically result from partial characteristics of the quality concept.
* can only be formulated on the basis of the IT strategy.
* should be prioritized and communicated to all team members. (1 pts)

IQSS01\_Lektion02\_Frage04

Quality assurance and improvement activities ...

* are generally carried out with a focus on early project phases.
* are determined by project management together with quality management. (1 pts)
* generally only include constructive QA measures.
* are always provided to the developer in the form of checklists.

IQSS01\_Lektion02\_Frage05

Activities for constructive quality management ...

* can influence various artifacts throughout the entire software process and all the way through to acceptance. (1 pts)
* cannot be used to control the quality of software tests.
* are conducted to examine the suitability of an architecture definition.
* are part of quality improvement.

IQSS01\_Lektion02\_Frage6

Total quality management (TQM) ...

* can only be used in those software processes that cannot be further optimized.
* denotes an established management principle for quality assurance.
* has the satisfaction of all stakeholders as its primary objective, since the perception of all stakeholders determines the quality of the system.
* explicitly involves all project staff in achieving an appropriate level of quality. (1 pts)

IQSS01\_Lektion03\_Frage01

Activities in constructive quality management ...

* always eliminate the cause of the error symptoms that have been detected.
* include, among others, the definition of QA measures, as well as the monitoring of their compliance. (1 pts)
* precisely consist of testing the effectiveness and quality of measures specified in the software process.
* exclude the adjustment of specifications in the course of a software process.

IQSS01\_Lektion03\_Frage02

Organizational measures for constructive quality management ...

* are all non-process measures that have an impact on the specific organization of work.
* include standards, guidelines and checklists, but not templates.
* are, for example, the specification for a specific process model or compliance with ISO standards. (1 pts)
* are dependent on the type of project, but are generally not expressed in a company-specific way.

IQSS01\_Lektion03\_Frage03

Technical measures for constructive quality management ...

* do not include the specification of methods or approaches.
* are all non-organizational measures that have an impact on the specific technology organization.
* are all specific measures that relate to technical (software) aspects within a software process. (1 pts)
* are precisely comprised of the specification of programming languages, tools, and frameworks from industrial software engineering.

IQSS01\_Lektion03\_Frage04

Interpersonal measures for constructive quality management ...

* are any non-technical actions with an impact on team collaboration.
* should enable a professional and positive co-operation between the individuals involved in the process. (1 pts)
* include the design of a working environment and the specification of procedures, in addition to measures for qualification.
* regulate the leisure activities of team members.

IQSS01\_Lektion03\_Frage05

To identify and correct the actual cause of error symptoms, ...

* root cause analysis can be used together with the 4-who method.
* additional QA measures can also be introduced to avoid such errors in the future. (1 pts)
* software testing can help.
* only the 5-why method should be used.

IQSS01\_Lektion04\_Frage01

Static quality assurance procedures ...

* only examine artifacts, not activities.
* are used, among other things, for architectural evaluation. (1 pts)
* are dynamic techniques, in contrast to constructive quality assurance procedures.
* are carried out in practice using only pen and paper.

IQSS01\_Lektion04\_Frage02

Review techniques ...

* are dynamic, static procedures in analytical quality management.
* are manual procedures in constructive quality management.
* are manual static procedures in analytical quality management. (1 pts)
* are evaluation techniques in exceptional cases only.

IQSS01\_Lektion04\_Frage03

The roles involved in a review ...

* are always author, reviewer and presenter.
* depend on the type of review. For example, in an opinion, as opposed to an inspection, all four roles are generally always filled.
* can be assigned to multiple individuals, for example, the role of the reviewer. (1 pts)
* all decide on the outcome of the review together.

IQSS01\_Lektion04\_Frage04

The activities of a review ...

* are always documented by an external recorder.
* are always determined by the moderator.
* always require planning by the moderator, particularly the individual preparation of the reviewers.
* allow a rework by the author, in principle. (1 pts)

IQSS01\_Lektion04\_Frage05

The use of metrics ...

* requires measurements whose measured values are referred to as metrics. Metrics can always be measured directly; they are not composed of several measured values.
* supports product quality improvement, but not process quality improvement.
* is usually carried out with the help of tools. (1 pts)
* is a static, constructive method used to determine the quality of products and processes.

IQSS01\_Lektion04\_Frage06

With the use of software metrics, ...

* as elements of objective agreements, the focus is always placed on the fulfillment of professional requirements.
* measured values for the quality actually achieved can be automatically determined within the development environment itself.
* measured values can often be determined independent of the specifically chosen programming language. (1 pts)
* software errors can be reliably identified.

IQSS01\_Lektion05\_Frage01

Software testing ...

* follows the guidelines described as a test case.
* is used to examine and evaluate the quality of software artifacts after their creation.
* denotes dynamic analytical quality assurance measures.
* generally occurs after all development work has been completed. (1 pts)

IQSS01\_Lektion05\_Frage02

Black box tests ...

* are generated based on the interpretation of a specification. (1 pts)
* are generated with knowledge of the internal structure of a program code.
* always serve to test the created program code as completely as possible.
* are typically generated and executed by the system’s development team, unlike white box tests.

IQSS01\_Lektion05\_Frage03

Which of the following statements about generating test cases for industrial information systems is/are correct?

* Boundary value analysis is only conditionally suitable in combination with equivalence partitioning.
* Cause-effect analysis can be used to test interactions between equivalence classes. (1 pts)
* The use of a decision table can only be used for black box tests.
* The generation of random test data should be avoided, if possible.

IQSS01\_Lektion05\_Frage04

The use of equivalence partitioning ...

* is well suited for test cases where data is entered into the system via a GUI, but not via a technical interface.
* aims to reduce required input values so that only 3 representatives from each equivalence class need to be tested.
* is suitable for unlimited value ranges. (1 pts)
* is only possible for valid value ranges.

IQSS01\_Lektion05\_Frage05

Boundary value analysis ...

* is a technique for selecting specific input data for use in constructive QM. (1 pts)
* specifically determines values at the boundaries of equivalence classes.
* can assist with the selection of specific representatives from equivalence classes in the test case generation.
* can also be used without equivalence partitioning.

IQSS01\_Lektion06\_Frage01

Activities for methodical testing ...

* do not start with test case generation, but rather with test planning.
* also include test requirements analysis. (1 pts)
* differ in the effort and expense, depending on the current test level.
* should generally not exceed seven days, depending on the project.

IQSS01\_Lektion06\_Frage02

During test planning, ...

* the test environment setup does not need to be taken into account.
* which deadlines are to be met must be determined, among other things. (1 pts)
* the exact number of test cases must be calculated.
* the test cases must already be roughly specified.

IQSS01\_Lektion06\_Frage03

The automated execution of component tests ...

* is well supported by test frameworks.
* should be realized by independent and regression tests.
* allows all tests to be repeated after modifications to the program code.
* is not worth undertaking, since repeated execution does not lead to any gain in knowledge. (1 pts)

IQSS01\_Lektion06\_Frage04

Test-driven development ...

* is an approach in which the test cases are generated even before the program code to be tested. (1 pts)
* is best implemented without conducting automated tests.
* is a technical framework to support component tests.
* is an approach in which test cases and program code are created in parallel.

IQSS01\_Lektion06\_Frage05

The execution of system tests ...

* is only to ensure that the system as a whole meets the specified functional requirements.
* specifically includes load tests and performance tests, but does not include security tests.
* should be carried out in a productive environment that is as true to the original as possible. (1 pts)
* must never be done with real data sets for data protection reasons.

IQSS01\_Lektion07\_Frage01

Activities to examine and coordinate requirements ...

* include, but are not limited to, the selection of examination principles and examination techniques. (1 pts)
* always examine documented requirements only with regard to the content and documentation quality aspects.
* must, under no circumstances, lead to a conflict between the stakeholders.
* also include coordination with all the stakeholders involved in the project.

IQSS01\_Lektion07\_Frage02

The quality assurance of architectures ...

* determines the suitability of the architectural design after implementation.
* always evaluates the suitability of the architectural design prior to implementation.
* is also conducted to evaluate whether the architecture actually created adheres to the specifications of the architectural description. (1 pts)
* determines the suitability of the architectural concept even before specification.

IQSS01\_Lektion07\_Frage03

Scenario-based architectural analysis ...

* is used to test the architectural concept for suitability in meeting the required quality attributes and boundary conditions prior to its implementation. (1 pts)
* is implemented using the architecture tradeoff analysis method (ATAM) technical application.
* evaluates application scenarios with different architecture variants.
* uses architecture scenarios to evaluate application variants.

IQSS01\_Lektion07\_Frage04

In the individual phases and activities of ATAM, ...

* the development of detailed scenarios takes place in Phase 3 and the evaluation of the architecture variants in Phase 4.
* application scenarios and architecture variants are initially described relatively roughly and later elaborated in detail. (1 pts)
* Phase 1 can also be omitted, if necessary, particularly if important stakeholders are not yet familiar with ATAM.
* technical stakeholders are only included in Phase 1.

IQSS01\_Lektion07\_Frage05

Quality assurance of software processes ...

* only focuses on the artifacts generated in the software process.
* is based on the assumption that the quality of the software process influences the quality of the results generated. (1 pts)
* can only be conducted at the beginning and end of a software process.
* very rarely has an influence on the quality of the results generated.