A. Exam Preparation

iSAQB certification program
Certified Professional for Software Architecture
Foundation Level (CPSA-F)

Overview

- Examination Procedure
- Exam Question Structure
- Question Types
- How to Change Marks?
- Some Example Questions

Examination Procedure

External examiner

75 minutes, approx. 40 questions

Multiple choice only

1-3 points/question

60% to pass

- “Best fit” questions
- Incorrect answers reduce points given for that specific question. Lowest number of points for each question is 0 points.
- Blank answers: no points will be given or subtracted.

When in doubt, answers can be omitted.

dos

- Be there 10 minutes in advance
- Have a **photo ID** ready
- Take your time
  - Read questions carefully
  - Review your answers

don’ts

- Ask questions during exam
- Use notes, books, phone, etc.
- Leave room during exam
- Disseminate content of exam

The Structure of Examination Questions

Type of questions:
- Single-Choice,
- Pick Multiple,
- Choose Category

Max. points for this question

Question No. + ID

Question 1 *A-Question: Select one option. – 1 point*

ID: Q-20-04-01

Question

How many definitions of "software architecture" exist?

- ☐ (a) Exactly one for all kinds of systems.
- ☐ (b) One for every kind of software system (e.g. "embedded", "real-time", "decision support", "web", "batch", ...)
- ☐ (c) A dozen or more different definitions.

Answer options to choose from according to the type of the question.

A-Question
(Single-Choice, Single Correct Answer)

Question 1 *A-Question: Select one option. – 1 point*
ID: Q-20-04-01

How many definitions of “software architecture” exist?

- ☐ (a) Exactly one for all kinds of systems.
- ☐ (b) One for every kind of software system (e.g. “embedded”, “real-time”, “decision support”, “web”, “batch”, ...)
- ☐ (c) A dozen or more different definitions.

no choice -> 0 points

correct choice -> all points

wrong choice, no choice or to many choices -> 0 points

A-Question
(Single-Choice, Single Correct Answer)

Question 1 *A-Question: Select one option. – 1 point*
ID: Q-20-04-01

How many definitions of “software architecture” exist?

- ☐ (a) Exactly one for all kinds of systems.
- ☐ (b) One for every kind of software system (e.g. “embedded”, “real-time”, “decision support”, “web”, “batch”, ...)
- ☒ (c) A dozen or more different definitions.

correct choice -> 1 point

correct choice -> all points

wrong choice, no choice or to many choices -> 0 points

A-Question
(Single-Choice, Single Correct Answer)

Question 1 *A-Question: Select one option. – 1 point*
ID: Q-20-04-01

How many definitions of “software architecture” exist?

- ☒ (a) Exactly one for all kinds of systems.
- ☐ (b) One for every kind of software system (e.g. “embedded”, “real-time”, “decision support”, “web”, “batch”, …)
- ☐ (c) A dozen or more different definitions.

wrong choice -> 0 points

correct choice -> all points

wrong choice, no choice or to many choices -> 0 points

A-Question
(Single-Choice, Single Correct Answer)

Question 1 *A-Question: Select one option. – 1 point*
ID: Q-20-04-01

How many definitions of "software architecture" exist?

too many selected -> 0 points

- [x] (a) Exactly one for all kinds of systems.
- [ ] (b) One for every kind of software system (e.g. "embedded", "real-time", "decision support", "web", "batch", ...)
- [x] (c) A dozen or more different definitions.

correct choice -> all points

wrong choice, no choice or to many choices -> 0 points

P-Question (Pick Multiple)

Question 38 *P-Question: Choose the two most appropriate indicators. – 2 points*
ID: Q-20-04-29

You try to analyze your architecture quantitatively. Which are the TWO most appropriate indicators for architectural problem areas?

- ☐ (a) High coupling of components.
- ☐ (b) Inappropriate names of public methods.
- ☐ (c) Missing comments.
- ☐ (d) Error clusters.
- ☐ (e) Number of test cases per component.

no selection -> 0 points

correct answer -> add 1/n of max points
wrong answer -> deduct 1/n of max points
(but only down to 0 points overall)

too many selections -> 0 points
fewer selections -> 0 points added/deducted
worst case is 0 points

P-Question (Pick Multiple)

Question 38 *P-Question: Choose the two most appropriate indicators. – 2 points*
ID: Q-20-04-29

You try to analyze your architecture quantitatively. Which are the TWO most appropriate indicators for architectural problem areas?

- [x] (a) High coupling of components.
- [ ] (b) Inappropriate names of public methods.
- [ ] (c) Missing comments.
- [x] (d) Error clusters.
- [ ] (e) Number of test cases per component.

2 correct -> 1 + 1 = 2 points

correct answer -> add 1/n of max points
wrong answer -> deduct 1/n of max points
(but only down to 0 points overall)

too many selections -> 0 points
fewer selections -> 0 points added/deducted
worst case is 0 points

P-Question (Pick Multiple)

Question 38 *P-Question: Choose the two most appropriate indicators. – 2 points*
ID: Q-20-04-29

You try to analyze your architecture quantitatively. Which are the TWO most appropriate indicators for architectural problem areas?

- [X] (a) High coupling of components.
- [ ] (b) Inappropriate names of public methods.
- [X] (c) Missing comments.
- [ ] (d) Error clusters.
- [ ] (e) Number of test cases per component.

1 correct, 1 wrong -> 0 points

correct answer -> add 1/n of max points
wrong answer -> deduct 1/n of max points
(but only down to 0 points overall)

too many selections -> 0 points
fewer selections -> 0 points added/deducted
worst case is 0 points

P-Question (Pick Multiple)

Question 38 *P-Question: Choose the two most appropriate indicators. – 2 points*
ID: Q-20-04-29

You try to analyze your architecture quantitatively. Which are the TWO most appropriate indicators for architectural problem areas?

- [x] (a) High coupling of components.
- [ ] (b) Inappropriate names of public methods.
- [ ] (c) Missing comments.
- [ ] (d) Error clusters.
- [ ] (e) Number of test cases per component.

1 correct, 1 omitted -> 1 point

correct answer -> add 1/n of max points
wrong answer -> deduct 1/n of max points
(but only down to 0 points overall)

too many selections -> 0 points
fewer selections -> 0 points added/deducted
worst case is 0 points

P-Question (Pick Multiple)

Question 38 *P-Question: Choose the two most appropriate indicators. – 2 points*
ID: Q-20-04-29

You try to analyze your architecture quantitatively. Which are the TWO most appropriate indicators for architectural problem areas?

- ☐ (a) High coupling of components.
- ☒ (b) Inappropriate names of public methods.
- ☒ (c) Missing comments.
- ☐ (d) Error clusters.
- ☐ (e) Number of test cases per component.

both wrong -> 0 points

correct answer -> add 1/n of max points
wrong answer -> deduct 1/n of max points
(but only down to 0 points overall)

too many selections -> 0 points
fewer selections -> 0 points added/deducted
worst case is 0 points

P-Question (Pick Multiple)

Question 38 *P-Question: Choose the two most appropriate indicators. – 2 points*
ID: Q-20-04-29

You try to analyze your architecture quantitatively. Which are the TWO most appropriate indicators for architectural problem areas?

- [X] (a) High coupling of components.
- [X] (b) Inappropriate names of public methods.
- [ ] (c) Missing comments.
- [X] (d) Error clusters.
- [ ] (e) Number of test cases per component.

too many selected -> 0 points

correct answer -> add 1/n of max points
wrong answer -> deduct 1/n of max points
(but only down to 0 points overall)

too many selections -> 0 points
fewer selections -> 0 points added/deducted
worst case is 0 points

K-Questions
(Choose Category, Allocation Questions)

Question 19 *K-Question: Select "Contained" or "Avoided" for each line. – 1 point*
ID: Q-20-04-22

You document a component of your software architecture. Which information should be contained in your black box description and which information should be avoided?

Contained	Avoided		
☐	☐	(a)	Interfaces.
☐	☐	(b)	Responsibility.
☐	☐	(c)	Internal structure.
☐	☐	(d)	Hints for the implementation.

no selection -> 0 points

mark 1 answer per row (or none if not sure)
there is always one correct answer in each row
correct mark -> add 1/n of max points

wrong mark -> deduct 1/n of max points
(but only down to 0 points overall)
worst case is 0 points

K-Questions
(Choose Category, Allocation Questions)

Question 19 *K-Question: Select "Contained" or "Avoided" for each line. – 1 point*
ID: Q-20-04-22

You document a component of your software architecture. Which information should be contained in your black box description and which information should be avoided?

Contained	Avoided		
☒	☐	(a)	Interfaces.
☒	☐	(b)	Responsibility.
☐	☒	(c)	Internal structure.
☐	☒	(d)	Hints for the implementation.

4 correct -> 4 x 0,25 = 1 point

mark 1 answer per row (or none if not sure)
there is always one correct answer in each row
correct mark -> add 1/n of max points

wrong mark -> deduct 1/n of max points
(but only down to 0 points overall)
worst case is 0 points

K-Questions
(Choose Category, Allocation Questions)

Question 19 *K-Question: Select "Contained" or "Avoided" for each line. – 1 point*
ID: Q-20-04-22

You document a component of your software architecture. Which information should be contained in your black box description and which information should be avoided?

Contained	Avoided		
☒	☐	(a)	Interfaces.
☒	☐	(b)	Responsibility.
☐	☒	(c)	Internal structure.
☒	☐	(d)	Hints for the implementation.

3 correct, 1 wrong
-> 3 x 0,25 – 0,25 = 0,5 points

mark 1 answer per row (or none if not sure)
there is always one correct answer in each row
correct mark -> add 1/n of max points

wrong mark -> deduct 1/n of max points
(but only down to 0 points overall)
worst case is 0 points

K-Questions
(Choose Category, Allocation Questions)

Question 19 *K-Question: Select "Contained" or "Avoided" for each line. – 1 point*
ID: Q-20-04-22

You document a component of your software architecture. Which information should be contained in your black box description and which information should be avoided?

Contained	Avoided		
☒	☐	(a)	Interfaces.
☒	☐	(b)	Responsibility.
☒	☐	(c)	Internal structure.
☒	☐	(d)	Hints for the implementation.

2 correct, 2 wrong

-> 2 x 0,25 – (2 x 0,25) = 0 points

mark 1 answer per row (or none if not sure)
there is always one correct answer in each row
correct mark -> add 1/n of max points

wrong mark -> deduct 1/n of max points
(but only down to 0 points overall)
worst case is 0 points

K-Questions
(Choose Category, Allocation Questions)

Question 19 *K-Question: Select "Contained" or "Avoided" for each line. – 1 point*
ID: Q-20-04-22

You document a component of your software architecture. Which information should be contained in your black box description and which information should be avoided?

Contained	Avoided		
☒	☐	(a)	Interfaces.
☐	☒	(b)	Responsibility.
☒	☐	(c)	Internal structure.
☒	☐	(d)	Hints for the implementation.

1 correct, 3 wrong
-> 0,25 – 3 x 0,25 = 0 points

mark 1 answer per row (or none if not sure)
there is always one correct answer in each row
correct mark -> add 1/n of max points

wrong mark -> deduct 1/n of max points
(but only down to 0 points overall)
worst case is 0 points

K-Questions
(Choose Category, Allocation Questions)

Question 19 *K-Question: Select "Contained" or "Avoided" for each line. – 1 point*
ID: Q-20-04-22

You document a component of your software architecture. Which information should be contained in your black box description and which information should be avoided?

Contained	Avoided		
☒	☐	(a)	Interfaces.
☒	☐	(b)	Responsibility.
☐	☐	(c)	Internal structure.
☐	☐	(d)	Hints for the implementation.

2 correct, 2 omitted
-> 2 x 0,25 = 0,5 points

mark 1 answer per row (or none if not sure)
there is always one correct answer in each row
correct mark -> add 1/n of max points

wrong mark -> deduct 1/n of max points
(but only down to 0 points overall)
worst case is 0 points

Best Practice Strategy

When in doubt, you may omit answers. That‘s OK.

- You „only“ need 60%. That‘s „good enough“.
- You do not get a „better“ certificate for doing everything right.

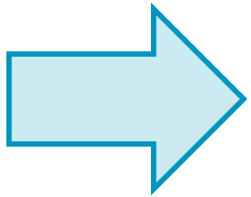
ONLY when you do not have any idea at all for the whole question, then (and only then) you should guess.

How to Change Marks?

1 -- Id: Q-15-01-20
How many definition
option.

A-Question: Choose

- ☐ One univ
- ☐ More thai
- ☐ Ten or m



1 -- Id: Q-15-01-20
How many definition
option.

A-Question: Choose

- ☐ One univ
- ☐ More thai
- ☐ Ten or m

Some Example Questions

2 -- Id: Q-15-01-33

Which people, information, artefacts or documents do you require as a minimum in order to qualitatively assess the architecture of a software system? Select the three most important items! [2 points]

P-Question: From the following 8 answers select 3 that fit best.

- ☐ The system's architect(s)
- ☐ The source code of the components
- ☐ Responsible domain expert, alternatively: current documentation of quality requirements
- ☐ System operator (administrators or similar)
- ☐ Architecture documentation
- ☐ Profiling or tracing information
- ☐ Log files
- ☐ Dependency graph of the building blocks or results of a static code analysis

Some Example Questions

3 -- Id: Q-15-01-50

What is the objective of using dependency inversion? [1 point]

P-Question: From the following 4 answers select 2 that fit best.

- ☐ Large building blocks should not depend upon small building blocks.
- ☐ Building blocks should depend on each other exclusively through interfaces.
- ☐ A building block should be independent of the concrete implementations of the building blocks it uses.
- ☐ Building blocks should be able to create building blocks they require more easily.

Some Example Questions

4 -- Id: Q-15-01-39

What information should be included in a building block's black box description and what should not? [1 point]

K-Question: Assign all answers.

should	should not	
☐	☐	Interfaces
☐	☐	Responsibilities
☐	☐	Internal structure
☐	☐	Notes on implementation

Some Example Questions

6 -- Id: Q-15-01-07

Which of the following are the three most important tasks of software architects? [2 points]

P-Question: From the following 6 answers select 3 that fit best.

- ☐ Setting up and maintaining the development environment
- ☐ Documenting and communicating the design
- ☐ Managing integration testing
- ☐ Negotiating daily rates for the developers
- ☐ Illustrating the consequences of architectural decisions to other parties
- ☐ Clarifying and questioning requirements