

Exam 2II45 Block 2 (Software Architecture, 1.5h) on Tuesday 13 April 2010, 09.00h–10.30h

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Work clearly. Read the entire exam before you start. **Motivate each answer concisely and to the point.** Maximal scores per question are given between parentheses. The maximum total score is 30 points on 10 questions.

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1. (3) Explain the notions of a *Viewpoint* and a *View* according to IEEE Standard 1471, and explain their relationship to Kruchten's 4+1 views.
2. (3) Describe three ways in which delivering an architectural design is also beneficial from a project management point of view.
3. (3) Present three testability aspects that are an architectural concern, and explain why this is the case. Describe a testability aspect that is *not* an architectural concern, *or* explain why testability is inherently architectural.
4. (3) *Module Architecture Control* (MAC) involves the *Module View* and *Code View*. Explain these views and their main ingredients, explain how they are related to each other, and what their role in MAC is.
5. (3) Present a *general* and a *specific* performance requirement in the form of a *Quality Attribute Scenario*.
6. (3) Describe the notion of *tactic* to achieve a specified quality, and give examples of usability tactics, covering both design time and runtime tactics.
7. (3) What is the ATAM and what are its primary purposes? Give an example of a *sensitivity point*.
8. (3) What is a *Component Model* in CBSE? Describe Bondarev's four-step strategy to make performance predictions using CBSE.
9. (3) Is it possible to extract behavioral architectural models from a software system for which (a) the complete working source code is available, *and* (b) the source code cannot be compiled and executed, *and* (c) no architectural documentation is available? If no, explain why. If yes, which techniques play a role?
10. (3) What is the motivation behind *Model Driven (Software) Engineering*, and how does this affect (the activity of designing a) software architecture?