

**CT70A6300 Software Process Management  
Exam 4.5.2026**

Name: \_\_\_\_\_ Student number: \_\_\_\_\_

**Read the instructions carefully. The maximum number of points from this exam is 50 points.**

**1. Explain the following terms/concepts with a few sentences (10 points).**

a) Servant leadership (2 points)

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b) DevOps (2 points)

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c) Principles vs. practices in software engineering (2 points)

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d) Agile coach (2 points)

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e) Psychological safety (2 points)

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## 2. True or false? (10 points)

Mark your choice with (X). A correct answer gives you one point (+1), no answer gives you zero points (0), and a wrong answer gives you minus two points (-2), so answer only if you know the answer.

- a) Software engineering prescribes a standard development method that is applicable to all software development projects.  
 TRUE                       FALSE
  
- b) The incremental development model aims at building the whole system in one single iteration to save on planning and testing effort.  
 TRUE                       FALSE
  
- c) “As a [role], I want [something] so that I can [achieve something]” is a user story format used in agile software development.  
 TRUE                       FALSE
  
- d) While estimating the effort for a large software project, the best choice is to choose one method and stick with it.  
 TRUE                       FALSE
  
- e) As global software engineering is getting more popular, in almost all software development projects, it would be worth using a globally distributed team due to the lower salaries and thus lower total costs.  
 TRUE                       FALSE
  
- f) As a Product Owner, the INVEST principle helps you to assess the quality of a user story.  
 TRUE                       FALSE
  
- g) When using Weighted Shortest Job First (WSJF) to prioritize work, a team calculates each initiative’s score as the cost of delay divided by the job’s size or duration and then prioritizes as the highest priority items those items that receive the lowest ratings.  
 TRUE                       FALSE
  
- h) If it looks like a project is going to run late, the best course of action in most cases is to add personnel to get the work done faster.  
 TRUE                       FALSE
  
- i) Extreme Programming is a software process model that consists of some core practices, such as Planning Game, Pair Programming, and Test-Driven Development.  
 TRUE                       FALSE
  
- j) The Scrum Master in a Scrum Team is responsible for maximizing the value of the product resulting from the work of the Scrum Team.  
 TRUE                       FALSE

### 3. Essay (30 points)

Choose **three** topics from the following and write essays on each. You may receive max 10 points per topic.

**Note: choose only three topics, if you write about extra topics, we will remove the points from the best essay.**

**Topic 1 – Waterfall & Scrum:** Briefly compare the Waterfall and Scrum software development methods. Discuss the strengths and weaknesses of each method. For what kind of situation(s) / software project(s) do you think each model would suit? Motivate your answer.

**Topic 2 – Effort Estimation:** Effort estimation in software development.

**Topic 3 – Portfolio management:** You are a manager working in a mid-size, 250-person SaaS (software-as-a-service) company located in Finland. The company has five major services that are interrelated, currently maintained, and further developed. The services are used by a growing number of businesses in Europe. Two new services are planned. Over the past three years, the company has grown significantly, but with growth comes increased complexity in managing multiple services and investment priorities. Competitors are rapidly adopting emerging AI-driven technologies; thus, the company needs to closely follow the competition and react to competitors' moves and technical advances. Large clients require seamless integration between the company's different services, plus continuous updates and short release cycles. You have decided to suggest to the company's leadership team that the company should adopt lean portfolio management to streamline its portfolio management and ensure better alignment with strategic goals. a) Based on the details provided above, explain whether the company should have a single portfolio or multiple portfolios (if multiple, how many). Justify your recommendation using the provided information about the company. (2 points) b) You decide to sell the idea of lean portfolio management to the company's leadership team. First, explain to them how traditional project-based and lean-agile portfolio management differ. In that explanation, compare the main differences and explain which benefits lean portfolio management brings to your company. (4 points) c) What could be the next steps the company needs to take to implement lean portfolio management? Explain briefly. (4 points)

**Topic 4 – Large-scale Agile Frameworks.** You are working in a large insurance company that uses a waterfall-type process model for software development at a high level. At the developer level, there already exist some agile teams using Scrum. The company has 500 people working in the software development department, located in two different cities in Finland. They are developing several systems, both for the company's internal use and for the use of the organization's clients. Your boss has decided that the company needs to transform its software development into a fully agile approach and asks you to research which large-scale agile framework would best suit the company. You end up with three large-scale agile frameworks: The Spotify Model, Large-scale Scrum (LeSS), and Scaled Agile Framework (SAFe). a) Explain to your boss briefly: What do you see as the biggest differences between these models? (3 points) b) Explain briefly: What do you think would be the benefits and challenges of adopting each of the models in your company? 5 (points) c) Which of these large-scale agile frameworks would you recommend for your company? Motivate your answer (2 points)











