Written Exam

SEP400 och PVT200

Software Engineering 15 hp (PVT200 7,5 HP)
Exam theory - 4 - hp - U/3/4/5 individual written exam

Date	2023-10-30
Time	08:30 – 12:30
Examiner	Annabella Loconsole
Teachers	Annabella Loconsole, Thomas Lundqvist, Darwen Al-Taeshi
Visit	Yes
Telefon	070 1039816
Help tools	no
Number of exercises	7
Number of pages	3
Max points	32
Grades interval	Grade 3 16<= X<=21 Grade 4 22<= X<=27 Grade 5 28<= X<=32
Results published	latest 2023-11-20

Good luck!

Exam instructions:

• The exam can be written in Swedish or in English.

• Books or similar are not allowed, only pencils and erasers

• If the question is unclear, choose an interpretation, indicate it and answer the question according to your interpretation.

• Start each question on a new page.

• The answer sheets must be arranged in numerical order.

• You will not be awarded points if the answer is difficult to understand due to unclear handwriting.

• Justify all your answers to the questions.

1. **Points: 1+1+1+1+1**
   a. What is software engineering and why do we study this topic?
   b. An important role in a project is the project manager. What are the tasks of a project manager?
   c. Describe the activity of project scheduling.
   d. Why a plan must be continually reviewed during a software project?
   e. Describe 3 milestones of your (current or past) software project.

2. **Points: 1+1+2+2**
   a. What is the difference between plan-based approaches and agile approaches?
   b. When would you recommend *against* the use of an agile method for developing a software system?
   c. Briefly describe the scrum process.
   d. Extreme programming expresses user requirements as stories, with each story written on a card. Discuss the advantages and disadvantages of this approach to requirements description.

3. **Points: 2+2**
   a. Can you name 4 elicitation techniques?
   b. Make a list of at least 5 vague terms (words that should be avoided when writing requirements) and explain why we should avoid these words.

4. **Points: 2+1**
   1. What is the MVC pattern? Explain briefly.
   2. In software development, what are the main roles of a version control system (VCS) like Git? Explain briefly.

5. **Points: 2+1+2**
   1. What is the purpose of verification and validation? Explain briefly.
   2. What is the main goal of integration testing? Explain briefly.
   3. In Test-Driven Development (TDD), what are the main steps you follow when building software? Explain briefly.

6. **Points: 2+2**

   a. Explain the difference between an error, a system fault, and a system failure.

   b. Explain the difference between redundancy and diversity. Also explain how it can help increase reliability.

7. **Points: 1+2+2**

   a. Can you describe the relationship between agile development and evolution?

   b. Explain the differences between software reengineering and refactoring.

   c. What is configuration management (CM) and what are the main activities of CM?