

Final exam: TDDE35/TEN1 – Large-scale distributed systems and networks

Date: Mar. 22, 2021 Time: 8:00-12:00 (240 min + **30 min upload buffer**) Total Marks: 40

Grade requirements: Three (20/40); four (28/40); and five (36/40).

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General instructions

- Read all instructions carefully, including these!
- Some questions have multiple tasks/parts; please remember to address *all*.
- The total possible marks granted for each question are given in parentheses. The entire test will be graded out of 40. This gives you 10 marks per hour, or six minutes per mark, **plan your time accordingly**.
- The exam consists of $(9+1) = 10$ questions. Please check that this exam is complete.
- When applicable, please explain how you derived your answers.
- Your final answers should be clearly stated.
- Where a discourse or discussion is called for, be concise and precise.
- If necessary, state any assumptions you made in answering a question.
- Answer questions as precisely as possible. Solving the *wrong* question may result in deductions! It is better to solve the *right* question incorrectly, than the *wrong* question correctly.
- Please answer in English. Use Swedish only if needed (e.g., for unknown words).
- Many questions are designed to be answered using concrete example figures/tables. Please try to be as precise as possible.
- Since this is a remote exam, we expect you to demonstrate your understanding and to make personal considerations; not simply reproduce the lecture notes.

2020 exam

- Questions will be available via the course's **Lisam** (<https://lisam.liu.se/>) submission room after the exam starts (and on the course website as backup).
- Answers should be submitted as a **single pdf file** via **Lisam**. (In the case your submissions fail, please email the examiner the pdf before the hand-in deadline, with "TDDE35/TEN1 exam" clearly in the subject line.)
- **Type answers electronically in English**; no handwritten answers are allowed. (Labels and clarifying text in figures are okay. See next bullet. This text must be easily legible!)
- Figures can be drawn by hand or by computer. If you draw by hand, please scan (or take a photo) and insert into the file you use to generate your pdf.
- Please **number pages**, answer **at most one question per page**, report **answers in the same order** as the corresponding questions appear in the exam, and clearly state your **name and student ID (e.g., abcde123) at the top/header of each page**.
- The exam is not anonymous due to the exceptional situation of COVID-19.
- You must answer all questions yourself; no group work or outside help is allowed.
- Do not copy-paste text from other sources. Plagiarism may be checked.
- By taking the exam, you accept the responsibility not to cheat.
- Request to ask questions should be done by emailing the instructor (i) the questions you have and (ii) a zoom link where the instructor can talk individually with you. The instructor will either answer per email or join your zoom meeting around 10am or 11am.
- Finally, **you must fill out and sign the compliance statement** at the end of the exam.

Good luck with the exam!

1) Question: XXXX (6)

Consider ...

2) Question: XXXX (4)

Consider ...

3) Question: XXXX (4)

Consider ...

4) Question: XXXX (6)

5) Question: XXXX (4)

6) Question: XXXX (4)

7) Question: XXXX (4)

8) Question: XXXX (4)

9) Question: XXXX (4)

10) Bonus question: XXXX (4)

Mandatory: Statement of compliance

Finally, you are required to sign and send back (scan/photo), together with the exam, a text with the following declaration:

I hereby solemnly declare that during the TDDE35 exam, Mar. 22nd 2021, I did not cheat or plagiarize text, and that all work presented here was done by myself without any consultation with people by phone, chat, or any other means during the exam. (The course instructors being the only exception.)