

OHJ-3066 Software testing – Exam December 14, 2010 – Mika Katara

Write down your name, student number, and email address to your answer sheet. Start answering each question from a new page. Write down your answers clearly (using block letters if necessary). Illegible answers will be ignored. If possible, illustrate your answers with practical examples and figures. Maximum number of points is 16 (+1). To pass the course, you should get at least five points from the exam in addition to the points from the course project. Moreover, the total number of points must also be sufficient. **NO CALCULATORS IN THIS EXAM.**

1. Short questions – short answers (6 points):

Describe shortly (usually about 4 sentences is enough) what the following terms mean in the context of software testing.

- (a) Requirements coverage matrix.
- (b) McCabe's cyclomatic number.
- (c) Bug report.
- (d) Soap opera testing.
- (e) MoSCoW method.
- (f) Beta testing.

2. Answer both questions (2 points + 3 points):

- (a) What is model-based testing?
- (b) Your job is to test the functionality of a simple CD player. The user interface of the device consists of four buttons: play, stop, prev, and next. Play starts to play the selected song and pressing the stop button stops the playing. Next moves the selection to the next song and prev to the previous one. When the disc is entered into the device, the first song is selected by default. Draw a state machine specifying the functionality of the user interface and describe how the model could be used to test the device and what benefits could be achieved with the model-based approach. For simplicity, you can assume that a CD can contain a maximum of 10 songs. You can complement the specification of the device if needed.

3. Choose one title from the following and write an essay (1-2 pages) on that (5 points):

- (a) Error seeding and mutation testing.
- (b) Problems in test automation.

If you write more than one essay, only the weaker one will be taken into account.

4. Bonus question:

Write down your opinion about this course (course project, material, exam etc.) How could we better serve international students with the limited resources we have? Whether positive or negative, a well justified opinion is worth a bonus of one point. If you have given feedback already earlier, you should state your opinion also now in order to get the bonus.