

UNIVERSITY OF TORONTO  
FACULTY OF APPLIED SCIENCE AND ENGINEERING  
FINAL EXAMINATION, December, 2008  
CSC444H1 F – Software Engineering I  
Examiner – D. Penny  
2½ Hours - 60 marks total

**Write all answers in the exam books provided.**  
**No aids allowed other than non-programmable calculators.**

Answer all questions succinctly, but including all relevant points. Think deeply about your answers, demonstrating your insight and understanding of software engineering with each one, and make convincing arguments to back them up. If you make a statement, for example "a certain practice is inefficient," then be sure to explain why.

1. (10) What are the potential problems with using Gantt charts to plan the next release of a software product?
2. (10) Why is using only a single number for an "estimate" (e.g., estimating a work factor is 0.6) not terribly meaningful? What is the most accurate way of providing an estimate? What is generally considered an acceptable compromise?
3. (10) Why do we recommend that a source code control system be used as a buffer between the coding group and the build/QA group?
4. (10) What is UML used for in software engineering?
5. (10) Why do we use defect arrival rate as a shipping threshold?
6. (10) In the feature workflow presented in class, there were three states called 'Valid', 'Valid Ready', and 'Valid Verified'. Why were they there? How did they work? Should they always be present in a feature workflow? How are they used by a manager to affect behavior?