

UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE AND ENGINEERING
FINAL EXAMINATION, December, 2007
CSC444H1 F – Software Engineering I
Examiner – D. Penny
2½ Hours - 100 marks total

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

1. (40) Create a release plan for the next release, R2.0, of a software product using all the conventions and definitions from the book assuming the following. (Show your work)
 - a. There are 10 features of 500 GUI lines of code (LOC) and 500 Database LOC each.
 - b. There are 3 developers, A, B, and C. Developers A and B can code GUI at the rate of 10 LOC per hour and database at the rate of 5 LOC per hour. Developer C can code GUI at the rate of 5 LOC per hour, and database at the rate of 50 LOC per hour.
 - c. Developer A codes 6 hours per workday; B 4 hours but also codes 8 hours each weekend; C 10 hours each day, including weekends.
 - d. Historical code:test phase length ratios have been 2:1 (end of test is GA).
 - e. Fork is on Monday, January 7, 2008. (Number of days in each month starting Jan 2008 is 31, 29, 31, 30, 31,30,31,31,30,31,30,31) Assume no statutory holidays.
 - f. A is on vacation starting Jan.14, back the morning of Jan.28. B is on vacation April 14, back April 28. C is on vacation Feb.11 back Feb.25 but will code 4 hours each day while on vacation.
2. (15) Assume in the above that all feature sizings are Normally distributed with the numbers you computed as means and standard deviations of 10% of those means. Assume work factors and vacations are deterministic. What should the GA date be assuming we want an approximately 84% chance of being on time or earlier? Show your work.
3. (15) Explain using codeline diagrams how codelines would be used to do feature work on an upcoming release, R2; perform ongoing maintenance on the current release R1; and do last minute preparation on a point release R1.1 of the current release for final shipment.
4. (15) Name and define the 5 general types of testing given in the book.
5. (15) Modify the state transition diagram for the defect resolution workflow given in the book to ensure all defects get test cases added into automated regression testing that would have found them. Make sure to include a QA step for this. What report would you give a manager to monitor this for compliance?