Student Name_____ Student Number_____

Concordia University
Department of Computer Science and Software Engineering

SOEN 6461 — Section SS Fall 2017 — Quiz 1 — Some Sample Questions

Special Instructions and Information

- This is a closed-book examination. You may not use any materials other than normal writing implements.
- Pocket calculators are not allowed.
- Turn off all electronic devices including cell phones.
- Write your name and student number at the top of this page.
- Place your student ID card on the desk face up.
- Answer all three questions. The marks for each question are indicated. The total marks are 60.
- Answer questions in the space provided on the examination paper. Write legibly. Write complete sentences. Answer the question that is asked.

Question 1

For each of the following statements, indicate whether the statement is true or false by circling T or F respectively.

(1) The design phase decides how the system will work. **T or F**

(2) A design document includes a domain model of the problem. **T or F**

(3) The GRASP High Cohesion pattern aims to reduce the impact of change. **T or F**

(4) Object-oriented software development is seamless from analysis through to design and through to implementation. **T or F**

(5) Design-by-contract involves outsourcing the design work as subcontracts. **T or F**

(6) Hand execution during design review requires explicit input, an explicit state, and an explicit scenario. **T or F**

Question 2

(a) [5 marks] What is a class interface? In design, what is the purpose of the class interface? What information should be contained in the class interface?

Half-page answer required.

(b) [5 marks] Explain the concept of *"visibility"* in object design. Why is visibility, or the lack of visibility, a design issue? Explain the different ways in which visibility can be achieved.

Half-page answer required.

Question 3

(a) [5 marks] In design, we are given the requirements, and we develop a design for a system by breaking the system down into a set of smaller components that collaborate together to perform the work required of the system. Why do we adopt such an approach to design? How does our adoption of this approach address the key problems areas for software development: software requirements, software architecture, change, and complexity? Explain.

Half-page answer required.

Question 4

Andreas Ruping in *"Agile Documentation"*, John Wiley, 2003, pg. 197-204 writes

> **Focused Information***: A clear and identifiable focus on a particular topic makes a document concise and straightforward.*
> **Individual Documentation Requirements***: The most effective approach towards documentation is for each project to define its documentation requirements individually.*
> **Focus on Long-Term Relevance***: There is much value in documentation that focuses on issues with a long-term relevance.*
> **Design Rationale***: Design documents become a valuable source of information if they aren't restricted to describing the actual design, but also focus on the rationale behind the design and explain why the particular design was chosen.*
> **The Big Picture***: A good feel for a project is best conveyed through a description of the 'big picture' of the architecture that underlies the system under construction.*
> **Separation of Description and Evaluation***: Authors gain credibility if, in their documents, they clearly separate description from evaluation.*
> **Structured Information***: Most project documents are best organized as sequential yet well-structured text. This begins with well-chosen chapters and sections, but may well extend to using textual building blocks consistently throughout a document.*
> **Judicious Diagrams***: Diagrams can provide excellent overviews, while an accompanying text explains details to the extent that is necessary.*

(a) [5 marks] Rupling is listing principles of Agile Documentation. How do these principles relate to the five sections of the design document used in your Design Assignments? That is, which principles were used, and in which sections were they used? Explain how and why they were used in the five sections.

Half-page answer required.