Midterm Exam Preparation – Fall 2008

COMP 3711 OOA & OOD

Important notes:
Duration for the midterm exam paper is 50 minutes. No computer will be used.

Midterm Paper Format:
True and False questions, Multiple choice questions, Written answer questions

Midterm exam will include materials covered from week 2 to week 7, inclusive, i.e, Larman text chapters 1,22,2,3,4,5,6,8,30,9,31.2-31.17,11,10.32, 14,15,16,17

1. UP
   Understand the UP methodology and the various UML diagrams applicable across the four UP phases and the iterative process throughout. Be familiar with *Inception* and *Elaboration* phases. You are also to understand the key concepts of agile approach and some of its well known methodologies. You must understand the key issues of conceptual modeling.

2. OOA
   Understand and be familiar with the key concepts, issues, techniques and artifacts learnt on OOA, mainly from week 2 to week 5. You must understand the Domain model that includes Use Case, SSD, Conceptual Class diagram, and the use of Operation Contracts. It is important to know the OO class relationships such as associations, dependence, hierarchies, navigation, visibility, generalization, specialization, composition, aggregation, etc.

3. OOD
   Understand and be familiar with the key concepts, issues, techniques and artifacts covered thus far on OOD, mainly from week 6 to week 7. You must understand the Design Model that includes the Interaction diagrams, DCD and Package. You must understand the OOA/OOD approach to capturing real-world events and operations - messages - methods. In addition to the above, understand the concept of RDD and GRASP and the first five GRASP patterns covered in week 7.

"ALL THE BEST IN YOUR MIDTERM PREPARATION"

Sample questions:

1.1 In RDD, responsibilities are implemented by means of Methods acting alone or collaborating. True (1) False(2)

1.2 For a good design, when there are too many system events, one should choose to use _____.
   a. Fascade controller
   b. Use Case controller
   c. Boundary controller
   d. System controller

1.3 Would you start constructing a SSD in the Inception phase of UP? Why or Why not?

COMP 3711 – Quiz 1 – Fall, 2008 (ANSWERS)

STUDENT NAME:	Set:
STUDENT #:	Total: /(10)

1.4 **The nature of software is non-material, ethereal, flexible and pliable.** **True (1)** **False(2)**

1.5 **UML is an OO Development methodology.** **True (1)** **False(2)**

1.6 **Pair Programming is one of the core practices in Extreme Programming.**
True (1) **False(2)**

1.7 **Encapsulation in OO Design is sometime referred to as ____information hiding _____.**

1.8 **The artifact UML Use Case diagram is typically constructed in the __ Inception _____ phase of the UP Iterative Development Process.**

1.9 **State two key difference between Analysis and Design?**

Analysis focuses on investigating and understanding the problem domain
Design focuses on understanding the conceptual solution

Analysis focuses on functional requirements
Desing focuses non-functional requirements

1.10 **What does the acronym FURPS stand for in analyzing requirements?**
Functional, Usability, Reliability, Performance, Supportability

1.11 **What are the four phases in the UP development process?**

Inception, Elaboration, Construction, Transition

1.12 **Name at least *two* core principles of Agile Development Methodologies.**

Customer value, individual capability, collaboration, adaptation, minimalism

1.13 **Name at least two major Agile Development Methodologies?**

Extreme Programming, Scrum, Crystal, Lean Development, Adaptive Software Development, DSDM(Dynamic Systems, Development Method)

COMP 3711 – Quiz 2 – Fall, 2008 (ANSWERS)

STUDENT NAME:	Set:
STUDENT #:	Total: /(10)

1.14 An Use Case should be named by beginning with a verb. **True (1)** False(2)

1.15 The conceptual class in a Domain model must consist of class name, attributes and methods. True (1) **False(2)**

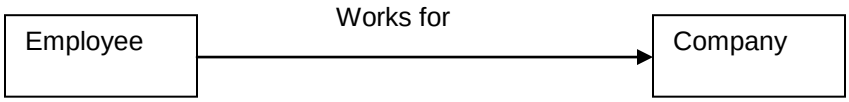
1.16 An Use Case scenario is a sequence of actions between the actors and the system. **True (1)** False(2)

1.17 Aggregation has a stronger relationship than Composition between the superclass and its subclasses. True (1) **False(2)**

1.18 Conceptual classes in a UML Domain model are identified from the Use Cases. **True (1)** False(2)

1.19 In a Generalization the conceptual subclass has a ____*is-a-kind* _____ of relationship with the superclass.

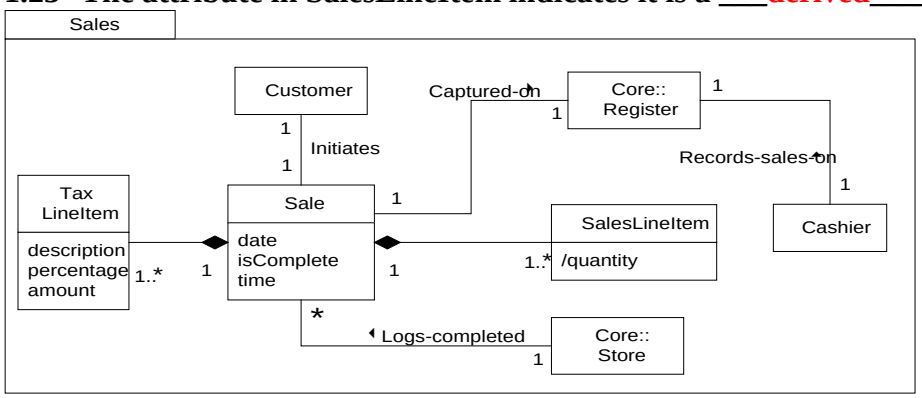
1.20 The relationship between the two conceptual classes below is a relationship type regarded as ___ **directional association** __and this relationship specifically is named ___ **Employee works for Company** _____.



1.21 In the UML Domain model the __**role** ____ name is added at each end of the relationship when the relationship between two objects is not clear.

1.22 The relationship between Sales and SalesLineItem below is called ___**composition**___.

1.23 The attribute in SalesLineItem indicates it is a ___**derived**_____ attribute.



COMP 3711 – Quiz 3 – Fall, 2008 (ANSWERS)

STUDENT NAME:	Set:
STUDENT #:	Total: /(10)

1.24 UML SSD shows ACTORS interacting with the SYSTEM as a "black box". **True (1)** False(2)

1.25 Activation boxes represent the life line of the object in SSD. True (1) **False(2)**

1.26 SSD captures the external and internal system operations. True (1) **False(2)**

1.27 A SSD represents a group of Use Case scenarios. True (1) **False(2)**

1.28 Loop and Reference are types of Interaction frame. **True (1)** False(2)

1.29 SSD shows how the events are interacting with the system. True (1) **False(2)**

1.30 Postconditions in an Operation Contract describe the changes in the state of objects in the Domain Model. **True (1)** False(2)

1.31 When should Operations Contracts be used?

_____when Use Cases are insufficient for describing system behavior_____.

1.32 The four main sections in an Operation Contract are:

_____Operation Name

_____ Cross references to Use Case

_____ Preconditions

_____ Postconditions

1.33 Name at least two examples of state changes of a Domain Model.

_____instances Case _____

_____broken association_____.