Final Term Examination – Spring 2005
Time Allowed: 150 Minutes

Please read the following instructions carefully before attempting any of the questions:

1. Attempt all questions. Marks are written adjacent to each question.

2. Do not ask any questions about the contents of this examination from anyone.

> **a**. If you think that there is something wrong with any of the questions, attempt it to the best of your understanding.
>
> **b**. If you believe that some essential piece of information is missing, make an appropriate assumption and use it to solve the problem.
>
> **c**. Write all steps, missing steps may lead to deduction of marks.

**WARNING: Please note that Virtual University takes serious note of unfair means. Anyone found involved in cheating will get an `F` grade in this course.

Total Marks: 60   **Total Questions: 11**

Question No. 1	Marks : 10

What is meant by Maintainable Code? Describe it briefly. [10 marks]

Question No. 2	Marks : 05

Explain how effective modular design is achieved through functional independence of the individual modules?
[5 marks]

Question No. 3   **Marks : 02**

Which of the followings can not be used to relate use cases with each other? [2 marks]

- o Extends
- o Include
- o Exclude
- o Uses

Question No. 4   **Marks : 05**

What are the symptoms of Boolean Bugs? [5 marks]

Question No. 5   **Marks : 15**

Following is the prototype of a function to find the square root of a number.

double sqrt (int num);

(a) **Identify equivalence partitions to devise black-box test cases for this function.** [10 marks]
(b) **Write test cases against each partition identified in part (a).**
[5 marks]

Question No. 6   **Marks : 02**

Which of the followings is not a testing type? [2 marks]

- o Subsystem testing
- o Alpha testing
- o Beta Testing
- o Gamma Testing

Question No. 7   **Marks : 02**

Which of the following documents should be prepared before the commencement of a software project? [2 marks]

- o Quality plan

- Design specification
- Validation (Test) Plan
- Software requirement specification

Question No. 8   Marks : 02

During the requirement analysis stage, which of the following requirements should be identified? [2 marks]

- Functional requirements
- Performance requirements
- Software tools requirements
- Personal resources requirements

Question No. 9   Marks : 02

Which of the followings is design tool? [2 marks]

- Collaboration Diagram
- State Transition Diagram
- Flow Chart
- Data Flow Diagram

Question No. 10   Marks : 10

Draw the corresponding object model diagram for the following system description.
[10 marks]
(Note: Use the UML Object Model Notation)

"A bank account is either, a current account, a deposit account, or a mortgage account. All bank accounts can be opened and closed and all bank accounts have a balance. Deposit accounts pay interest. For current accounts it is possible to set up an overdraft facility. All mortgage accounts have a 'term' (the number of years the mortgage runs). A bank customer (who is characterized by name and address) can have one or more accounts."

Question No. 11   Marks : 10

Which of the followings is design tool? [2 marks]