



**DURATION: ONE AND HALF HOURS ONLY (1.5HRS)**

**Date : 17<sup>th</sup> April 2012**

**Time: 4.00pm – 5.30pm**

**Answer ALL Questions.**

**Q1).**

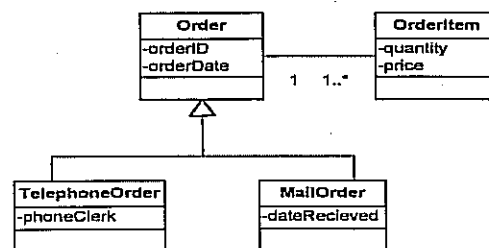
- I. Briefly describe why it is important to establish the boundary of a system and its context model.
- II. *“Risk driven software specification has been widely used by safety and security critical systems developers”*
  - a. Briefly describe the steps in the process of risk analysis when developing a risk driven software specification.
  - b. Why it is important to consider a risk driven software specification for a safety and security critical system.
- III.
  - a. Briefly describe the importance of the architectural design of software.
  - b. Assume a software system that makes up few sub systems and those sub systems need to exchange their information each other to do their work effectively. What is the architectural model you suggest for the above system? Give reasons for your suggestion.

**Q2).**

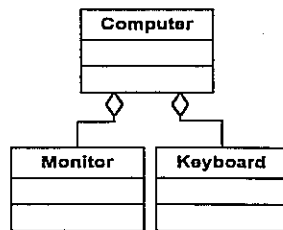
**I.**

- a. The Unified Modeling Language (UML) is a standard language for writing software blueprints. Name five (05) diagrams in UML.
- b. Identify the types of relationship for the diagrams given below.

i.



ii.



II. Draw the *Use Case diagram* and write the *Use Case narrative(s)/description(s)* for the following Hospital Management System case study given below.

Patients request for appointments to see a doctor from the assistant. Assistant retrieves the details of the existing patients from the system. New patients update their details (Name, Birth Date and Address) in the system before they request for an appointment with the help of the assistant. The assistant confirms the appointment based on the availability of free slots for the respective doctors and the patient is informed. Assistant may cancel an appointment at any time.

III.

- a. Identify the objects, its attributes, operations and relationships and draw the Class diagram for the above case study.
- b. Draw the Sequence diagram for the above case study.

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