



**MANIPAL INSTITUTE OF TECHNOLOGY**  
 (Constituent Institute of MANIPAL University)  
 MANIPAL-576104



**VII SEMESTER B.E. DEGREE EXAMINATION**

**SUBJECT: DESIGN OF OBJECT ORIENTED SYSTEMS WITH UML (CSE 403.4)**

**Date: 09-12-2010**

**TIME: 3 HOUR**

**MAX. MARKS: 50**

**Instructions to Candidates**

- Answer any five full questions.
- Answer should be clear and concise in point form.
- Missing data can be suitably assumed

- 1A. Give the two orthogonal views of the software. (2 Marks)
- 1B. With the help of a diagram explain the analysis phase of unified approach. (6Marks)
- 1C. Compare Rumbaugh, Booch and Jacobson methodologies. (2 Marks)
- 2A. Explain encapsulation and information hiding with an example. (5 Marks)
- 2B. What do you mean by common class pattern approach? (5 Marks)
3. Draw a use case diagram for a library management system (Show relationship between use cases) (10 Marks)
- 4A. List out and explain the four types of prototypes with their application. (8 Marks)
- 4B. What do you mean by component based development and rapid application development? (2 Marks)
- 5A. Develop a simple business process model using an activity diagram based on the following narrative. The purchasing department handles purchase requests from other departments in the company. People in the company who initiate the original purchase request are the "customers" of the purchasing department. A case worker within the purchasing department receives that request and monitors it until it is ordered and received. Case workers process the requests for purchasing products under \$1,500, write a purchase order, and then send it to the approved vendor. Purchase requests over \$1,500 must first be sent out for a bid from the vendor that supplies the product. When the bids return, the case worker selects one bid. Then, the case worker writes a purchase order and sends it to the approved vendor. (5 Marks)
- 5B. Differentiate between collaboration/communication diagram and sequence diagram with diagrams. (5 Marks)

- 6A. A token-ring based local-area-network (LAN) is a network consisting of nodes, in which network packets are sent around. Every node has a unique name within the network, and refers to its next node. Different kinds of nodes exist: workstations are originators of messages; servers and printers are network nodes that can receive messages. Packets contain an originator, a destination and content, and are sent around on a network. A LAN is a circular configuration of nodes. (5 Marks)**
- (i) Identify the classes for the above scenario using noun phrase approach. Group the relevant, irrelevant and fuzzy classes separately.**
  - (ii) Identify the relationships and responsibilities of the classes using CRC.**
- 6B. List out the various corollaries that are used in OOD phase and explain corollary 1: Uncoupled design with less information content. (5 Marks)**