

MCA (Revised)
Term-End Examination
December, 2007

**MCS-032 : OBJECT ORIENTED ANALYSIS
AND DESIGN**

Time : 3 hours

Maximum Marks : 100

Note : Question number 1 is **compulsory**. Attempt any **three** questions from the rest.

1. (a) Explain the concept of live objects with an example. 5
 - (b) Explain the difference between aggregation and generalization. 5
 - (c) What is inheritance ? Explain two benefits of inheritance, with an example of each. 5
 - (d) Define polymorphism and its types with an example. 5
 - (e) Explain the term "Persistent Objects". 5
 - (f) Explain Process, Data flows, Actors and Data stores. 5
 - (g) Explain UML. What are the basic building blocks of UML ? Develop a UML diagram for library information system. 10
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2. (a) What is the relationship between object oriented analysis and object oriented design ? Explain using suitable example. 6

- (b) Develop an object oriented analysis and design for the implementation of the student registration system. The system should be able to show the list of courses and accept admission forms etc. 9
- (c) What is one way association and two way association ? Give the advantages of two way association. 5
3. (a) Describe the problem of processing of order and generating invoices of sales done by a medical store. Design class diagram for the solution to this problem. Describe clearly the role of each of the classes in your diagram, the relationships between these classes and the operations defined for them. Construct a sequence diagram to show the main messages that must be exchanged between the instances of these classes according to the pattern. 9
- (b) Differentiate between data encapsulation and data hiding. 3
- (c) What is the difference between an << extends >> and a << uses >> relationship in UML ? Illustrate your answer through an example. 8
4. (a) Write short notes on : 7
- (i) Extensibility
 - (ii) Genericity

- (b) Critically evaluate and analyze model construction using UML. How does UML catalyze the finalization of the basic structure of a model ? Also explain using appropriate illustration. 9
- (c) Differentiate between Object oriented modelling and Dynamic modelling. 4
5. (a) Construct level one data flow diagram for Airlines reservation management system. 6
- (b) What are use case diagrams ? Explain with two suitable examples. 6
- (c) What is the main difference between an analysis class diagram and a design class diagram ? What sort of factors should a system designer take into account while constructing a design class diagram ? Give examples of the changes that need to be made to an analysis class diagram to reflect two of these factors. 8