

MCA (Revised)
Term-End Examination
June, 2007

**MCS-032 (S) : OBJECT ORIENTED
ANALYSIS AND DESIGN**

Time : 3 hours

Maximum Marks : 100

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

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1. (a) What is meant by abstraction ? How is it different from encapsulation ? Justify with example. 5
- (b) Compare structured analysis with object oriented analysis. 5
- (c) How is the object oriented diagram different from ER diagram ? 5
- (d) How is UML used in visualizing, specifying, constructing and documenting object oriented system ? Briefly explain. 5
- (e) How can concurrency be identified in objects ? List the mechanisms used to handle concurrency. 5

- (f) Compare and contrast the object, dynamic and functional model. Out of these three models, which is most important and why ? 5
- (g) Write short notes on : $2\frac{1}{2} \times 4$
- (i) Object Identity
 - (ii) Package
 - (iii) Design Optimization
 - (iv) Entry and Exit Actions
2. (a) Write three major characteristics of object oriented modelling. Explain the concept of Link, Association and Aggregation, with a suitable example for each. 9
- (b) Write three cases when statechart diagram should be prepared for web based development. Compare it with the activity diagram in these cases. 6
- (c) What are Immutable associations ? How are they implemented in C++/Java ? Explain. 5
3. (a) Explain 4+1 view architecture with a suitable example. How does it affect the development of Software Architecture ? 9
- (b) What are the advantages of object ID ? Explain. 3
- (c) Write major considerations while using control as state within the program. Draw the control of state and event in case of ATM. 8

4. (a) Explain three major reasons for creating abstract classes. Prepare a UML diagram to represent the abstract class. 7
- (b) Differentiate between state and actions. Explain various notations in case of state chart diagram. Create state chart diagram for login system. 9
- (c) What are the advantages and disadvantages of merging an association into a class ? Explain. 4
5. (a) Explain the steps involved in implementing persistence in object oriented system. 6
- (b) Implement association for bi-directional system, with suitable example. 6
- (c) Explain the process of extending three level architecture for object modes. Describe the process of mapping associations to tables, with suitable diagram. 8

