

Major Paper VII : Object Oriented System Analysis and Design

Unit I

Introduction to object-oriented Development – Object Oriented themes – Modeling – The object modeling Technique – Objects and classes Links and Associations Concepts – Generalization and inheritance – Grouping constructs.

Unit II

Advanced Object Modeling – Aggregation – Abstract Classes – Extension and Restriction – Multiple Inheritance – Metadata – Candidate Keys – Constraints. Dynamic Modeling : - Events and States – Operations – Nested State diagram – Concurrency. Functional Modeling – Functional models – Data Flow Diagram – Specifying operations – Constraints.

Unit III

OMT as a software Engineering Methodology – The OMT Methodology – Impact of an Object Oriented Approach. Analysis : - Overview of Analysis – Problem Statement – Automated Teller Machine example – Object modeling – Dynamic modeling – Functional Modeling – Adding Operations Iterating the Analysis.

Unit IV

System Design – Overview of System Design – Breaking a System into Subsystem – Identifying Concurrency – Allocating Subsystems to processors and tasks – Management of data stores – Handling Boundary Conditions – Common Architectural Frame works – Architecture of the ATM system. Object Design – Overview of Object Design – Combining the three models – Designing Algorithms – Design Optimization – Implementation of control.

Unit V

Implementation using a programming language – Implementation Using a Database System. Programming style : Object – Style – Reusability – Extensibility – Robustness – Object Oriented Language Features – Survey of Object – Oriented Languages.

Text Book :

Object Oriented Modeling and Design – James Rumbaugh, Michel Blaha, William Premerlani – PHI Twelfth Printing – 2001.

Reference Book :

Object Oriented Analysis and Design with Applications – Grady Booch Second Edition – Pearson Education Asia Publications.