

## **PAPER XII: ELECTIVE II**

### **I - OBJECT ORIENTED ANALYSIS AND DESIGN**

Credits: 5

Hours: 75

*Objective: To study the Object oriented analysis and design techniques.*

#### **UNIT – I**

**INTRODUCTION:** An overview-Object basis-object state and properties-Behavior-Methods-Messages-Class hierarchy-Relationships-Associations-Aggregations-Identity-Dynamic binding-Persistence-Object oriented system development life cycle.

#### **UNIT – II**

**METHODOLOGY AND UML:** Introduction-Survey- Rumbaugh, Booch, Jacobson methods-Patterns-Frameworks-Unified approach-Unified modeling language-UML Diagrams-Class diagram-Use case diagrams - sequence diagram – collaboration diagram - Dynamic modeling-Model organization.

#### **UNIT – III**

**OBJECT ORIENTED ANALYSIS:** Identifying Use case-Business object analysis-Use case driven object oriented analysis-Use case model-classification- identifying Object responsibility. object, relationships, attributes, methods- Object responsibility.

#### **UNIT – IV**

**OBJECT ORIENTED DESIGN:** Design process-Axioms-corollaries-Designing classes-Class visibility-Refining attributes-Object storage and object interoperability-object relational systems-Macro and micro level processes-The purpose of a view layer interface.

#### **UNIT – V**

**SOFTWARE QUALITY:** Quality assurance-Testing strategies-Object orientation testing-Test cases-Test plan –Debugging principles-Usability testing –Satisfaction testing.

### **TEXT BOOK**

1. Ali Bahrami, "*Object Oriented System Development*", McGraw Hill International Edition, 1999.

### **REFERENCE BOOKS**

1. Graig Larman, "*Applying UML and patters*" 2<sup>nd</sup> Edition, pearson, 2002.
2. Grady Booch, James Rumbaugh, Ivar Jacobson, "*The Unified Modeling Language User Guide*", Addison Wesley Longman, 1999.
3. Bernd Bruegge, Allen H. Dutoit, "*Object Oriented Software Engineering using UML, Patters and Java*", pearson, 2004.

## II - DESIGN AND ANALYSIS OF ALGORITHMS

Credits: 5

Hours: 75

*Objective: To study the fundamental algorithm design techniques.*

### UNIT – I

Introduction – Performance analysis – Asymptotic notation – Divide and Conquer: General method – Finding minimum and maximum - Quick sort – Selection

### UNIT – II

Greedy Method: General method – Knapsack problem – minimum cost spanning tree – Prim's algorithm – Kruskal algorithm – Single source shortest path

### UNIT – III

Dynamic Programming: Principle of Optimality - Multistage graph – Travelling salesperson problem - String Editing

### UNIT – IV

Basic traversal and search Techniques: Techniques for binary trees – Techniques for graphs – BFS – DFS – Bi connected components and DFS

### UNIT – V

Back Tracking: General method – 8 Queens Problem – Sum of subsets – Graph coloring – Hamiltonian Cycles

### TEXT BOOK

1. E Horowitz, S Sahni and S Rajasekaran. *Computer Algorithms C++*. Galgotia, 1999.

### **III - E-COMMERCE**

Credits: 5

Hours: 75

*Objective: This course gives an exposure to the Electronic Commerce.*

#### **UNIT - I**

Electronic Commerce and Opportunities: Background -The Electronic Commerce Environment – Electronic Market place Technologies – Modes of Electronic Commerce: Overview: Electronic Data Interchange.

#### **UNIT - II**

Approaches to Safe Electronic Commerce: Overview – Secure Transport Protocols – Secure Transaction – Secure Electronic Payment Protocol (SEPP) – Secure Electronic Transaction (SET).

#### **UNIT - III**

Certificates for Authentication – Security on Web Servers – Payment Schemes: Internet Monetary Payment and Security Requirements- Payment and purchase order process – Online electronic cash.

#### **UNIT - IV**

Internet / Intranet Security Issues and Solutions: The Need for Computer Security – Specific Intruder Approaches – Security Strategies-Security Tools – Encryption – Enterprise Networking and Access to the Internet Antivirus Programs- Security Teams

#### **UNIT – V**

Master Card/Visa Secure Electronic Transaction: Introduction –Business Requirements – Concepts – payment Processing. E-mail and secure e-mail technologies for Electronic Commerce: Introduction \_ The Means of Distribution – A model for Message Handling- MIME, S/MIME, MOSS, MIME and Related Facilities for EDI over the Internet.

#### **TEXT BOOK**

1. Daniel Minoli and Emma Minoli, “Web Commerce Technology Handbook”. Tata McGraw Hill – 1999.

#### **REFERENCE BOOKS**

- 1.K.Bajaj & D Nag , “E-Commerce”, Tata McGraw Hill – 1999.
- 2.Mamta Bhusry – “E-Commerce”

