

Tilak Maharashtra University
Bachelor of Computer Applications (BCA)
Third Year

BCA 621- Project

BCA 622 – Unified Modeling Language (UML)

Examination 1

- 1. Getting started**
 - 1.1. Models
 - 1.1.1. Importance of modeling
 - 1.1.2. Principles of modeling
 - 1.1.3. Object-oriented modeling
 - 1.2. Review of Object-Orientation
 - 1.2.1. Objects and classes
 - 1.2.2. Abstraction
 - 1.2.3. Inheritance
 - 1.2.4. Polymorphism
 - 1.2.5. Encapsulation
 - 1.2.6. Message passing
 - 1.2.7. Associations
 - 1.2.8. Aggregation
 - 1.3. Introduction to UML**
 - 1.4. History
 - 1.5. The components of the UML
 - 1.6. Building blocks of the UML: Things, Relationships, Diagrams
 - 1.7. Common mechanisms in the UML
 - 1.8. Architecture
 - 1.9. Basic structural modeling**
 - 1.10. Classes
 - 1.11. Relationships
 - 1.12. Class diagrams
 - 1.13. Advanced structural modeling**
 - 1.14. Interfaces, Types and Roles
 - 1.15. Packages
 - 1.16. Instances
 - 1.17. Object diagrams

Examination 2

- 1.18. Basic behavioral modeling
- 1.19. Interactions
- 1.20. Use cases and use case diagrams
- 1.21. Interaction diagrams
- 1.22. Activity diagrams
- 1.23.** Advanced behavioral modeling
- 1.24. Events and Signals
- 1.25. State machines
- 1.26. Processes and Threads
- 1.27. Time and Space
- 1.28. Statechart diagrams
- 1.29.** Architectural modeling
- 1.30. Components and Component diagram
- 1.31. Deployment diagram
- 1.32. Collaborations

2. New diagrams in UML 2.0

Reference Books:

- Unified Modeling Language User Guide- Grady Booch, James Rumbaugh, Ivar Jacobson
- UML 2 for dummies – Michael Jaeasse, Chonoles, James A., Schardt
- Learning UML 2.0 – Russmiles, Kim Hamilton

BCA 623 ASP.Net

Examination 1

1. Introduction to ASP.NET

The .NET Framework, The .NET programming Framework, .NET languages, The .NET class library, ASP vs. ASP.NET, About ASP.NET, Basic difference between C# and VB.NET

2. ASP.NET 2.0

Features of ASP.NET 2.0, Stages in Web Forms Processing, Introduction to Server Controls, HTML Controls, Validation Controls, User control, Data Binding Controls, Configuration, Personalization, Session State

3. Declaring Variables in ASP.NET

Data Types, Initializes, Arrays, Enumerations. Variable Operations- Advanced Math Operations, Type Conversions. Object Based Manipulation - String Object, Date Time Object, Time span object & Array Object. Conditional Structures, Loop Structures, Functions & Subroutines – Parameters, Procedure Overloading, Delegates.

Examination 2

4. Web Server and User

Installing IIS. IIS Manager- Creating a virtual directory, Virtual directories and Applications, Folder Settings, Adding virtual directory to your neighborhood.

5. ASP. NET Applications

ASP.NET file types, the bin directory, code-behind, The Global.asax, Understanding ASP.NET classes. ASP.NET configuration

6. Overview of ADO.NET

ADO.NET architecture, Accessing Data using data adapters and datasets, using command and data reader, binding data to data bind controls, displaying data in data grid.

Reference Books:

- 1) The complete Reference ASP.NET by Matthew MacDonald- Tata McGraw-Hill.
- 2) Professional ASP.NET – Wrox Publication

Elective –III

BCA 624 Management Information System (MIS)

Examination 1

1. INTRODUCTION TO MANAGEMENT INFORMATION SYSTEM

- 1.1 MIS Introduction
- 1.2 MIS Some definitions
- 1.3 MIS and Computers
- 1.4 Need for MIS
- 1.5 Purpose & Objectives of MIS
- 1.6 Conceptual Design Models Of MIS
- 1.7 MIS: It's Role in an Organization
- 1.8 Impact of MIS on the Organization

2. DECISION MAKING CONCEPTS

- 2.1 Introduction
- 2.2 Phases in the Decision-making Process
- 2.3 Types and Systems of Decision Making
- 2.4 Organizational Decision Making
- 2.5 Uncertainty Avoidance
- 2.6 Problem initiated Search
- 2.7 Methods and Tools of Decision Making
- 2.8 Decision Tables
- 2.9 Law of Requisite Variety
- 2.10 management Of Risk

3 INFORMATION CONCEPTS

- 3.1 Introduction
- 3.2 Definition Of Information
- 3.3 Data and Information
- 3.4 Data Processing
- 3.5 Types Of Information
- 3.6 Sources Of Information
- 3.7 A Question Of Quality
- 3.8 Ensuring The Effectiveness Of Information
- 3.9 Information Modeling
- 3.10 The Human Being as an Information Processor
- 3.11 Relevance of Information in MIS

4 SYSTEM CONCEPTS

- 4.1 Introduction
- 4.2 System – some definitions
- 4.3 Open and Close Systems
- 4.4 Deterministic and Probabilistic Systems
- 4.5 Physical and Abstract Systems
- 4.6 Natural and Man-made Systems

- 4.7 Negative Feedback and Entropy
- 4.8 Feedback Control Loop
- 4.9 Relevance of System Theory
- 4.10 Integration of Organization Systems and Information Systems

Examination 2

5 ORGANISATIONS AND ORGANISATIONAL BEHAVIOUR

- 5.1 Introduction
- 5.2 Organizational Structure
- 5.3 Types of Organization
- 5.4 Decision making In an Organization
- 5.5 Information Flow in an Organization
- 5.6 Organizational Behavior
- 5.7 A Note on Management Style
- 5.8 Impact on MIS

6 ASSESSING INFORMATION NEEDS OF ORGANISATION

- 6.1 Introduction
- 6.2 Purpose of analysing Information Needs
- 6.3 Methods and tools of assessing Information needs
- 6.4 Determining Information Requirements
- 6.5 Information Needs – Relation to Organization's Goals
- 6.6 Breakup of Information Needs according to Decisions
- 6.7 Relation between Information Needs and Type of Decision
- 6.8 Information Models and their Integration with Data Processing

7 MIS DESIGN, DEVELOPMENT AND IMPLEMENTATION

- 7.1 Introduction
- 7.2 Prototyping and CASE tools
- 7.3 MIS Structure
- 7.4 Hardware and Software
- 7.5 Data Processing and Information Processing Systems
- 7.6 System Analysis and Design

8 MIS DESIGN II

- 8.1 MIS Plan and its Implementation
- 8.2 MIS Design Criteria
- 8.3 Implementation of MIS
- 8.4 Review and Evaluation of MIS
- 8.5 Introduction to RDBMS
- 8.6 Objectives of DBMS
- 8.7 Introduction to DSS

9 APPLICATIONS OF MIS

- 9.1 Introduction
- 9.2 Application of MIS in Manufacturing
- 9.3 Application of MIS in Service Industry

9.4 MIS Applications in Hotels

9.5 MIS in Hospitals

Reference Books

- Jawadekar MIS
- Gordon Davis MIS
- Utpal Banerjee MIS
- Oka MIS

BCA 625 Cyber Security Level- III

Examination 1

1. CYBER FORENSICS & CYBER CRIME INVESTIGATION

Cyber Crime as We Enter the Twenty-First Century, WHAT IS CYBER CRIME?, Specific computer crimes, hOW DOES TODAY’S CYBER CRIME DIFFER FROM THE HACKER EXPLOITS OF YESTERDAY?, REASONS FOR CYBER CRIME, INDUSTRIAL ESPIONAGE — HACKERS FOR HIRE, PUBLIC LAW ENFORCEMENT’S ROLE IN CYBER CRIME INVESTIGATIONS, THE ROLE OF PRIVATE CYBER CRIME INVESTIGATORS AND SECURITY CONSULTANTS IN INVESTIGATIONS, The Initial Contact, Client Site Arrival, Evidence Collection Procedures

2. CYBER LAW

“Cyber Law – An Indian Perspective”, What Is Cyber Crime?, Emergence of Information Technology Act, 2000, Types of Attacks By Hackers, Types of Techniques used by the Crackers/ Cyber Terrorists, Measures To Curb Cyber Crime, Investigations And Search Procedures, Problems Underlying Tracking of Offence, How Efficient Is Information Technology Act 2000?, Data Protection, Process of Reporting Internet Frauds, WHAT IS A COMPUTER FORENSICS REPORT?, What Is an Expert Report?, A TEMPLATE FOR COMPUTER FORENSIC REPORTS, Attacker Methodology, User Applications, Internet Activity or Web Browsing History.

3. DIGITAL EVIDENCE & FRAUDS

WHAT IS DIGITAL EVIDENCE?, Digital Forensic Examiner Proficiency and Competency Tests, Imaging Electronic Media (Evidence), Collecting Volatile Data, Analysis, Reporting, Firewall Forensics, The Value (or Not) of IP Addresses, Deciphering Port Numbers, Securing the Firewall, Network Forensics, Build a Monitoring Workstation, Analyzing the Data, Firewall Log Analysis and Management, Network Forensics Tools, Database Forensics, Testing For SQL

Injection Vulnerabilities, Mobile Forensics, DIGITAL FRAUDS, Computer Crimes, Steps for Computer Crime Investigation.

Examination 2

4. Mobile Frauds & Countermeasures

Mobile Forensics, Identification of Mobile, Cell Tracking, Types of LBS Technology, Case Study, Recovering Stolen Mobile, Here are steps on how to find a stolen or lost phone, Recover your stolen mobile using IMEI number, Identifying Fake SMS, Collecting Evidence to be presented in Court, How to take a Complaint from the Victim?, Do and don't for mobile user.

5. Forensic Data Acquisition/ Data Recovery

The Forensics Process, Collecting Digital Evidence, Live vs. Dead analysis, Imaging electronic media (evidence), Collecting Volatile Data, Analysis, Comparison to Physical Forensics, Computer Forensics Certifications, TIMELY EVIDENCE COLLECTION AND CHAIN OF CUSTODY, "MARKING" EVIDENCE WITH AN MD5 HASH AND ENCRYPTION — CRCMD5 AND PGP, FILELIST, CRCMD5, SEALING EVIDENCE, USING SAFEBACK 2.0 TO TAKE AN IMAGE OF A FIXED DISK, TAKING A HARD DISK INVENTORY WITH FILELIST, Data Recovery, Recovering data after physical damage, Recovery techniques, Hardware Repair, Disk Imaging, Recovering data after logical damage, Preventing logical damage, Recovery Techniques, Consistency checking, Data carving.

6. Operating System Forensics

WHERE EVIDENCE RESIDES ON WINDOWS SYSTEMS?, CONDUCTING A WINDOWS INVESTIGATION, Reviewing All Pertinent Logs, Event Viewer, Event Log Drawbacks, Where to Look for Evidence, IIS Logs, Reviewing Relevant Files, Incident Time and Time/Date Stamps, Where to Look for Evidence, Proprietary Email Files, Netscape Messenger Mail, Microsoft Outlook Mail, Deleted Files and Data, Temporary Files , Backup File Recovery, The Swap File, Broken Links, Web Browser Files, Looking for Unusual or Hidden Files, Remote Control and Remote Access Services, Administrative Shares, Reviewing Searches and Files Used, AccessData Registry Viewer, Registry Viewer Overview, Windows Registry Basics, Opening and Closing Registry Files, Forensic Analysis of a Live Linux System, Pt. 1 Mariusz Burdach 2004-03-22, Forensic Analysis.

Reference Book

1. Computer Networks - Andrew S. Tanenbaum 4th edition
2. Cyber-Forensics The Basics -Tim Vidas (CERTConf2006)
3. Digital Evidence - Harley Kozushko
4. Guidelines on Cell Phone Forensics - Wayne Jansen Rick Ayers (NIST Special Publication 800-10)

BCA 627 Practical ASP.Net