

Swami Ramanand Teerth Marathwad University, Nanded

B.Sc III Year Computer Science

(Optional Subject)

Annual Pattern

(W.E.F June 2010)

Paper No	Paper Title	Teaching Periods/week	Marks	Total Periods	Duration of Examinations
VIII	Software Engineering & Programming in Visual Basic	03 Periods (Theory)	100	80	03 Hours
IX-A Elective	Relational Database Management System And Computer Network	03 Periods (Theory)	100	80	03 Hours
IX-B Elective	E-Commerce and Unix Shell Programming	03 Periods (Theory)	100	80	03 Hours
X	Computer Lab- IV	01 Practical (03 Periods)	10	20 minimum practicals	03 Hours
XI	Computer Lab- V Project Work	01 Practical (03 Periods)	10	20 minimum practicals	03 Hours

Paper VIII :
Software Engineering & Programming in Visual Basic
(Total Marks- 100) (Theory)

Unit-I : Software Engineering (50 marks)

1. Introduction to software Engineering

The Evolving role of software, Software, Software Myths

2. Software Process Models

Software Engineering- A layered technology, Waterfall model, Incremental Process models, Evolutionary Process models, Specialized Process models

3. Requirement & Design Engineering

Requirement Engineering task, Building the analysis model, Requirement analysis, Design within the context of software engineering, Design process & design quality, The Design model

4. Software testing

A Strategic approach to software testing, System testing, Software Testing fundamentals, White box testing, Basis path testing , Black box testing

5. Web Engineering

Attributes of web based systems and applications ,Web Engineering layers , Web engineering process

6. Risk Management

Software risks , Risk identification, Risk projection

Ref. Books:

Software Engineering – A Practitioner’s Approach By Roger S. Pressman (McGraw Hill) Sixth Edition

Unit-II : Programming in Visual Basic (50 marks)

1. Getting Started with VB

The IDE , The Elements of user interface, Designing user interface, Programming an application Visual Development and Event Driven Programming.

2. Visual Basic- The language

Variable, Constants, arrays, collections, Procedures, control flow & loop statements

3. Working with forms

Form types, Appearance of forms, Designing menu structure, Building dynamic forms at run time

4. The Multiple document Interface

MDI Applications, Accessing child forms Implementing scrolling forms

5. Database Programming with VB

Understanding Database and DBMS , Understanding relational concepts, Understanding Visual data manager

6. Introduction to Web

Internet & web protocols , An HTML Primer, Activating the client with VBScript, Dynamic HTML, Study of Web browser control and Internet explorer object.

7. Windows API

Accessing win32 API from VB, API function arguments, Declaring 32bit functions
Determining free disk space, Other file functions

Ref. Books : 1 Mastering Visual Basic 6 By Evangelos Perroustos (BPB Publications)

Paper IX-A :
RDBMS and Computer Networks
(Total Marks- 100) (Theory)

Unit-I: RDBMS (50 marks)

1. Basic Concepts

Data Modeling for a database , Records and files, Three level architecture, Components of DBMS, Advantages and disadvantages

2.Data models

Introduction, Data Associations, Data models classification, Entity Relationship Model, Relational Data Model, Network Data Model,

3. Relational Model

A Brief Review of Set theory , Relational Database, Physical Implementation Issues

4. SQL

Basic Structure , Set Operations, Aggregate functions, Null Values , Nested sub queries ,Derived Relations , Views , Modification of database, Joined relations, Data Definition Language ,Embedded SQL

4. Relational Database Design

Pitfalls in Relational Database Design , Decomposition, Normalization using functional Dependencies,

5. Database System Architectures

Centralized Systems , Client Server Systems, Parallel Systems, Distributed Systems

Ref. Books :

1. An Introduction to Database Systems by Bipin Desai (Galgotia Publications)
2. Database System Concepts By Abraham Silberschatz and Henry F Korth (McGraw Hill) 4th Edition.

Unit-II: Computer network (50 marks)

1.Introduction to Computer networks

Uses of Computer Networks, Network Hardware, Network Software, Reference Models

2. Physical Layer & Data link Layer

Transmission Media, Wireless Transmission, The Mobile Telephone System, Design issues of Data link layer.

3. The Network Layer

Internetworking, The IP Protocol, IP addresses

4. The Transport Layer

Services Provided to the upper layers, Transport service primitives

5. The Application Layer

Domain name system, E-mail, The world wide web

6. Network Security

Introduction to cryptography, Two Fundamentals Cryptographic principals.

Ref. Books:

1. Computer Networks By Andreqw S. Tanebaum (Prentice Hall India) Fourth Edition

Paper IX-B :
E-commerce & Unix Shell Programming
(Total Marks- 100) (Theory)

Unit-I: E-Commerce (50 marks)

1. E- Commerce
2. EDI
3. The UN/EDIFACT Standard
4. Identification and Tracking Tools
5. Legal Issues
6. Information Technology Act 2000
7. Electronic payment system and Internet Banking

Ref. Books:

1. E- Commerce – The cutting edge of business By Kamlesh K Bajaj & Debjani Nag (Second Edition)
(Tata Mcgaw Hill Publications)

Unit-II : Unix Shell Programming (50 marks)

1. Getting Started
2. Gaining Confidence
3. The Unix file system
4. Essential Unix Commands
5. I/O Redirection & piping
6. Vi Editor
7. Shell Programming – First Step
8. Taking Decision
9. The Loop Control Structure
10. Shell meta Characteristics

Ref. Books:

1. Unix- Shell Programming By Yeshwant Kanentkar (BPB Publications)

Paper X :
Computer Lab-IV
(Total Marks- 100) (Practical)

Practicals based on Paper No. VII & IX at least 10 practical exercises from each paper.

Paper XI :
Computer Lab-V (Project Work)
(Total Marks- 100) (Practical)

- Maximum a group of 03 students are allowed to work on a project.
- Project Synopsis should be submitted by the students to their concern faculty also a declaration should be submitted by the students regarding the originality of work.
- Project report should prepared by the students & it should be certified by concern faculty & head of the department.
- Students should submit one hardcopy of report to the department.
- Distribution of marks for project is as
 - Project Work 70
 - Project Viva 15
 - Project Report 15

Total Marks: - 100