

M.Sc. (I.T.)
SEMESTER – III
Paper No.: 9

Title of the Paper: Data Communication and Network

Credits: 5

Marks: 100

Marks: Semester End Examination: 70 Marks
Continuous Internal Evaluation: 30 Marks

Unit 1:

Introduction to computer Network and the Internet: Internet-Birds' Eye View: Protocol-Examples, Internet-Layered Architecture.

Unit 2:

Application Layer – HTTP, FTP, SMTP, DNS. Socket Programming

Unit 3:

Transport Layer – UDP, TCP, Congestion Control

Unit 4:

Network Layer and Routing – routing algorithms in brief, Link Layer and LAN – LAN address and ARP, Ethernet, PPP.

Unit 5:

Computer Network Security, Network Management.

REFERENCE BOOKS:

1. Kurose J.F. & Ross K.W., "Computer Networking - A Top-Down Approach Featuring the Internet," 3rd Ed., Pearson Education
2. Unix Network Programming – Volume 1: Richard Stevens, Pearson Education
3. Keshav S., "An Engineering Approach to Computer Networks," AWL-ISE, 1999.
4. Bertsekas, Galager, "Data Networks," 2nd Ed., PHI, 1992.
5. Tanenbaum A.S., "Computer Networks," 3rd Ed, PHI, 1997.
6. Walrand J, "Communication Networks: A First Course," 2nd Ed, WCB/MH, 1998.

**M.Sc. (I.T.)
SEMESTER – III
Paper No.: 10**

Title of the Paper: Software Engineering

Credits: 5

Marks: 100

**Marks: Semester End Examination: 70 Marks
Continuous Internal Evaluation: 30 Marks**

Unit 1: Introduction

Introduction to Software Engineering, Software(S/W), Nature of S/W., Software development cycles, Software Development Process models

Unit 2: Software Requirement Specifications

Role of SRS, Problem Analysis, Requirement Specification, Verification & Validation

Unit 3: Planning & Design of Software

Team Structure, Quality assurance plan, Unit development folder, Risk Management, System Design principles, Module level concepts, Coupling & Cohesion, Design Methodology, Structure Chart, Functional approach vs. Object oriented approach.

Unit 4: Coding & Testing.

Programming Practice, Testing Fundamentals, Errors, Fault, Failure, Reliability, Levels of Testing, Test cases & Test criteria

Unit 5: Case Study

REFERENCE BOOKS:

1. Jalote Pankaj: Integrated Approach to Software Engineering, Narosa Publication, 1991.
2. Pressman: Software Engineering, A Practice Approach, McGraw Hill Publication, 1987.
3. Fairley R. E.: Software Engineering, Concepts, McGraw Hill.
4. Senn, Analysis & Design of Information System, McGraw Hill Publication.
5. Lewis T G: Software Engineering, McGraw Hill Publication.

M.Sc. (I.T.)
SEMESTER – III
Paper No.: 11

Title of the Paper: Internet & Scripting Languages

Credits: 5

Marks: 100

Marks: Semester End Examination: 70 Marks
Continuous Internal Evaluation: 30 Marks

Unit-1: Introduction

Internet – A network Of Networks, Types of Internet Connection-Dial Up & leased line, ISDN, broad band connectivity through DSL & WiMax, Various services available on internet, TCP/IP, FTP, Web Server, Web Site.

Unit-2: Internet Functions & Securities

Concept of Web server & mail server, Intranet, applications in Internet & Intranet environment, Firewall, Virus, Cryptography

Unit-3: Web Page Design through scripting (HTML)

Document Layout, Header Elements, Block Oriented elements, Lists, Inline links, Hyperlinks, URL, Images, Forms, Tables, Special Characters

Unit-4: Introduction to other Web Languages

DHTML, XML, PHP, WML, CGI.

Unit-5: Animation in web page

Flash Introduction & Screen Environment @ Basic Drawing & paintings.
Use of Library @ Animation in old Fashion
Motion Twin @ Graphic Symbol & Button Creation.
Animated Gif Creation.

REFERENCE BOOKS:

1. Duglass Comer, Internet - An Introduction, Prentice-Hall of India Pvt. Ltd.
2. Ned Snell, Teach your self to create web pages in 24 hours, Techmedia pub.
3. Cistems, Internet An Introduction, Tata McGraw, Hill Pub. Co. Ltd.
4. Thomas Powell, Complete reference HTML, Osborne Computer Books.

M.Sc. (I.T.)
SEMESTER – III
Paper No.: 12

Title of the Paper: Programming Lab-III

Credits: 5

Marks: 100

Practical Based On

**Paper 11: Internet & Scripting Languages {50%}
and Visual Programming on .NET Platform {50%}**

Visual Programming on .NET Platform:

Getting Started with VB .NET, Concept of event handling, Creating forms in application
Adding the controls to the form – Text Boxes, Rich Text Boxes, Labels & Link Labels, Other
common controls – Buttons, Check Boxes, Radio Buttons, List Boxes, Combo Boxes, Scrollbars
& Timers.

Object Oriented Programming

Classes & Objects, Fields, Properties, Methods & Events, Abstraction, Encapsulation,
Inheritance & Polymorphism, Overloading, Overriding & shadowing, Constructors &
Destructors.

Web Application in VB .NET

Working with web forms and web form controls – Buttons, Text Boxes, Labels, Literals & Place
Holders, Using other controls in Web form – Check Boxes, Radio Buttons, Labels, Panels, List
Boxes, Hyper Links & Link Buttons, HTML Client controls & server controls

Database Access with ADO .NET

Accessing data with Server Explorer, Accessing data with Data Adaptors & Datasets, Working
with ADO .NET.

REFERENCE BOOKS:

1. Steven Holzner, Visual Basic .NET Programming Black Book DeramTech Press.
2. Professional VB .NET, Wrox Press Ltd.
3. Jeffrey Kent: Visual Basic .NET A Beginner's Guide, Tata McGraw-Hill Pub. Co. Ltd.