

Swami Ramanand Teerth Marathwada University, Nanded

B.Sc Third Year Semester Pattern Information Technology (Optional) (With Effect from 2011-12)

B.Sc. III Year. Information Technology (Optional)

Paper No.	Paper Title	Teaching Period/ week	Marks University evaluation	Marks Internal evaluation	Total Marks	Total Periods	Duration of Examination
Semester 5							
XII	Advance Java	03	40	10	50	40	03 Hours
XIII	Oracle 10G PL/SQL	03	40	10	50	40	03 Hours
Semester 6							
XIV	MIS	03	40	10	50	40	03 Hours
XV	Web development using PHP	03	40	10	50	40	03 Hours
XVI Annual Practical (Practical on XII + XIII)	Computer Lab 4	01 Practical (03 Periods)	100	---	100	20 Minimum practicals	03 Hours
XVII Annual Practical (Practical on XIV+XV)	Computer Lab 5	01 Practical (03 Periods)	100	---	100	20 Minimum practicals	03 Hours
Total Marks:					400		

B.Sc. III semester Information Technology

Paper XII – Advance Java (Marks 50, Periods 40)

1. Graphics Programming Using Swing (4)

- Working with 2D Basic Shapes
- Using Color
- Using Font
- Displaying Images

2. Multithreading (6)

- What are threads
- Running and starting thread
- Running multiple threads
- The Runnable interface
- Thread priorities
- Synchronization and interthread communication

3. Database Programming (10)

- The design of jdbc, jdbc configuration
- Types of drivers
- Executing sql statements, query execution
- Scrollable and updatable result sets, rowset
- Metadata, transactions

4. Collections (6)

- Collections, Introduction to the Collection framework (Interfaces, Implementation and algorithms), Interfaces, collection classes : Set, List, Queue and Map
- Set : HashSet, TreeSet, and LinkedHashSet
- Interfaces such as Lists, Set, Vectors, LinkedList, Comparator, Iterator, hash tables.

5. Servlet (10)

- Introduction to Servlet(HTTP Servlet)
- Life Cycle of servlet
- Handling get and post request(HTTP)
- Data handling using servlet
- Creating and cookies
- Session tracking using HTTP servlet

6. JSP (5)

- Getting Familiar with JSP Server
- First JSP
- Adding Dynamic contents via expressions
- Scriptlets, Mixing Scriptlets and HTML
- Directives, Declaration, Tags and Session

7. Networking (5)

- The java.net package
- Connection oriented transmission – Stream Socket Class
- Creating a Socket to a remote host on a port (creating TCP client and server)
- Simple Socket Program Example.

8. JavaBeans Components (2)

- Why beans?

- The bean-writing process
- Using beans to build an application

Reference Books :

- 1) Complete reference Java by Herbert Schildt(5th edition)
- 2) Java 2 programming black books, Steven Horlzner
- 3) Programming with Java , A primer ,Forth edition , By E. Balagurusamy
- 4) Java servlet Programming by Jason Hunter, O'Reilly
- 5) Core Java Volume-I-Fundamentals, Eighth Edition, Cay S. Horstmann, Gary Cornell, Prentice Hall, Sun Microsystems Press.
- 6) Core Java Volume-II-Advanced Features, Eighth Edition, Cay S. Horstmann, Gary Cornell, Prentice Hall, Sun Microsystems Press.

B.Sc. III semester Information Technology

Paper XIII – Oracle 10G PL/SQL (Marks 50, Periods 40)

1. Introduction and Basic Concepts DBMS

5 Hrs.

- 1.1 Structure of DBMS
- 1.2 Advantages & Disadvantages
- 1.3 Users of DBMS
- 1.4 Database Models
 - Hierarchical Data Model
 - Network Data Model
 - Relational Data Model
 - E R Data Model

2. SQL Statements & Working with tables

8 Hrs.

- 2.1 DDL
- 2.2 DML
 - Procedural DML
 - Non Procedural DML
- 2.3 DQL
- 2.4 DCL
- 2.5 Transaction Control Commands
- 2.6 Data types in SQL
- 2.7 Creating & Managing Tables
- 2.8 Manipulating Data
- 2.9 Retrieving data using SELECT Command
- 2.10 WHERE Clause
- 2.11 DISTINCT Clause
- 2.12 Using Column Aliases
- 2.13 Working with Views
 - Creating View on Tables
 - Creating View on Views
 - Updating Views
 - Altering Views

3. Sorting & grouping Data in SQL

5 Hrs.

- 3.1 Using Order By Clause
- 3.2 Using Group By & Having clause
- 3.3 Substitution Variables
- 3.4 Using &, &&
- 3.5 Using DEFINE
- 3.6 Using VERIFY

4. SQL Functions

6 Hrs.

- 4.1 Single Row Functions
 - Character Functions
 - Case Manipulation
 - Character Manipulation
 - Number Functions
 - Date Functions
 - Conversion Functions
 - General Functions

4.2 Multiple Row Functions

5. Using Operators

6 Hrs.

5.1 Using Comparison Operators

- BETWEEN
- IN
- LIKE
- IS NULL

5.2 Logical Operators

- AND
- OR
- NOT

6. Joining Tables & Working with Sub queries

6 Hrs.

6.1 What is Join?

6.2 Natural Join/Inner Join/Equijoin

6.3 Joining With 'USING' Clause

6.4 Joining With 'ON' Clause

6.5 Self Join

6.6 Cross Join/ Cartesian Product

6.7 Outer Join

- Left Outer Join
- Right Outer Join
- Full Outer Join

6.8 What is Sub query?

6.9 Single Row Sub query

6.10 Multiple Row Sub query

7. Security

6 Hrs.

7.1 Creating User

7.2 Privileges

- System Level Privileges
- Object Level Privileges

7.3 Granting Privileges

7.4 Revoking Privileges

7.5 Roles

- Study of default roles
- Creating roles

7.6 Granting and Revoking roles

8. PL/SQL

7 Hrs.

8.1 An Introduction to PL/SQL

8.2 PL/SQL Overview

8.3 Declaration section

8.4 Executable Commands section

8.5 Condition logic

8.6 Loops

8.7 Exception Handlings

8.8 Triggers

- Triggers Syntax
- Types of triggers

- Enabling and Disabling Triggers
- Replacing and Dropping Triggers

8.9 Working Cursor

- % TYPE Variable
- % ROWTYPE Variable

Reference Books -

1. Oracle Database 10g SQL (Osborne ORACLE Press Series) by Jason price, McGrawHill, 0-07-222981-0.
2. Oracle Database 10g PL/SQL Programming by Scott Urman , Ron HARDMAN, MichaleMc Laughlin, Oracle Press, TMH, ISBN-0-07-059779-0.
3. Oracle Database 10g The Complete Reference By Kevin Loney, Bob Bryla Oracle Press (TATA McGraw Hill Edition) ISBN-13:978-0-07-059425-8, ISBN-10: 0-07-059425-2

B.Sc. III semester Information Technology

Paper XIV – Management Information System (Marks 50, Periods 40)

- 1 Introduction to Management Information Systems
 - 1.1 Overview of Management Information System.
 - 1.2 Structure of Management Information system.
 - 1.3 MIS: Support to Management
 - 1.4 MIS and the user.
 - 1.5 Management as a control system.
2. Information Systems Technology
 - 2.1 Hardware, Software & communication technology for information systems.
 - 2.2 Transaction processing, office automation, Information processing control functions.
3. Conceptual Foundations
 - 3.1 The decision-making process.
 - 3.2 Concepts of information.
 - 3.3. Human as Information processors.
 - 3.4 Systems concepts, planning & control.
- 4 E-business Enterprise
 - 4.1 Introduction
 - 4.2 Organization of business in an E-enterprise.
 - 4.3. E-business, E-communication & E-collaboration
5. Information Security Challenges in E-enterprises
 - 5.1 Security Threats & Vulnerability
 - 5.2 Controlling security threat and vulnerability.
 - 5.3 MIS & Security challenges
6. Development, Implementation and Management of MIS Resources.
 - 6.1 Developing and implementing application systems.
 - 6.2 Quality assurance and evaluation of information systems.
 - 6.3 MIS: Development process model.
7. Application of MIS to E-business
 - 7.1 Application in Manufacturing Sector.
MIS for Personnel Management, Financial Management, Production management, Raw Materials management & Marketing management.
 - 7.2 Application in Service Sector
Introduction, Service concept, service process cycle and analysis, customer service design, service management system.
8. Case Study
 - 8.1 Tata home finance Ltd.

References:

1. MIS: Conceptual Foundations, structure & development by Gordon B.Davis, Margrethe H.Olson, Tata McGraw Hill.
2. MIS, Text & Cases, Third Edition by Waman S. Jawadekar, Tata McGraw Hill.

B.Sc. III semester Information Technology

Paper XV – Web development using PHP (Marks 50, Periods 40)

1. Introduction to web techniques 8

HTTP basics, Introduction to Web server and Web browser

Introduction to PHP

What does PHP do?

Lexical structure

Language basics

2. Function and String 10

Defining and calling a function

Default parameters

Variable parameters, Missing parameters

Variable function, Anonymous function

Types of strings in PHP

Printing functions

Encoding and escaping

Comparing strings

Manipulating and searching strings

Regular expressions

3. Arrays 6

Indexed Vs Associative arrays

Identifying elements of an array

Storing data in arrays

Multidimensional arrays

Extracting multiple values

Converting between arrays and variables

Traversing arrays

Sorting

Action on entire arrays

Using arrays

4. Introduction to Object Oriented Programming 8

Classes

Objects

Introspection

Serialization

Inheritance

Interfaces

Encapsulation

5. Files and directories 6

Working with files and directories

Opening and Closing, Getting information about file, Read/write to file,

Splitting name and path from file, Rename and delete files

Reading and writing characters in file

Reading entire file

Random access to file data

Getting information on file

Ownership and permissions

6. Web Techniques 10

Variables

Server information

Processing forms

Setting response headers

Maintaining state, SSL

References

1. Programming PHP Rasmus Lerdorf and Kevin Tatroe O'Reilly publication
2. Beginning PHP 5 Wrox publication
3. PHP web services Wrox publication
4. AJAX Black Book Kogent solution
5. Mastering PHP BPB Publication
6. PHP cookbook O'Reilly publication
7. Learning PHP and MYSQL O'Reilly publication
8. PHP and MYSQL O'Reilly publication
9. PHP for Beginners SPD publication
10. www.php.net.in
11. www.W3schools.com
- 12 www.wrox.com