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DETAILED SYLLABUS

FOR

DISTANCE EDUCATION

Diploma

(One Year Semester Scheme)

Diploma in Information Technology
(DIT)

COURSE TITLE : DIT
DURATION : 1 YEARS
MODE : SEMESTER
TOTAL DEGREE MARKS: 1600

FIRST SEMESTER

Course Title	Paper Code	Marks				
		Theory		Practical		Total
		Internal	External	Internal	External	
Fundamentals of Information Technology	DIT/S/0110	40	60			100
Basics of Structured System Analysis and Design [SSAD]	DIT/S/0120	40	60			100
Use of Data Structures Using ' C '	DIT/S/0130	40	60	40	60	200
Introduction of DBMS and SQL Server	DIT/S/0140	40	60	40	60	200
Study of Internet and Multimedia	DIT/S/0150	40	60	40	60	200

SECOND SEMESTER

Course Title	Paper Code	Marks				
		Theory		Practical		Total
		Internal	External	Internal	External	
Introduction to Operating System [OS	DIT/S/0210	40	60			100
Linux (OS)	DIT/S/0220	40	60			100
Effective Communication	DIT/S/0230	40	60	40	60	200
Introductory Mathematics	DIT/S/0240	40	60	40	60	200
Programming with Visual Basics	DIT/S/0250	40	60	40	60	200

Syllabus for DIT

First Semester

I Fundamentals of Information Technology

Subject Code – DIT/S/0110

Basics of Information Technology

Unit 1: Basics of IT

What is Information Technology; Data Processing System; Information; Types of Information System; Types of Information Computing Models; Internet.

Unit 2: Numbering Systems

Introduction, Number Systems, Conversions from one base to another, Conversion of binary to Hexadecimal (Shortcut Method).

Unit 3: Computer Fundamentals

Introduction, Characteristics of a Computer, Criteria using computers, History, Generations of computer, Classification, Application, Basic Components of PC, Computer Architecture, Central Processing Unit.

Unit 4: Computer Memory and Peripheral Devices

Computer Memory, Computer Peripherals, Output Devices

Unit 5: Software

Introduction, Classification of Software, Computer Programming Languages, Translators, Operating System, Fourth Generation Language.

Unit 6: Windows XP

Introduction, Features of windows XP, Windows XP Installation, Activating Windows XP, Security features, Accessing user Accounts, Getting Help.

Unit 7: Windows XP Interface

Introduction, Windows XP User Interface, Start Menu, Working with recently opened document, Tool bar, Desktop, Windows Explorer, Recycle bin, Locating files, Windows Media Player, Image Format, Encryption file system, Automating window XP.

Unit 8: Security and Networking

Introduction, Simple files sharing, Internet information services, Peer to Peer Networking

Window Based Application

Unit 1: Word XP

What is Word Processing? Features of WP, Getting into Microsoft word XP, Help

Unit 2: Tool Bars and File Operations

Standard Toolbar, Formatting Toolbar, Word Tables and Borders Toolbar, Drawing Toolbar, File operations in word XP, Select, Editing text and graphics, Creation of

Tables in WORD, Sort list or tables, Create a header or footer, What is the clip Gallery?, Print a Document, Auto Correct, Diagram Style and Formatting, Page setup, Creating Background.

Unit 3: Mail Merge and Macros

What is mail merge? Organizing the mail merge, Selecting the mail merge option, Mail merge, Macros in word and Excel.

Unit 4: MS-Word Functions and their Shortcut Keys

Unit 5: Electronic Spreadsheets

Concept of Spread sheets, ESS, MS-Excel, Work book operations, File operations in excel, Worksheet operations, creating a workbook, Rearranging cell contents, Worksheet printing, Changing the height and width of rows and columns, Auditing Formula, Conditional Formatting, Sorting data, Filtering data, Validating data.

Unit 6: Building Formula and Function

Introduction, Types of operators used in excel, Enter a Formula, Addressing Methods.

Unit 7: Functions Charts and Macros in Excel

Introduction, Entering functions, Mathematical Functions, Statistical Functions, Financial Functions, Date and time function, Logical Function, Text function, What is chart?, Types of charts, Creating a chart, What are Macros?.

Unit 8: Working with power point

Introduction, what you can do with power point, Create a new presentation, Power point wizards and Template, Power point view, Create handouts of slides, Print slides notes or handouts, Running a presentation

II Basics of Structured System Analysis and Design (SSAD)

Subject Code – DIT/S/0120

Unit 1: Systems and System concepts

Introduction, System Concepts, Definition of system, Characteristics of System – Organization, Interaction, Interdependence, Integration, Elements of Systems: Inputs and Outputs , Types of Systems

Unit 2: Information System and System Planning

Introduction, Information and Management, Types Information Systems, Information system analysis overview, Information gathering, Information system requirement specification. Systems planning Tools: Dataflow diagram [DFD] : Definition, notations of DFD, Roles to design DFD, Examples of DFD, Data dictionary [DD], merits and demerits of DD, Decision table: Definition , components of Decision table, types of decision table with an example of each, Decision tree: Definition , merits and demerits of decision tree.

Unit 3: The System Development Life Cycle

Introduction, The System Development Life Cycle [SDLC], The role of System department and System Analyst. The Analyst/ User Interface

Unit 4: Tools of structured Analysis

Introduction, Tools of Structured Analysis, Information-Gathering Tools, The Process and Stages of System Design: The process Design, Design Methodologies, Development Activities.

Unit 5: System Design Tools and Documentation

Introduction, Input Design, Output Design Forms, System Design: System structure charts, Data structure diagrams, Data Access diagrams, HIPO charts, design of input and control, design of output and control, file design/database design, process design, user interface design, prototyping, software constructions. Test plans, Structured walkthroughs, and design and code reviews. Use of CASE tools in the analysis, Hardware/software selection, Make V/s Buy decision Documentation: Importance, Types of documentation, Security and disaster planning and management.

III Use of Data Structures using 'C' **Subject Code – DIT/S/0130**

Block I : Data Structures Using C

Unit 1: Arrays, Pointers and Structures

Introduction, Definition and concept of an Array, Array Used in 'C' Language, Single – Dimensional Arrays (One Dimensional Array) , Two Dimensional Arrays. [Matrix], Pointers, Declaring a pointer variable, Pointer Operators, Pointers and Arrays, Pointers used in function, Pointers used in an Array, Structures, Declaration of structure , Initialization of structure , Processing of Structure , Structure used with an Array

Unit 2: Overview of Data Structures

Introduction, What is a Data Structure? , Definition of data structure , The Abstract Level , The Application Level , Implementation Level, Data Types and Structured Data Type, Common Structures , Abstract Data Types , Properties of Abstract Data Type Generic Abstract Data Types, Programming with Abstract Data Types, Pre and Post Conditions, Preconditions, Postconditions, Checking Pre & Post Conditions, Implementation Checks Preconditions Linear Data Structure, The Array Data Structure , Using an Array and Lists as a Data Structure, Elementary Data Structures , What the application needs ? , Implementation methods , Non Linear, Data Structures – Trees, Binary Tree, Hash Tables

Unit 3: Overview of Stack

Introduction, Operations of Stack, Insert / Push operation, Delete/pop operation, Display, Stack implementation using arrays, Applications of stack, Stacks using structures. Sample C programs to represents the Stack Implementation

Unit 4: Overview of Queues

Introduction, Queues and its Operations ,Different types of queues, Ordinary queue Disadvantage of ordinary queue, Double ended queue (Deque), Circular queue Sample C programs to represents the Queue Implementation:

Unit 5: Linked Lists

Introduction, Linear list, Linked list, Typical basic linked-list operations, Singly-Linked Lists, Circular singly linked list, Insert a node at the front end , Insert a node at the rear end, Delete a node from the front end , Delete a node from the rear end, Doubly

linked lists, Insert a node at the front end , Insert a node at the rear end, Delete a node from the front end

Unit 6: Trees

Introduction , Overview of Tree Concept , Binary tree, Strictly binary tree, Complete binary tree, Almost complete binary tree, Storage representation of a binary tree, Various operations on binary trees using linked representation, Insertion Operation Traversals , Binary search tree (BST) , Insertion Operation, Searching , Other operations , find maximum value in a tree BST, To find minimum value in a BST , Height of tree , Count nodes in a tree, Count leaves in a tree, Delete a node from the tree

Unit 7: Graphs

Introduction, Overview of Graphs, Adjacency lists & Adjacency Matrix , Adjacency lists , Adjacency Matrix, Depth – First Traversal, Breadth – First Traversal, Spanning Trees

Unit 8: Searching Methods

Introduction, Basics Searching Techniques, Self Assessment Questions , Algorithmic Notation Sequential Search [Linear search] , Binary Search , Illustration of C Programmes

Unit 9: Sorting Methods

Introduction, Overview of Sorting Methods , How do you sort? , Evaluating a Sorting Algorithms , Stability on Sorting algorithm, Internal Sorting, Insertion Sort , Bubble Sort , Selection Sort , Shell Sort, Quick Sort , Tree Sort External Sorts, Merge Sort, 2-Way Merge Sort .

IV Introduction of DBMS and SQL Server

Subject Code – DIT/S/0140

Block I : Fundamentals of Database Management

Unit 1: Database Management System

Introduction, Data processing requirements, Data flow diagrams, DBMS characteristics, Problems with traditional systems, Three schema architecture, DBMS history, Data models, E-R model, Relationship, Ternary relationship

Unit 2: Relational Data Model, Constraints and Relational Algebra

Introduction, Relational Database, Constraints, Data Integrity, Relational algebra, Database planning, Steps in database planning, Database design, Conversion of e-r diagram to relations, Introduction to normalization.

Unit 3: Query language-SQL

Introduction, Data types, DDL statements, Data manipulation language, Data control language

Unit 4: Normalization and Data Storage Devices

Introduction, Functional dependency, Decomposition of relations, Normalization, Schema design, Axioms for FDs and MVDs, Fourth normal form, Fourth generation languages, Data storage devices, File systems.

Unit 5: Model review, System Architecture and Optimization

Introduction, Hierarchical data model, Network data model, HDMS: a typical DBMS, Transaction model, Client-server architecture, Query tree and query operators, Query optimization,

Unit 6: Security, Integrity and Information Quality

Introduction, Security and Integrity Threats, Security, Information Quality, Privacy etc.

Block II : SQL Server 2005

Unit 1: Introduction to Databases

Introduction to Databases, Basic Database Concepts, Characteristics of a Database Management System, Relational model, Characteristics of a Relational DBMS Model, Relational Database Objects, TABLES, UNIQUENESS AND KEYS, Normalization, History, Normal Forms, First normal form, Second normal form, Third normal form (3NF), Boyce-Codd normal form, Fourth normal form, Fifth normal form, Domain/key normal form, Sixth normal form

Unit 2: Introduction to SQL

SQL Server 2005 Overview, Layout of the SQL Server 2005 Data Platform, Structured Query Language, Enhancements in Transact-SQL, Query Notification, Platforms, Integration with Microsoft Back office, Client/Server Architecture, The components in the communication architecture include: Client Application, Application Development Architecture, Database Architecture, System Database, Database Implementation, SQL Server 2005 System Tables and Views, System Views, Information Schema, SQL Server Components, Server Software, SQL Server Service, SQL Server Administration Tools & Wizards, Full support of SQL Server 2005, New state-of-the-art graphical user interface, Rapid database management and navigation, Easy management of all SQL Server objects, Advanced data manipulation tools, Effective security management, Excellent visual and text tools for query building, Report designer with clear in use report construction wizard, Impressive data export and import capabilities, Visual Database Designer to handle database structure in a few clicks, Easy-to-use wizards performing SQL Server administrative tasks, Other useful tools to make your work with SQL Server as easy as it can be, SQL Server Configuration Manager, Surface Area Configuration Tool, SQL Server Management Studio

Unit 3: Installing and Configuring SQL Server 2005

SQL Server 2005 Editions, Versions for SQL Server 2005, Hardware and Software Requirement, System Requirements, Hardware and Software Requirements, Cluster Hardware Requirements, Network Software Requirements, Internet Requirements, Software Requirements, Understanding SQL Server Installation Options, Licensing Mode, Character Set, Default Installation path, SQL Server Logon Account, Using a Domain User Account, Auto Start Services, Running SQL Server 2005 Setup Program, Starting and stopping SQL Services, Configuration Manager, Connecting to SQL Server, SQLCMD, Using Graphical Utility

Unit 4: Building a Database

Database Consideration, Devices Creating Databases, Allocating Units, Transaction Log, Managing Databases, Creating Database Devices, Creating Tables, Object Explorer MANAGING DATABASES, Managing Data and Log File Growth, Expanding Database and Log Files, Adding secondary database files, Creating Filegroups, DROPPING DATABASE, TABLES, CREATING TABLE, ALTERING

TABLES, Adding a Column, Dropping a Column, Dropping Tables, Data Types (Transact-SQL), SQL Server Data Types and Their .NET Framework Equivalents

Unit 5: Retrieving & Managing Data

Introduction, Select System (T-SQL), Using comparison operators, Using String Comparisons, Using Logical Operators, Retrieving a Range of Values, Retrieving a List of Values, Sorting Result Sets, Additional Language Elements, Local and Global Variables, Operators, Functions, Control-Of-Flow Statements, Local Variables (User defined), Global Variables (System supplied), Operators (T-SQL), Arithmetic Operators, Assignment Operator, Bitwise Operators, Comparison Operators, Local Operators, String Concatenation Operator, Unary Operators, Operator Precedence, Enhancements in T-SQL, Functions, Mathematical Function, String Functions, Date Functions, Data Conversion Functions, Control of Flow Language Elements, Ways to Execute Transact-SQL statements, Dynamically Constructing Statements, Using Transactions, Constraints, Naming Conventions, Determining Which type of constraint to use, Disabling Constraint Checking, Disabling Constraint Checking on Existing Data, Disabling Constraint Checking when loading new data, Implementing Indexes, Use the CREATE INDEX statement to create an Index, Use the DROP INDEX statement to Drop an Index, Data Integrity, Entity Integrity, domain Integrity, Referential Integrity

Unit 6: Views, Triggers and Stored Procedures

Views: Advantages of Views, Disadvantages of View, A view is used to do any or all of these functions, Dropping Views, Renaming Views, What is an Indexed View?, What's new for Indexed Views in SQL Server 2005 ?, Group by Restrictions
Triggers: Characteristics of a Trigger, Creating Triggers, Magic Tables, The INSERT Trigger, Delete Trigger, The ALTER TRIGGER, The DROP TRIGGER Command, Triggers and Data Integrity, Multiple Triggers, AFTER and SNSTEAD of Triggers
Stored Procedures: Details of the CLR Integration, The .NET Framework, CLR Integration, Interactively Using the sqlcmd Utility, Using a sqlcmd Startup Script, Using the Query Editor to build a sqlcmd Script, Cursors: Structure of Cursors, Cursor Types, The four APL serve cursor types supported by SQL Server, Declaring Cursors, Opening Cursors, FETCH Statement, Closing Cursors, Deallocate Cursors, Control of Flow Language,

V Study of Internet and Multimedia

Subject Code – DIT/S/0140

Unit 1: Introduction to Internet

Introduction, What is Internet, ISP's, DNS Services, Connection Types, Modems, Dial-up Connections, Web Browsers, Working Principles of Internet, Routers

Unit 2: WWW, Telnet and FTP

Introduction to WWW, Web Pages, Web sites, Web Server and Protocols, Search Engines, Helper Applications, Internet Relay Chart (IRC), Telnet – Using Telnet, Windows Telnet Program, Telnet Sites, Overview of FTP and its Applications

Unit 3: TCP/ IP

Introduction to TCP/IP, Internet Standards, Domain Names and IP Addressing – Host Names, Domain Names, IP Addressing, Reserved IP Addresses, Class A, B and C Networks, Setting up Internet on PC- Dial-up Networking, Installing TCP/IP, Configuring TCP/IP Parameters, Setting up new connection and its Testing

Unit 4: Electronic Mails

Introduction to E-mails, Advantages of E-Mails, E-Mail Addresses and mail Boxes, Working of E-Mails, E-mail Options, E-Mail Software, Microsoft Outlook Express, Netscape Navigator, Creating and Managing Web Based E-Mail

Unit 5: Introduction to HTML

Introduction to URI, Fragment Identifier, Relative URI's, History of HTML, Structure of HTML Document, Structuring a Web Page, Paragraph and Line Break Tags, Adding Comments, Formatting Texts – Creating Lists, Creating Definition Lists, Hypertext Links, Link Lists, Inserting Inline Images, Creating Image links, Horizontal Rules, Address Tag, Working with Text, Changing Font Size and Colors, Using Background Images, Marquee Tag

Unit 6: Web page Authoring Using HTML

Introduction, Working with Tables, Frames, Forms

Unit 7: Multimedia

Introduction of Multimedia, System Requirements, Sound, Voice Recognition, Creative Software Utilities for Multimedia Applications - Creative CD, MIDI, WAVE Studio, Mixer, Graphics, Animation, Video, Multimedia Applications – Entertainment, Education and Training, Business organizations

Second Semester

I Introduction to Operating System (OS)

Subject Code – DIT/S/0210

Unit 1: OS Structure

Simple Batched Systems, Multiprogrammed Batched Systems, Time Sharing Systems, Parallel Systems, Distributed Systems, Computer System Operation

Unit 2: Processes

What is process? Operations on Processes, Process Scheduling, Interprocess Communication, Threads

Unit 3: CPU Scheduling

CPU Scheduler, Scheduling Criteria, Types of Scheduling

Unit 4: Deadlocks

Necessary Conditions for Deadlock, Deadlock Prevention, Deadlock Avoidance

Unit 5: Memory Management

Logical and Physical Addresses, Swapping, Paging, Segmentation, Segmentation with Paging

Unit 6: Virtual Memory

Demand Paging, Page Replacement and Page Replacement Algorithms, Demand Segmentation

Unit 7: File- System Implementation

File System Structure, Allocation Methods, Free Space Management, Directory Implementation

II Linux OS

Subject Code – DIT/S/0220

Unit 1: An Introduction to Linux

Introduction, brief history of Linux, The design and philosophy of Linux, Advantages of Linux, System Requirements, Installing Linux - Multiple Booting and Partitioning, Disk drive and partition naming in Linux, File systems in Linux, Installation steps, Logging in, activating the user interface and logging out, Graphical mode, Text mode, Basics commands,

Unit 2: Linux File System

Introduction to Linux File System, Types of file on Linux, File system layout, I-node and Path, The path, Absolute and relative paths, Manipulating files, Finding files, Linking files, File security, The chmod command, The file mask, Special Modes

Unit 3: Linux Processes

Overview Process Types, Process attributes, Displaying process information, Life and death of a process, SUID and SGID, Boot process, Init and shutdown, Managing processes, Priority, CPU Recourse, Memory Recourse, I/O Recourse, Process Monitoring Tools,

Unit 4: Redirection, Vi Editor & Linux Configurations

Introduction, I/O Redirection, Text Editors, File Management, Configuring Environments, Environment variables, The Bash prompt, The Graphical Environment, The X Window System, Display Name, Window & Desktop Managers, X server configuration, Sound and video, Region specific settings

Unit 5: Shell Scripting

Introduction, Writing first Shell script, Variables in shell, echo Command, Shell Arithmetic, Exit Status, The read Statement, Wild cards, Command Line Processing, Pipes, Branching and Decision making , If –then-else Construct, Nested ifs, Loops in Shell Scripts - for loop, while loop, Case Statement, De-bugging the shell script, Advance Sell Scripting, Local and Global Shell Variable, Conditional Execution, Functions, Shift Command

III Communication Skills in English

Subject Code – DIT/S/0230

Unit 1: Language and Communication

Definition of Communication: Function and Purpose of Communication; Process of Communication; Barriers to Effective Communication; Types of Communication: Verbal Communication, Non-verbal Communication; he Impact of Communication on Performance.

Unit 2: Remedial English

Parts of Speech: Nouns, Pronouns, Adjectives, Verbs, Adverbs, Prepositions, Conjunctions, Interjections; Sentences; Subject-Verb Agreement; Active Voice and Passive Voice; Degrees of Comparison; Direct and Indirect Speech; Question Tags

Unit 3: Oral Skills for Effective Communication

Advantages and Disadvantages of Oral Communication: Improving Oral Communication; One-to-One Oral Communication: Face- to- face Communication, Communication through Telephone; Oral Presentations: Making an Effective Oral Presentation, Basic Steps for Oral Presentations, Visual Aids, Using Overhead Projectors, Using Slide Projectors, Making Power Point Slides

Unit 4: Listening Skills

Meaning of Listening; Types of Listening; Barriers of Effective Listening; Strategies for Effective Listening; Semantic Markers; Listening to Customer Complaints

Unit 5: Reading Skills

Meaning of Reading: Purposes of reading, Reading as a skill; Types of reading: Skimming, Scanning, Extensive reading, Intensive reading, Loud and silent reading; SQ3R Technique of Reading

Unit 6: Writing Skills

Note Taking: Strategies of note-taking; Paraphrasing; Elements of writing: Cause and Effect, Cohesion; Business Letter Writing: Principles of Writing Letters, Structure of a Business Letter, Types of Business Letters, Job Applications; Other Business Communications: Press Releases, Fax, Telegram and E-mail.

IV Introductory Mathematics

Subject Code – DIT/S/0240

Unit 1: Set Theory

Sets, types of sets, operation on sets, Venn diagrams, Cartesian product of two sets, Distributive laws

Unit 2: Mathematical Logic

Proposition or statements, converse, inverse and contra positive of an implication

Unit 3: Modern algebra

Binary operation, semi groups, monoid, group

Unit 4: Subgroups and other groups

Subgroups, cosets, cyclic groups, group of permutations

Unit 5: Basic graph theory

Definition of graphs, multigraphs, complete graphs, null graphs, bi-graphs, degrees, degree sequences

Unit 6: Data Analysis

Data and statistical data, frequency distribution, graphical representation, measures of central tendency, measures of dispersion

Unit 7: Permutation and combination

Fundamental principles, permutation and combination, permutation of n different things taken r at a time, permutation of things of which some are alike, circular permutation, combinations, complementary combinations

Unit 8: Probability

random experiment, sample space, event, probability, additional theorem, classical approach, conditional probability, independent events, multiplication theorem, empirical approach

Unit 9: Elements of trigonometry

Radian and circular measure, trigonometric functions, identities, trigonometrical ratios of certain standard angles, allied angles, compound angles, multiple and sub multiple angles

Unit 10: Limits

Definitions of limits, continuity, evaluation of limits, some of the standard limits with their derivations, exponential limit

Unit 11: Continuity and differential calculus

Differentiation, equations of tangent and normal, pedal equations, polar coordinates, angle between radius vector and tangent, successive differentiation, indeterminate forms, partial differentiation

Unit 12: Integral Calculus

Integration by parts, integral as the limit of a sum, reduction formulae, integration of algebraic rational functions, integration of irrational functions, definite integrals and evaluation

Unit 13: Complex trigonometry

Complex number definition, De Moivre's theorem, Roots of a complex number, Exponential function of a complex variable, hyperbolic functions, logarithmic function of a complex variable

Unit 14: Matrices and determinants

Matrices, related matrices, matrix method of solution of simultaneous equations, elementary transformation of a matrix

Unit 15: Infinite series

Convergence and divergence, series of positive terms, Binomial series, exponential series, logarithmic series

Unit 16: Differential equations

First order differential equations, Practical approach to differential equations, first order and first degree differential equations, homogeneous equations, linear equations, Bernoulli's equations, exact differential equations

V Programming with Visual Basics**Subject Code DIT/S/0250****Unit 1: Introduction to Visual Basic**

Introduction, Visual Basic Application Development Cycle, Develop an Attractive User Interface, Define Properties, Write the Code, Loading Visual Basic, Visual Basic User Interface, VB Controls, Control Categories, Drawing Objects on the Form, Object Naming Conventions, Event Procedures

Unit 2: Programming Fundamentals

Variables, Declaring Variables, Storing and Retrieving Data in Variables, Variable Data Types, Scope and Life Time of Variables, Data Types, Modules - Form Modules, Standard Modules, Class Modules, Procedures - Sub Procedures, Function Procedures, Property Procedures, Control Structures- Decision Structure – If, Decision Structure – Select Case, Loop Structure – DO While...Loop, Loop Structure – DO...Loop While, Loop Structure – For...Next, Loop Structure – For Each...Next, Exit Statement, Control Array, Arrays, Defining Dynamic Arrays, Multi-Dimensional Arrays, Functions

Unit 3: Menus, MDI and Data Files

Introduction, Menu Editor, Creating Menu Controls in the Menu Editor, Menu Naming Conventions, Creating a Menu Control Array, Writing Code for Menu Controls, Clipboard Commands, Creating Sub Menus, Separating Menu Controls, Assigning Access Keys and Shortcut Keys, Controlling Menus at Run Time, Dialog Boxes, Coloring and Sizing Window, Drawing Program, MDI Application, Specifying Active Child Form or Control, Loading MDI Form and Child Forms, Setting Child Form Size and Position, Maintaining State Information for Child Form, Unloading MDI Form with Query Unload, Menus in MDI Applications, Creating Menus for MDI Applications

Unit 4: Accessing Database

Introduction, Database, Creating Student Database, Creating Database using Visual Data Manager, Manipulating Database Objects, Accessing Databases, Data Control, DAO – Data Access Object, DAO- Adding a Bookmark, Adding a Field to a Table, Adding/Deleting an Index from a Table, Attaching Tables from External Database, Deleting a Table from the Database, Using Transactions to Control Changes, Using

an SQL Action Query, ADO – ActiveX Data Objects, RDO - Remote Data Object, Visual Basic and Oracle, Adding an ODBC Data Source

Unit 5: ActiveX Components

Introduction, ActiveX Components, ActiveX Control, To Add and Remove ActiveX Controls, Creating an ActiveX Control, ActiveX Code Component, Creating an ActiveX DLL, To Include the DLL in any Project, ActiveX Document

Unit 6: Report/ API/ HELP/ System Functions

Introduction, Creating Reports – Connection, Commands, Adding a Calculated Field to the Data Report , Grouping Information Based on a Field, Adding Function Control to the Data Report to Print Sub-Totals and Grand Totals, Adding an Aggregate Field to the Data Report, Adding Date, Time, Page Number and Titles to the Data Report, Printing a Data Report, Selecting Data for the Report Based on a User Input, Extending the Report to include Child Commands, Interacting with Data in a Microsoft Jet Database, Create a Simple Data Bound Form, Create a Data-Grid form Based on a Query, User-Created On- Line Help, Creating the Topic File, which Contains the Help Text, Creating the Project File, Compiling Help Project to Create HLP File, Linking help to VB Application, Windows API (Application Program Interface), Exercise to Find the Windows Directory, Declaring API Functions, IIS Application, Library Functions, String Functions, Numeric Functions, Time- Related Functions, Miscellaneous Functions, Error Handling

List of reference books

INFORMATION TECHNOLOGY

Sl. No. Title Author Publisher

Core Computers

1. An Introduction to Data Structures with Applications Jean-Paul-Tremblay, Paul-Sorenson Tata McGraw -Hill
- 2 Data Mining Pieter Adriaans, Dolf Zantinge Addison Wesley
- 3 Digital Systems Principles and Applications Ronald J Tocci, Neal S Widmer Prentice Hall of India Private Limited Software Mathematical Structures with Applications to Computer
- 4 J.P. Tremblay, R.Manohar Tata McGraw –Hill Science

Database

- 1 Data-Base Management System Arun K Pujari ISTE - Learning Materials Centre
- 2 Special Edition Using Oracle 11i Boss Corporation Techmedia
- 3 Building the Data Warehouse W H Inmon Wiley Dreamtech India Pvt Ltd
4. Oracle 8i - Certified Professional DBA Certification Exam Guide Jason S. Couchman, Ulrike Schwinn Tata McGraw -Hill
- 5 Oracle 8i - The Complete Rference Kevinkoney, George Koah Tata McGraw -Hill
- 6 Oracle 8i The Complete Reference Kevin Loney George Koch Tata McGraw Hill
- 7 Fundamentals of Database Management System Renu Vig, Ekta Walia Learning Materials Centre
- 8 Mastering Oracle 7 & Client Server Computing Steve Bo Browski BPB Publications

Electronics & Communication & Networking

- 1 The essential guide to Wireless Communication Applications Audy Dornan Person Education, Asia
- 2 The Intel Microprocessors Barry B Brey Prentice Hall of India Private Limited
- 3 Digital Communications Fundamentals and Applications Bernard Sklar Dorling Kindersly (India) Pvt Ltd
- 4 Optical Fiber Communications Gerd Keiser Mc Graw Hill

- 5 Introduction to Telecommunications Anu A. Gokhale Thomson Learning
- 6 Bluetooth Connect Without Cables Jennifer Bray Charles F Sturman Pearson Education Asia
- 7 Voice over IP Fundamentals Jonathan Davidson, James Peters Techmedia
- 8 Computer Graphics Prof. Madasu Hanmandlu, Prof.K.K. Biswas and R. Hariharan BPB Publications
- 9 Networking Complete SYBEX BPB Publications
- 10 Digital Design M Morris Mano Prentice Hall of India Private Limited
- 11 Digital Image Processing Rafael C. Gonzalez, Richard E.Woods Addison Wesley Long Man
- 12 Understanding Digital Signal Processing Richard G Lyons Pearson Education (Addison Wesley)
- 13 Digital Electronics Saroj Rangnekar ISTE - Learning Materials Centre
- 14 Computer Communication Networks A Shanmugam, S Rajeev ISTE - Learning Materials Centre
- 15 Computer Systems Design and Architecture Vincent P Heuring, Harry F Jordan Pearson Education (Addison Wesley)
- 16 Data & Computer Communications William Stallings Prentice - Hall of India

Programming Languages, Operating System and Applications

- 1 Data Structures and Algorithms Alfred V. AHO, John E. Hopcroft, Jeffery D.Ullman Addison Wesley
- 2 Programming in Java Dr Amita Dev, Prof S Subramanian BPB Publications
- 3 Access 2000 - The Complete Reference Rajasekaran, Virginia Anderson Tata McGraw -Hill
- 4 Object Oriented Programming with C++ E.Balaguruswamy
- 5 Programming with Java E.Balagurusamy Tata McGraw-Hill Publishing Tata McGraw Hill
- 6 Programming in ANSI C E Balagurusamy Publishing Company Limited
- 7 Red Hat Linux 8 Unleashed Billy Ball Hoyt Duff Techmedia
- 8 Visual C++ 6 : The Complete Reference Chris H. Pappas, William H. Muray Tata McGraw -Hill

- 9 Visual C++ 6 : The Complete Reference Chris H. Pappas, William H. Muray Tata McGraw -Hill
- 10 Photoshop 6 for Windows – Bible Deke Mcelelland IDG Books India Pvt. Ltd.
- 11 Mastering Visual Basic.Net Evangelos Petroustos BPB Publications
- 12 Director 8 and Lingo Bible John R. Nyquist, Robert Martin IDG Books India Pvt. Ltd. Tata McGraw-Hill
- 13 Logic John Nolt, Dennis Rohatyn and Achile Varzi Publishing
- 14 Dreamweaver 3 Bible Joseph W. Lowery IDG Books World wide Inc. Foster City, CA, USA
- 15 Data Structures and Algorithms O.G.Kakde and U.A. Deshpande Learning Materials Centre
- 16 Microsoft SQL Server 7.0 DBA Survival Guide Techmedia Techmedia
- 17 Visual Basic 6 - The Complete Reference Noel Jerke Tata McGraw -Hill
- 18 Computer Installation and Troubleshooting M Radhakrishnan, D Balasubramanian ISTE - Learning Materials Centre
- 19 Fundamentals of Computers V. Rajaraman Prentice - Hall of India Pvt. Ltd.
- 20 Mastering Coreldraw 9 Rick Altman BPB Publications
- 21 Visual J++ 6 Rick Leinecker Techmedia
- 22 Data Structures Richard F Gilberg, Behrouz A Forouzan Thomson Learning Inc
- 23 Flash 5 Bible Robert Rein Hardt, Jon Warren Lentz Hungry Minds, Inc. Foster City CA, USA
- 24 Auto CAD 2005 for Enginers & Designers Prof. Sham Tickoo Dream Tech
- 25 Microsoft SQL Server 7.0 Sharon Bjeletich Techmedia
- 26 Page Maker 6.5 Complete R. Shamms Mortier, Rick Wallace Techmedia
- 27 Programming in C++ Y.I.Shah, M.H.Thaker Learning Materials Centre
- 28 Beginning SQL Server 2000 for VB Developers Thearon Willis Shroff Publishers & Distributors
- 29 Microsoft SQL server 2000 System Administration Microsoft Prentice Hall of India Private Limited
- 30 Elements of Information Theory Thomas M Cover, Joy A Thomas Wiley India (P) Ltd
- 31 Computer Fundamentals & Applications Trade Wings Student Material

Software Engineering

- 1 Software Engineering & Quality Assurance Dr K Chandrashekar Shet BPB Publications
- 2 An integrated Approach to S/w Eng Pankaj Jalote Narosa Publishing House
- 3 Software Engineering A Practitioner's Approach Roger S. Pressman Mc Graw Hill
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