

Madhya Pradesh Bhoj (Open) University

Syllabus for DCA

DCA 01

FUNDAMENTALS OF COMPUTERS AND INFORMATION TECHNOLOGY -I

Unit – I (16 Marks)

Introduction to Computer and Information Technology

- . History of development of computers
- . Computer system concepts
- . Characteristics
- . Capabilities and limitations
- . Types of computers - Analog, Digital, Hybrid, General, Special Purpose, Micro, Mini, Mainframe, Super.
- . Generations of computers
- . Personal Computer (PCs) - IBM PCs, Characteristics, PC/PCXT /PCA T Configurations, Pentium and Newer PCs Specifications and Main Characteristics.
- . Types of PC's - Desktop, Laptop, Notebook, Palmtop, Workstations etc. their characteristics.

Computer Organizations

- . Basic components of a computer system - .Control Unit, ALU, Input/Output functions and characteristics, memory - RAM, ROM, EPROM, PROM and other types of memory.

Unit-II (16 Marks)

Input Devices

- . Keyboard, Mouse, Trackball, Joystick, Digitizing tablet, Scanners, Digital Camera, MICR, OCR, OMR, Bar-code Reader, Voice Recognition, Light pen, Touch Screen. Output Devices . Monitors - characteristics and types of monitor - Digital, Analog, Size, Resolution, Refresh Rate, Interlaced/Non-Interlaced, Dot pitch, Video Standard - VGA, SVGA, XGA, LCD Screens etc.
- . Printers - Daisy wheel, Dot Matrix, Inkjet, Laser, Line Printer
- . Plotter

- . Sound Card and Speakers

Storage Devices

- . Storage fundamentals - Primary v s Secondary
- . Data Storage and Retrieval methods - Sequential, Direct and Index Sequential.
- . Various Storage Devices - Magnetic Tape, Magnetic Disks, Cartridge Tape, Data Drives, Hard Disk Drives, Floppy (Winchester Disk), Disks, Optical Disks, CD, VCD, CD-R, CD-RW, Zip Drive, DVD, SVCD.

Unit – III (16 Marks)

Computer Softwares

- . Need, Types of Soft wares - System software, Application software.
- . System Software - Operating System, Utility Programme, Programming languages, Assemblers, Compilers and Interpreter.
- . Operating Systems - Functions, Types - Batch, Single, Multi-programming, Multi processmg.
- . Programming languages - Machine, Assembly, High Level, 4 GL, their merits and demerits (Theory).
- . Application Software - Word-processing, Spreadsheet, Presentation Graphics, Data Base Management Software, Characteristics, Uses and examples and area of applications of each of them.

Number System

- . Data representation in computers.
- . Number System of computers - Binary, Octal, Hexa - Representation & their converSION.
- . Coding System - ASCII, BCD, and EBCDIC etc.

Computer Virus

- . Virus working principals
- . Types of Viruses
- . Virus detection and prevention
- . Viruses on network

Unit-IV (16 Marks)

Disk Operating System (DOS)

- . Introduction, History & Versions of DOS
- DOS basics
- . Physical structure of disk, drive name, FAT, file & directory structure and naming rules, booting process, DOS system files.

DOS Commands

- . Internal - DIR, MD, CD, RD, Copy, DEL, REN, VOL, DATE, TIME, CLS, PATH, TYPE etc.
- . External - CHKDSK, SCOPY, PRINT, DISKCOPY, DISKCOMP, DOSKEY, TREE, MOVE, LABEL, APPEND, FORMAT, SORT, FDISK, BACKUP, EDIT, MODE, ATTRIB, HELP, SYS etc.

Executable V Is Non executable files in DOS

Unit –V (16 Marks)

Data Communication and Networks . Analog and Digital Signals

- . Modulations - Amplitude Modular (AM), Frequency Modulation (FM), Phase Modulation (PM).
- . Communication Process
- . Direction of Transmissions Flow - Simplex, Half Duplex, Full Duplex.
- . Communication Software
- . Communication Protocols, Http, Hp, Sntp, NNtp, gophar, etc
- . Communication Channels-Twisted, Coaxial, Fiber Optic, Serial and Parallel Communication.
- . Modem - Working and Characteristics
- . Types of Connections - Dialup, Leased Lines, ISDN
- . Types of Network - LAN, WAN, MAN, etc.
- . Topologies of LAN - Ring, Bus, Star, Mesh and Tree topologies
- . Components of LAN - Media, NIC, Nos, Bridges, HUB, Routers Repeater and Gateways.
- . Use of Communication in daily life.

Text & Reference Books:

- . Introduction to Computers and Information Technology by Anurag Seetha, Ram Prasad & Sons, Bhopal.
- . Computers Today by S.K. Basandra, Galgotia Publications.
- . Fundamentals of Information technology by Alexis Leon & Mathews Leon, Vikas Publishing House, New Delhi.
- . DOS Quick reference by Rajeev Mathur, Galgotia Publications.

DCA 03
PC PACKAGES (WINDOWS XP, WORD, EXCEL, POWER POINT)

Unit – I (8 Marks)

Windows XP

- . Windows concepts, features, windows structure, desktop, taskbar, start menu, my computer, Recycle Bin.
- . Windows Accessories - Calculator, Notepad, Paint, WordPad, Character map.
- . Windows Explorer - Creating folders and other Explorer facilities.
- . Entertainment - CD Player, DVD Player, Media Player, Sound Recorder, Volume Control.
- . Managing Hardware & Software - Installation of Hardware & Software, Using Scanner. . Communication - Dial up Networking, Hyper terminal, Phone Dialer. . Sharing Information between Programs.
Understanding OLE
Embed/Link Using Cut and Paste
Embed/Link Using Insert Object
Manage Embedded/Linked Object

Unit-II (16 Marks)

Word Processing: MS Word

- . Introduction to Word Processing
- . Introduction to MS Word: features, Creating, Saving and Opening documents in Word, Interface, Toolbars, Ruler, Menus, Keyboard Shortcut.
- Editing a Document - Moving, Scrolling in a document, Opening Multi document windows, Editing Text - Selecting, Inserting, deleting, moving text.
- Previewing documents, Printing documents - Print a document from the standard toolbar, Print a document from the menu, shrinking a document to fit a page, Reduce the number of pages by one.
- Formatting Documents: Paragraph formats, Aligning Text and Paragraph, Borders and Shading, Headers and Footers, Multiple Columns.

Unit – III (16 Marks)

Word Processing: Advanced Features of MS Word

- Find and Replace, Checking the grammar and spelling.
- Using the Thesaurus, Using Auto Correct, Auto Complete and Auto Text, Word Count.
- Mail merge, mailing labels, Wizards and Templates, Handling Graphics
- Table Insert and Modification
- Conversion of Tables
- Converting a word document into various formats like - Text, Rich Text Format, Word Perfect, and HTML etc.

Unit-IV (16 Marks)

Worksheet: MS Excel

- . Worksheet basics. Creating worksheet, entering data into worksheet, heading information, data, text, dates, alphanumeric, values, saving & quitting worksheet.

- . Opening and moving around in an existing worksheet
- . Toolbars and Menus, keyboard shortcuts
- . Working with single and multiple workbook - coping, renaming, moving, adding and deleting, coping entries and moving between workbooks

. Working with formulas & cell referencing.

Auto sum

Coping formulas

Absolute & Relative addressing

- . Working with ranges - creating, editing and selecting ranges.
- . Formatting of worksheet - Auto format, changing - alignment, character styles, column width, date format, borders & colours, currency signs.

Unit- V (16 Marks)

Worksheet: MS Excel

- . Previewing & Printing worksheet - Page setting, Print titles, Adjusting margins, Page break, headers and footers.
- . Graphs and charts - using wizards, various charts type, formatting grid lines & legends, previewing & printing charts.
- . Database - creation, sorting, query & filtering a database
- . Functions - Database, Date and Time, Maths & Trigonometry, Statistical, Text and Logical functions.

Creating and Using Macros

Multiple worksheets - concepts, Creating and Using

Unit-VI (8 Marks)

,Presentation Graphics: MS Power Point

- . Features and various versions
 - . Creating presentation using Slide master and template in various colour scheme
 - . Working with different views and menus of power point
 - . Working with slides - Make new slide, move, copy, delete, duplicate, lay outing of slide, zoom in or out of a slide.
 - . Editing and formatting text: Alignment, editing, inserting, deleting, selecting, formatting of text, find and replace text.
 - . Bullets, footer, paragraph formatting, spell checking.
 - . Printing presentation - Print slides, notes, handouts and outlines.
 - . Inserting Objects - Drawing and inserting objects using Clip Art's pictures and charts. . Slide sorter, slide transition effects and other animation effects.
- Presenting the show - making stand alone presentation, Pack and go wizards

Text and Reference Books

- . Microsoft Office 97 by Gini Courter & Annette Marquis, BPB Publications.

- . Learning Windows 98 step by step by Rajeev Mathur, BPB Publication.
- . Learning Word 97 for Windows by Rajeev Mathur, BPB Publication.
- . Learning Excel 97 for Windows by Rajeev Mathur, BPB Publication.
- . A First course in Computers by Sanjay Saxena, Vikas Publishing House Pvt. Ltd.,
New Delhi.
- . Office 97 Interactive Course by Greg Perry, Techmedia.

DCA 05 MS Access

Unit – I (16 Marks)

1. Introduction to Database-Database Concepts- So What is Database?, Manual Database System, Comparison between a manual and, Computerized Database System, Common DBMS, Introduction to Microsoft Access, Features of Access, Starting Access, Access Terminology ,Exiting Access, Microsoft Access Hardware & Software Requirements
2. Designing a Database- About designing a database, Steps in designing a database ,Creating a Database-Creating a Database using blank database ,Creating a Database using Database Wizard

Unit-II (16 Marks)

1. Tables- Introduction to Tables, Different Ways of creating a table, Guidelines for naming fields, controls and objects, Creating a table by entering data in a datasheet , Create a table using the Table Wizard, Working with Tables
Designing a Table- Create a table from scratch using Design view, Field/Variable name Conventions, About the Data types, Setting Primary Keys, Field Properties - Field Size, Format, Decimal Places, Input Mask, Caption, Default Value ,Data Validation, Required, Allow Zero Length, Indexed, Sorting and Filtering Data

2. Modifying the Table Design - To insert the field within the table, Rename a field name in a table, Deleting Fields, Moving Fields ,Changing a Field Size ,Saving a Table ,Working with Tables in Datasheet View - Viewing the Table in Datasheet view ,Adding Records, Sizing the Columns, Navigating the Datasheet Using the navigation Buttons ,Using the Go To Menu ,Finding a Specific Value Using Wildcards , Editing And Deleting Records, Editing Records ,Deleting Records ,Undoing Edits ,Cutting, Copying and Pasting Data ,Sorting and Filtering Data in a Datasheet - Quick-Sort Feature ,Filter By Selection ,Filter By Form ,Printing Tables ,Importing Objects and Data into Tables

Unit-III (16 Marks)

- 1) Relationship - Relationship in a Database, How to relationship work, Types of Relationships- One-To-One, One-To-Many, Many-To-Many, Define Relationships- Relationships between tables, To Delete a Relationship, Working with Multiple Tables and Relationships, Working with Subdatasheets.

Operators and Functions

Operators - Types of Operators, Mathematical Operators, Relational Operators, String Operators, Boolean Operators, Miscellaneous Operators, Operator Precedence. **Functions**
Some Common Functions- Expression Builder

Query Basics

What is a Query? Usage of Queries, Types of Queries, Steps for Creating a Query, The Design View, Working With Fields, Changing the order of Fields, Removing a Field, Inserting a Field, Hiding Fields, Sorting in Query. Perform Calculation in a Query, Creating a Query, Query by Criteria, Examples of select query, Example of Cross Tab query, Creating Cross Tab Query, Working with Action Queries, Creating Make Table Query, Creating Append Query, Creating Delete Query, Creating Update Query, Setting Query Properties

Unit – IV (16 Marks)

Form Basics

Introduction to Forms, Types of Forms, Columnar Forms, Tabular Forms, Main/Sub Form, Ways of Creating Forms, Creating a Form with Auto form, Creating a Form with The Form Wizard

Designing a Form, Controls are of Three Types, Creating the Form, Using the Form

Window, Moving Between Fields and Records in a Form, Displaying Data with a Form, *Q*

Saving Record and the Form, Printing a Form, Creating buttons on Form, Main/Sub *r*

form, Create a Sub form, Create a form and sub form at the same time, Create a sub form and add it to existing form, Add an existing form to another existing form to create a form with a Sub form, Move between a main form and sub form in form view.

Viewing Forms, Editing Forms, Creating Form with Multiple Pages or Tabs, Page Break Control, Using Filters

Unit – V (16 Marks)

Report, Introduction, Parts of a Report, Creating a Report, Creating a Columnar Report with Auto Report, Tabular Auto report, Creating Reports with Wizards, Examples of Report, Getting Department wise Subtotals, Designing your own report, Creating a field, Add a control to a form or report, Creating a text box, Creating a calculated control, Resizing a control, Moving a control, Change the properties of a control, Insert date/ time in a report

Preview report from the database window, Printing a Report, Creating Mailing Labels, Review Exercise Macros and Import/Export of Data, What is macro? Creating macros, Running macro, Run a macro directly, Import/Export of Data, Importing from Excel Workbook, Exporting a Table to Excel sheet, Editing a Macro, Assigning a Macro to a Command Button, Saving and Closing Macro Window.

Text and Reference Books

- Beginning Access 2000 VBA by Robert Smith (Author), David Sussman (Author) Access 2000 Developer's Handbook 2 Volume Set by Paul Litwin, et al
- Alison Balter's Mastering Microsoft Access 2000 Development by Alison Balter Microsoft Access 2000 Bible by Cary N. Prague (Author), Michael R. Irwin (Author)
- F. Scott Barker's Microsoft Access 2000 Power Programming by F. Scott Barker

LAB01

COMPUTER LAB

Computer Applications and Programming Practical Based on Subjects CAO1 to CAOS.

DCA07 Programming in 'C' Language

Unit-I (16 Marks)

Let us learn C- a computer language

Overview of Programming

- . Introduction to Computer Based Problem Solving . Program Design and Implementation Issue
- . Programming Environment

Fundamentals Of C Programming

- . Overview of C Language
- . Data Types, Variables and Constants
- . Operators, Type Modifiers and Expressions . Basic Input! Output

Unit – II (16 Marks)

Control Constructs

- . IF, IF-ELSE, NESTED IF'S, SWITCH CASE,
- . LOOPS- FOR, WHILE, DO-WHILE
- . The GOTO Statement, The break statement, The continue Statement . NESTING OF LOOPS

Unit – III (16 Marks)

Arrays

- . What are Array,
- . More on Array,
- . Pointers and Arrays,
- . More than one dimension, . Arrays of Pointer

Unit-IV (16 Marks)

Functions

- . What is function - why use function
- . Standard library string Functions
- . Passing value between Functions
- . Scope rule of function
- . Advanced feature of functions- Function declaration and prototypes, Call by value and Call by reference, An introduction to Pointers, Pointer notation, back to function Calls, Recursion.

Pointers

- . What is Pointer- Why we use pointer
- . Pointer Notation, Pointer declaration and Initialization. . Accessing Variable through Pointer, Pointer Expressions . Arrays of Pointers, Pointer to Pointers

Unit –V (16 Marks)

Structures & Unions

- . Why use structures- Declaring a structure, Accessing structure elements,How structure elements are stored
- . Array of Structures'
- . Additional feature of structures
- . Use of structure
- . What is union - Why we use union
- . Defining unions, Using of union

Miscellaneous Features

- . File Handling In C
- . C preprocessor

Text & Reference Books:

- . Let us C - Yashwant Kanetkar, BPB Publication. . Programming in C -Gotfried, Schoum series

DCA 09

GUI PROGRAMMING IN VISUAL BASIC

Unit – 1 (16 Marks)

Integrated Development Environment of Visual Basic

- . Integrated Development Environment of VB, User Interface Designing, Basics of Event driven programming.
- . Form - Designing, Showing & Hiding.

Unit-II (16 Marks)

Visual Basic Language

- . Data Types, Variables & Constant, Arrays, Dynamic Arrays, Array as function, Collections, Procedures, Arguments passing, Functions Return Values.
- . Control flow Statements: if-then, if-then-else, Select case, looping statement: Do Loop, For-next, While-wend, Nested Control Structure, Exit stmt.

Unit – III (16 Marks)

Building Blocks of Visual Basic

- . Basic Active X Control & Their Use - Text box, List box, combo box, Scroll bar, Slider & Fire Controls.
- . Graphics controls, Image Handling in VB, Coordinate System, Graphics methods Text Drawing, Lines & Shape, Filling Shapes, Grid methods.

Unit-IV (16 Marks)

Components of Visual Basic

- Menu editor: Pull - down and Pop - up menus.
- . Multiple Document interface - Parent & Child Forms & Methods.
- . Error handling: Types of Errors, Error handling methods and functions.

Unit – V (16 Marks)

Database Programming with VB

- . Database programming with VB - DATA Control- methods, Properties, Connectivity with database.

Text & Reference Books:

- . Beginner's Guide to Visual Basic 6 By Rita Sahoo & G.B. Sahoo, Khanna Publishing House.
- . Beginning Visual basic 6 By Peter Wright, Shroff Publishers.

DCA II

INTERNET AND WEB PAGE DESIGNING

Unit - I (16 Marks)

Internet

- . Evolution, Protocols, Interface Concepts, Internet V s Intranet, Growth of Internet, ISP, Connectivity - Dial-up, Leased line, VSAT etc. URLs, Domain names, Portals, Application.E-Mail
- . Concepts, POP and WEB Based E-mail, merits, address, Basic of Sending & Receiving, E-mail Protocols, Mailing List, and Free E-mail services.

Unit – II (16 Marks)

File Transfer Protocols, Telnet & Chatting

- . Data Transmission Protocols, Client/Server Architecture & its Characteristics, FTP & its usages. Telnet Concept, Remote Logging, Protocols, Terminal Emulation. Message Board, Internet chatting - Voice chat, text chat, video chat.

Unit-III (16 Marks)

Word Wide Web (WWW)

- . History, Working, Web Browsers, Its functions, Concept of Search Engines. Searching the Web, HTTP, URLs, Web Servers, Web Protocols.

Unit-IV (16 Marks)

Web Publishing

- . Concepts, Domain name Registration, Space on Host Server for Web site, HTML, Design tools, HTML editors, Image editors, Issues on Web site creations & Maintenance, FTP software for upload web site.

HTML

- . Concepts of Hypertext, Versions of HTML, Elements of HTML syntax, Head & Body Sections, Building HTML documents, Inserting texts, Images, Hyperlinks, Backgrounds and Colour controls, Different HTML tags, Table layout and presentation, Use of font size & Attributes, List types and its tags.

Text & Reference Books

- . 0 level Module - M 1.2 Internet & web page designing by V.K. Jain - BPB Publications.
- . Internet for Everyone - Alexis Leon and Mathews Leon, Vikas Publishing House Pvt. Ltd., New Delhi. . Internet for Dummies - Pustak Mahal, New Delhi. . A Beginner's Guide to HTML available at :
<http://www.ncsa.uiuc.edu/General/Internet/WWW/HTMLPrimerAll.html>

LAB 02

COMPUTER LAB

Computer Applications and Programming Practical Based on Subjects CAO7 to CA11.