

**PGDCA**

**SEMESTER-I**  
**PGDCA-1**  
**Maharishi's Vedic Science-I**

**UNIT-I**

- Meaning & Importance of Guru Pujan.
- Meaning of Meditation, Mann, Intelligence, Chitta, Ego, Thought.

**UNIT-II**

- Name of forty areas of Vedic Science and their expression in Human Physiology and characteristics of consciousness.

**UNIT-III**

- Consciousness, types of consciousness, characteristics of higher stages of consciousness.

**UNIT-IV**

- Yogasana, Type of Yogasana (Surya Namaskar)

**UNIT-V**

- Transcendental Meditation-A general Introduction.
- TM-Siddhi Programme

**Suggested Readings:**

- + Chetna- His Holiness Maharishi Mahesh Yogijee
- + Maharishi Sandesh - 1 and 2, II- His Holines Maharishi Mahesh Yogijee
- + Scientific Yog Ashanas- Dr. Satpal

**SEMESTER-I**  
**PGDCA-2**  
**FUNDAMENTAL OF COMPUTERS**

**Unit-I**

**Introduction to Computer and Information Technology**

- Brief history of development of computers
- Computer system characteristics
- Capabilities and Limitations
- Types of Computers-Analog, Digital, Hybrid, General, Special Purpose, Micro, Mini, Mainframe, Super. Generations of Computers
- Type of IBM PCs, characteristics, PC/PCXT/PCAT-configurations, Pentium and Newer PCs specifications and main characteristics.
- Numbers System
- Data representation in computers.
- Number system of computers-Binary, Octal, Hexa-Representaion & their conversation. Coding System-ASCII, BCD, EBCDIC etc.

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**Unit-II**

**Computer Organizations and Working**

- Brief components of computer system-Control unit, ALU, Input/Output functions and characteristics, memory-RAM, ROM, EPROM, PROM and other types of memory.
- Keyboard, Mouse, Trackball, Joystick, Digitizing tablet, Scanners, Digital Camera, MICR, OCR, OMR, Bar-code Rader, Voice Recognition, Light pen, Touch Screen.
- Monitors-characteristics and types of monitor-Digital, Analog, Size, Resolution, Refresh Rate, Interlaced/Non Interlaced, Dot Pitch, Video Standard-VGA, SVGA, XGA etc.
- Printers-Daisy wheel, Dot Matrix, Inkjet, Laser, Line Printer
- Plotter
- Sound Card and Speakers

**Unit-III**

- Need, Types of Soft wares-System software, Application software.
- System Software-Operating System, Utility Program, Programming languages, Assemblers, Compilers and Interpreter
- Operating System-Functions, Types-Batch, Single, Multiprogramming, Multiprocessing.
- Programming languages-Machine, Assembly, High Level, 4GL, their merits and demerits.
- Applications Software-Word-Processing, Spreadsheet, Presentation Graphics, Data Base Management Software, characteristics, Uses and examples and area of application of each them.

**Unit-IV**

- Storage fundamentals-Primary Vs 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), Disk, Optical Disks, C.D., VCD, CD-R, CD-RW, ZIP Drive.
- Virus working principals.
- Type of viruses
- Virus detection and prevention

**Unit-V**

- Analog and Digital Signals
- Modulations-Amplitude Modular (AM), Frequency Modulation (FM), Phase Modulation (PM).
- Direction of Transmissions Flow-Simplex, Half Duplex, Full Duplex.
- Communication Software
- Communication Protocols
- Communication Channels-Twisted, Coaxial, Fiber Optic, Serial and Parallel Communication.

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- 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, Repeaters 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 & Maathewas Leon, Vikas Publishing House, New Delhi.

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**PGDCA 3  
OPERATING SYSTEM (DOS, LINUX, WIN-98, WIN NT)**

**Unit-I**

- 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.
- Executable V/s Non executable files in DOS.
- Internal-Dir, MD, CD, RD, COPY, DEL, REN, VOL, DATE, TIME CLS, PATH, TYPE etc.
- External-CHKDSK, XCOPY, PRINT, DISKCOPY,DISKCOMP, DOSKEY, TREE, MOVE, LABEL, APPEND,, FORMAT, SORT, FDISK, BACKUP, EDIT, MODE, ATTRIB, HELP, SYS ETC.

**Unit-II**

- Hardware requirements of Windows, 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 Players, Media Player, Sound Recorder, volume Control.
- Managing Hardware & Software-Installation of Hardware & Software, Using Scanner.

**Unit-III**

- System Tools- Backup, Character map, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk, System Information, System Monitor, Drive converter (FAT 32)
- Communication-Dialup Networking, Direct Cable Connection, Hyper Terminal, Phone Dialer.
- Multiple Users Features of Windows.

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- Accessibility Features of Windows
- Sharing Information between Programms
  - Understanding OLE
  - Embed/Link Using Cut and Paste
  - Embed/Link Using Insert Object
  - Manage Embedded/Linked Object

**Unit-IV**

- History & Features of Linux
- Linux Structure
- File Systems of Linux
- Hardware Requirements of Linux
- Various flavours of Linux
- Program & Process
- Multiprocessing features of Linux
- Login and logout from Linux system

**Unit-V**

- Process creation and process identifiers
- Functions of profile and login files in Linux
- Linux kernel
- Login and logout from Linux system
- Linux commands-bc, cal, cat, cd, chgrp, chmod, chown, clear, emp, copy, date, find, kill, ksh, ls, mail, mkdir, more, mv, rm, rmdir, tty, uucp, uuto, we, who, whois, write
- Vi editor
- Network concept and components
- Windows NT features & capabilities
- Hardware requirements of Windows NT

**Text & Reference Books:**

- DOS Quick reference by Rajeev Mathur, Galgotia Publications.
- Linux Complete by BPB Publication.
- Peter Norton Complete Guide to Linux by peter Norton, Techmedia Publications.
- O Level Module M 1.1 Information technology by Khanna Book Publication, New Delhi.
- Learning Windows 98 step by step by Rajeev Mathur, BPB Publication.

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**PGDCA-4**  
**RDBMS Programming (Visual Foxpro)**

**Unite-I**

- FoxPro-Wersions, features, requirement of Hardware and Software.
- FoxPro-Menu System, Working with FoxPro.
- Creating Database File Some common operations on data- CREATE, LIST, APPEND, CLOSE, QUIT
- FoxPro-Data Types
- Data Displaying and Monitoring Commands- DISPLAY, LIST, LOCATE, EDIT, CHANGE, BROWSE, REPLACE, DELETE, RECALL, PACK (All Commands with various Options)

**Unite-II**

- Sorting & Indexing Concept
- Sort Commands- Single & Multiple Key
- Advangate & Disadvantage of Sort
- Indexing Vs Sorting, Single & Multiple Key
- Indexing, FIND, SEEK, Rushmore Technology
- FoxPro Report-its creation, features & Utilities, Preview, Printing Custom Report, grouping & Subgrouping.
- FoxPro Label- Designing & Printing.

**Unite-III**

- Time & Date Functions and Commands, Date Arithmetic
- Converting Defining Function Keys
- Keyboard Macros- Creating and Using  
Arithmetic Operations, Mathematical Functions, Mathematical Commands, Statistical Functions.

**Unite-IV**

- Memory Variables-Creation and Uses, Simple Vs Array
- Saving and Restoring Memory Variables
- ?/??/??? Commands
- Concepts of FoxPro commands file, Modify Commands
- Conditioning, Branching and Looping within Program files with Do- While Enddo, If-Endif, Scan-Endscan, For-Endfor, Docese-Endcase, Text-Endtext, Executing Commands from other command files, Macro Substitution.
- Common Error Messages
- Debugging techniques and commands

**Unite-V**

- Concept of Multiple Database Files-Using multiple database files
- Relationing the database- SET RELATION, UPDATE, APPEND FROM, COPY TO, JOIN, Relation Query by Example and SQL CUSTOM SCREENS & USER DEFINE FUNCTIONS & OTHER TOLS create Custom Screen with @, @\_GET, @EDIT, @\_SAY\_GET\_READ, creating Box & Lines, User Define Functions, Custom Screen Designing and their Use, FoxDoc for documentation.

**Text & Reference Books:**

- Foxpro Made Simple by R.K. Taxali, BPB Publications
- Mastering Foxpro 2.5 BPB Publications
- Foxpro 2.6 for Dummies- Pustak Mahal

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**PGDCA-5**  
**PC-PACKAGE FOR MEDIA (MS-OFFICE)**

**Unite-I**

- 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.

**Unite-II**

- Advanced Features of MS Word:
  - Find and Replace, Checking the grammar and spelling, Formatting via find and replace.
  - Using the Thesaurus, Using Auto Correct, Auto Complete and Auto Text, word count.
  - Hyphenating, Mail merge, mailing labels Wizards and Templates, Handling Graphics, tables and charts, Converting a word document into various formats like- Text, Rich Text Format, Word Perfect, HTML etc.

**Unit-III**

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

#### Unit-IV

- Working with formulas & cell referencing
  - Autosum
  - Coping formulas
  - Absolute & Relative addressing
- 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-V

- Features and various versions
- Creating presentation using Slide master and templates in various colour scheme
- Working with different views and menus of power point
- Working with slides- Make new slide, move, copy, delete, duplicate, layout 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 out lines.
- Inserting Objects- Drawing and inserting objects using Clip Arts, 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 :

- Learning Word 97 for Windows by Rajeev Mathur, BPB Publication
- Learning Word 97 for Windows by Rajeev Mathur, BPB Publication
- A First course in Computers by Sanjay Saxena, Vikas Publishing House Pvt. Ltd. New Delhi.
- Microsoft Office 97 by Gini Courter & Annette Marquis, BPB Publishing
- Office 97 Interactive Course by Greg Perry, Tech media.

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#### PGDCA-6 COMPUTER LAB-I

#### Computer Applications & Programming Practical Based on Subjects (PGDCA 2 to PGDCA-5)

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#### SEMESTER-II 2 PGDCA-7 Maharishi's Vedic Science-II

#### UNIT-I

- Classical and Scientific introduction of forty areas of Vedic Science.
- First and Last Verse of forty areas.

#### UNIT-II

- Third Law of Thermodynamics.
- Miessener's effect.
- Maharishi's Effect- Society, Environment, Behaviour and effect on moral value.

#### UNIT-III

- Pradhavansasabhav, Atantabhav, Annyonabhav, Pragbhav.
- Meaning of "Yogastha Kuru Karmani".
- Meaning of "Gyanam Chetanayam Nihitam".

#### UNIT-IV

- Theory of Karma-Prarabadha, Kriyamana, Sanchieta.
- Theory of Invincibility.

#### UNIT-V

- Theory of Ayurved.
- Theory of Dincharya & Ritucharya.

#### Suggested Readings :

- + Maharishi Sandesh Part -I, II.
- + Chetna Vigyan- His Holiness Maharishi Mahesh Yogjee

#### SEMESTER-II 2PGDCA-8 OOPS AND PROGRAMMING IN C++

#### Unit-I

#### Principles of Object-Oriented Programming

Object-Oriented programming Paradigm, Basic Concepts of Object- Oriented Programming, Benefits of Oops, Object-Oriented Languages, Applications of Oops , C++ Statements, Class, Structure of C++ Program, Creating the Source File, Compiling and Linking.

#### Unit-II

Tokens, Expressions and Control Structures  
Introduction, Tokens, Keywords, Identifiers, Basic Data types, User Defined Data Types, Derived Data Types, Symbolic Constants. Type Compatibility, Declaration of Variables, Dynamic Initialization of Variables, Reference Variables, Operators in C++, Scope Resolution Operator, Member Dereferencing Operators in C++, Scope Resolution Operator, Member Dereferencing Operators, Manipulators, Type Cast Operator, Expressions and Implicit Conversions, Operator Precedence, Control Structures.

### Unit-III

#### Classes and Objects

Specifying a class, Defining Member Functions, Making an Out-side Function Inline, Nesting of Member Functions, Private Member Function, Arrays within a class Memory Allocation for Objects, Static Data Member,, Static Member Functions, Arrays of Objects, Object as Function Arguments.

#### Constructors and Destructors

Introduction, Constructors, Parameterized Constructors, Multiples Constructors with Default Arguments, Dynamic Initialization of Objects, Copy Constructors, Dynamic Constructors, Constructing Two-Dimensional Arrays, Destructor.

### Unit-IV

#### Operator Overloading and Type conversions

Introduction, Defining Operator Overloading, Overloading Unary Operators, Overloading Binary Operator Using Friends, Manipulating of strings using Operators, Rules for Overloading Operators, Type conversions.

### Unit-V

#### Inheritance : Extending Class

Introduction, Defining Derived Classes, Single Inheritance, Making a Private member Inheritable, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Hybrid Inheritance, Hybrid Inheritance. Pointers, Virtual Functions and Polymorphism  
Compile time Polymorphism, run time polymorphism, Pointers to Object, This Pointer, Pointers to Derived Classes, Virtual Functions, Pure Virtual Functions.

#### Text & Reference Books

- Object Oriented Programming with C++ by E. balaguruswami, TMH Publications
- Object Oriented Programming in C++ by Nabajyoti Barakati SAMS PHI Pvt. Ltd.

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### 2PGDCA-2 INTERNET & E-COMMERCE

### Unit-I

#### Internet

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

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### Unit-II

#### File Transfer Protocols, Telnet & Chatting

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

### Unit-III

#### World Wide Web (WWW)

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

### Unit-IV

#### Web Publishing

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

### Unit-V

#### HTML

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

### E-Commerce

- An introductions, Concepts, Technology in E- Commerce, Internet & E-business, Advantage of E-Commerce. Applications, Feasibility & various constrains.

#### Text & Reference Books :

- O 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

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### 2PGDCA-10 GUI Programming in Visual Basic

### Unit-I

#### Integrated Development Environment of Visual Basics

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

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### Unit-II

#### Visual Basic Language

- Data Types, Variables & Constant, Arrays, Dynamic Arrays, Array as function, Collection, 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, Exist stmt.

### Unit-III

#### Building Blocks of Visual Basic

- Basic Active X control & Their Use-Text box, List box, Combo Box, Scroll Box, Slider & Fire Controls.
- Graphics controls, Image Handling in VB, Coordinate System, Graphics methods-Text Drawing, Lines & shape, Filling Shapes, Grid methods.

### Unit-IV

#### Component 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 method and function.

### Unit-V

#### 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 Reeta Sahoo & G.B. Sahoo, Khanna Publishig House.
- Beginning Visual Basic 6 By Peter Wright, Shroff Publishers.

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**2PGDCA-11**  
**Desk Top Publishing**  
**(Page Maker, Corel Draw Photoshop)**

### Unit-I

- Introduction to DTP
- Definition, Importance, Characteristics
- Use of DTP in Publication & Newspaper Printing
- Various DTP Software
- Bitscream & Vector Graphics
- Printers-Dot Matrix, Inkjet and Laser
- Introduction to Offset Printing Technology
- Typography-History, Elements, Selection of Fonts, Points, use of blank spaces and dashes, White spaces, Various breaks, Good designing and Easy Readability. Different Measurements used in DTP printing.

### Unit-II

- Introduction to Adobe Page Maker
- Why Page maker popular in publication
- Toolbox, Styles, Menus, Templates
- Different Page Layouts
- Importing Text
- Auto flow
- Text frames & Text block
- Story Editor & Layout view
- Spell Check & find & Replace
- Attribute settings. Alignments, Grids, and Guides etc.
- Working with text and graphics
- Tab setting
- Columns & Gutters

### Unit-III

- Import & Export of files
- Placing Texts & Graphics
- Styles & Palettes
- Picture Editing
- Using Colours
- Bullets, Masking
- Fonts : PostScript Fonts, True Type Fonts, Bit Stream & Vector fonts
- Column Balancing, Breaks
- Windows & Orphan lines
- Reverse Text
- Text Wrapping
- Revert Command
- Drop Caps
- Printing Options
- Control Palette

#### Unit-IV

- Clips & Image Files
- Key Board Controls
- OLE & Embedding
- Linking
- Plugins
- Mathematic Equation
- Table Editor
- Printing option
- Filters, Layers, PDF files
- Frame Options
- Headers & Footers

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2PGDCA-12  
COMPUTER LAB-II

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2PGDCA-13  
PROJECT WORK