Course : PGDCA Semester : I Paper Code : C-1

Subject Name : Fundamentals of Computers & Information Technology

Unit I : COMPUTER FUNDAMENTALS

COMPUTER - A Definition, Data, Processing Information, Basic Anatomy of Computer: Bits, bytes and words, Input, Output, CPU, Peripheral devices, Backing Storage, Input interface, Output interface. Classification of Computers: Micro, Mini, Super, Mainframe, Digital, Analog, Hybrid (On the basis of generation/component).

Computer Applications: In Business & Industry, Science & Technology, Education, Health, Communication, Banking & other Public Services.

Unit II: Peripheral Devices

Input Device: Keyboard, Mouse, Punch card, Joystick, Touch Panels, OMR, OCR, MICR, Image Scanners, Light Pen, Voice System

Output Devices: Impact printers and Non impact printers Character printers, line printers and page printers Dot Matrix, Daisy wheel, Thermal, Laser, Ink Jet, Drum Printer, Chain Printer, Plotters Drum and Flat Bed Plotters, VDU, Visual Display Adapters, LCD

Secondary Storage Device: Magnetic Disk(Winchester and hard disks) Magnetic Tape, Floppy disk, Optical disk, Memory and register Primary memory, Secondary memory

RAM - SRAM, DRAM, ROM - PROM, EPROM, EEPROM, CDROM ROM BIOS, Buses, Registers- Program counter, Memory buffer register, Memory, CACHE MEMORY

Unit III: Computer Codes and Arithmetic

Number system: Positional Decimal, Binary, Octal, Hexadecimal, Non Positional (Roman)

Conversion of Decimal numbers in other systems and vice-versa Binary Arithmetic - Addition, Subtraction (1's complement, 2's complement), Multiplication, Division Basic Gates (OR, AND, NAND, NOT, XOR, NOR).

Types of processing -

Batch processing, On-Line, Real-time

Introduction to OS: Utilities, Compilers/Interpreters, Assemblers Multiprogramming, Multitasking, Multiprocessor.

Networking: Topologies (Bus, Star, Ring, Mixed), Advantages and Disadvantages of networking, LAN, WAN

Unit IV: DOS

Internal Commands, External Commands, Directory Structure, File naming convention and valid characters for filenames

Internal Commands -

CLS, DIR, COPY CON, TYPE, REN, COPY, DATE, TIME, DEL, MD, RD, CD, ERASE, PROMPT, ECHO, PATH, PAUSE, SET, VER, VOL

WILDCARD CHARACTERS * AND ?, ( ) current directory, ( ) root directory

External Commands: FORMAT, CHKDSK, SCANDISK, DISKCOPY, SORT, FIND, ATTRIB, XCOPY, TREE, UNDELETE, EDIT, DELTREE, MOVE, DEFRAG, MORE, Redirection, Pipes, Executable files, Text files, Batch files

Suggested Readings:

1. P.K Sinha & Priti Sinha, Computer Fundamentals, BPB Publications
2. Alexix Leon, Mathewes Leon, Fundamentals of Information Technology.
3. V. Rajaraman, Fundamentals of Computers, PHI
4. Peter Norton, Introduction to Computers, Tata Mcgraw Hill

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Course : PGDCA Semester: I Paper Code : C-2

Subject Name : OFFICE AUTOMATION

Unit I:

WINDOWS: Starting Windows, Tip of the day. Windows desktop and taskbar. Double-clicking to start programs. Quitting programs, Shutting down and quitting windows, Running DOS programs & Startup group. WINDOWS BASICS: Parent and child windows, parts of a window, Opening, activating, hiding(minimizing), resizing, scrolling, arranging and closing a window, Moving information from one window to another HELP, Context Sensitive Help & Search for Help

WORKING WITH DISKS, FOLDERS, AND FILES: Disk icons and their windows, The Windows Explorer, Creating and naming new folders, Moving and copying folders and files, Deleting folders and files, Emptying the Recycle Bin, Naming files, File types in windows, Associating files with programs, Renaming files & Finding lost files

UNIT II:

IMPORTANT TECHIQUES AND TIMESAVERS: Moving or copying by dragging and dropping, Moving or copying by creating scraps, Shortcut icons, Property settings, Object linking and embedding. PERSONALIZING WINDOWS: The welcome screen and tips, Adding programs to the start menu, Clock, calendar, regional settings, Mouse behaviour and mouse property window, Desktop pattern and wallpaper. Windows color scheme & Screen savers. ACCESSORIES: MS Paint, Notepad, Calculator & WordPad.

Unit III

MICROSOFT EXCEL: Excel Basics, Enter Data, Select Cells, Using AutoFill, Move Through a Worksheet & Getting Help. SAVING AND OPENING WORKBOOKS: Save a Workbook, Close a Workbook, Exit Excel, Open a Workbook, Create a New Workbook & Switch Between Workbooks. EDITING WORKSHEETS: Edit Data, Clear Data, Undo Last Change, Move Data, Copy Data & Check Spelling. USING FORMULAS AND FUNCTIONS: Formulas, Enter a Formula, Functions, Enter a Function, Add Numbers & Copy Formulas, WORKING WITH ROWS AND COLUMNS: Insert a Row or Column, Delete a Row or Column, Change Column Width & Change Row Height FORMATTING WORKSHEETS: Change Appearance of Numbers, Align Data, Center Data Across Column, Bold, Italic and Underline, Clear Formats, Change Fonts & Add Borders.

PRINTING WORKSHEETS: Preview a Worksheet, Change margins, Print a Worksheet & Add a Header or Footer. USING MULTIPLE WORKSHEETS: Switch Between Worksheets & Copy or Move Data-Between Worksheets, CHARTING DATA: Create a Chart, Move a Chart, Size a Chart, Print a Chart & Change Chart Type. DATABASE MANAGEMENT: Goal seek Data sort Data filtering Sub-totaling Pivot table Scenario Manager, Introduction to macro.

Unit IV

POWER POINT: Create new slide, Select slide, Enter data & Getting help. Save a new Slide, Close a Slide & Exit Power Point, Insert Slide, Delete Slide, Clear Slide & Duplicate slide. VIEWING SLIDES: Normal view, Outline view, Slide sorter & Slide Presentation. USING MULTIPLE SLIDES: Create new slide, Insert time, date, page no., Copy slides from file, Copy objects from WORD & Copy graphs from EXCEL. FORMATTING SLIDES: Change data alignment, Change fonts, Create bullets & numbers Create periods. SLIDE PRESENTATION: Presentation templates, Change wizards, Change slide background & Change Slide colour. DRAWING SHAPES: Group slides, Rotate picture, Change picture colour & Crop picture.

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UNIT V

MS Excel: EXCEL WORLD: Enter Text, Move Through a Document, Select Text & Getting Help. EDITING DOCUMENTS: Insert Text, Delete and Replace Selected Text, Undo Changes, Redo Changes, Change the Case of Text, Move Text, Copy Text & Change Views. SMART EDITING: Find Text, Replace Text, Check Spelling, Use Auto Correct, Using the Thesaurus & Check Grammar. SAVING AND OPENING DOCUMENTS: Save, Save a Document, Close a Document, Exit Word & Open a Document. PRINTING MULTIPLE: Set Up a Page, Create a New Document, Arrange Open Documents, Copy or Move Text Between Documents, Minimize a Document & Switch Between Documents, Preview a Document, Print a Document. FORMAT CHARACTERS: Bold, Underline & Italics, Change Fonts & Insert a Symbol. FORMAT PARAGRAPHS: Change Line Spacing, Change Paragraph Alignment, Display or Hide the Ruler, Change Tab Settings, Indent Paragraphs & Create Numbered and Bulleted Lists. FORMAT PAGES: Insert a Page Break, Create a New Section, Change Margins, Add Headers or Footers & Create a Page. WORKING WITH TABLES: Create a Table, Type Text, Add a Row or Column, Delete a Row or Column, Change Column Width, & Format a Table.

TEXT & REFERENCE BOOKS

1. "Operating System" by Rohit Khurana- Vikash Publication House
2. "Operating System" by Abraham Silberschatz- Johan Wiley & Sons
3. Windows 95 for Busy People- Ron Mansfield

Course: PGDCA Semester: I Paper Code: C-3

Subject Name: Programming Techniques in either C or C++

Unit I

Techniques of programming (Flowchart,pseudocode)

Flowchart, Structured Flowcharts. Introduction To Pseudocode, Selection, Iteration, Modular Approach, Array, Sorting (LINEAR, BUBBLE), Searching (SEQUENTIAL, BINARY), Structured programming

Unit II C/C++ Programming

Features of C/C++ language, character set, tokens, identifiers, keywords, constants, variables storage class (auto, static, register, extern), Data types and sizes (char, int, float, short int, long int unsigned, double, numerated), Operations and expressions(Arithmetic, logical, relational, bit - wise, compound, assignment, increment and decrement , conditional and special, typedef statement, type conversion. Header files, library files, preprocessor directives (#include, #define), linking and compilation process, Control flow Statements and blocks

Unit III

Library Functions

I/O functions: getc(), putc(), getchar(), putchar( ) , puts() , gets(), scanf(), printf(), getch(), fflush(), String functions: strcpy() , strcmp(), strcat(), strlen(), Character functions: isupper(), islower(), isalpha(), isdigit(), ispunct(), isalnum(), isspace(), tolower(), toupper()

Mathematical functions : abs(), atof(), rand(), atoi(), exp(), log(), pow(), sqrt(), sin(), cos(), tan()

Some other general functions: sleep(), system(), itoa(),calloc(), malloc(), free(), exit()

User functions- function components, passing data to function, function return data type, parameter passing(call by value, call by reference), recursive functions, storage class (local variables, global variables)

Unit IV

Arrays: operations on arrays, single and multi dimensional arrays, passing array to function.

Structure and union: structure declaration and definition, accessing, nesting of structure, array of structure, structures and functions, unions, difference between structure and union

Pointer and its operator: &, *, pointer arithmetic, pointers to constants, constant pointers, array of pointers, pointer to function, pointer to structure, Command line arguments: *argv[] & argc

Creation of Linked List, Traversing, Printing and Deletion.

Unit V

Files: Opening modes, FILE, fread(), fopen(), fwrite(), feof(), fgetc(), fputc(), fgets(), fputs(), rewind(), fscanf(), fprintf(), fclose( ), ftell(), fseek( )

REFERENCE BOOKS:

1. "Object Oriented Programming with C++ "by E.Balaguruswami, TMH Publications
2. "Object Oriented Programming in C++ by Nabajyoti Barakati Sams Phi Pvt. Ltd
3. " Object Oriented Programming in C++ by R.K. Shukla, Willey
4. "OOPs with C++" Edition First by-M.Jaya Prasad.- Laxmi Publication
5. "Object Oriented Programming with C++" by Yashwant Kanetkar BPB Publication.
6. Let u C, Yashwant Kanetkar
7. Ansi C, E.balaguru Swamy

Course : PGDCA Semester: I Paper Code : C-4

Subject Name : Practical on course C-2 and C-3 [Office automation and Programming Techniques]

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Course : PGDCA

Semester: II

Subject Name : Web Designing using Web Technologies

Paper Code : C-5

UNIT 1:

Javascript

Fundamentals of javascript, Syntax of javascript, Use of javascript in HTML, Validation using javascript

UNIT 2:

CSS

What is CSS? Advantage & Disadvantage of CSS, Creating CSS, Use of CSS in HTML, CSS Colors, Backgrounds, Borders, Margins, Padding, Text, Fonts, Lists, Tables, Forms, Align, Image Gallery, Website Layout.

UNIT 3:

Graphics Basics

Bitmap vs. Vector-based graphics, Color/bit depth and image resolution, Graphic file formats, Optimizing web graphic, Regular text vs. Anti-aliased text, Pixel resize vs. Smart resize, Regular graphics vs. Interlaced graphics, Lossy compression vs. Lossless compression, Dithered graphics vs Non-dithered graphics, Tolerance, Opacity, Introduction to Color, Color modes- RGB, CMYK, grayscale, LAB, bitmap, Color Adjustments- Hue, saturation, and brightness, Browser safe colors, Shadows, highlights and midtones of an image.

UNIT 4:

Photoshop Environment

About Photoshop, The Photoshop Interface, Setting up a new Photoshop document, The Photoshop Toolbox and Options bar, Photoshop Image and Color Basics, Opening, Creating and Saving an Image in Photoshop, Basic image editing, Working with color in Photoshop.

Photoshop Tools - Marquees, Magic wand, Lassos, Move tool, Crop tool, Slice tools, Pencil, Paintbrush, Eraser tools, History brushes, Gradient, Paint bucket, Burn-dodge-sponge, Blur-sharpen smudge, Shapes-line-rectangle-polygon, Path selection tool, Pen tool, Back ground and foreground.

Transforms : Using free transform, move, Rotate, scale, Skew, Distort, Perspective, Flip.

Photoshop Layers and Channels and Filters: Introduction to Layers, Layer modes and blending options, Image composting using layers, Introduction to Channels and Actions, Filters – Artistic, Blur, Noise etc., Text editing and special effects

UNIT 5:

Introduction to Flash

Reference Books:

1. HTML, DHTML, Java Script, Perl & CGI, Ivan Bayross BPB Publication.
2. Internet and Web Design, Ramesh Bangia , New Age International
3. Web Design Technology, D.P. Nagpal, Paperback
4. Web Design: The Complete Reference, Thomas A. Powell,Paperback
5. Comprehensive Multimedia And Web Technology, Ramesh Bangia, Meenakshi Arora, Firewall Media
6. Photoshop CS5, In Easy Steps ,Paperback
7. Adobe Photoshop CC Bible, Lisa Danae Dayley and Brad Dayley
8. Exploring Adobe Flash CS6, Prof. Sham Tickoo , Supriya Mishra ,Paperback

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Course : PGDCA

Semester: II

Paper Code : C-6

Subject Name: Programming using Java

UNIT I

Introduction to Java Programming

History of Java, Why Java is important to the Internet, The Byte Code Features of Java, Introduction to Java, Java class libraries

Data types, variables and arrays

Integer types: Byte, short, int, long Floating-point type: Float, double Characters, Booleans Literals Integer literals, floating-point literals, Boolean literals, character literals, String literals Variables Declaring Variables, Dynamic initialization, The scope and lifetime of variables Arrays: One-dimensional Array, Multi-dimensional Array

UNIT II

Operators: Basic arithmetic operators, Modulus Operator, Assignment Operator, Bitwise Operator Left shift, Right shift, Unsigned right shift, Bitwise operator assignment, Relational Operators, Boolean logical operators, Assignment operators

Control Statements

Java's selection statements: If, Switch Iteration Statement: While, do-while, for, Nested loops Jump statements: Using break, continue, return

Classes: Class fundamentals, Declaring objects, Assigning object reference variables, Introducing methods, Constructor, The this keyword, Garbage collection, The finalize() method

A closer look at methods and classes

Overloading methods, Overloading constructor, A closer look at argument passing, Returning objects, Recursion, Understanding static, Introducing final, Introducing nested and inner classes, Using command line arguments

Inheritance

Inheritance Basics, Using super, Method overriding, Using Abstract Classes, Using final with Inheritance, The object class

Package and Interfaces: Package, Understanding CLASSPATH, Importing packages, Interfaces

Exception Handling: Exception handling fundamentals, Exception types, Uncaught Exception, throw and throws, finally, Java's built-in Exceptions, User defined Exception Subclasses

Exploring java.lang: Simple type wrappers, Number, Double and Float, Byte, short, integer and long, Character, Boolean, Void, Process, Runtime

Exploring java.util: Collection overview, Arrays, The legacy classes and interfaces, the enumeration interfaces, Vector, Stack, Hashtables

Threads in Java: The thread class, the runnable interface, life-cycle of a thread, synchronizing multiple threads

Input/Output, Exploring java.io: The java I/O classes and interfaces File : Directories, Using Filename Filter, The ListFiles() alternative, Creating Directories The stream classes : File Input Stream, File OutputStrem, FileReader, FileWriter, BufferReader, BufferWriter, PrintWriter

UNIT III

Networking: Socket overview, Client/Server, Reserve Sockets, Proxy Servers, Internet Addressing

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UNIT IV

Introducing Java Applet

Applet Fundamentals

An applet skeleton :Init(), start(), stop(), destroy()

Simple Applet Display Methods

drawString(), setBackground(), setForeground(), Paint()

String Handling

String Constructor, String Conversion and toString()

Character Extraction

charAt(), getChars()

String Comparison

equals(), equalsIgnoreCase(), equals() versus comparisons

Modifying Strings

subString(), concat(), replace(), trim(), toLowerCase()

toUppercase(), length(), append(), insert(), reverse()

UNIT V

Graphical User Interface: AWT, Swing overview, Controls in java, Creating windows, Layout manager Mouse and keyboard event handling

Using HTML: Introduction, Structure of an HTML Document Various Tags : Headings, Text(Font), Link, Image, Lists, Table, Form, Applet

Reference Books:

1. Cay S. Horstmann, Gary Cornell, Core Java 1.2 Vol-1 & Vol -2 -The Sun Microsystems Press, New Delhi
2. Jerry R. Jackson & Alan L. McClellan, Fundamentals Java By Example 1.2- The Sun Microsystems Press, New Delhi
3. Peter Van der Linden , Just Java - The Sun Microsystems Press, New Delhi
4. Peter Van der Linden, Not Just Java, Second Edition-The Sun Microsystems Press, New Delhi
5. " Programming with Java A Primer" by E Bala Gurusamy, TMH
6. "Practical Java project for Beginners" by B.M. Harwani & Ivan Bayross Shroff Publisher

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Course : PGDCA

Subject Name : RDBMS Semester: II Paper Code : C-7

UNIT-I

Introduction to DBMS & RDBMS -Introduction to database, Introduction DBMS, Different database models, Structure of DBMS, Information system and SDLC, RDBMS an introduction, Cod's law for RDBMS, Components of RDBMS (kernel/data dictionary) introduction to oracle RDBMS and client/server computing - Introduction to Oracle, The Features of Oracle 9i, The oracle product details, An introduction to client/server computing, Oracle and client/server computing overview of oracle architecture - Oracle Architecture, Oracle Files, System and User Processes, Oracle Memory, System Database Object, Protecting Data

Unit-II

Introduction to SQL*PLUS -Introduction to SQL, Features of SQL, Components of SQL, Introduction to SQL*PLUS, Features of SQL*PLUS, Execution of SQL*PLUS, Important commands used in SQL*PLUS, Oracle Data-Types

Working with tables – Tables - An Introduction, Use Of Table In SQL, Viewing The Stored Data In Tables, Filtering Table Data, Updating Data, Deleting Data From Tables, Modifying The Structure Of Tables, Destroying A Table, A Few Other SQL Statements

Data constraints - Data Constraints, The Use of Data Constraints, The Types of Data Constraints, Defining Integrity Constraints By 'Alter Table', Removing Integrity Constraints, 'Null' Value Concept, 'Not Null' Constraint, Default Value Concept, 'User Constraints' Table

Unit-III

Data Manipulation in SQL - Oracle Operators, Range Searching, Pattern Matching, LIKE 'IN' and 'NOT IN' Predicates, An Introduction to 'DUAL' Table, An Introduction to 'SYSDATE' oracle functions- Oracle Function, Function Types, Group Function, Scalar Function, Working With 'Date' in SQL, Grouping Of Data Of Different Tables In SQL joins, sub-queries & views-types of joins, use of sub-query, 'union' and clause, 'Intersect' Clause, Minus Clause, Concept of View, Types of View, Use of View

Unit-IV

User Accounts Management & Indexing - Creation of User Account, User Account Management, Granting Privileges, Revoking Privileges, Modifying Password, Closing User Account, Concept of Index, Creation of Index, Types of Index, Use of Index, Deleting Index, introduction to pl/sql programming- Introduction to PL/SQL, Advantages of PL/SQL, Differences between SQL and PL/SQL, PL/SQL Block Structure, PL/SQL Character set, Variable, Constant and Data type, Assignment Operator and the use of 'SELECT... INTO, PL/SQL Program Control Structure, The use of 'IF...THEN...ELSE...ENDIF', Iteration Control (The use of LOOP, WHILE, FOR), The use of 'GOTO Statement .cursor -Cursor an Introduction, Types of Cursor, Features of Cursor, Implicit Cursor, Explicit Cursor, Application of for Loop with Cursor.

Unit-IV

Exception Handling in PL/SQL - Exception Handling in PL/SQL, Built in Exception Handling, User Defined Exception Handling, The Raise Application-error Procedure oracle transaction-Oracle Transaction, Commit Statement, Rollback Statement, Save point statement, Concept of lock, Types of locks, Levels of Locks, 'SELECT....FOR UPDATE' Statement, Removing the Lock. procedures and functions-Concept of Procedures and Functions, Advantages of Procedure

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and Function. Creation of Procedure and Function. Deleting Procedure and Function database triggers- Concept of Triggers, Types of Triggers. Creation of Triggers. Application of Triggers. Deleting Triggers Out Comes – After study this student will be able to know about and concepts & Fundamentals of DBMS. Concept of keys RELATIONAL DATA MODEL & design

Reference Books:

1. "Database Management System" by Leon & Leon. Vikas Publications
2. "Database System Concepts" by Henry F. Korth & Abraham Silberschatz .
3. "An introduction to database system" by Bipin C. Desai
4. "An Introduction To Database System" by C. J. Date Chai
5. Oracle 11i The Complete Reference by Rashmi Anandi –Laxmi Publications Pvt.Ltd.
6. Using Oracle 11i by Bose- Techmedia

Course : PGDCA **Semester: II** **Paper Code : C-8**

Subject Name : A. Practical on Course C-5,C-6 and C-7 [Lab of Web Deigning, Java, RDBMS]

B. Project work/ Internship

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