

PGDCA SEMESTER-I

PGDCA 101: PC SOFTWARE:

Unit-1: Introduction

- Introduction to personal computer – Concept of hardware & software, program, data processing, classification of PC software, Computer Applications.
- Overview of Operating System (Windows XP & Linux)

Unit-2: Word Processing - I

- Introduction to Word Processor, Exemplars of W.P. Packages, Use of W. P.

Unit-3: Word Processing - II

- Creating, Editing, Formatting of Documents, Search and & Replacement of text
- Special Print Features, Mail Merge Facility, Spelling checker, Advantages & Application of W. P.
- Other Advance Feature of MS Word

Unit-4: Spreadsheet

- Introduction to spreadsheet, some popular spreadsheet packages on different OS platforms.
- Building spreadsheet using Formulas, Conditions, Calculations, Built in functions.
- Using mathematical, statistical, logical, date & time and text function
- Writing macros and spreadsheet menus to build a user interface to the spreadsheet application.
- Graph-plotting facilities, Sorting database, Auto filter /Advance filter, Subtotal, Pivot table.

Unit-5: Presentation

- Importance of presentation software,
- Introduction to PowerPoint - Concept of slide & presentation, slide layout, different slide views, slide show options.
- Working with text and Pictures, Presentation of slide show with Animation

Reference Book: -

PC Software for windows made simple, By-R K Taxali (Tata McGraw Hill)

PGDCA 102: Computer Programming & Problem Solving

Unit-1: Introduction

- Introductory Concepts, computer characteristics, application areas, stored program concept, editors.
- Types of Programming Languages, High & Low level language, Compiler, Translator, Machine Language

Unit-2: Logic Development

- Problem Analysis, Flow charts, algorithm.
- Variables, Expression & its manipulation.
- Data types in High level language, operators.
- I/O statements, Assignment statement.

Unit-3: Structured Programming & Advance Computing

- Control statements - Condition & Loop Statements.
- Method of Structured Programming, Subroutines.

Unit-4: Complex Data Types

- Arrays, String handling
- Structure, Pointer, Union, Storage memory.
- Register References, Command line arguments

Unit-5: File Handling

- I/O Statements.
- File access in R,W,R+,W+,A,A+

Reference Book:-

E. Balaguruswami : Programming with ANSI C, Tata McGraw-Hill Publishing Co. Ltd.

PGDCA 103: Logical Organization of Computer

Unit-1: Introduction

- Block Diagram of a simple computer and its different functional units.
- Representation of Information
- Number Systems
- Integer & Floating Point representation
- Character codes(ASCII & EBCDIC)

Unit-2: Processors, Memory and Input / Output

- Instruction Execution
- CPU organization
- Parallel Instruction Execution
- Microprocessor chips & Buses
- Example of a typical Microprocessor
- Memory : Main memory, Secondary memory, Types & Organization
- Input / Output: Common types of I/O devices, Controllers.

Unit-3: Gates and Boolean Algebra

- Gates
- Boolean Algebra, Truth Tables
- Preparing truth table for given circuit
- Preparing circuit for given truth table (SOP & POS)
- De Morgan's Theorems, use of De Morgan's theorems to implement (i) SOP using NAND gates, and (ii) POS using NOR gates.

Unit-4: Basic Digital Logic Circuits.

- Integrated circuits.
- Combinational Circuits - Encoder, Decoder, Multiplexer, De-multiplexer, comparator.
- Arithmetic Circuits - Half adder, full adder, binary adder binary adder / subtractor.

Unit-5: Registers & Counters

- Flip flops.
- Registers & Counters.

Reference Books: -

1. Tanenbaum A. S. : Structured Computer Organization, Prentice-Hall of India Pvt. Ltd.
2. Malvino A. P.: Digital Computer Electronics, 2nd Edition, Tata McGraw-Hill Publishing Co. Ltd.

Paper 104: Visual Programming with Database Concepts

Unit – 1 Visual Basic Overview and Introduction...

- Introduction to integrated development environment
- Introduction to application wizard.
- How to manage V.B. Project & Forms.
- Introduction to Method & Events.
- Declaration of variable, types of variable, constant, procedures, subroutines, functions.
- Control flow statement, loop statement, Iteration.
- Designing menus, shortcut keys.
- Active X control: Textbox, Combo box, Command button, Option button, List box, Scroll bar, Label, Timer etc.
- Advance Active X Control

Unit – 2 Multiple Document Interface (MDI) & Graphics with Visual Basic...

- Introduction to MDI Form
- MDI built in capabilities
- Introduction to Image box, Picture box

Unit – 3 Database programming with visual basic & error handling methods

- Client server programming concepts
- Using ADO for database connectivity
- Database programming using MS-Access
- Create, Add, Delete, Update, Search, First, Last, Next, Previous, Sort calculated fields
- Error handling methods: On error go ton Label, on error go to line#, On error resume next.
- Getting en error using error code & error description

Unit – 4 Database Concepts:

- File Processing System
- Aims of Database Technology
- Key words (Data, Information, Database, DBMS& RDBMS, Entity, Attribute, Tuple, Domain set)
- Relationship between Entities
- Detailed Study of ER- Diagram
- Database Normalization (1st, 2nd & 3rd)
- Database Technology used in client-server
- Responsibilities of DBA
- Managing database with simple database problems (Data Redundancy, Data Integrity, Data Consistency)

Unit – 5 Database Management:

- Creating Database, Tables, Queries, different database constraints
- Defining Keys (Primary, secondary Unique, foreign) relationship among the tables
- MS Access Functions:
 1. Conversion Functions – (Asc(), Datevalue(), Day(), Month(), Weekday(), Year())

2. Date & Time Functions –(Date(), Dateadd(), Datediff(), Now(), Time(),Dateserial())
3. Mathematical Functions – (Into(), Log(), Pound(), Sqr(), Sgn())
4. Text Functions – (Left(), Right(), Instr(), Len(), Ltrim(), Rtrim(), Mid(), Strcom())

Reference Books: -

1. Steven Holzner: **Visual Basic 6.0** Programming Black Book: DreamTech Publication.
2. Bready: Programming **VB 6.0**. TMH Pub.
3. The Complete Reference Microsoft Office Access 2007 Virginia Andersen
4. Database Management System by Bipin C Desai.

Paper 105: Practical:

Practical Based on following papers: Weight

1. Paper 101: PC Software {30% }
2. Paper 102: Computer Programming & Problem solving Using C. {30% }
3. Paper 104: Visual Programming with Database Concepts. {40% }

PGDCA SEMESTER-II

PGDCA 201: Internet & Scripting Languages

Unit-1: Introduction

- Internet – A network Of Networks
- Types of Internet Connection-Dial Up & leased line, ISDN, broad band connectivity through DSL & WiMax,
- Various services available on internet,
- TCP/IP, FTP, Web Server, Web Site,

Unit-2: Internet Functions & Securities

- Concept of Web server & mail server,
- Intranet, applications in Internet & Intranet environment,
- Firewall, Virus, Cryptography

Unit-3: Web Page Design through scripting (HTML)

- Document Layout, Header Elements,
- Block Oriented elements, Lists, Inline links, Hyperlinks, URL, Images
- Forms, Tables, Special Characters

Unit-4: Introduction to other Web Languages

- DHTML, XML, PHP, WML, CGI

Unit-5: Animation in web page

- Flash Introduction & Screen Environment @ Basic Drawing & paintings.
- Use of Library. @ Animation in old Fashion.
- Motion Twin @ Graphic Symbol & Button Creation.
- Animated Gif Creation.

Reference Book:-

Internet - An Introduction by Duglass Comer Prentice-Hall of India Pvt. Ltd.

PGDCA 202: Structured System Analysis & Design

Unit-1: Introduction

- Role of technology in business.
- Business systems concepts.
- Categories of Information systems.
- System Development Strategies - Systems Development Life Cycle method, Structured analysis and design method, System prototype method

Unit-2: System Planning & Requirement Analysis

- Source of project request
- Steering committee, Information systems committee, User-group committee
- Fact finding techniques - Interviews, Questionnaire Record review, & Observation
- Analysis tools - Decision trees, Decision tables, Structured English.
- Data flow diagrams.
- Data dictionary.

Unit-3: Design of Output & Input

- Output objectives, types of output, Key output questions
- Output format - Detailed report & Summary report, Tabular output & Graphics output
- Input validation
- Error checking methods and Error messages
- Dialogue design - Menu driven dialogues, Data entry dialogues

Unit-4: Database Design

- Storage media.
- Database and conventional environments
- System development in a database environment
- Design of Database – Normalization

Unit-5: Software Design, Testing & Implementation

- Top-Down structure of modules, Coupling & Cohesion, Span of control, Module size, Shared modules
- Software Design tools - Structured flowcharts, HIPO, Warnier/Orr diagrams
- Level of testing - Unit testing, Systems testing, & special systems testing
- Methods of system conversion - parallel systems, direct conversation, pilot system, phase-in.

Reference Book:-

James A Senn : Analysis and Design of Information Systems, McGraw Hill Intl. Std. Edn.

PGDCA 203: RDBMS –II

Unit-1: STRUCTURED QUERY LANGUAGE (SQL * PLUS)

- Tables, Primary key, Foreign key, Indexes
- Data Definition Language : Create, Alter, Truncate, Drop
- Data Manipulation Language : Insert, Update, Delete
- Database Constraints

Unit-2: Database Objects & Function

- View, Sequence, Synonyms
- Transaction Control Language : Commit, Rollback, Savepoint
- Data Control Language : Grant, Revoke
- Database index
- General SQL Function(Character, Arithmetic, Date, Conversion)

Unit-3: Procedure Language with Data Manipulation

- Parts of PL/SQL block (Declaration, Execution, Exception, Error Handling).
- Writing PL/SQL Code : input/output statements,
- If-Then-Else,
- Cursor for Loop,
- while Loop and Simple for Loop,
- Error Handling

Unit-4: Advanced RDBMS Objects

- Stored Procedures
- Functions
- Packages.
- Triggers.

Unit-5: Introduction to Oracle Server

- Physical & Logical database
- Oracle instance
- Database Structure & Space Management
- Memory & Process Structure
- Process Architecture
- Client/Server Architecture: Distributed Processing

Reference Books:-

1. SQL, PL/SQL The Programming Language of Oracle by Ivan Bayross, 3rd Edition
2. Learn Oracle 8i by Jose A Ramalho

PGDCA 204: Visual Programming on .NET Platform

Unit-1: Introduction

- The .NET framework & Common Language Runtime
- Visual Basic Language – Operators, Conditions & Loops
- Procedures & Functions
- Understanding Scope
- Exception handling

Unit-2: Getting Started with VB .NET

- Concept of event handling
- Creating forms in application
- Adding the controls to the form – Text Boxes, Rich Text Boxes, Labels & Link Labels
- Other common controls – Buttons, Check Boxes, Radio Buttons, List Boxes, Combo Boxes, Scrollbars & Timers

Unit-3: Object Oriented Programming

- Classes & Objects
- Fields, Properties, Methods & Events
- Abstraction, Encapsulation, Inheritance & Polymorphism
- Overloading, Overriding & shadowing
- Constructors & Destructors

Unit-4: Web Application in VB .NET

- Working with web forms and web form controls – Buttons, Text Boxes, Labels, Literals & Place Holders
- Using other controls in Web form – Check Boxes, Radio Buttons, Labels, Panels, List Boxes, Hyper Links & Link Buttons.
- HTML Client controls & server controls

Unit-5: Database Access with ADO .NET

- Accessing data with Server Explorer
- Accessing data with Data Adaptors & Datasets
- Working with ADO .NET

Reference Books:-

Steven Holzner : Visual Basic .NET Programming Black Book DeramTech Press.

Paper 205: Practical:

Practical based on following papers: Weight

1. Paper: 201 Internet & Scripting Languages. { 30% }
2. Paper: 203 RDBMS & Client Server Programming. { 30% }
3. Paper: 204 Visual Programming on .NET Platform { 40% }