# PGDCA - 01 BASIC INFORMATION TECHNOLOGY

**Marks: Theory: 60 Practical: 40**

Information: Concepts and Processing

Data concepts, Elements of electronic data processing, Special applications, Number system in computers, Elements of a computer system, Classification computer systems, Concepts of hardware, Concepts of software and types, Concepts of storage devices and data communication equipment.

Operation Systems (OS) Concepts, Overview of MS DOS, Windows, Unix

Programming Languages classification, Generation

Information Technology applications

System Definition and Concepts:

System Planning and Analysis, SDLC, DFD, DSS.

Data and fact gathering techniques, Feasibility study,Use of PC Software

1. Word Processing using MS Word, Spreadsheet using MS Excel, Power Point

Practical: DOS, Windows, Linux, Office tools.

## PGDCA-02 PROGRAMMING WITH C

**Marks: Theory :60 Practical:40**

1. Introduction to 'C' Language

Character set, Variables and Identifiers, Built-in Data Types, Variable Definition. Arithmetic operators and Expressions, Constants and Literals , Simple assignment statement, Basic input/output statement, Simple 'C' programs

2. Conditional Statements and Loops Decision making within a program, conditions, Relational Operators, Logical Connectives ,if statement, if-else statement ,Loops: while loop, do while, for loop, Nested loops, Infinite loops, Switch statement, structures Programming

3. Arrays : One dimensional arrays: Array manipulation; Searching, Insertion, Deletion of an element from an array; Finding the largest/smallest element in an array; Two dimensional arrays, Addition/Multiplication of two matrices, Transpose of a square matrix; Null terminated strings as array of characters, Representation sparse matrices.

4. Functions

Top-down approach of problem solving, Modular programming and functions, Standard Library of C functions, Prototype of function: Formal parameter list, Return Type, Function call, Block structure, Passing arguments to a Function: call by reference, call by value, Recursive Functions, arrays as function arguments.

5. Structures and Unions

Structure variables, initialization, structure assignment, nested structure,

structures and functions, structures and arrays: arrays of structures, structu containing arrays, unions.

6. Pointers:Address operators, pointer type declaration, pointer assignment, pointer initialization, pointer arithmetic, functions and pointers, Arrays and Pointers, pointer arrays

7. File Processin: Concept of Files, File opening in various modes and closing of a file, Reading from a file, Writing onto a file

Practical: Implementation of above topics in C.

## PGDCA - 03 INTERNET TECHNOLOGY, E-COMMERCE

**Marks: Theory :70 Practical:30**

Internet: Evolution, protocols, interface concept, Internet vs. Intranet, growth of Internet ISP, connectivity, - dial up, leased line, VSAT, etc. URLs, domain names, portals, application, Email File Transfer Protocol, Telnet, Chatting, data transmission protocol, client/server architecture, and its characteristics, FTP, and its usages, Telnet Concepts, remote logging, protocols, terminal emulation, message board, Internet chatting, voice chat, text chat.

World Wide Web, Web publishing, HTML, design tools, HTML edition, Image editors, issue in web site creation & maintenance, FTP s/w for uploading web site.

Use of frames and forms in web pages. , JavaScript

E Commerce: Introduction, concepts technology in E-Commerce, internet business, advantage of E-Commerce, application, feasibility and constrain.

PHP: what is a PHP file? Why we need PHP? What is ZEND? Operators and expressions; Conditional statements and iterations in PHP; Functions and arrays in PHP Interaction between PHP and My SQL: Connecting to the Database selecting the Database Table, Executing commands and closing the connection to the Database.

Practical: HTML, JavaScript, PHP, My SQL.

## PGDCA - 04 RELATIONAL DATABASE MANAGEMENT SYSTEMS, USING ORACLE

**Marks: Theory : 60 Practical:40**

Data-Base concept: Database, DBMS, Concept of Schema, View, RDBMS, Concept of Keys(Super, Candidate, Primary, Foreign), Normalization (1NF, 2-NF, 3-NF), Operators of Relational Algebra ( Select , Project , Union , Intersection , Set Difference, Cartesian Product, Join operations).

Introduction & features: SQL plus, manipulation in DBMS,Oracle data types,Table

Data Constraints: Computation in Expression list used to select data: Logical operators, range searching, pattern matching, Oracle functions, grouping data frame tables in SQL, manipulating data in SQL.Joins: Index views: creation, updation, destroying, selections of data, renaming column of a view, granting permission, permission on the objects created by user, GRANT statements, Object privileges, referencing a tables belonging to another user, revoking permission given.

PL/SQL, Introductory Concept of Visual Basic.

Practical: Implementation in ORACLE with Visual Basic

## PGDCA - 05 DATA COMMUNICATION AND COMPUTER NETWORK

**Marks: Theory – 60 Practical - 40**

Data Communication: Theoretical basis of data communication, Analog and digital signals, asynchronous and synchronous transmission, Data encoding and modulation, techniques, Broadband and baseband transmission, Pulse code modulation, bandwidth, channel, baud rate of transmission, multiplexing, Transmission medium, transmission errors-error detection and correction (Single Error Code , Parity Check Method, Hamming Distance Method ) Network Classification and Data Communication Services Network Reference Models (OSI/ISO)
Introductory Concept of TCP/IP , Brief Concept of different Layers of TCP/IP
Network application - File transfer protocol, electronic mail, World Wide Web.

### Practical :

Unix commands and Unix Shell Programming.

## PGDCA - 06 MAJOR PROJECT

**Marks: 200 (Project Report :100 ,Seminar :50 , Viva/Voce :50)**

Students will have to present a seminar based on project topic. They have to submit a project report and appear for viva/voce.