VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

F Y B Sc(Computer Science)
With Effect from : June 2007

Paper I Paper Name : Fundamentals of Computer architecture, Datbes & web page designing

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1 Computer Fundamentals
1.1 History, Characteristics and Generation of Computers
1.2 Classification of Hardware and Software
1.3 Basic knowledge about CPU, Control Unit, ALU (Concepts only)
1.4 Memory : Primary memory, secondary memory
1.5 Storage devices (HDD, CD-ROM, DVD)
1.6 I/O Devices: (key board, mouse, scanner, Plotter, OCR, OMR, CD-Drive, Joy stick)
1.7 Display Devices (VDU, LCD, Touch screen, TFT)
1.8 Types of printers: (Impact and non-Impact)

2 Number System
2.1 Decimal, Binary, Octal and Hexa
2.2 Conversion of numbers to other systems
2.3 Arithmetic operation of Binary Number System (Addition and Subtraction)

3. Operating system
3.1 What is operating system . Types of O.S.(Single User, Multi-User/ CUI – GUI)
3.2 Loading process of OS
3.3 BIOS,POST Operation, Vector table, device drivers, TSR programs
3.4 Systems files, configuration files
3.5 Disk architecture (FAT, FAT32,NTFS)
3.6 DOS internal commands and Equivalent UNIX commands

4. Introduction of Internet
4.1 What is internet? History of Internet
4.2 Introduction of Modem, Router and Gateway
4.3 Concepts of ISP, DNS Server, Browser, WWW, Webpage, Domain name and IP Address
4.4 Advantages of E-Mail, E-Mail address and mail boxes, working of e-mail
4.5 Concepts of Browser , Search Engine, Telnet, FTP, IRC(Internet Relay Chat)

5 HTML and its working:
5.1 Introduction to URL (Fragment Identifier, Relative URL)
5.2 History of HTML, SGML
5.3 Structuring Web-page, Paragraph and line break tags
5.4 Adding comments, Formatting text, Creating Lists (OL, UL)
5.5 Creating Definition Lists, Creating Hypertext links
5.6 Creating Link lists, inserting images and objects
5.7 Creating Image Links, Horizontal rules, Address Tags
5.8 Font sizes and colors, Background image, marquee tag
5.9 Tables, Frames and creating Forms.
5.10 concepts of uploading the web-site

6 Database and its concepts
6.1 Concept of Field, Record, Table and Database
6.2 Comparison between manual and File system
6.3 Need and Organization of Database (Physical, Conceptual, Logical)
6.4 Keys – Primary key, Foreign key, Composite Key

7 Working with MS-ACCESS – Basics and concepts
7.1 Working with data base & tables
7.2 Managing constraints & relationships
7.3 Create forms and reports
7.4 Using SQL Queries(Simple, join, subquery,view)

REFERENCE BOOKS:

1. Computer Fundamentals - V Rajaraman , PHI
2. Advanced MS DOS - Rayduncon, McGraw Hill
3. Inside IBM PC - Peter Norton, PHI
4. Computer System Architecture - Morris Mano
5. HTML in 21 days - SAMS publication
6. Ms Access in 21 days - SAMS Publication
7. How to create Web Pages using HTML - K Laudon, TMH
8. Web Enabled commercial application Development using HTML, DHTML - Ivan Bayross , BPB
9. Introduction to Internet - Hantani, TMH
10. The Internet - Dougles E Comer
11. Data Base Concepts - Henry Korth

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Paper No.: II
Title: Programming in C

1. Programming Methodology
   1.1 Algorithm and flowchart
   1.2 Levels of programming languages
   1.3 Structured programming
   1.4 Compiler/Interpreter
   1.5 Program bugs and testing

2. Fundamentals of "C"
   2.1 The Basics of "C"
      Identifiers, key words, data types, declaration, reserved words
   2.2 Operators and Expression
   2.3 Arithmetic Operators
      2.3.1 Unary Operators
      2.3.2 Relational Operators
      2.3.3 Assignment Operators
      2.3.4 Conditional Operators
      2.3.5 Bitwise Operators

3 Various Header Files and I/O Functions

4. Control Statements
   While, do-while, for, if-else, switch, break, continue

5. Function
   5.1 Library Functions
   5.2 User Defined Functions
      5.2.1 Definition and Accessing of a Function
      5.2.2 Passing arguments to a function
      5.2.3 Specifying argument Data type
      5.2.4 Function Prototype
      5.2.5 Recursion

6. Array
   Array defintion, Processing an array, Passing array to function, Multidimensional array

7. Pointers
   7.1 Pointer Fundamentals
   7.2 Pointer Declaration
   7.3 Passing Pointers to a function
   7.4 Pointers and one Dimensional array
   7.5 Pointers and Multidimensional array
   7.6 Array of Pointer
   7.7 Passing Functions to other functions

8 Structures and Union

8.1 Defining Structure
8.2 Processing a Structure
8.3 User Defined Data Type (typedef)
8.4 Structure and Pointer
8.5 Passing Structure to a function
8.6 Self Referential Structure
8.7 Unions

9. Files

9.1 Opening a file & Closing a file
9.2 Reading from a file & Writing to a file
9.3 Reading & Writing Structures
9.4 Random Accessing a file

10. Preprocessor

10.1 # And ## operator
10.2 Preprocessor Statements
10.3 Macro Definitions

REFERENCE BOOKS:

1. "C Language Programming", By Gottfried, Tata McGraw Hill
2. Let Us C, - Yashwant Kenetkar
3. C Programming Language – Karnighan & Ritchie - TMH
4. 'C' Odyssey (6 volumes) – Vijay Mukhi - PHI
5. Programming in 'C' --- Stephan Kochan - CBS
6. Mastering Turbo C --- Kelly & Bootle - BPB
7. Mastering Turbo C --- Stan Kelly - BPB