

INFORMATICS PRACTICES

Maximum Marks= 100

Theory: Marks 70

Practicals: Marks 30.

External: 20 marks, Internal: 10 marks

Unit – I: Digital Design:

Number Systems: Binary, Octal, Decimal, Hexadecimal and conversions, Coding Schemes ASCII, EBCDIC, Basic Logical Gates (AND, OR, NOT, XOR, XNOR) with Truth Tables.

Unit – II: Computer Fundamentals:

Basics of a Computer and its operation; Functional Components and their interconnection (Block Diagram; illustrating main parts of computer (CPU, ALU, CU, Memory); Generations of Computers, Classification of Computers.

Input / Output Devices: Keyboard, Mouse, Light Pen, Touch Screen, Joy Stick, Mic, Scanner (MICR, OCR, BCR, VDU (CRT, LCD), Printers (Dot Matrix, Inkjet, LaserJet), Speaker.

Memory: Primary Memory (ROM and its Types); Secondary Storage Devices (Floppy Disks, Hard Disk, Compact Disk, Magnetic Tape, Flash Devices).

Units of Memory: Bit, Nibble, Byte, Kilo Byte, Mega Byte, Giga Byte, Tera Byte, Zeta Byte.

Unit –III: Software Concepts:

Concept of Software, Types of Software, System Software, Operating System, Functions of OS [Processor Management, Memory Management,

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File Management, Device Management], Application Software, Utility Programs; Computer Languages: Compilers, Interpreters, Assembler. Commonly used OS, Boot and its types; Computer Languages: Low Level Language, High Level Languages, Assembly Language; Concept of GUI and CUI.

Unit-IV: Graphical User Interface:

GUI based OS: Introduction to Windows, Features of Windows, File structure of Windows, Concept of Folder, Directories, Path, Path Name, Elements of Desktop, Taskbar, Icon, Start Buttons, Shortcuts, Recycle Bin, My Computer, Start Menu; Control Panel: Adding New Hardware and Programs.

Unit-V: Office Automation:

Word Processing: Introduction, Open a Document, Saving a Document, Printing a Document, Page Setup, Cut, Copy, Paste, Format Painter, Bold, Italics, Underline, Superscript, Subscript, Alignment of a Text, Formatting a Text, Indentation, Line Spacing, Find, Replace of a text, Insertion of a Table with other options, Picture, Clip Art, Shapes, Chart, Hyperlink, Header, Footer, Page Number.

Spreadsheets: Basic Options, wrap text, merge and center, Number format, Conditional Formatting, Format as Table, Format as cell; Insert, Delete and

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format cells, Auto Sum, Sort, Find and select; Header & Footer, Symbols; Page Layout, Margins, Size, Paper, themes; Insert Functions.

Presentations: Creating Presentation, Opening and Saving Presentation, Adding and Formatting Text, Formatting Paragraphs, Making Notes Page and Handout, Adding Clip Art and Other Pictures; Animations – Custom Animations, Transition Speed, Transition Speed; Slide Show –Custom Slide Show, Setup Slide Show.

Unit VI: Programming Fundamentals:

Introduction to VB, Concept of Event driven programming, VB user Interface, Toolbox, Project Explorer, Properties Window, Form Layout; Variables – Declaring variables, scope and life time of variables (Local & Global), Data Types: Integer, Long, Single, Double, String, Date and Variant; Operators (Arithmetic, Relational, Logical); Control Structures: Decision Structures – IF, IF – Then, IF – Then – Else, Select Case : Looping Structure – For – Next, Do – While, While – Wend.

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Time : 3 hours

Practicals : Marks 30. External : 20 marks, Internal : 10 marks

Topic	Marks
Computer Networking & OSS	20
Visual Basic Programming	15
Fundamentals of DBMS	20
Internet & Web Application Development	15

UNIT I: COMPUTER NETWORKING & OSS

A brief overview of Networking, Identifying computers over a network; Types of Network Address (MAC, IP); Domain Name Resolution; Types of Networks (PAN LAN, MAN, WAN); Networking Topologies (BUS, RING, STAR, TREE); Network Media – Guided (Twisted Pair, Fiber Optics, Co-axial), Unguided (Infrared, Radio, Microwave); Network Devices – Modem, Repeater, Hub, Switch, Gateway and their function; Network Technologies – Ethernet, Bluetooth, WiFi; Network Security – Brief Overview, Network Threats, Virus, Worms, Trojan Horse, Denial Of Service, Snooping; Network Security Measures – Anti-virus, Firewall, Intrusion Detection.

Open Source Concepts – Open Source Software Overview, Common Foss Examples (GNU/ LINUX, Firefox, Open Office).

UNIT II : VISUAL BASIC PROGRAMMING

Revision of Decision Structures (IF, IF-Then-Else, Select Case), Revision of Looping Structure (Do-While, While – Wend, For – Next); Functions – Inbuilt Functions (String – Space) (), chr(), Str(), Right(), Left(), Mid(), InStr(), Len(), LTrim(), RTrim(), UCase(), LCase(), String(), Number Function – Sgn(), Val(), Int(), Abs(), Fix(), Sqr(), Power(), Round(), Trunc(): Time Functions– Now(), Time(), Minute(), Month(), MsgBox(), InputBox(); Types of Forms (SDI & MDI).

UNIT III : FUNDAMENTALS OF DBMS

Introduction to Database, definition of Database, Table, Attribute, Tuple / Rows, Field, Data; Data Types & Data Integrity, Candidate Key, Alternate Key, Primary Key, Foreign Key; Constraints (Unique, NULL, Not NULL); Front End and Back End of a DBMS, Examples of Front End Software like Oracle, VB, Visual C++, Etc;

Types of SQL Commands – SQL Data types (Varchar2, Char, Number, Date, Long); SQL Operators (Arithmetic, Relational, Logical); Types of SQL Commands (DDL, DML); DDL Commands (Create, Alter, Drop), DML Commands (Select, Insert, Update, Delete including different Clauses); TCL Commands (Commit, RollBack, SavePoint).

SQL Functions – Brief Overview, Character & String Function; Character Function (Lower, Upper, InitCap), Character Manipulation Function (Concat, Substr, Length, Instr, LPad, Trim), Number Functions (Abs, Ceil, Exp, Len, Long, Mod, Power, Round, SQRT, Trunc, Floor); Date Functions (Months_Between, Add_Months, Next_Day, Last_Day); Conversion Functions (To_Date, To_Number, To_Char); Group Functions (Avg (), Count(), Max(), Min(), Sum()).

UNIT IV : INTERNET & WEB APPLICATION DEVELOPMENT

Introduction, hardware/Software requirement, Uses and facilities of Internet, ISP, WWW, Web Browser, Web Page & Types, Web Address, Search Engines, Web Applications, URL Address.

Introduction to HTML Scripting language, Page Structure, Head Section, Body Section, Base Font, Font, Text Links, Text Format, Text Size, Text Layout, Marquee, HTML Lists – Bulleted, Numbered, Lists, Images – GIF, JPG, Resizing, Body Around, Alternate Text, Spacing Around, Alignment; Background Color, Background Image; Html Tables, Basic Tags, Table Tags, Row/Cell Tags.

PRACTICALS

Time : 3 Hours

Marks 30

1. LAN Implementation of School Computer Lab. & Identifying different Network Devices used during the setup.
2. Establishing a PAN using PDU (Personal Data Units) any one of the wireless technologies given in the syllabus.
3. WAP to check whether a given number is Even/Odd.
4. WAP to print the Factorial of a given Number.
5. WAP to SWAP two given values.
6. WAP to find min/max of three given numbers.
7. WAP to print the Multiplication table of a given number.
8. WAP to generate the Fibonacci Series.
9. WAP to convert a given string from Lower Case to Upper Case or Vice Versa.