

# Computer Fundamentals

F.Y. Diploma : Sem. I

## EVALUATION SYSTEM

	Time	Marks
<b>Theory Exam</b>	–	–
<b>Practical Exam</b>	–	50*#
<b>Oral Exam</b>	–	–
<b>Term Work</b>	–	25@

\* On line Examination, # External Assessment, @ Internal Assessment

## SYLLABUS

### 1. Algorithms

Introduction, Three Basic Operations, Procedures and Programs.

### 2. Data Representation

Representing different symbols, minimizing errors, Representing more Symbols, Generic Formula, the ASCII code, the EBCDIC code, Rules of Decimal number System and its conversion to binary.

#### Multimedia

Digital images, analog to digital conversions, digital audio and digital video.

### 3. Binary Arithmetic

Binary addition, binary subtraction, multiplication and division.

#### Logic Gates

The need for derived gates, Half adder, Full adder, Logical operations.

### 4. Data Storage – Memory

Main Memory, Memory data transfer, MBR, Memory decoders - 1×2, 2×4 ... 10×1024, MAR, Address, Data and Control Buses, Load and Store Instructions, Word and Word Length, RAM and ROM, Cache Memory

#### Data Storage – Disk

Memory Hierarchy, Disk basics - Cylinders, Tracks, Surfaces, Sectors, Relationship between logical and physical records, Disk Controller Architecture, Sector format, Formatting Process, Seek Time, Rotational Delay and Transmission time, The relationship between Application program, Operating System, Disk Controller and the actual disk, CDs, DVD

#### VDU and Printers

Human-computer interface, Keyboard, Raster Scanning, Frame Buffer, Basics of Graphics, Black and White/Color Terminals, Text based terminals, LEDs/LCDs, Inkjet Printers, Laser Printer

### 5. Computer Architecture

CPU Registers, Multiplexers, ALU, Instruction Format, Instruction Decoding, Instruction Execution Cycles

#### Operating System

Concepts of system calls, Multiprogramming, Concepts of Context Switch, Different Services of Operating System, Information Management, Process Management (Process states, Process State Transition, Process Scheduling), Memory Management (Fixed Partition, Variable Partition, Paging, Demand Paging)

## **6. Classification of Computers and applications**

Characteristics of Computers, What Computers can do, What computers can't do, Classification of Digital Computer Systems, Anatomy of a Digital Computer.

## **7. Introduction to Computer**

Usage of computer system in different domains like office, book publication, ticket reservation, banks etc.

Components of PC - Mouse, keyboard, CPU, monitor, printers, scanners, modem, memory, sound cards, pen drives.

## **8. Introduction to Operating System (Windows 7)**

Working with Windows desktop, icons, taskbar, menu bar options, My Documents, My Computer, Control Panel, Recycle bin Concept of drives, folders, files.

Windows accessories - Notepad, WordPad, paint, clock, calendar, calculator.

## **9. GUI Based Software - MS - Office 2010**

MS-Word - Opening menus, toolbars, opening and closing documents, clipboard concept

MS - Excel - Working and manipulating data with excel, formulas, functions, chart and its types

MS - PowerPoint - Working with PowerPoint and presentation, Changing layout, Graphs, Auto content wizard, Slide show, Animation effects, Normal, outline, Slide sorter, Reading view.

## **10. Internet**

History of Internet, equipments required for Internet connection, browser (Internet Explorer, Mozilla and Firefox, Google Chrome)

## **Reference Books**

1. Demystifying Computer (Achyut Godbole), TMH.
2. Introduction to Computers (Alexis Leon), Vikas Publishing House.
3. Comdex Computer Course Kit (Windows 7 with Office 2010) (Vikas Gupta), Dreamtech Press.
4. Microsoft Office 2010 (Steve Schwartz), Pearson.
5. Microsoft Project 2010 (Bible) (Elaine Marmel), Wiley India.
6. Windows 7 Step by Step (Preppernau Cox), PHI.

