



**अखिल भारतीय सूचना प्रौद्योगिकी संगठन**  
**All India Information Technology Association**  
**New Delhi**

WORK RELATED TO MINISTRY OF INFORMATION TECHNOLOGY (GOVT. OF INDIA)

## DIPLOMA IN INFORMATION TECHNOLOGY

**Eligibility :** 10<sup>th</sup>

**Course Code :** DP-03

**Duration :** 1 Year

### Semester-I

## Computer Fundamentals

Introduction To Computers , Types Of Computer , History Of Computer , Generation Of Computer , PC & Its Components , Disk Defragmentor , Categories Of PC , Evolution Of Micro Processors , Registers Of Micro Processors , Basic Components Of Computer System , Input Output & Storage Units , Software , Types Of Software , Types Of Operating System , Categories Of OS , Example Of Utility Program , Programming Languages , Generations Of Programming Language , Application Software , User & Example Of Application Software , Viruses , Types Of Virus , Virus Detection & Prevention , Communication Process , Communication Protocols , Communication Channel/Media , Modem , Components Of LAN , Types Of Internet Connections , Internet & Its Advantages , Internet Services , WWW & Common Technologies of Internet

## Windows

**Windows XP** :-- Introduction To Window XP And Its Features , Hardware Requirements Of Windows , Window Structure, Desktop, Taskbar, Start Menu , Working , With Recycle Bin – Restoring A Delete File , Emptying The Recycle Bin , Managing Files, Folders And Disk Navigating Between Folders , Manipulating Files And Folders , Creating New Folder , Searching Files And Folder My Computer Exploring Hard Disk , Copying And Moving Files And Folder from One Drive To Another Formatting Floppy Drive , Windows Accessories- Calculator , Notepad , Paint , Wordpad , Character Map, Paint

**Windows Fundamental** :-- Windows is an operating system , XP Home Addition , XP Professional Addition , Active desktop , Multi user account , Data protection features , Playing MP3 Sound and XP , Windows desktop fundamental , Desktop , Taskbar , Icons , My computer , My Document , Recycle bin , Folder

## Office Automation (Word , Excel , Power Point)

**Office package** :-- Word processor Software , Spreadsheet software , Presentation software , Database Management software

**MS Office** :-- Introduction to Ms Office , Introduction to Ms Word , How to Start , Components of Ms Word , File Menu , Edit Menu , View Menu , Insert Menu , Format Menu , Tools Menu , Table Menu , Window Menu , Help Menu

**MS Excel** :-- Introduction to MsExcel , Calculations , Formula , Functions , Insert Row/Columns , Create Chart , Format Sheet

**Tools Menu** :-- Goal Seek , Scenario , Auditing



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**Data Menu** :-- Sort , Filter , Advance Filter , Sub total , Forms , Validations , Table , Consolidate , Pivot table , Window , Help

**MS Power Point** :-- Introduction , Insert New Slide , Format Slide , Slide Show

## Basic Concept of Hardware Maintenance

Introduction To DOS Command , Basic Troubleshooting , Formatting , Installation

## Semester-II

### D.T.P. (Page Maker , Photoshop , Corel Draw)

#### Pagemaker

**Adobe Pagemaker** :-- Components of Pagemaker , ToolBox , Palettes , Working with text

**Constructing a Publication** :-- Creating a new Page , Save publication , Preferences

**Edit Text** :-- Edit Story , Master Pge , Measurement , Ruler & guideline , Pge numbers

**Layout menu** :-- Sorting page , Deleting Pge

**Text formatting** :-- Type Menu , Control Palette , Expert Tracking , Indents And Tab

**Element Menu** :-- Fill , Fill and Stroke , Create a Frame , Arrange , Wrap textGroup Object , Image Control , Using PhotoShop Effect , Change the Shape Of Polygon/ Rectangle

**Utilities Manu** :-- Checking Spelling & Grammer , Change Case , Intex Entry

#### Coreldraw

Introduction to corel draw , Toolbars , Components of Corel draw

**What is New in edit Menu** :-- Introduction to corel draw , Duplicate , Clone

**View menu** :-- Full screen Preview , Grid and ruler setup

**Layout Menu** :-- Insert page , Delete page , Switching page Orientation , Page setup

**Arrange menu** :-- Introduction , Transformation , Order , Behind , Group , Shaping

**Effects Menu** :-- Adjust , Transform , Artistic Media , Contour , Extrude

**Bitmap Menu** :-- convert to bitmap , Mode , 3d Effect

**Art Strokes** :-- Charcol , Pastels , Pen & ink , Scrap oared , Sketchpad , Watercolor , Blur , Smooth , Color transform , Halftone

**Art Stockes** :-- Edge Detect , Find edge

**Creative** :-- Crafts , Glass black , Sample glass

**Distort** :-- Blocks , swirl

**Noice** :-- Add Noice

**Text menu** :-- Edit text , Fit text to path

**Tools & windows**

#### Photoshop

Introduction to Photoshop , About work area , Toolbox overview

**File menu** :-- What is new in file

**Edit menu** :-- What is s new in file , Transform & Patten

**Image menu** :-- Mode , Rotate image



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**Layer menu** :- New layer , Layer styles , New fill layer , Add layer mask

**Select menu** :- Inverse , Feather , Modify , Grow

**Filter menu** :- Extract , Artistic , Blur , Brush stroke , Distort , Pixel ate , Render , Sharpen , Sketch

## Internet & Multimedia Introduction

HTML , DHTML , Java/VB Script , Dream viewer

**Macromedia Flash** :- Introduction , logging onto server , basic Macintosh skills , Working in Flash , Drawing with Flash , Basic animation , Working in the timeline , Working with symbols Shape tween staggering animation effect , Animation Review Break apart and distribute Intro to Motion Guide , Motion Guide Paths , Mask layers , Button Intro , Intro to scripting , Setting up your project Publishing movies , Working with custom colors and gradients , Setting up scenes for first project , buttons and action scripting for project , Animated Buttons

## Advance Programming in "C" & Data Structures

Better understand the C language , Exploit advanced features of the C language to enable efficient programming , Files , File support overview , ASCII and binary files , Working with files , Preprocessor , The C Preprocessor - How it works , #include , #define - Defining named constants , #undef , Predefined macros (\_FILE\_ etc.) , Macros , Conditional compilation , Preprocessor operators # , ## , defined , #line , #error , #pragma , Extern and static declaration (for variables and for functions) , The compiler , The linker , Object libraries , Advanced Use of Pointers , Arrays with negative indexes , void Pointer , Pointers to functions , The library function qsort , The library function bsearch , Reallocation , Pointer to structures , C Functions and the Environment , Arguments to main , Environment variables

## Data Structure

Basic concepts of data representation

**Abstract data types** :- Fundamental and derived data types, Representation, Primitive data structures.

**Introduction to Algorithm Design and Data Structures** :- Design and analysis of algorithm: Algorithm definition, Comparison of algorithms, Top-down and bottom up approaches to algorithm design, Analysis of Algorithm, Frequency count, Complexity measures in terms of time and space, Structured approach to programming.

**Arrays** :- Representation of arrays , Single and multidimensional arrays , Address calculation using column and row major ordering , Various operations on Arrays. Application of arrays , Matrix multiplication , Sparse polynomial representation and addition.

**Stacks and Queues** :- Representation of stacks and queues using arrays and linked-list , Circular queues , Priority Queue and D-Queue , Applications of stacks , Conversion from infix to postfix



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and prefix expressions , Evaluation of postfix expression using stacks.  
**Linked lists :-** Singly linked list , Operations on list , Linked stacks and queues , Polynomial representation and manipulation using linked lists , Circular linked lists , Doubly linked lists , Generalized list structure , Sparse Matrix representation using generalized list structure.

**Trees :-** Binary tree traversal methods , Preorder , In-order , Post-ordered traversal , Recursive and non-recursive.

Algorithms for above mentioned Traversal methods

Representation to trees and its applications

Binary tree representation of a tree , Conversion of forest into tree , Threaded binary trees , Lexical binary trees , Decision and game , trees , Binary search tree: Height balanced (AVL) tree , B-trees.

**Searching, Sorting and Complexity Searching :-** Sequential and binary searches, Indexed search, Hashing Schemes.

**Sorting :-** Insertion , Selection , Bubble , Quick , Merge , Radix , Shell , Heap sort.

**Comparison of time complexity Graphs :-** Graph representation , Adjacency matrix , Adjacency lists , Adjacency Multicasts , Traversal schemes , Depth first search , Breadth first search , Spanning tree , Definition , Minimal spanning tree algorithms , Shortest Path algorithms (Prime's and Kruskal's)

## RDBMS

Oracle Product details , Different data base model , RDBMS components –Kernel , Data dictionary , client /server computing and oracle , Overview of oracle architecture –oracle files , system and user process , Oracle memory , system data base object , protecting data.

Oracle data type , working with tables , data Constraints , column level & table level constraints , defining different constraints on the table defining integrity constraints in the ALTER TABLE command , Select Command , logical operator , Range Searching , Pattern Matching , Oracle Function , Grouping data from table in SQL , Manipulation Data in SQL Joining Multiple Tables(Equi joins ) , Joining a Table to self (Self joins) , Sub queries Union , intersect & Minus clause , creating view Renaming the column of a view , granting permissions –updating , Selection , Destroying view.

### Admin Office New Delhi:

All India IT Association

B-1041, 3rd Floor, Sector 7, Near Palam Extension, Dwarka, New Delhi - 110075

Ph : +91 11 47350202, 47541212 | Help line : 91 999 39 500 00

Fax : +91 11 47350203, Email : [president@aiita.org](mailto:president@aiita.org)

### Admin Office Indore :

All India IT Association

18/3, Pardeshipura Nr. Electronic Complex, Indore (M.P.) INDIA

Ph: +91 731 4055550, 4055551, 4222242, 4222252, 4299909, 4288812

Fax : +91 731 2573779 | Email: [info@aiita.org](mailto:info@aiita.org)