अखिल भारतीय सूचना प्रौद्योगिकी संगठन
All India Information Technology Association
New Delhi
WORK RELATED TO MINISTRY OF INFORMATION TECHNOLOGY (GOVT. OF INDIA)

ADVANCE DIPLOMA IN COMPUTER APPLICATION & PROGRAMMING

Eligibility : 12th   **Duration :** 1 Year
Course Code : ADC-02

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

Operating System (Dos , Windows , Linux)

Disk Operating System (Dos) :-- Introduction , History & Versions Of Dos , Basic Physical Structure Of Disk , Drive Name , Fat , File & Directory Structure And Naming Rules , Booting Process , Dos , System Files , Dos Commands : Internal – Dir , Md , Cd , Rd , Copy , Del , Ren , Vol , Date , Time , Cls , Path , Type Etc.
External-Chkdsk , Xcopy , Print , Diskcopy , Diskcomp , Doskey , Tree , Move , Label , Append , Format , Sort , Fdisk , Backup , Edit , Move , Attrib , Help , Sys Etc. Executable V/S Non Executable File In Dos.
Windows XP :-- Introduction To Window XP And Its Features.Hardware Requriments Of Windows.Window Concepts , Window Structure , Desktop , Taskbar , Start Menu , My Pictures , My Music Working , With Recycle Bin–Restoring A Deleted 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 , Windowa Accessories-Calculator , Notepad , Paint , Wordpad , Character Map , Paint Command Prompt ,Window Explorer- Exploring Hard Disk Coping And Moving Files And Folder From One Drive To Another , Formatting Floppy Drive And And Other Explorer Facilities.Burning Cd Entertaintment-Cd Player , Dvd Player , Media Player , Sound Player , Volume Control , Movie Marker.
Advanced Features Of Window Xp :-- Managing Hardware & Software–Installation Of Hardware & Software Using Scanner Web Cemera , Printers , Sharing Of Printers , Seytem Tools–Backup , Character Map , Clipboard Viewer , Disc Defragment , Drive Space , Scandisk , System

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Information , System Moniter , Drive Converter (Fat 32), Disk Cleanup , Using , Windows Update.Communication – Dial Up Networking , Direct Cable Connection , Hyper Terminal ,

Phone Dial , Browsing The Web With Internet Explorer , Communication Through , Outlook Express , Multiple Users , Features Of Window , Creating And Deleting Users , Changing User , Password Etc Asccessibility Features Of Windows–Sharing Information , Between Program , Sharing Folder And Drive , Browsing The Entire Network , Mapping Windows Shared Drive , Using Shared Printers –Understanding Ole-Embed/ Link Using Insert Object – Manage Embedded /Linked Object

LINUX :-- History & Features Of Linux , Linux structure , file System of linux hardwere requirement of linux , various flavource of linux , program & process , process creatior and process identifiers , functions of profile cnd login file in linux , linux kernel , Multi user features of linux , login and logout from linux system linux command –bc , cal , cat , mv , rm , rmdir , tty ,wc , who , whois , grep , white , telnet , pipeline concepts using floppy and cd rom in linux vi editor

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

Various version of Windows :-- Windows desktop fundamental , Desktop , Taskbar , Icons , My computer , My Document , Recycle bin , Folder

MS Office (Word , Excel , Power Point , Access)

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

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

MS Access :-- Introduction , Different Between DBMS /RDBMS , Hierarchy , Database File , How to Start work , Create database using wizard , Create blank Database

Data base object :-- Table , Primary key , Manipulate data , Field properties , Relationships , Forms , Sub forms , Queries , Operators , Calculations , Update Query , Reports , Macro , Import data

Programming in "C" Language

Introduction to programming concept :-- Types of programming language , Low level language , High level language , Types of language processor , Header file

Structure of programming language :-- Program structure , Comment , Define columns &Rows

Data type in C :-- Introduction to data type , Variables , Input statement

Operators and expression :-- Arithmetic operators , Increment and Decrement operator , Relational operator , Logical operator , And operator , Or operator , Not operator , Conditional operator

Decision control structure :-- Introduction to Decision Making statement , The switch statement

loop control structure :-- Introduction , For loop , While loop , Do while loop , Loop termination

Arrays :-- Introduction to arrays

Function :-- Introduction to function , Types of function

Structure :-- What is Structures , Structure in C , The dot operator , Arrays of Structure

Semester-II
Oracle/SQL

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.

Object Oriented Programming with C++ / Core Java

Introduction to programming concept :-- Types of programming language , Low level language , High level language , Types of language processor , Header file

Structure of programming language :-- Program structure , Comment , Define columns &Rows

Data type in C++ :-- Introduction to data type , Variables , Input statement

Operators and expression :-- Arithmetic operators , Increment and Decrement operator , Relational operator , Logical operator , And operator , Or operator , Not operator , Conditional operator

Decision control structure :-- Introduction to Decision Making statement , The switch statement

loop control structure :-- Introduction , For loop , While loop , Do while loop , Loop termination

Arrays :-- Introduction to arrays , Function , Introduction to function , Types of function

Structure :-- What is Structures , Structure in c++
Introduction to Object Oriented Programming
Object oriented Programming, concept, advantage, usage, c++ environment, :program development environment ,the language and the c++ language standards., introduction to various c++ compiler, c++ standard libraries, prototype os main function ,data types ,Creating and compiling ,c++ programs using IDE and thought command line ,IDE feature for compiling ,debugging ,tracing, and testing the c++ program in turbo c++/Borland c++/Microsoft vc++/GNU c++ compiler. Classes and objects :classes structure and classes, union and classes ,Friend

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function ,Friend classes Inline function, Scope resolution operator, Static class members Static data members function ,passing object to function, Returning objects. object assignment.
Types def

Arrays :-- Pointer reference & the Dynamic Allocation operator : Arrays of object , pointer to object ,   Types checking c++ pointers , The this pointer , pointer to derived types , pointer to class members , References , reference   parameter , passing references to object , return references Independent reference , C++ dynamic allocation operator initializing allocated memory , Allocating arrays , allocating objects , constructor and destructor : Introduction constructor , parameterized constructor , multiple constructor in a class , constructor with default argument , copy constructor , copy constructor , Default argument , destructor .

Operator overloading :-- function & operator overloading : function overloading , overloading constructor function finding the address of an overloading function , operator overloading : creating a member operator function , Creating prefix and postfix form of the increment & decrement   operator , overloading the shorthand operation (i .e. +=,-=etc) , operator overloading restrictions , operator overloading using friend function , overloading loading Some special operators , overloading [ ] , () , -, comma operator , overloading <<.

Inheritance :-- Base class access control , protected member , Protected base class Inheritance , Inheritance multiple base class , constructors , destructors & Inheritance , when constructor & destructor function are expected , Passing parameter to base class constructors , grating access , Virtual functions & Polymorphism : virtual function , pure virtual function , early Vs , late binding.

The c++ input /output system basic :-- C++ stream , the basic stream classes : C++ Predefined stream , **formatted I/o :--** formatting using the ios member , setting the format flags , clearing format flags , an overloaded form of self () , Examining the formatted flags , setting all flags , using width ()precision () and fill() , using manipulators to format i/o , creating your own manipulators.

CORE JAVA
Introduction of Java :-- What is Java? **,** How to Get Java , A First Java Program , Compiling and Interpreting Applications , The JDK Directory Structure

Data types and Variables :-- Primitive Data types ,Declarations , Variable Names **,** Numeric Literals , Character Literals **,** String , String Literals **,** Arrays , Non-Primitive Data types ,The Dot Operator

Operators and Expressions :-- Expressions Assignment Operator , Arithmetic Operators Relational Operators Logical Operators Increment and Decrement Operators Operate -Assign operators (+ = ,   etc.) The Conditional Operator Operator Precedence Implicit Type Conversions The Cast Operator

Control Flow Statements :-- Statements **,** Conditional (if) Statements , Data types and Variables 3 **,** Adding an else if , Conditional (switch) Statements , while and do-while Loops , for Loops , A for Loop Diagram , Enhanced for Loop , The continue Statement , The break Statement

Methods :-- Methods , Calling Methods , Defining Methods , Method Parameters , Scope , Method Parameters

Object-Oriented Programming :-- Introduction to Object-Oriented Programming , Classes and Objects , Fields and Methods , Encapsulation , Access Control , Inheritance **,** Polymorphism

Objects and Classes :-- Defining a Class , Creating an Object , Instance Data and Class Data , Methods , Constructors , Access Modifiers , Encapsulation

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Using Java Objects :-- Printing to the Console , StringBuilder and StringBuffer , Methods and Messages toString , Parameter Passing , Comparing and identifying Objects , Destroying Objects
 Inheritance in Java :-- Inheritance , Inheritance in Java , Casting , Method Overriding , Polymorphism , Super class

Packages :-- The import Statement , Static Imports , Casting , CLASSPATH and Import , Defining Packages , Package Scope

Exception Handling :-- Exceptions Overview **,** Catching Exceptions , The finally Block , Exception Methods , Declaring Exceptions , Defining and Throwing Exceptions , Errors and RuntimeExceptions

Input/Output Streams :-- Overview of Streams , Bytes vs. Characters , Converting Byte Streams to Character Streams , File Object , Binary Input and Output **,** PrintWriter Class , Reading and Writing Objects , Basic and Filtered Streams

Collection Framework :-- The Collections Framework , The Set Interface , Set Implementation Classes , The List Interface , List Implementation Classes , The Map Interface , Map Implementation Classes

Inner Classes :-- Inner Classes **,** Member Classes , Local Classes , Anonymous Classes , Instance Initializers , Static Nested Classes

Introduction to Threads :-- Non-Threaded Applications , Threaded Applications , Creating Threads , Thread States , Runnable Threads , Coordinating Threads , Interrupting Threads , Runnable Interface , ThreadGroups

Interfaces and Abstract Classes :-- Separating Interface and Implementation , UML Interfaces and Realization , Defining Interfaces , Implementing and Extending Interfaces , Runnable Threads , Abstract Classes

Serialization :-- Object Serialization , Serializable Interface , Serialization API , ObjectInputStream and ObjectOutputStream , The Serialization Engine , readObject and writeObject , Externalizable Interface

Programming in Visual Basic .Net

Introduction to .NET frame work :-- Features of VS.NET , Components of .NET Framework , CLR , MSIL , JIT , Assemblies , .NET framework library system , Common type System , What is new in .Net , Shared ID , Types of project , Working with win Forms

Feature of Visual basic .NET :-- Components of Visual studio , Toolbox , Solution Explorer , Properties window , Introduction to V.B .NET , Edition of Visual basic

Working with winforms :-- Introduction to class library , Properties and methods of forms

Control of VB.NET :-- Label , Textbox , Button , Listbox , Combo box control , Scrollbar control , Slider and Trackbar , Link label , Timer control , Numeric Up Down Control , Panel Control , Graphic display , Rich text control , Date time picker , Month calendar

Data type in V.B NET , Variables V.B NET , Scope and life of the variable , Arrays in V.B NET , Collection in V.B NET , Message box function , Operators , Relational Operator , Decision control Statement , Event in V.B NET , Loops , Object Collection , Built in function V.B NET , MDI(Multiple document interface , Context Menu , Toolbar Strips , Status Strips , Progress bar , Tab control , Common dialog control , Rich text box , Common Dialog classes , File Handling in V.B NET , Some Advace Controls , Procedure and Modules , Object oriented programming in V.B NET

Basic concept of object oriented Programming , Data Abstraction and encapsulation , Polymorphism , Benefits of OOPS , Object class and methods V.B .NET , Inheritance in VB.net , Overloading Concept
Operator and function,Constructor in V.B . NET
OLE(Object Linking Embedding) , Win32 API Application
COM(Component object Model) , User control , Database Programming in V.B NET

ADO.NET , Different between ADO and ADO.NET , ADO.NET Architecture , Application connection to the database
The Data base provider , Data sources , Data rider and data view object , Display data into grid control , Data Adapter Object , Accessing data using Server Explorer , .NET Data provider ,Method of command object , Data bound Control,**Crystal Report**

Structured System Analysis & Design

System Concept :-- Definition , characteristics , elements of System , Physical and abstract System , Open and closed system
Users requirements an analysis , fact finding process and techniques , System Performance constraints and identification of systems , Tools of structured Analysis , logical and physical model , context diagram , data dictionary data diagram , form driven methodology , pseudo codes , flow charts , system flow charts , run flow charts , input/output and form design , menu screen design , layout consideration **Organization of EDP :--** introduction Job responsibility and duties of EDP

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