



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

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

MASTER IN COMPUTER SOFTWARE TECHNOLOGY

Eligibility : Graduation

Duration : 1 Year

Course Code : MS-01

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 , Management Information System , Characteristics Of MIS , Advantages And Disadvantages Of MIS , Computer Application In Business , Computer Application In Project Management , Work Environment , Information System For Accounting , Cost Finding , Cost & Profit Analysis , Computer Application In Material Management , Computer Application In Insurance Banking And Stock Broking

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 Requirments 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 Entertainment-Cd Player , Dvd Player , Media Player , Sound Player , Volume Control , Movie Marker.



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Advanced Features Of Window Xp :- Managing Hardware & Software–Installation Of Hardware & Software Using Scanner Web Camera , Printers , Sharing Of Printers , System Tools–Backup , Character Map , Clipboard Viewer , Disc Defragment , Drive Space , Scandisk , System Information , System Monitor , 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 Thourgh , Outlook Express , Multiple Users , Features Of Window , Creating And Deleting Users , Changing User , Passward Etc Accessibility 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 hardware requirement of linux , various flavource of linux , program & process , process creator and process identifiers , functions of profile and 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



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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 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



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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

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



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

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.

GUI Programming In Visual Basic

Computer programming :- Introduction to Programming languages , Low level languages , Assembly language , Machine languages , Language Processors

Introduction to Visual Basic :- Introduction to programming , Advantages& Disadvantages , Features , Edition

Building a VB Application :- Project , Forms , Controls , Properties , Event procedures , Modules , VB Operate Modes , Setting Properties , Writing codes

Controls :- VB standard controls

Data types :- Types declaration character , Variables , Variable declaration , Default variant , Implicit , Explicit , Procedure level , From level , Global level

Message Box

Operator in Visual basic :- Introduction to operator , Arithmetic operator , Relational operator , Logical operator

Conditional branching :- The if statement & select statement , Simple if statement , If else statement , Nested if statement , If else ladder , The select statement

Special Events :- Change event , Key down , Key press , Lost focus

System built in Function :- Data type functions , Maths functions , String function , Conversion function , Date function , Input box function

Loops :- For loops , For each loops , While loops , Do while loops , Withend with

Procedure & Modules :- Introduction to procedure & function , Sub procedure , Function procedure , Property procedure , Let method , Get method , Set method , Modules

Menu editor :- introduction to menu editor , document interface , MDI form , Pop up menus



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Special controls :-- Toolbar control , Status bar , Calendar control , Date picker , Ms tabbed dialog control

Error in Debugging :-- Introduction to errors , Kinds of errors , Debugging , Handling run time error

Common Dialog Controls :-- Introduction to common dialog control , Open dialog control , Save dialog control , Font dialog control , Print dialog control

File System Object Component :--

Visual basic and data base :-- Introduction to data base , Data control , Database engine , ADO data control , Data control properties , Data bound control , ADO data control methods

Programming with ADO :-- Connection object , Command object , Recordset object , Cursor type , ADO library

ADO Data Environment

Data Report :-- Introduction to data report , Report section , Other report section

Component Basic :-- Introduction to COM , Active X EXE , Active X DLL , Active Xcontrol , Check the control , Creating active XDDL , Creating active X control

Package &Development Wizard

Web Services Using VB.Net & ASP.Net/Advance Java

Web Architecture :-- The Way the Web works , The Asp.net difference , Client-Side Processing
How Asp.net Ties It Together

Setting up and Installing ASP.NET :-- Installing Internet Information Server , IIS Manager , Creating virtual/home directory , Folder Settings , Adding a virtual directory to your neighborhood , Installing .Net Framework SDK

Overview of the ASP.NET Framework :-- Asp.net and the .NET Framework , Common Language Runtime , .Net Framework Class Library , Understanding Namespaces , The Structure of asp.net Page , Directives , Code Declaration Blocks , Code Render Block , C# fundamentals

Using the Standard Controls :-- Displaying information , Label Controls , Literal Controls , Accepting User Input , Textbox controls , RadioButton And RadioButtonList Controls , CheckBox And CheckBoxList Controls , Submitting Form Data , Button controls , LinkButton Control , ImageButton Control , Displaying Images , Image Control , Using Panel Control , Using Hyperlink Control

Using the Validation Controls :-- RequiredFieldValidator Control , RegularExpressionValidator Control , CompareFieldValidator Control , RangeValidator Control , ValidationSummary Control , CustomValidator Control , Disabling Validation , Creating a LengthValidator Control , Creating a AjaxValidator Control

Using the Rich Controls :-- Accepting File Uploads , Saving files to file system , Saving files to database , Uploading Large files , Displaying a calendar , Creating a popup date picker , Rendering a calendar from a database table , Displaying advertisements , Storing advertisements in XML files , Storing advertisements in database tables , Tracking impression and transfers , Displaying Different Pageviews , Displaying a Tabbed Page View , Displaying a Multi-Part Form , Displaying a wizard

Designing Websites with master pages :-- Creating master pages , Creating default contents , Nesting master pages , Using images and hyperlinks in master pages , Registering master pages in web configuration

Designing websites with Themes :-- Creating Themes , Adding skins to themes , Creating named skins , Themes versus StyleSheetThemes , Disabling Themes , Registering Themes in web configuration file



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Microsoft SQL Server :- Overview of SQL Server , Installation of SQL Server , Features of SQL Server Express , SQL Server 2005 Express management tools , Server databases versus Local Databases , Summary

Overview of Data Access :- Using DataBound Controls , Working with List Controls , Working with tabular DataBound Controls , Working with Hierarchical DataBound Controls , Working with other Controls , Using Data Source Controls , Using ASP.NET parameters with data source controls , Using programmatic DataBinding , Understanding Templates and Databinding Expressions , Using templates **Using List Controls :-** Overview of the List Controls , Declaring List Items , Binding to a Data Source , Determining the selected List Item , Appending data items , Enabling automatic post backs , Using the Items Collection , Working with the DropDownList control , Working with the RadioButtonList control , Working with the ListBox control , Working with the CheckBoxList control , Working with BulletedList control

Using the GridView Control :- GridView Control fundamentals , Displaying Data , Selecting Data , Using Data Keys , Sorting Data , Paging through Data , Editing Data , Displaying Empty Data , Formatting the GridView Control , Using ViewState with GridView Control , Using fields with GridView control , Using BoundFields , Using CheckBoxFields , Using CommandFields , Using Button Fields , Using HiperLinkField , Using ImageField , Using Template Field , Working with GridView Control Events , Highlighting GridView Control , Displaying Column Summaries , Displaying nested master/details form , Extending the GridView Control , Creating a long text field , Creating a delete button field , Creating a validated field

Overview of XML

Creating an XML Web Services :- Overview of XML Web Services , XML Web Services Facilitate Communication , XML Web Services Enable Aggregation , Creating an simple XML Web Services , Setting WebMethod Attribute , Setting WebServices Attribute , Precompiling an XML Web Service , Testing an XML Web Services from browser , Invoking an XML Web Service with HTTP-Get , Invoking an XML Web Service with HTTP-Post , Invoking an XML Web Services with SOAP

Advanced XML Web Services :- Using the WebService Behavior , Examining Limitations of the WebService Behavior , Creating a Simple Page with a WebService Behavior , Using WebService Behavior Callback Functions

Sending Emails :- Designing email panel , How to send an email to various users , Sending auto emails

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