Diploma In .Net

- **C course content**

🔹 Basics content of C Language

- ⭕ What is C language
- ⭕ History of C Language
- ⭕ Features of C Language
- ⭕ How to Install C
- ⭕ The Structure of a C Program ➢ How to Write C Programs?
- ⭕ Compilation process in C
- ⭕ Printf() and scanf() in C

🔹 C language Overview

- ⭕ Veriables in C and Its Types
- ⭕ Data Types in C
- ⭕ C laguage Keywods
- ⭕ Identifiers in C and their type

- Role of operater in C language
- Comments in C and their Types
- Format Specifier in C language
- Esacape sequence
- (ASCII) American Standard Code for information interchange values in C
- Role of a constraints in C
- The Types of Literals that exist in C programs
- Importance of Tokens in C
- Boolean Data Type in C
- Static keyword in C
- Role of programming errors in C and their types
- Role of compile time and run time error in C
- Conditional operater in C language
- Bitwise operater in C and their types

➕Control Statements Which Used C Language:

- The IF.....ELSE Statement in C and variants of if statement in C language
- IF......ELSE ladder (C switch statement)
- The difference between If ...else and switch statement
- Loops in C programming and their three types
- Do while loop in C
- While loop in C (pre-tested loop)
- For loop in C Language
- Nested loop in C language ➢ Infinite loop in C language ➢ Role of C break statement
- C continue statement
- goto statement in c
- type casting in c

Function in C

- Advantages of C Function and their Types
- Call by value method in C and call by reference method in C
- Recursion process in C
- Storage classes in C and their Four types

Array in C

- Array: what and why?
- 1D arrays
- 2Darrays
- Mulri Dimentional array
- Dynamic arrays

Pointers in C

- Pointers in C and declaring a pointer
- Double pointer in C
- Dangling pointer in C
- Sizeof() operater in c
- Constraint pointer in c and their syntax
- Void pointer in c

- Dereference pointer (indirection operator) in C and why we use

Dynamic memory in C

➢ The concept of dynamic memory allocation in c language and their 4 types of functions

String Handling in C

- gets() puts() function in C
- Role of string function
- String Length: strlen function in C language
- The strcpy function
- String concatenation: strcat()
- Compare string function in c .....strcmp()
- The reverse string function.....strrev()
- String lowercase function ....strlwr()
- String uppercase function...strupr()
- String strstr()
- Match function in C

The Structures and union in C

- Advantages of a structure in c
- Defining structure .....typedef keyword in C
- Uses of an array structures in c
- Nested structure in C
- Structure padding in c
- Defining union datatype in c

File Management in C

- Introduction of file management and need of file handling in C
- Fprintf() and fscanf() function
- Writing file fputs() function and reading file fgets() function
- fseek() function in c
- rewind() function in c
- ftell() dunction in c

Dynamic Memory allocation

- Introduction to Dynamic Memory Allocation
- Malloc
- Calloc

Realloc

Free

• **CPP COURSE CONTENTS**

C++ Overview

- ☐ Features of C++ language
- ☐ Installation
- ☐ Cpp basic input/output operation
- ☐ Variable and its syntax
- ☐ Datatypes in CPP(Basic,Derived,Enumaration,user defined)
- ☐ List of all keywords in cpp
- ☐ The Role of an operators
- ☐ The role of an Identifier
- ☐ Cpp expression

Control statements of CPP

- ☐ Types of statements
- ☐ If _else statement
- ☐ Cpp Switch statement
- ☐ For loop
- ☐ While loop
- ☐ Do while loop
- ☐ Break statement
- ☐ Continue statement

- Goto statement
- Commnet statement

Functions in CPP

- call by value and call by reference
- recursion in CPP
- storage classes in cpp

Arrays In CPP

- Advantages And disadvantages of arrays
- Types of an Arrays
- Passing arrays to Function in cpp
- Multidimensional arrays in cpp

Pointers Variable in CPP

- Advantages and uses of pointer
- Sizeof() operater in cpp
- Array of pointer in cpp
- Void pointer in cpp
- How to creat references

- Difference between references and pointers
- Function pointer in cpp
- Memory management in cpp
- Malloc() vs new in cpp
- Free vs delete in cpp

Object class in cpp

- Oops concept in cpp
- Object and class in cpp
- Constructer and their types in cpp
- Copy constructer
- Destructor in cpp
- This pointer in cpp
- Static keyword in cpp
- Struct in cpp
- Enumeration data type
- Friend function in cpp

Inheritance in cpp

- Advantages and cpp supports five types of inheritance
- Aggregation HAS-A relationship)

Polymorphism in cpp

- Types of polymorphism
- Overloading (function and operater)
- Types of overloading in cpp
- Overriding function in cpp
- Virtual function

- **Interfaces in cpp (abstract class)**

- **Data abstraction in cpp**

- **Name spaces in CPP**

- **Strings in cpp**

- **Advantages and their classes ✓ Cpp files and streams**

- **Cpp getlines()**

✓ Cpp int to string

Functions and Variables

✓ Functions: Declaration and Definition

✓ Variables: Definition, Declaration, and Scope

✔ Variables: Dynamic Creation and Derived Data

✔ Arrays and Strings in C++

Qualifiers

Classes in C++

✔ Defining Classes in C++

✔ Classes and Encapsulation

✔ Member Functions

✔ Instantiating and Using Classes

✔ Using Constructors

Multiple Constructors and Initialization Lists

Using Destructors to Destroy Instances

Friendship

Operator Overloading

✔ Operator Overloading

Working with Overloaded Operator Methods

Initialization and Assignment

✔ Initialization vs. Assignment

✔ The Copy Constructor

✔ Assigning Values

Specialized Constructors and Methods

Constant and Static Class Members

Storage Management

✓ Memory Allocation
✓
Dynamic Allocation: new and delete

Input and Output in C++ Programs

✓ Standard Streams
✓
✓ Manipulators
✓
Unformatted Input and Output

File Input and Output

C#

1. Introduction and features

- Introduction of Language
  Introduction of Web
  Application
- Platform Dependence , Independence &
  Portability Introduction of
  .NET Framework
- Introduction of Compiler &
  MSILIntroduction of CLR
  Introduction of CLS, CTS,
  CLI

2. Basics

- Variable, Keyword, Datatype, Operators
- If else/conditional/control statements
- Switch statements
- For/while/do-while loops
- Break, Continue, Goto, Comment
- Function in C#
- Array 1D 2D
- Jagged array, params, array classes
- Command line arg
- Struct, Enum

3. OOPS

- Object and Class
- C# Properties, inheritance
- Polymorphism

- Abstraction, Interface
- Namespace, Access Modifier, Encapsulation
- Inner Class

4. String Handling

- String class & concept of ImmutabilityPool of String Constants & its use Common String operations

- Use of String Builder
- Difference between String and String Builder and string Buffer

5. Exception Handling

1. Difference b/w Exception and error Exception Handling & Robustness Common Exceptions and Errors Try and catch block
2. Exception handlers
3. throw keyword and its usageRole of finally
4. Exception Class Methods & propertiesCreating User defined Exceptions
5. Types of Exceptions

6. Multithreading in .NET

- Multitasking and MultithreadingProcess & thread
- States of Thread
- Thread based execution model of .NET ApplicationsImplementing User threads
- Thread synchronization Inter Thread communicationThread Interrupting
- Daemon Threads and their use

7. Input Output Streams

- Streams & their advantages over conventional input output Reading & writing data byte by byte, line by line, and in one go.

- Redirecting Standard input & output streams
- Serialization & Deserialization
- File Info
- Directory Info

8. Collection Framework

- Role and Importance of Collection Framework Index Based Collection Array List, Stack, QueueUse Define Collection
- Map Based Collection Use of Key & Value pair (Entry)Hash Table, Sorted List
- Searching elements in List, Hash and Tree based collectionsRole of equals and hashCode() methods

- Role of Comparable
  interfacesType safety and
  Generics Generic
  Collection
- List ,Stack ,Queue ,Dictionary ,Linked List ,Sorted List

9. Reflection

- Understanding object representation of
  classesLoading classes dynamically
- Instantiating classes indirectly
- Obtaining information of classes dynamically

10. LINQ

- Conversion Operators
- Custom Sequence Operators
- Element Operators
- Generation Operators
- Join Operators
- Miscellaneous operators
- Ordering Operators
- Partitioning Operators
- Projection Operators
- Quantifiers
- Query Execution
- Restriction Operators
- Set Operators

Advance .Net

11. Database Connectivity Using ADO.NET

- Overview of Database & Database ServerIntroduction of SQL Server 2008
- DML & DDL Query
- Join , Procedure & function Ado.NET API
- Connected Layer
- Connection, Command & Data ReaderDisconnected Layer
- Adaptor, Data Set, Table, Row & ColumnODBC, OLEDB, Oracle Client
- Connectivity with Oracle ,Access, Excel & MySqlConnection Pooling

12. Introduction to ASP

- Basic Of HTML and JavaScript
- Introduction to ASP
- Web Forms

- Using Web Controls
- Masterpages and UserControl
- Applying Themes and Styles to Controls
- ASP.NET State Management
- ASP Intrinsic Objects
- ASP.NET Web Application
- Data Access Controls
- Caching
- Configuration
- Trace Functionality
- Security

- Globalization and Localization

13. ASP.NET MVC Training Course Content

- Introduction to MVC
- First MVC Application
- The MVC Pattern
- Exploring Controller's
- Exploring Razor Views
- HTML Helpers
- Model Binders
- Annotations and Validations
- CRUD Operations using Entity Framework
- Caching in ASP.NET MVC
- Exception Handling in ASP.NET MVC
- Working with Areas
- Ajax and Client Scripting
- Security
- New Features of ASP.NET MVC 4.5
- Project Explanation

Aptitude syllabus :

Quantitative Aptitude

▶ **1 Problems Based on Ages.**

▶ **2 Test on Divisibility.**

▶ **3.Addition and Subtraction.**

▸ 4. Multiplication.

▸ 5. Division.

▸ 6. Square root and Cube root.

▸ 7. BODMAS Rule.

▸ 8. Indices

▸ 9. Quadratic Equation.

▸ 10. Word problems (Simplification with Profit Questions).

▸ 11. HCF and LCM.

▸ 12. Average and Percentage .

▸ 13. Ratio

▸ 14. Time and work.

▸ 15. Pipes and Cistern

▸ 16. Time and Distance.

▸ 17. Boat and Stream

▸ 18. Problems on Train.

▸ 19. Profit and loss.

▸ 20. Probability

Reasoning Aptitude

▸ 1. Test on Alphabet

- **2. Coding-Decoding**

- **3. Letter-Coding**

- **4. Number Symbol Coding**

- **5. Deciphering Message Code**

- **6. Pairs in English Alphabet**

- **7. Blood Relations**

- **8. Number Series.**

- **9. Direction and Distance.**

- **10.Ordering Test**

- **11.Sitting Arrangement**

- **12.Puzzle**

- **13.Input Output**