

## MSC IT 4th

### C#

#### MS.NET Framework Introduction

The .NET Framework - an Overview , Framework Components , Framework Versions

Types of Applications which can be developed using MS.NET , MS.NET Base Class Library , MS.NET Namespaces , MSIL / Metadata and PE files.

The Common Language Runtime (CLR) ,Managed Code , MS.NET Memory Management / Garbage Collection , Common Type System (CTS) , Common Language Specification (CLS)

#### Language Basics

Datatypes & Variables Declaration , Implicit and Explicit Casting , Checked and Unchecked Blocks – Overflow Checks , Casting between other datatypes Features of Object Oriented programming Boxing and Unboxing , Enum and Constant , Operators , Control Statements , Working with Arrays, Working with Methods , Pass by value and by reference and out parameters

#### Exception Handling

What is Exception , Rules for Handling Exception , Exception classes and its important properties, Understanding & using try, catch keywords , Throwing exceptions

Importance of finally block , "using" Statement , Writing Custom Exception Classes.

#### Working With Collections and Generics

Importance of IList and IDictionary., Using ArrayList and Hashtable. , Understanding IEnumerable and IEnumerator. Sorting Items in the collection using IComparable.

Typesafety issue with ArrayList and Hashtable classes. Writing custom generic classes.

Working with Generic Collection Classes.

#### WinForms

Introduction, Controls, Menus and Context Menus, MenuStrip, ToolStrip.

Graphics and GDI , SDI and MDI Applications , Dialogbox (Modal and Modeless)

Form Inheritance, Developing Custom, Composite and Extended Controls

Other Misc topics., Working with Resource Files , Working with Settings

#### Data Access using ADO.NET – DataSet

Dataset, Advantages of DataSet, DataSet Object Model, Fetching data using Fill methods of Data Adapter and filling data into Dataset to create a DataTable, Showing DataTable in DataGridView

## **E-Governance**

Introduction: E-Governance - Technology and Prospects, Definition of E-Governance, Economic potential of E-Governance, Incentives for engaging in E-Governance, forces behind E-Governance, Advantages and Disadvantages, Architectural framework, Impact of E-Governance.

Network Infrastructure of E-Governance: Internet based E-Governance Issues, problems and prospects, Network Infrastructure, Network Access Equipments, Broadband telecommunication (ATM, ISDN, FRAME RELAY).

Mobile Commerce: Introduction, Wireless Application Protocol, WAP Technology, Mobile Information device, Mobile Computing Applications.

Web Security: Security Issues on web, Importance of Firewall, components of Firewall, Transaction security, Emerging client server, Security Threats, Network Security, Factors to consider in Firewall design, Limitation of Firewalls.

Encryption: Encryption techniques, Symmetric Encryption-Keys and data encryption standard, Triple encryption. Asymmetric encryption-Secret key encryption, public and private pair key encryption, Digital Signature, Virtual Private Network.

Electronic Payments: Overview, The SET protocol, payment Gateway, certificate, digital Tokens, Smart card, credit card, magnetic strip card, E-Checks, Credit/Debit card based EPS, online Banking EDI Application in business, E-Commerce Law, Forms of Agreement, Govt. policies and Agenda.