C# Prelims Papers

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Q-1 (A)

1. Integrated Development Environment.
2. Computer Program Code that requires and executes under the Management of a runtime environment.
3. Code that runs directly on the OS bypassing the CLR, and it typically written in languages like C or C++;

Q-1(B)

1. Just-in-time :- reduces waste, improves cash flow, increases flexibility, optimizes human resources and encourages team empowerment

There types of JIT

- Pre JIT Compiler
- Normal JIT Compiler
- Econo JIT Compiler

Q-1(C)

1. List of looping structure :
   - ~~C#~~ Control Statements
   - loops
   - For loop
   - while loop
   - Do while loop
   - Nested Loop
   - Break
   - Continue

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For loop

Syntax :- for (initialization; Condition ; iteration)
{
//Code You want to perform
}

Example :-

```
using System;
using System.Windows.Forms;

public class loop
{
    public static void main(string s[])
    {
        for(int i=1 ; i<=5 ; i++)
        {
            Console.WriteLine(i);
        }
        Console.ReadLine();
    }
}
```

Output :- 1
2
3
4
5

Q-1(A)

1. Information about your program's types and members, stored in an assembly, that enables self-describing files and facilitates language interoperability and component-based design.
2. Common Language Runtime
3. Common Type System.

Q-2(B)

1. In C#, namespaces are used to organize code, particularly classes, structs, interfaces and other types. into logical groups, preventing naming conflicts and improving code ~~Rea~~ Readability and maintainability.

Q-2(C)

1. .net framework

- A software framework developed by microsoft for building and running application on windows, providing a consistent environment for programming languages like C#, and offering tools and libraries for various application types.

Advantages

- This allows developers to builds applications that can run on windows, linux, and macos.
- This includes libraries for web development, data access, UI development, and more
- This eliminates the need for developers to manually allocate and deallocate memory, reducing the risk of memory leaks and improving code reliability.
- The garbage collector automatically identifies and closes unused system resources to free up memory at regular intervals.
- The .net framework benifits from a large and active developer community, providing example support, resources, and solutions.

Disadvantages

- This can lead to challenges when developing applications that need to run on non windows platforms
- This can be a significant factor for businesses especially those developing applications across multiple platforms.
- Although the .net framework has a garbage collector to manage memory, it has faced criticism for potential memory leaks.

Q-2(A)

1. Belong to the class itself, not to any specific instance and are accessed using class name, not and instance.
2. Instance of a class
3. one that cannot be inherited, preventing other classes from deriving from it, effectively restriction extensibility and ensuring a fixed structure.

Q-2(B)

1. Interface inheritance allows an interface (derived interface) to inherit members (methods, properties, events, and indexers) from one or more base interfaces, enabling a class to implement multiple interfaces and achieve a form of mutiple inheritance.

Q-2(C)

1. C# Pointers (unsafe code) allows memory direct manipulation, enabling operations like accessing memory addresses and modifying variables values directly

Example

```
using System;

public class PointerExample
{
    public static void main (String S[])
    {
        int mynum = 10;
        int* mypointer;
        mypointer = &Mynum;
        Console.writeline ("Original value:" + mynum);
        Console.writeline ("Value Pointed to by mypointer:"
                           + *mypointer);
        *mypointer = 20;
        Console.writeline (" Modified value: " + mynum);
    }
}
```

Output

```
Original value : 10
Value pointed to by MyPointer : 10
Modified value : 20
```

Q-2(A)

1. A special type of class that can't be instantiated directly and it designed to be base class for other classes, providing a common template with partial or no implementation, forcing derived classes to implement specific methods.
2. Class is a blueprint or template for creating objects, encapsulating data and behaviors that define a specific type of entity or concept.
3. Polymorphism means "Many forms", and it occurs when we have many classes that are related to each other by inheritance.

Q-2(B)

1. Encapsulation is a fundamental concept in object oriented Programming (OOP). It refers to the bundling of data related operations into a single unit, or object.

- In C#, encapsulation is achieved through the use of classes and access modifiers such as public, private, protected.

Q-2(C)

- Constructor :- Constructor is a same name as a class and when create a object its class so constructor is access without declaration or calling.

Example :- Constructor overloading.

```
using System.
pubiic class co.
{
pubiic static void mainCString s[])
{
    co c = new co(5);
    co b = new co(5.6);
    Console.ReadLine(); }

pubiic void co(int a)
{
    int b a
    b=a;
    Console.WriteLine(b); }

Pubiic void co(double d)
{
    double e=d;
    Console.WriteLine(e); }
}
```

Output :-

```
5
5.6
```

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Q-3(A)

1. Combobox displays a textbox combined with a ListBox. which enables the user to select items from the list or enter a new value.
2. C# listbox is used to add mutiple elements to perform any specific operation.
3. ScrollBars Represent the ScrollBars enumeration value that indicate whether a mutiline TextBox Control appears with no scroll bars, a horizontal scroll bar, a vertical scroll bar, or both.

Q-3(B)

1. MenuStrip

- MenuStrip is a Control used to create and manage menus in windows forms applications.

ContextMenuStrip

- ContextMenuStrip is a control allows you to display a shortcut menu when a user right-click on a specific control or area of a form.

Q-3(C)

1. List of Dialog Box :—

- Showdialog ()
- MessageBox ()
- openfiledialog ()
- Savefiedialog ()
- Printdialog ()

→ ShowDialog() :- You can create a custom dialogBox by designing a form and then displaying it useing the ShowDialog() Method.

→ MessageBox() :- Displays a simple message box with an optional title, Massage, buttons, and icon.

→ openfiledialog() :- Allows the user to select a file to open.

→ Savefiledialog() :- Allows the user to select a location and filename to save a file.

→ Printdialog() :- Allows the user to configure printing options.

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Q-3(A)

1. PictureBox is used to display graphics from a bitmap, Metafile, icon, JPEG, GIF, or PNG file.
2. We use buttons whereever we need to perform operations like Save, Cancel, Search, etc.
3. Allows the user to choose one option from a list of options when paired with other RadioButton controls.

Q-3(B)

1. • Open VS, and create Project in start window
   • Create a new project select windows form app (net framework) template for C#.
   • Enter name of your project and click on Create and your project is created.

Q-3(C)

1. List of Three Events in C# windows form application :-

   • click event
   • Load event
   • Text change event.

click event :- whenever user click on any items so perform an operation as you need for execution.

Load event :- whenever form load first time so call load event of form and load your operation written in load event.

Text change event :- whenever user write or change text in tools so that call text change and perform code as you write.

Q-4(A)

1. The Data Row is an object of Data Table
2. Data column is an object or Component of DataTable
3. Data Relation used to Relate two DataTable objects to each other through data column objects.

Q-4(B)

1. An ADO.Net data provider connects to a data source such as SQL Server, Oracle, or an OLE DB data source, and provides a way to execute commands against that data source in a consistent manner that is independent of ds

and Data source - specific functionality:

Q- ☹(((

- Disconnected Architecture

```
using System.
using System.windows.form;
using data;
ring g data.sqlclient;
using data.sql;

namespace InsertData {
 public class ID {
 private void button1_click(object sender, EventArgs e) {
 SqlConnection con = new SqlConnection("Data Source=(LocalDB)\\MSQLLocalDB; AttachDBFilename=|DataDirectory|\\ID.mdf;
 Integrated Security=true");
 String insertQuery: "Insert into ID value (id, nnm, pass)";
 SqlDataAdapter DA = new SqlDataAdapter(com, InsertQuery);
 DataTable DT = new DataTable();
 DA.Fill(DT);
 }
```

Q-4(A)

1. A DataView enables you to create different views of the data stored in a DataTable.
2. Command is a behavioral design pattern that convert requests as simple operations into objects
3. A DataReader is an object that is used to read data ~~from~~ from the data sources.

Q-4(B)

1. SqlConnection con = new SqlConnection ( );
   - These is a example of connection and its object.
   - So con is a object of connection that take a string of a database or table.

Q-4(C)

1. Connected Architecture

```
using System;
using System.windows.forms;
using System.Data;
using System.data.sql;
using System.Data.sql client;
```

```
namespace DeleteData
{
    class DeleteData
    {
        SqlConnection Con = new SqlConnection("
Data Source=(LocalDB)\MSSQLLocalDB; AttachDbFile
name=|DataDirectory|\DataBase; Integrated Security
=true");
Con.Open();
String Sql=" Delete from DeleteData
            where id='1' and name='Pasth';
SqlCommand Cmd = new SqlCommand(Sql, Con);
SqlDataReader dr=null;
dr= Cmd.ExecuteReader();
if(dr.HasRows)
{
    MessageBox.Show(" Data Deleted ");
}
else
{
MessageBox.Show(" Error Access");}
}
}
```

Q-5(A)

1. The FileStream is a class used for reading and writing files in C#
2. Uses interface of the editors usually means the input of the output and the interaction language.
3. Used to define conditions that must be met on the target machine before the installation process can begin.

Q-5(B)

1. C# reports can be broadly classified into informational, analytical, and operational.
   Informational Report : Purpose, Examples, Tools
   Analytical Report : Purpose, Examples, Tools
   operational Report that is common Report type in windows form and setup.

Q-5(C)

1. • open visual studio IDE and open project or create project uses control.
   • Add some items for uses control like tools Button, TextBox, and Labels.
   • Go to your another project and access it by solution explorer and toolkit.

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```
using system;
using System.windows.forms;

namespace UserControl
{
    class UC
    {

private void BtnClear_click(object sender, EventArgs e)
{
        txtBox.text = String.Empty;
}
}
}
```

- above program is create a UserControl for clear textBox via Button click.

Q-5(A)

1. A Summary Repost is a miniature version of the original Repost.
2. A property is a member that provides a flexible mechanism to Read, write, or Compute the value of a data field.
3. A method is a code block that Contains a series of statements.

Q-5(B)

1. C# .net development, a "Setup project" is a special project type that creates an installer for deploying your application to other computers.

Q-5(C)

I. • Setup Projects

Purpose : Used to create installers for windows-based applications, packaging them as MSI files

Creation : Choose "File" > "New" > "Project"
Select "Setup Projects".
give name of project and click ok.

Features : offers a User Interface Editor to customize the installer's appearance.

• Visual Studio Installer Projects

Purpose : Similar to setup projects, but often used for .net core and newer applications.

Creation : Install visual studio Installer project extension
Choose "File" > "New" > "Projects".
Type "Setup" and Create Template.

Features : Similar features to setup projects, but with improved support for .net core and newer technologies.