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**MATRIC NUMBER -H/CS/23/1095**

**COURSE CODE –** COM316

**COURSE TITLE –** COMPURTEPROGRAMMING USING C#

**ASSIGNMENT QUESTION -**

1. Write a short note on the evolution of .Net Framework and C# (100 words)

2. Explain the following terms;

Mono, Xamarin, COM, .Net Core, Unity C#, REST

3. Critically, explain ANY three key functions of CLR (50 words)

**Write a short note on the evolution of .Net Framework and C#**

Microsoft started development on the NET

Framework in the late 1990s originally under the name of Next Generation Windows Services (NGWS). By late 2001 the first beta versions of .NET Framework 1.0 were released. The first version of NET Framework was released on 13 February 2002, bringing managed code to Windows NT 4.0, 28, 2000. ME and XP

Since the first version, Microsoft has released nine more upgrades for NET Framework, seven of which have been released along with a new version of Visual Studio. Two of these upgrades, NET Framework 2.0 and 4.0, have upgraded Common Language Runtime (CLR). New versions of .NET Framework replace older versions when the CLR version is the same.

The NET Framework family also includes two versions for mobile or embedded device use. A reduced version of the framework, the NET Compact Framework, is available on Windows CE platforms, including Windows Mobile devices such as smartphones. Additionally, the NET Micro Framework is targeted at severely resource-constrained devices.

NET Framework 4.8 was announced as the final version of

NET Framework, with future work going into the rewritten and cross-platform NET Core platform (later, simply NET), which shipped as NET 5 in November 2020. However, NET Framework 4.8.1 was released in August 2022.

**Explain the following terms;**

1. Mono

2. Xamarin

3. COM

4. .Net Core

5. Unity C#

6. REST

1. **Mono**

Mono is a software platform designed to allow developers to easily create cross platform applications. Sponsored by Microsoft, Mono is an open source implementation of Microsoft's .NET Framework as part of the .NET Foundation and based on the ECMA standards for C# and the Common Language Runtime.

1. **Xamarin**

Xamarin is a .**NET developer platform** made up of tools, programming languages, and libraries for building many different types of application

1. **COM**

The .com domain extension in a URL stands for "commercial." It's the most widely recognized and commonly used top-level domain (TLD). The .com domain is often used by companies, e-Commerce websites and businesses of various sizes and type

1. **.Net Core**

NET Core is **a new version of .NET Framework**, which is a free, open-source, general-purpose development platform maintained by Microsoft.

1. **Unity C#**

A real-time 3D development platform for building 2D and 3D application, like games and simulations, using. NET and the C# programming language.

1. **REST**

REST is an acronym that stands for **Representational State Transfer**, and it refers to a software architecture for creating web services.

**Critically, explain any three key functions of CLR**

The Common Language Runtime (CLR) is a component of the Microsoft .NET Framework that manages the execution of .NET applications. It is responsible for loading and executing the code written in various .NET programming languages, including C#, VB.NET, F#, and others.

When a C# program is compiled, the resulting executable code is in an intermediate language called Common Intermediate Language (CIL) or Microsoft Intermediate Language (MSIL). This code is not machine-specific, and it can run on any platform that has the CLR installed. When the CIL code is executed, the CLR compiles it into machine code that can be executed by the processor.

The CLR provides many services to .NET applications, including memory management, type safety, security, and exception handling. It also provides Just-In-Time (JIT) compilation, which compiles the CIL code into machine code on the fly as the program runs, optimizing performance.

Additionally, the CLR provides a framework for developing and deploying .NET applications, including a set of libraries, called the .NET Framework Class Library, which provides access to a wide range of functionality, such as input/output operations, networking, database connectivity, and user interface design.