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**COURSE CODE: COM 316**

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

The .NET Framework and C# have evolved significantly over the years. The .NET Framework was first introduced by Microsoft in 2002, providing a platform for building and running applications. C# was developed alongside the framework as a modern, object-oriented programming language. Over time, the framework has undergone updates and enhancements, introducing new features and improvements. The introduction of .NET Core expanded its reach to different platforms, including Linux and macOS. The evolution of .NET Framework and C# has focused on enhancing performance, security, and developer productivity, making them popular choices for building robust and scalable applications.

**2. Explain the following terms** ;

**-Mono:** Mono is an open-source implementation of the .NET Framework that allows developers to run .NET applications on different operating systems, including Linux and macOS.

**- Xamarin** is a cross-platform development framework that uses C# and allows developers to build native mobile applications for iOS, Android, and Windows using a single codebase.

**- COM (Component Object Model)** is a technology used for creating and accessing software components in a distributed environment.

**- .NET Core** is a cross-platform, open-source version of the .NET Framework that allows developers to build applications that run on Windows, Linux, and macOS.

**- Unity** is a popular game development platform that uses C# as its scripting language.

**- REST (Representational State Transfer)** is an architectural style for designing networked applications, where resources are represented as URLs and can be accessed using standard HTTP methods.

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

**\*JIT (just in time)compilation dynamically** translates Intermediate Language (IL) code into machine code at runtime, optimizing performance.

**\*Memory management** in CLR involves automatic memory allocation and deallocation through garbage collection, ensuring efficient memory usage.

**\*Exception handling** allows developers to catch and handle runtime errors, ensuring the stability and reliability of the application. These functions of CLR contribute to the overall execution and management of .NET applications.