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**DEPARTMENT: COMPUTER SCIENCE**

**LEVEL: HND 1**

**C# ASSIGNMENT**

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

The .NET Framework was launched by Microsoft in 2002, providing a platform for building and running Windows applications. In 2016, it evolved into .NET Core, offering cross-platform support, and in 2020, it merged with Mono to form .NET 5, unifying the .NET platform. Alongside the .NET Framework, C# has evolved into a powerful, versatile language with modern features, becoming a popular choice for building various types of applications, from web and mobile to cloud-based solutions. This has contributed to the expansion and versatility of the .NET ecosystem, making it a significant player in the world of programming.

**Question 2: Explain the following terms: Mono, Xamarin , COM , .Net Core,Unity C#,REST**

1. Mono: Mono is an open-source implementation of the .NET Framework for building .NET-based applications on Linux and macOS.

2. Xamarin: It is a platform for building cross-platform mobile applications using C# and .NET.

3. COM: COM (Component Object Model) is a binary interface standard for software components introduced by Microsoft.

4. .NET Core: This is an open-source, cross-platform version of the .NET framework for building cloud-based applications.

5. Unity: Unity is a cross-platform game engine used for creating interactive 2D, 3D, VR, and AR experiences.

6. C#: C# is a modern, object-oriented programming language developed by Microsoft.

7. REST: REST (Representational State Transfer) is a software architectural style for creating scalable web services using HTTP methods.

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

1. **Memory Management:** CLR manages memory allocation and deallocation, including automatic memory cleanup through garbage collection, ensuring efficient use of memory resources.
2. **Security:** CLR provides a security mechanism that includes code access security, role-based security, and validation of code to prevent unauthorized access and ensure the safe execution of code.
3. **Exception Handling:** CLR offers robust exception handling, allowing developers to write code that gracefully handles errors and exceptions, ensuring the reliability and stability of applications.