

.Net Technologies, Bachelor of Computer Engineering
Everest Engineering College
Pokhara University

Note: *Wherever possible, students should support their answers with appropriate programming examples to demonstrate their understanding of concepts practically.*

- ❖ What is the .NET Framework, and how does it differ from .NET Core?
- ❖ Explain the role of the Common Language Runtime (CLR) in .NET.
- ❖ What are assemblies in .NET, and why are they important?
- ❖ Describe the purpose and functionality of Just-In-Time (JIT) compilation.
- ❖ Discuss the evolution of the .NET framework from its inception to .NET 5.
- ❖ What are the key features of Object-Oriented Programming in C#?
- ❖ Differentiate between abstract and sealed classes in C#.
- ❖ What is a partial class, and when would you use it?
- ❖ Explain the concept of generics and provide an example in C#.
- ❖ How do interfaces differ from abstract classes in C#?
- ❖ Describe the Model-View-Controller (MVC) design pattern and its components.
- ❖ What is the SOLID principle, and how does it help in software design?
- ❖ Explain the Single Responsibility Principle (SRP) with an example.
- ❖ What does the Dependency Inversion Principle (DIP) state?
- ❖ How does the Open/Closed Principle help in software maintenance?
- ❖ Compare ASP.NET Web Forms with ASP.NET Core MVC.
- ❖ What is Razor syntax, and how is it used in ASP.NET Core views?
- ❖ Explain the concept of URL routing in ASP.NET Core.
- ❖ What are Tag Helpers in ASP.NET Core, and how do they simplify web development?
- ❖ Describe the differences between ViewData and ViewBag in ASP.NET Core.
- ❖ What is Entity Framework (EF) Core, and how does it simplify database operations?
- ❖ Explain the purpose of the DbSet class in Entity Framework Core.
- ❖ What are the advantages of using LINQ over traditional SQL queries?
- ❖ How does the ADO.NET model differ from Entity Framework Core?
- ❖ What is an Object-Relational Mapper (ORM), and how does it help in database management?
- ❖ What are the key principles of RESTful API design?
- ❖ How does ASP.NET Core Web API handle JSON data?
- ❖ What HTTP methods are commonly used in Web API applications?
- ❖ Explain how you can secure Web APIs in ASP.NET Core.
- ❖ What is the significance of the HTTP status codes in Web API responses?