

Satyug Darshan Institute of Technology, Faridabad		
	Programme: BCA	Year:/Semester:3/6
	Subject Name : C#	Subject Code:
	Department:DCSE	AY:2025-2026
Prepared By:		
Unit -1		
Short Questions		
S. No.	Questions	Bloom Taxonomy(KL)
1	What does .NET Framework stand for, and who developed it?	KL1
2	Explain the purpose of the Common Language Runtime (CLR) in one sentence.	KL2
3	List the three main components of the 3-tier architecture.	KL1
4	Differentiate between managed code and unmanaged code.	KL2
5	What is an assembly in the .NET context?	KL1
6	Briefly describe the role of the Just-In-Time (JIT) compiler.	KL2
Long Questions		
1	Explain the key design goals of the .NET Framework and how they are achieved. (Design goals: Language Independence, Simplified Deployment, Security, Performance).	KL2
2	Analyze the execution process of a .NET application, starting from source code compilation to machine code execution. Include the roles of IL, CLR, and JIT.	KL4
3	Compare and contrast the Common Type System (CTS) and Common Language Specification (CLS) in ensuring language interoperability within .NET.	KL3
4	Illustrate with an example the concept of inter-operability between managed (.NET) code and unmanaged (e.g., COM) code. What challenges might arise?	KL4
5	Evaluate the importance of the .NET Framework Class Library (FCL) for a developer. Can a .NET application be built without using the FCL? Justify your answer.	KL5
6	Design a high-level architecture diagram for a simple 3-tier application (Presentation, Business Logic, Data Access) using .NET, and explain the flow of data between tiers.	KL6
Unit -2		
Short Questions		
S. No.	Questions	Bloom Taxonomy
1	Name the two main data type categories in C#.	KL1
2	Convert the following if-else block into a switch statement: if(x==1) y=10; else if(x==2) y=20; else y=30;.	KL2
3	What is the purpose of the void keyword in a method declaration?	KL1
4	What will be the output: int result = 10 + 5 * 2;?	KL3
5	Differentiate between break and continue statements within a loop.	KL2
6	Given a for loop, trace its execution to determine the final value of the loop counter.	KL3
Long Questions		
1	Explain the scope and lifetime of variables in C# with examples of local, instance, and static variables.	KL3
2	Analyze the different types of operators available in C# (arithmetic, relational, logical, bitwise, assignment) and demonstrate the use of at least three with examples.	KL4
3	Describe the syntax and functionality of the four primary looping constructs in C# (for, while, do-while, foreach). When would you choose one over the others?	KL2
4	Evaluate the use of value types vs. reference types in C#. How do they behave differently when passed as arguments to methods?	KL5
5	Design a C# console application that takes two numbers and an operator (+, -, *, /) as input from the user and displays the result. Include proper decision-making logic for the operator.	KL6
6	Compare method parameters passed by value, by ref, and by out. Provide code snippets to illustrate the behavioral difference.	KL4
Unit -3		
Short Questions		
S. No.	Questions	Bloom Taxonomy
1	Define a class in C#. What is the default access modifier for its members?	KL1
2	Differentiate between String and StringBuilder classes.	KL2
3	Given a base class Animal and a derived class Dog, write a line of code to create a Dog object using the base class reference (pc	KL3

4	What is the purpose of the sealed keyword when applied to a class?	KL2
5	Name the two standard .NET exceptions.	KL1
6	How does method overloading differ from method overriding?	KL2
Long Questions		
1	Explain the concept of inheritance in C# with a suitable example. Discuss the use of the base keyword.	KL3
2	Analyze the differences between abstract classes and interfaces. When would you recommend using an interface over an abstract class?	KL4
3	Evaluate the importance of structured exception handling using try-catch-finally blocks. Write a code example that demonstrates handling a DivideByZeroException.	KL5
4	Describe the role of delegates and events in C#. How do they facilitate the publisher-subscriber model?	KL2
5	Design a class hierarchy for a library system. Create a base class LibraryItem (with properties like Title, Id) and derive classes Book and DVD. Include an abstract method DisplayDetails().	KL6
6	Compare arrays and collections (like List<T>) in C#. What are the advantages of using generic collections?	KL4
Unit -4		
Short Questions		
S. No.	Questions	Bloom Taxonomy
1	What does ADO.NET stand for?	KL1
2	State one major architectural difference between ADO (Classic) and ADO.NET .	KL2
3	List the two main components of the ADO.NET object model used for data access.	KL1
4	What is the primary function of a DataAdapter?	KL2
5	In the Connected architecture, which object is used to execute a SQL command?	KL3
6	Differentiate between a DataSet and a DataReader.	KL2
Long Questions		
S. No.	Questions	Bloom Taxonomy
1	Describe the two fundamental architectures of ADO.NET (Connected and Disconnected). Explain the key objects involved in each.	KL2
2	Analyze the role of the .NET Data Provider. Name its four core objects (Connection, Command, DataReader, DataAdapter) and explain their interaction in a typical data retrieval operation.	KL4
3	Explain the structure and purpose of a DataSet. How do DataTable, DataRow, DataColumn, and DataRelation objects fit into this structure?	KL3
4	Evaluate the advantages of the disconnected data architecture of ADO.NET over the connected architecture, especially for web applications.	KL5
5	Design a C# program snippet that demonstrates connecting to a SQL Server database, executing a SELECT query using a SqlCommand and SqlDataReader, and displaying the results.	KL6
6	Compare the use of ExecuteScalar, ExecuteNonQuery, and ExecuteReader methods of the Command object. Provide a scenario for each.	KL4