**C# Question Bank**

**Unit 1:**

From a programmer’s point of view, .NET can be understood as a new runtime environment and a comprehensive base class library make use of a diagram to illustrate composition of these new runtime environment.

.Net Framework is language independent hence “All languages targeting .NET platform emits CIL”. Justify these statement by making use of suitable examples. Explain with a neat diagram.

In the .NET environment all languages share a common type, give a list of the .NET types and explain CTS data types in C# with example.

Consider the life of a programmer in the following scenario and think about the difficulties in each. Then state what solution does .NET bring to the previous state of affairs in programming?

1. Life as a C/Win32 Programmer
2. Life as a C++/MFC Programmer
3. Life as VB6.0 Programmer
4. Life as a Java/J2EE Programmer
5. Life as a COM Programmer

Life as a Windows DNA Programmer.

.NET Framework is a completely new model for building systems on the Windows family of operating systems, as well as on numerous non-Microsoft operating systems such as Mac OS X and various Unix/Linux distributions. Justify these statements why .NET framework has to be used over other platforms. What solution does .NET framework provide?

Describe why C# language has to be used over other languages. What features does C# language provides which is not supported in other programming languages?

In the world of .NET, “type” is simply a generic term used to refer to a member from the set {class, structure, interface, enumeration, and delegate}. Summarize all the types of Common Type System.

Summarize the workflow that takes place between your source code (which is making use of base class library types), a given .NET compiler, and the .NET execution engine with the help of a neat diagram.

Compare between single file assembly and multi file assemblies.

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**Unit -2**

Demonstrate a C# program where a value type can be converted to reference type and reference type converted to value type. Name the term used for conversion for both types.

Recall the keyword that is used to define the data that should never be reassigned. Is it possible to assign this keyword for an object reference? Justify your statements with a sample example.

Methods (static and instance level) tend to take parameters passed in by the caller. However, unlike some programming languages, C# provides a set of parameter modifiers that control how arguments are sent into (and possibly returned from) a given method. Explain each one of them with an appropriate example.

Describe the uniqueness of using switch in C# compared to other programming languages. Write a C# program to print the grades, such as A(85-100), B(70-85),C(60-70),D(above 50), E(less than 50) of a student using switch. Implement the program by reading 3 subject marks from the console and calculate the percentage for each student

Demonstrate a C# program to pass a reference type by value by considering the following points

a. Is it possible alter objects state data if an object is passed by value type? Justify the statement.

b. Is it possible is to reassign what the reference is pointing to if it passed as a value type? Justify the statement.

The Object class defines a common set of members supported by every type in the .NET universe. When you create a class that does not explicitly specify its base class, you implicitly derive from System.Object. Explain the core members of it.

Explain the data members and member functions of a class which will be the base class for all user created class. Write a C# program using all the member functions of a class. Predict and display the output of it.

The Main method in C# accepts string[] args as parameter to capture the command line arguments. Makes use of foreach loop construct and write a C# program that to access all command line parameters and display each of them to the console.

Express how to obtain multiple return values of different types from single invocation of a function. Demonstrate a C# program by considering a sample example where the function should return at least 3 values from a single invocation.

Demonstrate a C# program where a data member can be instantiated through the class level but not through object level. Assign the value to the corresponding data member through the constructor, upgrade the value by multiplier of 2 using a method of the class and also display its value. Predict the output by assuming the initial value of a data member to be 8.

Class constructors are special methods, describe the role of constructors with respect to class constructs in C# programming language by giving a suitable example.

Explain the data members and member functions of a class which will be the base class for all user created class. Write a C# program using all the member functions of a class. Predict and display the output of it.