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Q1. Which of the following best describes the relationship between CTS, CLR, and CLS in the .NET framework?
A) CTS defines the rules for type safety across languages, enforced by the CLR, while CLS ensures only language-specific features are exposed for maximum compatibility.
B) CTS is a component of CLS, which ensures all .NET languages follow CLR's runtime behavior.
C) CLR is implemented in CTS and interacts with CLS to translate MSIL into unmanaged code.
D) CLS is the execution engine of .NET, CTS is the memory manager, and CLR is a garbage collector designed for platform independence.
Answer:- A

Q2. In the .NET ecosystem, which of the following statements correctly describes the difference between .exe and .dll assemblies?
A) .exe files are executable programs with an entry point; .dll files are reusable libraries without single entry point.
B) .dll files are standalone executables designed for user interfaces; .exe files are used only by background services.
C) .dll files are the only format that can contain MSIL code in the .NET framework.
D) .exe files can only be generated in unmanaged languages; .dll files are exclusive to .NET Core.
Answer:- A

Q3. Which of the following sequences accurately represents the compilation and execution process of a C# program using the .NET Framework?
A) C# Code → JVM → IL Code → CLR → Native Code → CPU
B) C# Code → CLR → IL Code → Native Code → TI → OS
C) C# Code → C# Compiler → IL → CLR → JIT → Native Code → CPU
D) C# Code → CTS → CLS → JIT → JVM → Native
Answer:- C

Q4. Which of the following type groupings under the Common Type System (CTS) is incorrectly paired?
A) Value Type → Int32, Decimal, Char, Enum
B) Reference Type → String, Object, Arrays, Interfaces
C) Reference Type → Types stored on heap and accessed via address
D) Value Type → Struct, Double, Boolean, class
Answer:- D

Q5. Which of the following combinations of .NET Framework versions and their major features is correct?
A) .NET Framework 2.0 introduced WPF and WCF, enabling rich UI development and service-oriented architecture.
B) .NET Framework 3.5 added support for Generics, which allowed creation of type-safe collections and methods.
C) .NET Framework 4.0 introduced Dynamic Language Runtime (DLR) and parallel programming support.
D) .NET Framework 1.0 was the first version to support LINQ, Entity Framework, and Generics.
Answer:- C

Q6. What will be the output of the following C# code?

```
static void Main(string[] args) {
    int X = 6, Y = 2;
    X *= X / Y;
    Console.WriteLine(X);
}
```

A) 12 B) 6 C) 18 D) Compile time error
Answer:- C

Q7. Which of the following statements about objects in “C#” is correct?
A) Everything you use in C# is an object, including Windows Forms and controls
B) Objects have methods and events that allow them to perform actions
C) All objects created from a class will occupy equal number of bytes in memory
D) All of the mentioned
Answer:- B

Q8. Consider the following statements about the public and internal access modifiers in C#.
A) A public class is only accessible within the project’s solution, while an internal class is accessible from other assemblies when marked with using.
B) An internal class is accessible from any project that references its DLL, while a public class is restricted to the same assembly unless marked as static.
C) A public class is accessible from anywhere including outside its assembly; an internal class is accessible only within the same assembly (project).
D) Both public and internal classes are accessible across all DLLs, but public requires the class to be sealed and internal requires inheritance.
Answer:- C

Q9. Which of the following best describes the working and behavior of the JIT compiler in the .NET runtime environment?
A) JIT translates C# source code into Intermediate Language (IL), then into native code during installation to reduce startup overhead.
B) JIT is a runtime feature of the CLR that compiles IL code to native code just before execution, ensuring efficient and platform-specific code execution.
C) JIT compiles IL code to native code line-by-line at the moment of writing each line in Visual Studio.
D) JIT directly interacts with the .NET assembly manifest to bypass IL code.
Answer:- B

Q10. Which of the following statements is correct about constructors in C#.NET?
A) A constructor cannot be declared as private
B) A constructor cannot be overloaded
C) A constructor can be a static constructor
D) None of the mentioned.
Answer:- C