MCA 512: .NET framework and C#

[Part – I : Medium Answer type Questions]

Unit - 1

Q1. What different tools are available and used to develop .NET Applications?

Hint a) .NET Framework SDK b) ASP.NET Web Matrix

c) Microsoft Visual C#.NET

d) Microsoft Visual Studio.NET Professional 2005

Q2. What platform and languages does the .NET Framework support?

Q3. What does 'Managed' mean in the .NET context?

Hint Managed Code, Managed Data, Managed Classes

Q4. What is Garbage collection? Do we have any control over the garbage collection algorithm?

Q5. What is Common Language Runtime? Compare CLR with earlier runtime phenomenons.

Q6. What are the main features of .NET platform? Discuss them briefly.

Q7. What is Just-In-time Compilation? How it is using in connection with Intermediate Language?

Q8. Explain the working of JIT and IL with suitable example.

Q9. What is the difference between .EXE and .DLL files? Explain the process to create both of them in .NET context.

Q10. How does .NET Remoting work?

Hint Single Call, Singleton, Client-activated object.

Q11. Briefly explain the development cycle of .NET technology. What are the major drawbacks of earlier technologies prior to .NET?

Q12. What is Visual Studio.NET ? How it fits in the .NET Framework?

Q13. Define following terms:

i.) CTS
ii.) CLS
iii.) MSIL
iv.) BCL
v.) CLR
vi.) CLI

Q14. Explain the historical development phases of C# and .NET.

Unit - 2

Q1. What are the major characteristics of C# language?

Q2. Explain the process to execute a C# program.

Q3. What do you mean by Properties in C#. Explain those using suitable examples.

Q4. What is the implicit name of the parameter that gets passed into the Set method/property of a class? Explain with some example.

Q5. What is Boxing and Unboxing concepts using in C#. Explain with suitable examples.

Q6. What is the difference between an Interface and Abstract class? Explain with examples.

Q7. What are the different ways a method can be overloaded in C#?

Q8. What is the difference between System.Array.Copyto() and System.Array.Clone()? Explain with examples.

Q9. Develop a method to compare strings in C#.

Q10. What is a Delegate? What are the multicast delegates? Explain with example.

Q11. What is an Event Handling? Write a program to handle the Mouse Click Event using C#.

Q12. Explain the concept of Jagged Arrays in C# using suitable example? What is the major advantage of Jagged Array over normal array?

Q13. String class supports two substring methods. How do they differ? Give an example where both the methods will return the same substring.

Q14. Find errors, if any, in the following statements:

a) string s1 = (“abc + xyz”);

b) String s2 = s1 + “abc”;

c) string s1.Copy(“abc”);

d) string s3 = “@\ABC\n\Csharp;”

e) int n = srting.Compare(s1, s2, false);

Q15. Explain the use of System.Collection in .NET development.

Q16. Write a program to implement System collection as ArrayList.

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Unit - 3

Q1. Explain the term namespace. Discuss the various contents of System namespace.

Q2. What is the need of using namespace in a class. Explain with the help of an example.

Q3. Explain different type of stream classes in C#.

Q4. Write a program to explain reading data from a text file and writing it to another text file.

Q5. What is multi-threading? Write a program for creating and starting a thread.

Q6. What is thread pool? Explain with the help of an example.

Q7. Briefly describe the namespace which are used for network programming in C#.

Q8. What is socket? How they are used for client-server programming? Explain with the help of an example.

Q9. What are windows forms? Write steps for the following:

(i) Creating Windows Application

(ii) Adding windows forms to the project

(iii) Resizing Windows forms

Q10. Explain the working of following controls:

(i) Button (iii) Checkbox (iii) Label

(iv) Textbox (v) ComboBox

Q11. What is Exception? Explain exception handling with the help of an example.

Q12. Discuss commonly used exceptions. Explain deriving exception classes with the help of an example.

Q13. How will you handle Nested Try-Catch-Finally Block to handle exceptions? Explain with suitable example.

Q14. Create a windows form that contains a text field that can be used to enter a number. When user will press the Enter button, display a message in a label that states whether the number is in between 0 to 1000.

Unit - 4

Q1. Discuss different Web Services supported by .NET technology. Explain the role of these services towards the improvement of Internet Technologies.

Q2. Briefly explain the features and application domains of following Web Services:

i) WDSL

ii) SOAP

Q3. Explain the SOAP Web Service architecture in detail. Use suitable examples to explain the role of SOAP services towards the advancement of Internet Technology.

Q4. Discuss different Windows Services supported by .NET technology. Explain the role of these services towards the improvement of Windows Advancement.

Q5. Explain the term "Reflection in .NET". What is the application domain of this concept? Use Reflection to display the information of Classes, Methods and Constructors at the Run-time in your program.

Q6. Explain the development need and requirement of DLL, OLE, COM, DCOM and COM+ technologies. Use suitable examples to differentiate among themselves. What are the major advantages of COM+ technology over its earlier ancient technologies?

Q7. What is Localization concept? What is its role in the .NET technology? Use suitable example to implement Localization in .NET.

Q8. Write down the required steps to create a Web Service using VS.NET IDE.

Q9. Using some suitable example write down the steps to deploy a Web Service in VS.NET environment.

Q10. What do you mean by Windows Messaging Services? Write down the steps to deploy a Messaging Service using VS.NET.

Q11. Write a program to implement a TCP Message Sender/Receiver using C#.

Q12. Write a program to connect a SQL server database with a Windows Form Application made in VC#. Explain the necessary steps to deploy such an application.

Q13. (i) Describe in detail the architecture of ASP.NET
(ii) Describe in detail the steps involved in writing a simple web service.

Q14. Explain the Web method in web services and discuss the various ways of implementing web services.

Q15. Explain the various stages of a Web Form Life Cycle using suitable example.

Q16. Briefly describe distributed application. How remote objects are implemented

in C#? Explain with the help of an example.

Q17. Explain different GDI+ classes in .NET.

Q18. What are the new features in Graphical Device Interface Plus (GDI+) ? Explain them in detail. Differentiate between GDI and GDI+.

Q19. Explain the working of Paint event handler with the help of an example.

Q20. How pointers are used in C#? Explain with the help of an example.

Q21. Explain the following parts of ASP.Net web application:

(i) Web Forms or .aspx pages

(ii) Code-behind pages

(iii) Configuration files (iv) Global.asax file

(v) XML Web service links (vi) Database connectivity

(vii) Caching

Q22. Discuss the following attributes:

(a) Page Attributes:

(i) Language

(ii) Codebehind

(iii) SmartNavigation

(b) Form attributes:

(i) Method

Q23. Explain General Page Life-Cycle stages of an ASP.Net page.

Q24. What is unsafe code in C#? Explain with the help of an example.

Q25. Explain the role of DCOM objects in the development of Internet technologies. What advantages do they carry over COM applications?

Unit - 5

Q1. Write down the steps to deploy a Messenger Application using VS.NET. What differences system resources are required by a PC to deploy Messenger Application?

Q2. Explain the process of Member Invocation using suitable examples.

Q3. How will you implement Reflection on Generics? Give suitable example.

Q4. Write down the code to implement a Chat Messenger Application using C#.

Q5. Explain the role of Socket Programming to implement a Secure Messaging Service in .NET. What are the major bottlenecks to provide Secure Messaging in MS Windows environment.

Q6. How will you initialize an attribute using a Constructor? Explain with the help of an example.

Q7. What are the Unified classes? What are their application domains?

Q8. What do you understand about .NET Assemblies? What is the difference between Private and Shared Assemblies?

Q9. Explain the process to create a strong name for a .NET assembly. What is GAC? Where is it situated on the system? What is the smallest unit of execution in .NET?

Q10. Explain Manifest and Metadata in context of .NET Assemblies.

Q11. Explain the difference between Built-in and Custom attribute with example.

Q12. What are the Serialization related Attributes. Explain with example.