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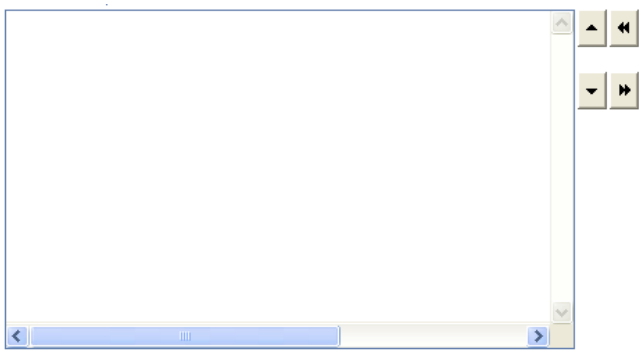
Microsoft

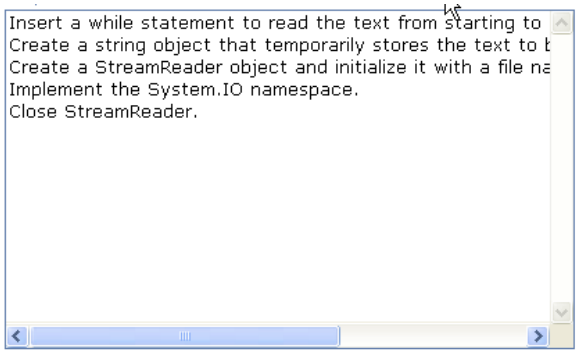
98-372 PRACTICE EXAM

Microsoft .NET Fundamentals

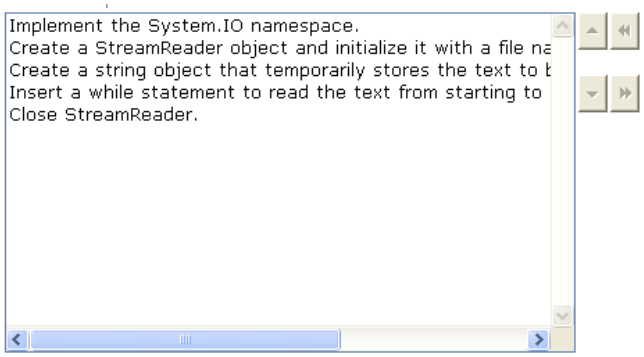
Question: 1

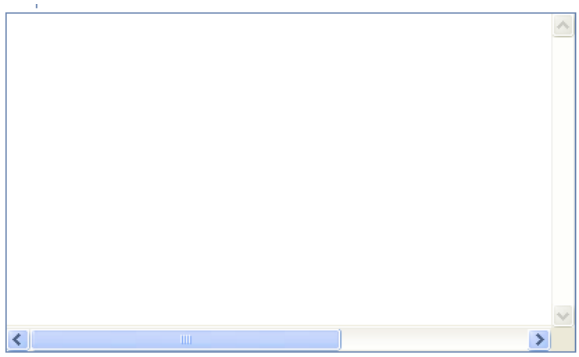
What are the steps required to read text from a file?





Answer:





Explanation:

The steps required to read text from a file are as follows:
1.Implement the System.IO namespace using the following code.
using System.IO;
2.Create a StreamReader class object and initialize it with a file name.
StreamReader sr = new StreamReader("TestFile.txt");
or
StreamReader sr;
sr = new StreamReader("TestFile.txt");
3.Create a string object that temporarily stores the text to be read from the file.
String line;
4.Insert a while statement to read the text from starting to the end of the file using the ReadLine() method, and display the text.

```
While(line=sr.ReadLine()!=NULL)
{
  Console.WriteLine(line);
}
```

5.Now, close the StreamReader class.
sr.Close();

Question: 2

Which element is NOT required if you need a custom class to raise an event?

A. A method to add an event handler
B. A class containing event data, derived from EventArgs
C. A delegate for the event
D. A class raising the event

Answer: A

Explanation:
You do not need a method to add an event handler because that functionality is provided by the .NET Framework.
An event handler is a course of action in program code and it is performed when an event occurs. Therefore, when an event is raised, the code within the event handler is executed. In order to handle an event, the event handler provides two parameters. The first parameter passes a reference to the object that raised the event, and the second parameter passes an object specific to the event that is being handled by the event handler. Event handlers can be created using the Windows Forms Designer as well as during runtime.
Answer: C, D, and B are incorrect. If you are required to raise an event in a custom class, you need a class that contains the event data, either EventArgs or a class inheriting from EventArgs, a delegate for the event, and a class raising the event.

Question: 3

Which class is used to write primitive types in binary to a stream and supports writing strings in a specific encoding?

A. TextReader class
B. BinaryReader class
C. BinaryWriter class
D. TextWriter class

Answer: C

Explanation:
The BinaryWriter class is used to write primitive types in binary to a stream and supports writing strings in a specific encoding. Any derived class can override the methods of the BinaryWriter class to give distinctive character encodings.
Answer: A is incorrect. The TextReader class exposes a reader that can read a sequential series of characters.
Answer: D is incorrect. The TextWriter class exposes a writer that can write a sequential series of characters.
Answer: B is incorrect. The BinaryReader class is used to read primitive data types as binary values in a specific encoding. Characters can be read from the stream using the given encoding system. The default encoding system is equal to New UTF8Encoding.

Question: 4

You are creating an application using .NET Framework 4.0. You write the following code segment in the application.

```
class CompGenerate <T>
where T : IComparable
{
```

```
    public T t1;
    public T t2;
    public CompGenerate(T _t1, T _t2)
    {
        t1 = _t1;
        t2 = _t2;
    }
}
```

Given the above class declaration, which of the following constructors is correct?

A. CompGenerate<float> gen = new CompGenerate<float>();
B. CompGenerate gen = new CompGenerate(10.125, 2005);
C. CompGenerate<double> gen = new CompGenerate<double>(10.125, 2005);
D. CompGenerate<double, float> gen = new CompGenerate<double, float>(20.125, 10.525);

Answer: C

Explanation:
The following constructor is correct:
CompGenerate<double> gen = new CompGenerate<double>(10.125, 2005);
The given class declaration is a generic. Therefore, in order to create a generic, you need to provide a type for each generic type, and that type must meet all constraints.
The .NET Framework version has provided a new feature of generics that introduce to the .NET Framework the concept of type parameters, which make it possible to design classes and methods that postpone the specification of one or more types until the class or method is declared and instantiated by client code. For instance, by using a generic type parameter T, a single class can be written that other client code can exploit without incurring the cost or risk of runtime casts or boxing operations. The following are the benefits of using generics:
1.Generic types are used to maximize the reusability of code, type safety, and performance of .NET applications.
2.Generics are used to create new generic collection classes contained in the System.Collections.Generic namespace.
3.Custom generics can be created that include generic interfaces, classes, methods, events and delegates.
4.The type information used in a generic data type can be obtained by reflection during runtime.
5.Generics enable the compiler to catch type-casting errors during compilation.
6.Generics do not require casting or boxing, and therefore, it improves runtime performance.
Answer: A is incorrect. In order to create an instance of a generic class, you need to provide parameter values. This constructor does not provide parameter values.
Answer: D is incorrect. The given class declaration only specifies a single generic type. This constructor provides two generic types.
Answer: D is incorrect. The given class declaration only specifies a single generic type. This constructor provides two generic types.
Answer: B is incorrect. In order to create an instance of a generic class, you need to provide a type. This constructor does not provide a type.

Question: 5

Which class is a byte of data that reads and writes from and to a disk?

A. StringReader class
B. TextReader class
C. XmlTextReader class
D. Stream class

Answer: D

Explanation:
A stream is a byte of data that reads and writes from and to a disk. The .NET Framework 2.0 provides the System.IO.Stream class as the base class for all the task-related stream data types. To read data in bytes is to transfer it from a stream into a data structure. To write data in bytes is to transfer it from a data structure into a stream. Streams support seeking, which queries and modifies the current position of data within a stream.
Answer: A is incorrect. The StringReader class is used to implement a TextReader that reads from a string. It constructs and initializesa new instance of the StringReader class that reads from the specified string. It consists of the following methods:
Close
Dispose
Peek
Read(char[], int, int)
Read
ReadLine
ReadToEnd
Answer: C is incorrect. The XmlTextReader class requires fast access to XML data. It does not require reading the entire document into memory via the Document Object Model (DOM). The class is derived from the XmlReader class and implements all the methods defined in the XmlReader class. The following are the functions of the XmlTextReader class:
It enforces rules of a well-formed XML document.
It does not provide any data validation in a document.
It checks the Document Type Definition (DTD) and DocumentType nodes for their well-formed structure, but does not validate these nodes by using the DTD.
Answer: B is incorrect. The TextReader class is used to provide a reader that can read a sequential chain of characters. It is the abstract base class of the StreamReader and StringReader classes. These derived classes can be used to open a text file for reading a specified range of characters, or to create a reader based on an existing stream. A derived class must at least implement the Peek and Read methods to make a functional instance of the TextReader class.

Question: 6

Namespaces are used a lot in C# programming in two ways.
What are those two ways?
Each correct answer represents a part of the solution. Choose two.

A. Use the namespace keyword to declare a namespace
B. Declaring your own namespaces
C. The .NET Framework uses namespaces to organize its many classes
D. Using global namespace

Answer: C and B

Explanation:
First, the .NET Framework uses namespaces to organize its many classes as follows:
System.Console.WriteLine("Hello World!");
Here, System is a namespace and Console is a class in the namespace. The using keyword is used to avoid using the complete name. An example is given below:
using System;
//No need to put System before Console

```
Console.WriteLine("Hello");
Console.WriteLine("World!");
```

Second, declaring your own namespaces can help you to control the scope of class and method names in larger programming projects. The namespace keyword is used to declare a namespace, as in the following example:

```
namespace SampleNamespace
{
    class SampleClass
    {
        public void SampleMethod()
        {
            System.Console.WriteLine("SampleMethod inside SampleNamespace");
        }
    }
}
```

Question: 7

You are creating an application using .NET Framework 4.0. You need to use a last-in, first-out collection in the application. Which of the following is a last-in, first-out collection?

A. Queue
B. List
C. Stack
D. Hash

Answer: C

Explanation:
The Stack collection is a last-in, first-out collection. A stack is the Last in First Out (LIFO) abstract data type and data structure. It can have any abstract data type as an element. However, a stack is characterized by only two basic operations: push and pop. The push operation is used to add an item to the top of the stack, hiding any items already on the stack, or initializing the stack if it is empty. The pop operation is used to remove an item from the top of the stack, and returns this value to the caller. A pop either exposes previously hidden items or results in an empty stack.
A stack is a restricted data structure, as only a limited number of operations are carried out on it. The nature of the pop and push operations also indicates that the stack elements have a natural order. The elements are removed from the stack in the reverse order to the order of their addition. Consequently, the lower elements are those that have been on the stack the longest.
Answer: A is incorrect. The Queue class is a first-in, first-out collection.
Answer: B is incorrect. The List class does not support ordered retrieval.
Answer: D is incorrect. The Hash class offers evidence about the hash value for an assembly. The hash value signifies a distinct value that corresponds to a specific set of bytes. The hash value designates the assembly without ambiguity, instead of referring to the assembly by name, version, or other designation. Names are subject to collisions in exceptional cases where the identical name is specified to totally different code. Different variations of code can unintentionally be marked with the identical version. However, changing a single bit might result in a very different hash value. The Hash class cannot be inherited.

Question: 8

How is an XmlWriter object useful when writing XML data to XML documents? Each correct answer represents a complete solution. Choose all that apply.

A. It ensures that XML data is represented in file format.
B. It ensures that an XML document is well-formed.
C. It allows XML values to be passed as parameters by using CLR types instead of using strings.
D. It ensures that XML characters are legal and contains valid element and attribute names.

Answer: B, D, and C

Explanation:
The XmlWriter class is used to create streams and write data to XML documents. An XmlWriter object of the class is useful when writing an XML data to XML documents in the following manner:
An XmlWriter object ensures that XML characters are legal and contains valid element and attribute names.
It ensures that an XML document is well-formed.
It allows encoding of binary data into bytes such as Base64 or BinHex, and writing the resulting data.
It allows XML values to be passed as parameters by using CLR types instead of using strings. This avoids value conversions manually.
It allows multiple XML documents to be written to one output stream.

Question: 9

What are the benefits of asymmetric key cryptography? Each correct answer represents a complete solution. Choose all that apply.

A. It is not scalable.
B. Key regeneration is not required when a user's private key is compromised.
C. Asymmetric algorithms provide a key revocation mechanism.
D. The same key pair is required to have effective communication with all the users of the asymmetric cryptosystem.

Answer: D and C

Explanation:
The benefits of asymmetric key cryptography are as follows:
The benefits of asymmetric key cryptography are as follows:
1.Same key pair is required to have effective communication with all the users of the asymmetric cryptosystem. This makes the algorithm extremely scalable.
2.Asymmetric algorithms provide a key revocation mechanism. This mechanism enables users to be effectively removed from the system by allowing the cancellation of a key.
3.Key regeneration is needed only when a user's private key is compromised. The system administrator invalidates the user's keys if the user leaves the community. During this task, the other keys are not compromised.
4.Asymmetric key encryption provides integrity, authentication, and nonrepudiation. A message signed by the users cannot be repudiated later, if their private key is not shared with the other individuals.
5.Key distribution is a simple process. Users make their public key available to anyone with whom they want to communicate. It is not possible to derive the private key from the public key.

Question: 10

You are creating an application using .NET Framework 4.0. You need to provide standard parameters for an event handler delegate. Which of the following are standard parameters for the event handler delegate?
Each correct answer represents a complete solution. Choose all that apply.

A. Event
B. Delegate
C. EventHandler
D. EventArgs
E. Object

Answer: E and D

Explanation:
The EventHandler delegate exposes a method that will handle an event having no event data. The event model in the .NET Framework is based on having an event delegate that connects an event with its handler. In order to raise an event, two elements are required, which are as follows:
A delegate identifying the method that provides the response to the event
A class containing the event data
The delegate is a type that defines a signature, i.e., the return value type and parameter list types for a method. The delegate type can be used to declare a variable that can refer to any method with the identical signature as the delegate.
The standard signature of an event handler delegate is used to define a method that does not return a value. The first parameter of the method is of type Object and refers to the instance that raises the event, and the second parameter is inherited from type EventArgs and contains the event data. If the event does not generate event data, the second parameter is just an instance of EventArgs. Otherwise, the second parameter is a custom type derived from EventArgs and provides any fields or properties required to contain the event data.
EventHandler is a predefined delegate that purposely represents an event handler method for an event that does not generate data. If the event does generate data, a custom event data type must be supplied, either create a delegate where the type of the second parameter is a custom type, or employ the generic EventHandler<TEventArgs> delegate class and replace the custom type with the generic type parameter.
However, in order to associate the event with the method that will handle the event, an instance of the delegate is added to the event.
The event handler is invoked whenever the event takes place, unless the delegate is removed.
The EventArgs class is the base class for classes that hold event data. The EventArgs class holds no event data. It is used by events that do not pass state information to an event handler whenever an event is raised. If the event handler needs state information, the application must inherit a class from the EventArgs class to hold the data. For instance, the AssemblyLoadEventArgs class holds the data for assembly load events, and holds an Assembly class that describes the loaded assembly.
Answer: B is incorrect. The Delegate class is the base class for delegate types. It is not a parameter for event handler delegates.
Answer: A is incorrect. The Event class is the base event for event types. It is not a parameter for event handler delegates.

Question: 11

How will you define a default value, Yellow, for a simple element of the XML schema?

A. <xs:element name="ColorName" type="xs:string" default="Yellow"/>
B. <xs:element name='ColorName' default='Yellow'/>
C. <xs:element ID='ColorName' default='Yellow'/>
D. <xs:element ID="ColorName" name="Color" type="xs:string" default="Yellow"/>

Answer: A

Explanation:
In XML schema, a default value is automatically assigned to the element when no other value is specified. The following is the syntax for the default value for a simple element:
<xs:element name="element_name" type="data_type" default="value"/>
For example:
<xs:element name="ColorName" type="xs:string" default="Yellow"/>
Here, the default value is "Yellow".
Answer: D, B, and C are incorrect. The values should be in double quote (") instead of a single quote (').

Question: 12

Consider the following scenario.
Allen has created a Windows Presentation Foundation (WPF) database application using .NET Framework 4.0. The application helps users keep track of their e-Book collection. He identifies that some computers might have many users, such as two roommates might share a computer, with both individuals using the same application on the same computer to manage their e-Book collections. Allen sets up a database to handle many users without mixing up the collections. Allen has implemented a very trendy system that allows users to alter the colors, fonts, and graphics in the application, giving it a personalized look and feel. What is the file name of the configuration file created by Visual Studio for Allen's application?

A. Machine.config
B. Setting.config
C. App.config
D. Web.config

Answer: C

Explanation:
App.config is the file name of the configuration file created by Visual Studio for Allen's application. Since Allen's project is a Windows application, Windows Presentation Foundation (WPF) in this case, Visual Studio will name the file app.config by default. However, a Web application will use web.config.
The App.config (Application configuration) file is a .NET configuration file that consists of a chain of settings specific to a Windows application. This file is usually located in the root directory of the application that is being configured according to a particular computer.
Generally, the application configuration files override the configuration settings in the Machine.config (Machine configuration) file.
Answer: B is incorrect. There is no such .config file as setting.config.
Answer: D is incorrect. Web.config is the main settings and configuration file for an ASP.NET Web application. The file is an XML document that defines configuration information regarding the Web application. It contains information that control module loading, security configuration, session state configuration, and application language and compilation settings. Web.config files can also contain application specific items, such as database connection strings.
The example of Web.config is as follows:

```
<configuration>
    <system.web>
      <customErrors mode="off" defaultRedirect="mycustompage1.htm"/>
    </system.web>
</configuration>
```

Answer: A is incorrect. The Machine.config file controls the configuration settings for the entire computer. It includes settings specific to a computer, such as built-in remoting channels, machine-wide assembly binding, and ASP .NET configuration settings. The configuration system first searches for APIs and ASP .NET settings in the machine.config file. The default configuration of the .NET

Framework is declared in the Machine.config file.

Question: 13

What is the major advantage of using class libraries?

A. They secure code with a basic encryption system.
B. They deploy quicker than full applications.
C. Easy to organize and maintain your project.
D. They provide easy access to classes, interfaces, and value types.

Answer: C

Explanation:
Easy to organize and maintain your project. Application extensions can be re-used for numerous projects. A program with a class library will run much faster than one with all the code in the main executable.
The .NET Framework class library is prepared of namespaces. Each namespace holds types that can be used in classes, structures, enumerations, delegates, and interfaces. When a Visual Basic or Visual C# project is created in Visual Studio, the most common base class DLLs (assemblies) are already referenced. However, if a type has been used that is in a DLL not already referenced, it will be required to add a reference to the DLL. In other words, the .NET Framework class library is a library of classes, interfaces, and value types that offers access to system functionality and is intended to be the base on which .NET Framework applications, components, and controls are built.

Question: 14

You are creating an application using .NET Framework 4.0. You need to run numerous lines of code after the application runs, regardless of whether or not an exception occurred. Which type of block can you use to implement this?

A. Try
B. Catch
C. Managed handler
D. Finally

Answer: D

Explanation:
You will implement the finally block to implement this. A block of code that appears just after the finally statement is called a finally block. The statements in a finally block are executed immediately after execution of the try/catch block. The finally block is optional. However, each try statement must have at least one catch block or a finally block. When a finally block is defined in a source code, it is guaranteed to execute, regardless of whether or not an exception is thrown.
Answer: B and A are incorrect. The try...catch block is used to handle runtime errors. In an event procedure, the try statement is placed just before the statements that might cause an error. The catch statement is placed just before the list of statements that are to be run if a runtime error occurs. For example:

```
try
 {
  //Statements that might cause a runtime error.
 }
    catch
```

```
{
  //Statements to be run if a runtime error occurs.
}
```

Answer: C is incorrect. A managed handler enables a user to call a .NET library to process a request. When a managed handler is added for a specific application, it works properly using .NET Libraries. For security reasons, it should always be kept in mind to make this handler available only to the Web application that requires it. This reduces the possibility of any unauthorized access or other types of attacks.

Question: 15

Which method is used to initiate a cleanup of a heap?

A. Collect
B. GCCollectionMode
C. KeepAlive
D. WaitForPendingFinalizers

Answer: A

Explanation:
The Collect method is used to initiate a cleanup of a heap. This method is part of the GC (garbage collector) class. Garbage collection is a process of reclaiming the memory resources used by an object. An object not referenced by any variable becomes eligible for garbage collection.
Answer: D is incorrect. The WaitForPendingFinalizers method is used to suspend the current thread until the thread that is processing the queue of finalizers has emptied that queue.
Answer: B is incorrect. GCCollectionMode is an enumeration that is used to indicate the behavior for a forced garbage collection.
Answer: C is incorrect. The KeepAlive method is used to ensure that the existence of a reference to an object that is at risk of being prematurely reclaimed by the garbage collector.

Question: 16

How is an XmlWriter object useful when writing an XML data to XML documents?
Each correct answer represents a complete solution. Choose all that apply.

A. It ensures that an XML document is well-formed.
B. It allows multiple XML documents to be written to one output stream.
C. It allows XML values to be passed as reference by using CLR.
D. It avoids value conversions automatically.

Answer: A and B

Explanation:
The XmlWriter class is used to create streams and write data to XML documents. An XmlWriter object of the class is useful when writing an XML data to XML documents in the following manner:
An XmlWriter object ensures that XML characters are legal and contains valid element and attribute names.
It ensures that an XML document is well-formed.
It allows encoding of binary data into bytes such as Base64 or BinHex, and writing the resulting data.
It allows XML values to be passed as parameters by using CLR types instead of using strings. This avoids value conversions manually.

It allows multiple XML documents to be written to one output stream.

Question: 17

Which of the following is a means of keeping information a secret and thus protecting the confidentiality, authenticity, and integrity of information?

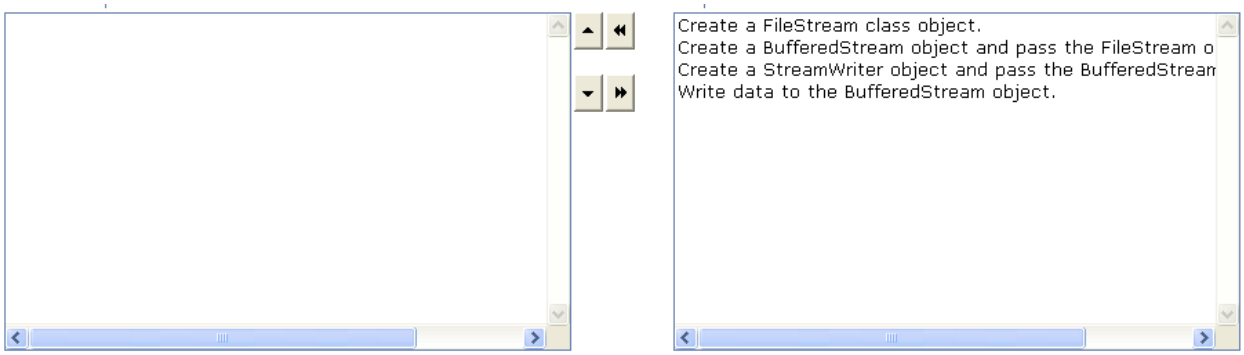
A. Authentication
B. Authorization
C. Access control
D. Cryptography

Answer: D

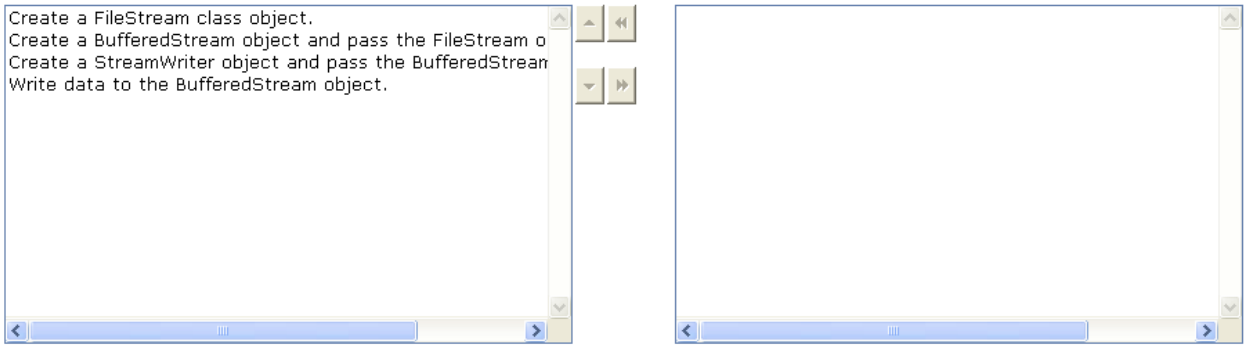
Explanation:
Cryptography is a combination of two Greek words, i.e., kryptos (hidden) and grafo (writing). Research in the field of cryptographic algorithms is referred to as crypto analysis and used to develop algorithms and crack the algorithms of enemies. Cryptography is a means of keeping information secret, and thus, protecting the confidentiality, authenticity, and integrity of information.
Answer: A is incorrect. Authentication is a process of verifying the identity of a person, network host, or system process. The authentication process compares the provided credentials with the credentials stored in the database of an authentication server.
Answer: B is incorrect. Authorization is the function of specifying access rights to resources, which is related to information security and computer security in general and to access control in particular.
Answer: C is incorrect. An access control is a system, which enables an authority to control access to areas and resources in a given physical facility, or computer-based information system. Access control system, within the field of physical security, is generally seen as the second layer in the security of a physical structure. It refers to all mechanisms that control visibility of screens, views, and data within Siebel Business Applications.

Question: 18

What are the steps required to use the BufferedStream class?



Answer: A



Explanation:

The steps required to use the BufferedStream class are as follows:
1.Create a FileStream class object as follows:
FileStream fs = File.Create(@"d:\temp\test.doc");
2.Create a BufferedStream class object and pass the FileStream object as follows:
BufferedStream bs= new BufferedStream(fs);
3.Create a StreamWriter class objects and pass the BufferedStream object as follows:
StreamWriter sw = new StreamWriter(bs);
4.Write data to the BufferedStream object as follows:
sw.WriteLine("Hello Everybody");

Question: 19

Consider the following scenario.
Allen has created a Windows Presentation Foundation (WPF) database application using .NET Framework 4.0. The application helps users keep track of their e-Book collection. He identifies that some computers might have many users, such as two roommates might share a computer, with both individuals using the same application on the same computer to manage their e-Book collections. Allen sets up a database to handle many users without mixing up the collections. Allen has implemented a very trendy system that allows users to alter the colors, fonts, and graphics in the application, giving it a personalized look and feel. How will Allen's WPF database application store the users' color choices?

A. As a setting with user scope
B. As a string in the source code
C. As a setting with machine scope
D. As a setting with application scope

Answer: A

Explanation:
Allen's WPF database application will store the users' color choices as a setting with user scope. Indicating the scope as "user scope" allows the application to store different settings for each user of the program.
Application settings provide a simple means to store application-scoped and user-scoped settings on a client computer. Using Visual Studio, a setting is defined for a specified property by providing its name, data type, and application/user scope. Related settings can also be placed into named groups for easy use and readability. Once defined, these settings are persisted and read back into memory automatically at runtime. A pluggable architecture makes possible the persistence mechanism to be altered, but by default, the local file system is used.
Application settings work by persisting data as XML to different configuration files (.config) related to whether the setting is application/user scoped. In most cases, the application-scoped settings are read-only, as they are program

information that need not be overwritten. By contrast, user-scoped settings can be read and written safely at runtime, even if the application runs under partial trust.
Settings are stored as XML fragments in configuration files. Application-scoped settings are represented by the <application.Settings> element, and are located in app.exe.config, where app is the name of the main executable file.
User-scoped settings are represented by the <userSettings> element and are located in user.config, where user is the username of the person presently running the application.
The app.exe.config file must be deployed with the application. The settings architecture will create the user.config files on demand when the first time the application saves settings for that user. A <userSettings> block is defined inside app.exe.config to supply default values for user-scoped settings.

Question: 20

Which of the following terms are used in cryptography? Each correct answer represents a complete solution. Choose all that apply.

A. Ciphertext
B. Value
C. Plaintext
D. Cipher
E. Key

Answer: C, D, E, and A

Explanation:
Cryptography is a technique of encrypting and decrypting messages. When the text is encrypted, it is unreadable by humans but when it is decrypted, it is readable. The terms used in cryptography are as follows:
Plaintext: This text can be read by a user.
Ciphertext: This text can be converted to a non-readable format.
Encryption: It is the process of creating ciphertext from plaintext.
Decryption: It is the process of converting ciphertext to plaintext.
Cipher: It is an algorithm that is used to encrypt and decrypt the text.
Key: Keys are the elements used in the technology of encrypting and decrypting the text.

Question: 21

Applications are overridden by explicit version policy in the configuration files. What are those configuration files? Each correct answer represents a complete solution. Choose all that apply.

A. Computer's administrator configuration file
B. Application configuration file
C. Computer's security configuration file
D. Publisher policy file

Answer: B, D, and A

Explanation:
Assembly versioning using CLR is done at the assembly level. A specific version of an assembly and the versions of dependent assemblies are stored in the manifest of the assembly. The default version policy for the runtime is that applications run only with the versions with which the applications were built and tested, except the applications

overridden by explicit version policy in the configuration files which are as follows:
Application configuration file
Publisher policy file
Computer's administrator configuration file

Question: 22

What are the benefits of a strong-named assembly? Each correct answer represents a complete solution. Choose all that apply.

A. It guarantees the uniqueness of a name.
B. It ensures that subsequent versions cannot be produced.
C. It describes the identity permission for strong names.
D. It provides versioning and naming protection.

Answer: A and B

Explanation:
A strong-named assembly is a commonly deployed element in a .NET application. Following are the benefits of a strong-named assembly:
A strong-named assembly guarantees the uniqueness of a name, as it relies on the unique key pairs i.e. private and public keys. An assembly name cannot be generated with the same name, as each time the assembly generates a private key with a different name.
A strong-named assembly ensures that subsequent versions cannot be produced, as the version of an assembly is loaded from the same publisher into which the assembly version was created when the application was built.
A strong-named assembly provides a strong integrity check. It guarantees that the contents of an assembly have not been modified since it was built. It is usually identified by a digital signature and a supporting certificate.
Answer: C and D are incorrect. The StrongNameIdentityPermission class is used to describe the identity permission for strong names. In order to have a strong name for an assembly, the code should be signed by a key pair. .Net provides the utility, sn.exe, to generate a key pair. This class provides versioning and naming protection by verifying that the calling code is in a particular strong-named code assembly. It also defines strong-name requirements for access to the public members of a type. The StrongNameIdentityPermissionAttribute class can be used to define strong-name requirements at the assembly level.

Question: 23

Allen is creating an application using .NET Framework 4.0. He needs a tool to sign assemblies with strong names and also to provide signature generation, signature verification, and key management.
What will he use?

A. Sn.exe tool
B. Strname.exe tool
C. ILasm.exe tool
D. Asm.exe tool

Answer: A

Explanation:
Strong Name (Sn.exe) is a tool used to sign assemblies with strong names. It also provides signature generation, signature verification, and key management. Following is the syntax for using Sn.exe:

sn [options [parameters]]
where, the term options specifies the options to be used, and parameters specifies the parameters used with options. Following are the options that are commonly used with Sn.exe:
Answer: D and B are incorrect. There is no such tool as asm.exe or strname.exe in the .NET Framework.

Option	Description
-k	It is used to generate a new key pair and write it to a specified file.
-i	It is used to install a key pair from a specified key container that resides in a strong name Cryptographic Service Provider (CSP).
-p	It is used to extract a public key from a key pair file and store it in another key pair file.
-v	It is used to verify the strong name in an assembly.
-d	It is used to delete a specified key container from the strong name CSP.
-D	It is used to verify that two assemblies differ only by signature.
-Vx	It is used to remove all verification-skipping entries.

Answer: C is incorrect. The Microsoft Intermediate Language Disassembler (ILDasm.exe) is a tool that comes with the Microsoft Intermediate Language Assembler (ILasm.exe). It allows users to view the internal types, underlying IL, metadata, and assembly manifest for a given managed binary. It operates only on Portable Executable (PE) files.

Question: 24

You are creating an application using .NET Framework 4.0. The application uses an instance of the ushort type. Which of the following values can be stored in the instance of the ushort type? Each correct answer represents a complete solution. Choose all that apply.

A. -127,236
B. 16,633
C. -48,000
D. -76,234
E. 127,236
F:34,210

Answer: F and B

Explanation:
The ushort type can only store values between 0 and 65,535. The ushort (Unsigned 16-bit integer) keyword specifies an integral data type that stores values according to the size and range.
You can declare and initialize a ushort variable as follows:
ushort myShort = 65535;
In the above declaration, the integer literal 65535 is implicitly converted from int to ushort. If the integer literal goes beyond the range of ushort, a compilation error will arise.

Question: 25

You are creating a new collection type that must be sorted using Array.Sort by using .NET Framework 4.0. Which of the following interfaces will you use?

A. ICollection
B. IEqualityComparer
C. IList
D. IComparer

Answer: D

Explanation:
Use the IComparer interface for collections that must be sorted using Array.Sort. The IComparable interface of the System namespace is used to define a generalized comparison method. When a value type or class implements this interface, it creates a type-specific comparison method that is the CompareTo method. The CompareTo method compares the current object of a class with another object of the same type. The IComparable interface is also suitable for the sorting mechanism.
Answer: B is incorrect. The IEqualityComparer interface is used to support only equality comparisons.
Answer: A is incorrect. The ICollection interface is implemented by all collections to provide the CopyTo() method as well as the Count, IsReadOnly, IsSynchronized, and SyncRoot properties. It is used to define the size, enumerators, and synchronization methods for all non-generic collections. It is the base interface for all classes in the System.Collection namespace. An ICollection interface can be modified.
It allows the addition or removal of elements. It does not support sorting.
Answer: C is incorrect. The IList interface is used by array-indexable collections. It defines a non-generic collection of objects that can be individually accessed by using the index value. The IList interface is a descendant of the ICollection interface and is the base interface of all non-generic lists. A read-only IList interface cannot be modified. A fixed-size IList interface does not allow the addition or removal of elements.

Question: 26

Which is a type of encryption that uses two keys, i.e., a public key and a private key pair for data encryption?

A. Asymmetric encryption
B. SEAL
C. Encrypt command
D. Symmetric encryption

Answer: A

Explanation:
Asymmetric encryption is a type of encryption that uses two keys, i.e., a public key and a private key pair for data encryption. The public key is available to everyone, while the private or secret key is available only to the recipient of the message. For example, when a user sends a message or data to another user, the sender uses the public key to encrypt the data. The receiver uses his private key to decrypt the data.
Answer: D is incorrect. Symmetric encryption is a type of encryption that uses a single key to encrypt and decrypt data. Symmetric encryption algorithms are faster than public key encryption. Therefore, it is commonly used when a message sender needs to encrypt a large amount of data. Data Encryption Standard (DES) uses the symmetric encryption key algorithm to encrypt data.
Answer: B is incorrect. SEAL is an alternative encryption algorithm to software-based DES, 3DES, and AES. It uses a 160-bit encryption key. SEAL provides less impact to the CPU than other software-based encryption algorithms. In Cisco IOS IPSec implementations, SEAL supports the SEAL algorithm. It can be configured through the command-line interface using the crypto ipsec transform-set command and the esp-seal transform option.
Answer: C is incorrect. The encrypt command is used to encrypt files or stdin with a symmetric cipher. The encrypt -l command is used to record and list the algorithms, that are available in Solaris. Those Mechanisms in Solaris, that are listed under a user-level library are available to the encrypt command. For user encryption, the framework provides AES, DES, 3DES (Triple-DES), and ARCFOUR mechanisms.

Question: 27

Which of the following sample code segments demonstrates unboxing?

A. object obj = 12345;
int it = (int) obj;
B. double dou = 12345;
int it = (int)dou;
C. int it = 12345;
object obj = (object) it;
D. int it = 12345;
double dou = it;

Answer: A

Explanation:
The following sample code segment demonstrates unboxing:
object obj = 12345;
int it = (int) obj;
Unboxing is used to convert a reference type to a value type. In this sample code segment, the Integer object is a value type, and the instance of the Object class is a reference type. Therefore, converting from the reference type to the value type needs unboxing. Unboxing is the inverse of boxing. Unboxing is used to explicitly convert reference type to value type. An unboxing operation consists of the following two actions:
Checking the object instance to make sure it is a boxed value of the given value type.
Copying the value from the instance into the value type variable.
The following statements will demonstrate an unboxing operation:
int test=457; //A value type
object obj=test; //A reference type
int result=(int) obj; //Unboxing
The unboxing conversion to a given value will succeed at runtime. This is possible only if the source argument is a reference to an object that is compatible and not null. Otherwise, an InvalidCastException is thrown.
Answer: B and D are incorrect. Converting between two value types requires neither boxing nor unboxing.
Answer: C is incorrect. Converting a value type to a reference type is called boxing.

Question: 28

You are creating an application using .NET Framework 4.0. You write the following code segment in the application:

```
try
{
    Console.WriteLine("Connecting to server");
    throw new SmtpException("Server busy");
    Console.WriteLine("Connected to server");
}
catch(SmtpException args)
{
    Console.WriteLine("SMTP Error: " + args.Message);
}
catch(Exception args)
{
    Console.WriteLine("Error: " + args.Message);
}
finally
{
    Console.WriteLine("Connection closed");
```

}
What is the output of the above code?

A. Connecting to server
SMTP Error: Server busy
Error: Server busy
Connection closed
B. Connecting to server
Error: Server busy
Connected to server
C. Connecting to server
SMTP Error: Server busy
Error: Server busy
Connected to server
Connection closed
D. Connecting to server
SMTP Error: Server busy
Connected to server
E. Connecting to server
SMTP Error: Server busy
Connection closed

Answer: E

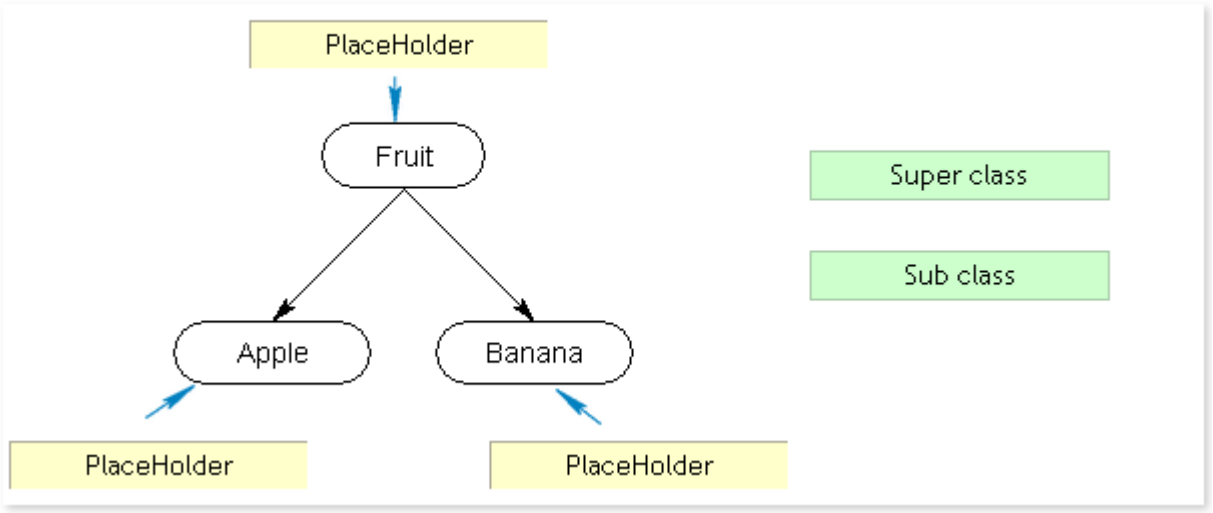
Explanation:
The output is as follows:
The output is as follows:
Connecting to server
SMTP Error: Server busy
Connection closed
In the try block, the first Console.WriteLine command runs. The Throw command stops execution and processing resumes in a catch block.
Because the first catch block matches the exception type thrown, processing resumes in the first catch block. After the catch block has finished running, processing continues inside the finally block.
The try...catch block is used to handle runtime errors. In an event procedure, the try statement is placed just before the statements that might cause an error. The catch statement is placed just before the list of statements that are to be run if a runtime error occurs. For example:

```
try
 {
  //Statements that might cause a runtime error.
 }
     catch
    {
      //Statements to be run if a runtime error occurs.
    }
```

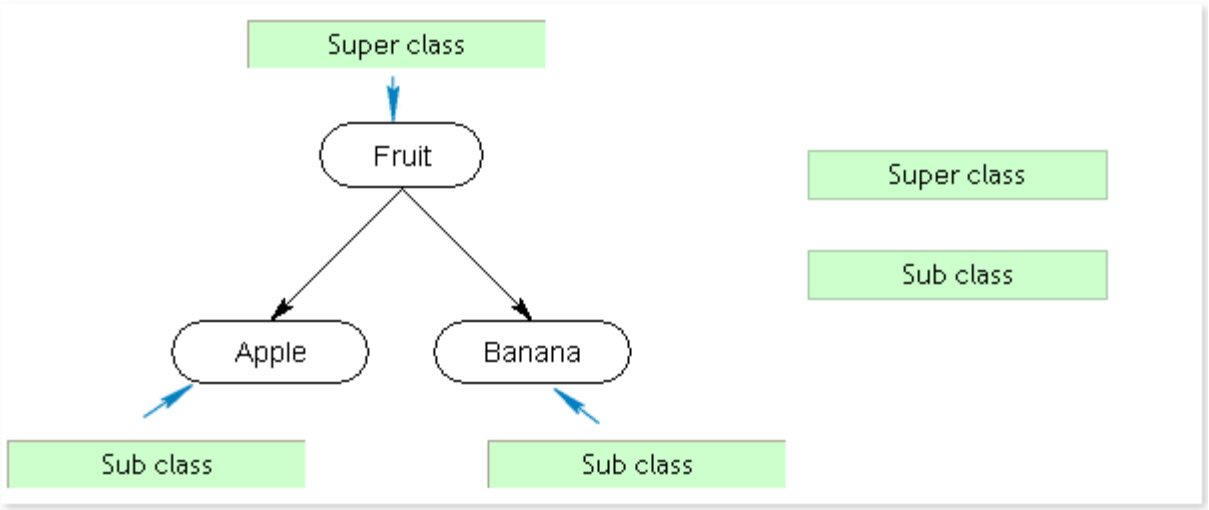
A block of code that appears just after the finally statement is called a finally block. The statements in a finally block are executed immediately after execution of the try/catch block. The finally block is optional. However, each try statement must have at least one catch block or a finally block. When a finally block is defined in a source code, it is guaranteed to execute, regardless of whether or not an exception is thrown.

Question: 29

Drag and drop the appropriate class to the provided place holders to identify the circular rectangle objects.



Answer:



Explanation:
The object that is being inherited is called the parent object and the object inheriting the object is called the child object. In the above exhibit, "fruit" is the parent (super/base class) and "apple" and "banana" are the children (sub/child class). In inheritance, each child has an is-a relationship with its parent.
Inheritance is the technique to classify and reuse code by creating collections of attributes and behaviors called objects, that can be based on the earlier created objects. In traditional inheritance, classes define objects and they can inherit other classes. The new class called sub-class/derived class, inherits attributes and behaviors of the existing classes called super classes or ancestor classes. The inheritance relationship of a class gives rise to a hierarchy. Objects can be defined directly from other objects without defining classes in prototype-based programming.
Inheritance is the ability of classes to inherit other classes and makes reuse of code possible. When a class file inherits from another class, it inherits all its members (variables and methods). Different languages use different terms to categorize the two parties in inheritance.

Question: 30

You are creating an application using .NET Framework 4.0. You need to implement asymmetric encryption in the application. Which of the following classes provides asymmetric encryption?

A. DSACryptoServiceProvider
B. RijndaelManaged
C. TripleDES
D. RSACryptoServiceProvider

Answer: D

Explanation:
The RSACryptoServiceProvider class carries out asymmetric encryption and decryption using the implementation of the RSA algorithm supplied by the cryptographic service provider (CSP). The RSACryptoServiceProvider class cannot be inherited.
Answer: B is incorrect. The RijndaelManaged class accesses the managed version of the Rijndael algorithm. The RijndaelManaged class cannot be inherited.
Answer: C is incorrect. The TripleDES class exposes the base class for Triple Data Encryption Standard algorithms from which all TripleDES implementations must inherit.
Answer: A is incorrect. The DSACryptoServiceProvider class defines a wrapper object to access the cryptographic service provider (CSP) implementation of the DSA algorithm. This class cannot be inherited.

Question: 31

Which is a technology employed by both Microsoft and Oracle to encrypt database content and offers encryption at a column, table, and tablespace level?

A. Globally Unique Identifier
B. One-way encryption
C. Encryption key
D. Transparent Data Encryption

Answer: D

Explanation:
Transparent Data Encryption (often abbreviated to TDE) is a technology employed by both Microsoft and Oracle to encrypt database content. It offers encryption at a column, table, and tablespace level. TDE solves the problem of protecting data at rest, encrypting databases both on the hard drive and consequently on backup media. Enterprises typically employ TDE to solve compliance issues such as PCI DSS.
Microsoft offers TDE as part of its Microsoft SQL Server 2008. Oracle requires the Advanced Security Option for Oracle 10g and 11g to enable TDE. Keys for TDE can be stored in a Hardware Security Module to manage keys across servers, protect keys with hardware, and introduce a separation of duties.
Answer: C is incorrect. In cryptography, a key is a piece of information (a parameter) that determines the functional output of a cryptographic algorithm or cipher. Without a key, the algorithm would have no result. In encryption, a key specifies the particular transformation of plaintext into ciphertext, or vice versa during decryption. Keys are also used in other cryptographic algorithms, such as digital signature schemes and message authentication codes.
Answer: B is incorrect. One-way encryption is also known as hash function. It is used to determine whether the data has changed. The message gets converted into a numerical value. The recipient then verifies the hash value using a known algorithm. This method checks the integrity of messages but it does not provide confidentiality.
Answer: A is incorrect. A Globally Unique Identifier (GUID) is a special type of identifier used in software applications to provide a reference number, which is unique in any context. While each generated GUID is not guaranteed to be

unique, the total number of unique keys (2128 or 3.4 1038) is so large that the probability of the same number being generated twice is extremely small.
The term GUID usually refers to Microsoft's implementation of the Universally Unique Identifier (UUID) standard. However, the term is common in applications not written by Microsoft, or for their operating systems. The GUID is also the basis of the GUID Partition Table, Intel's replacement for Master Boot Records under EFI, and of Preboot Execution Environment, Intel's environment to boot computers using a network interface. GUIDs are most commonly written in text as a sequence of hexadecimal digits such as:

Question: 32

An object that is used to follow the definition of a class is known as what?

A. Child of that class
B. Worker of that class
C. Instance of that class
D. Attribute of that class

Answer: C

Explanation:
An object that is used to follow the definition of a class is said to be an INSTANCE of that class.
An instance is a copy of an object whether presently executing or not. An instance of a class sharing identical set of attributes however will vary in what those attributes hold. For example, a class "Manager" will describe the attributes common to all instances of the Manager class. For the purpose of the task being solved, the Manager objects may be identical but vary in attributes such as "name" and "salary". The description of the class will list such attributes and define the operations/actions relevant for the class, such as "increase salary" or "change Address". One might then talk about one instance of the Manager object with name = "Allen Ryan" and another instance of the Manager object with name = "Allen Smith".
Answer: D is incorrect. An attribute is a data element that exists in every object of a class. It is represented by a specific value in each object. Attributes have no identity outside the object to which they belong. Attributes are controlled by those objects of which they are a part. An attribute is a role that a property takes. An attribute represents a data definition for an instance of a classifier. It describes a range of values for that data definition.
A classifier can have any number of attributes or none at all. Attributes describe the structure and value of an instance of a class. Each attribute is described by its name.

Question: 33

In C# programs, namespaces are heavily used in two ways. What are those ways? Each correct answer represents a complete solution. Choose all that apply.

A. The .NET Framework interfaces use namespaces to organize its various methods.
B. Declaring your own namespaces can assist controlling the scope of class and method names.
C. Declaring your own interfaces can assist controlling the scope of method names.
D. The .NET Framework classes use namespaces to organize its various classes.

Answer: D and B

Explanation:
In C# programs, namespaces are heavily used in two ways, which are as follows:
The .NET Framework classes use namespaces to organize its various classes.

Declaring your own namespaces can assist controlling the scope of class and method names in larger programming projects. Namespaces are used to distinguish between elements and attributes that share the same name but have different meanings. Namespaces also group all the related elements and attributes from a single XML application.

Question: 34

Which of the following is NOT a characteristic of managed code?

A. Automatic memory management
B. Execute in any operating system
C. It is written in a .NET language
D. Uses a Just-In-Time (JIT) compiler

Answer: B

Explanation:
Execute in any operating system is NOT a characteristic of managed code. The target operating system must have a CLR. Managed code is written in a .NET language and is executed by the common language runtime (CLR). It requires passing metadata that is necessary for the CLR to provide services. Code based on Microsoft intermediate language (MSIL) executes as managed code.

Question: 35

Which of the following collection classes are available in both the System.Collections and System.Collections.Generic namespaces? Each correct answer represents a complete solution. Choose all that apply.

A. SortedList
B. Hashtable
C. Comparer
D. SortedDictionary
E. Stack

Answer: C, E, and A

Explanation:
The Comparer, Stack, and SortedList collection classes are available in both the System.Collections and System.Collections.Generic namespaces.

Question: 36

Which of the following defines how data types are declared and used in the Common Language Runtime (CLR)?

A. Common Type System (CTS)
B. Common Language Runtime
C. Common Type Specification (CTS)
D. Common Language Specification (CLS)

Answer: A

Explanation:
Common Type System (CTS) defines how types are declared and used in the Common Language Runtime (CLR). There are three building blocks of .NET Framework, which are as follows:
Common Language Runtime (CLR): It is used to execute the managed code. It was designed to support multiple languages.
Common Type System (CTS): It provides every language running on the .NET platform with a base set of data types.
Common Language Specification (CLS): It describes a common level of language functionality. It is a set of rules that a language compiler must have in order to create .NET applications that run in the CLR. In Microsoft's .NET Framework, the Common Type System (CTS) is a standard that specifies how Type definitions and specific values of Types are represented in computer memory. It is designed to allow programs written in different programming languages to easily share information. As used in programming languages, a Type can be described as a definition of a set of values and the allowable operations on those values.

Question: 37

You are creating an application using .NET Framework 4.0. You write the following code segment in the application:
RC2CryptoServiceProvider RC2Crypto = new RC2CryptoServiceProvider(); Console.WriteLine(RC2Crypto.Mode);
Which of the following outputs will the above code segment display?

A. CTS
B. CBC
C. CFB
D. OFB

Answer: B

Explanation:
The RC2CryptoServiceProvider class is used to define a wrapper object to access the cryptographic service provider (CSP) implementation of the RC2 algorithm. The RC2CryptoServiceProvider class cannot be inherited. By default, all encryption classes make use of Cipher Block Chaining (CBC) as the cipher mode.
Answer: C, A, and D are incorrect. Cipher Feedback (CFB), Cipher Text Stealing (CTS), and Output Feedback (OFB) are not the default cipher mode.

Question: 38

Which of the following methods is inherited from the ICloneable interface?

A. CompareTo
B. Clone
C. Dispose
D. GetType

Answer: B

Explanation:
The Clone method is a member of the ICloneable interface. The Clone method of the ICloneable interface is used to create a new object that is a copy of the current instance. The Clone method can be implemented either as a deep copy or a shallow copy. In a deep copy, all objects are duplicated; whereas, in a shallow copy, just the top-level objects are duplicated and the lower levels hold references. The resulting clone needs to be of the identical type or a compatible type to the original instance.

Answer: C is incorrect. The Dispose method is a member of the IDisposable interface.
Answer: A is incorrect. The CompareTo method is a member of the IComparable interface.
Answer: D is incorrect. All classes inherit the ToString, Equals, and GetType methods from the base Object class.

Question: 39

Which class adds a buffering layer to read and write operations on another stream and can be composed more or less for specific types of streams?

A. ManagedStream class
B. Stream class
C. UnmanagedStream class
D. BufferedStream class

Answer: D

Explanation:
The BufferedStream class adds a buffering layer to read and write operations on another stream. It can be composed more or less for specific types of streams. It provides implementations for reading and writing bytes to an underlying data source. The BufferedStream class is designed to prevent the buffer from slowing down input and output when the buffer is not required. It also buffers reads and writes in a shared buffer.
Answer: A and C are incorrect. There is no such class as ManagedStream or UnmanagedStream in the System.IO namespace.
Answer: B is incorrect. A stream is a byte of data that reads and writes from and to a disk. The .NET Framework 2.0 provides the System.IO.Stream class as the base class for all the task-related stream data types. To read data in bytes is to transfer it from a stream into a data structure. To write data in bytes is to transfer it from a data structure into a stream. Streams support seeking, which queries and modifies the current position of data within a stream.

Question: 40

You are creating an application using .NET Framework 4.0. You need to create a name for a new temp file? What is the most efficient way to create the name for a new temp file?

A. Using the GetRandomFileName method of the Path class
B. Using the GetFullPath method of the Path class
C. Using the GetTempPath method of the Path class
D. Using the GetTempFileName method of the Path class

Answer: D

Explanation:
Using the GetTempFileName method of the Path class is the most efficient way to identify a name for a new temp file. The GetTempFileName method of the Path class is used to create a uniquely named, zero-byte temporary file on disk and returns the full path of the file. It creates a temporary file with a .TMP file extension. The GetTempFileName method will raise an IOException if it needs to create more than 65,535 files without deleting earlier temporary files. The GetTempFileName method will also raise an IOException if no unique temporary file name is available. To resolve this error, all unnecessary temporary files should be deleted.
Answer: C is incorrect. The GetTempPath method of the Path class is used to return the path of the current user's temporary folder.
Answer: A is incorrect. The GetRandomFileName method of the Path class is used to return a random folder name or

file name.
Answer: B is incorrect. The GetFullPath method of the Path class is used to return the absolute path for the specified path string.

Question: 41

The encryption strength is the measure of the inability to crack encrypted data. It basically depends on three important factors. What are those? Each correct answer represents a complete solution. Choose all that apply.

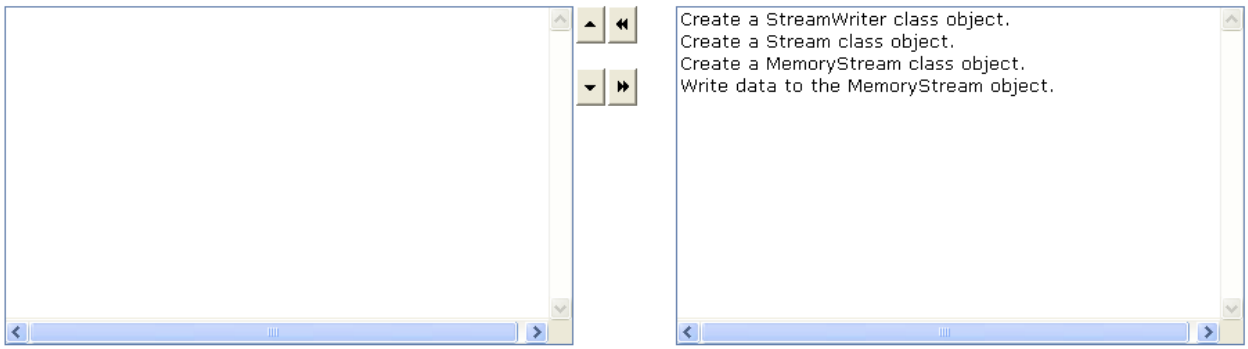
A. Encryption of the key
B. Algorithm strength
C. Secrecy of the key
D. Length of the key
E. Decryption strength
F. Encryption strength

Answer: B, C, and D

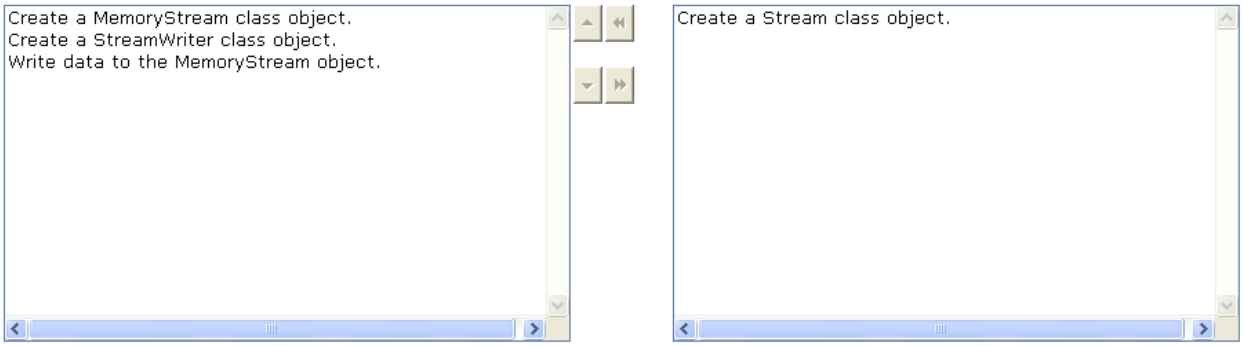
Explanation:
The encryption strength is the measure of the inability to crack encrypted data. It basically depends on three important factors, which are as follows:
Algorithm strength: Algorithm strength includes the inability to mathematically reverse the information without trying all possible key combinations.
Secrecy of the key: Secrecy of the key is the second factor in the Encryption strength. No algorithm can protect the encrypted data from the compromised keys. Thus, the degree of confidentiality is directly proportional to the secrecy of the keys. The data to be encrypted is used in combination with the key, and then it is passed through the encryption algorithm.
Length of the key: The third factor, which affects the encryption strength is the length of the key. In terms of encryption and decryption formula application, the key length is determined in bits. Higher is the number of bits, stronger is the encryption strength.

Question: 42

What are the steps required to use the MemoryStream class?



Answer:



Explanation:
The steps required to use the MemoryStream class are as follows:
1.Create a MemoryStream class object as follows:
MemoryStream ms=new MemoryStream();
2.Create a StreamWriter class object as follows:
StreamWriter sw=new StreamWriter(ms);
3.Write data to the MemoryStream object as follows:
sw.WriteLine("Hello Everybody");
sw.WriteLine("Company.com");

Question: 43

You are creating an application using .NET Framework 4.0. In the application, which of the following will you use to determine whether or not a principal is allowed to perform a requested action?

A. Authentication
B. Principal
C. Security policy
D. Authorization

Answer: D

Explanation:
Authorization determines whether or not a principal is allowed to perform a requested action. It occurs after authentication. Authorization is a process that verifies whether a user has permission to access a Web resource. A Web server can restrict access to some of its resources to only those clients that log in using a recognized username and password. To be authorized, a user must first be authenticated.
Answer: A is incorrect. Authentication discovers and verifies the identity of a principal. It examines and validates a user's credentials.
Answer: B is incorrect. A principal represents the identity and role of a user.
Answer: C is incorrect. A security policy is a configurable set of rules. It programmatically generates granted permissions.

Question: 44

Which of the following sample code segments demonstrates boxing?

A. double dou = 12345;
int it = (int)dou;
B. object obj = 12345;

int it = (int) obj;
C. int it = 12345;
object obj = (object) it;
D. int it = 12345;
double dou = it;

Answer: C

Explanation:
Boxing is used to convert a value type to a reference type. In this sample code segment, the Integer object is a value type, and the instance of the Object class is a reference type. Converting from the value type to the reference type requires boxing.
Boxing is an implicit conversion of a value type to a reference type.
Consider the following declaration of a value type variable:
int test=12345;
The following statement implicitly applies the boxing operation on the variable test:
object obj=test;
This statement creates a reference to an object obj (on the stack) that references a value of the type int (on the heap). This value is a copy of the value-type value assigned to the variable test. It is not necessary to perform the boxing explicitly, as in the following example:
int test=15105;
object obj=(Object) test;
Answer: A and D are incorrect. Converting between two value types requires neither boxing nor unboxing.
Answer: B is incorrect. Converting from a reference type to a value type is unboxing.

Question: 45

Which of the following is the correct way of using the System namespace?

A. class System;
B. importing System;
C. implementing System;
D. using System;

Answer: D

Explanation:
Most C# applications start with a section of using directives. The section lists the namespaces that the application will be using regularly, and saves the programmer from mentioning a fully qualified name every time a method contained within the namespaces is used. For instance, by including the line:
using System;
At the start of a program, the programmer can use the following code:
Console.WriteLine("Welcome, World!");
Rather than using the following code:
System.Console.WriteLine("Welcome, World!");

Question: 46

You are creating an application using .NET Framework 4.0. You write the following code segment in the application:
BaseClass base = new BaseClass();

ChildClass child = (ChildClass)base;
What type of exception will the runtime throw for the above code segment?

A. ArgumentException
B. InvalidCastException
C. NotSupportedException
D. CastConvertException

Answer: B

Explanation:
A base class cannot be cast to a child class if that variable does not hold a reference to a child object. Therefore, the conversion causes the runtime to throw an InvalidCastException. InvalidCastException is the exception that is thrown for invalid casting or explicit conversion.
InvalidCastException is thrown if:
A conversion is from a large to a small datatype.
The source value is infinity, Not-a-Number (NaN), or too large to be represented as the destination type.
A failure takes place during an explicit reference conversion.
For an explicit reference conversion to be successful, the source value needs to be null, or the source argument referencing the object type must be convertible to the destination type by an implicit reference conversion.
Answer: D is incorrect. There is no such exception as CastConvertException in NET Framework 4.0.
Answer: A is incorrect. The runtime throws an ArgumentException when you pass an invalid value to a method.
Answer: C is incorrect. The runtime throws a NotSupportedException when there is an attempt to read, seek, or write to a stream that does not support the called functionality.

Question: 47

What is native code?

A. Code that is executed by the Windows OS
B. Code that is executed by the CPU
C. Code that is executed by the JIT
D. Code that is executed by the CLR

Answer: B

Explanation:
Code that is executed by the CPU is called native code. Almost all executable programs are written in higher level languages, and translated to executable machine code by a compiler and linker. Machine code is sometimes called native code when referring to platform-dependent parts of language features or libraries.

Question: 48

Which of the following classes can directly interact with the file system? Each correct answer represents a complete solution. Choose all that apply.

A. TextReader
B. FileStream
C. MemoryStream
D. StreamReader

Answer: B and D

Explanation:
The FileStream or StreamReader class can directly interact with the file system.
The FileStream class is contained in the System.IO namespace. It inherits the Stream class. It specifies the write, read, and other file-related operations either in a synchronous or asynchronous manner. The Read and Write methods are used to perform synchronous read and write operations, respectively. Similarly, the BeginRead, BeginWrite, EndRead, and EndWrite methods are used to perform asynchronous read and write operations. The FileStream class supports random access to files by using the Seek method. It also buffers input and output files for enhancing performance.
The StreamReader class is derived from the System.IO namespace. It is implemented by the TextReader class. It reads lines of data from a byte stream stored in a text file in a particular encoding. By default, it supports UTF-8 encoding for character input.
Answer: C is incorrect. The MemoryStream class is contained in the System.IO namespace. It inherits the Stream class. It reads and writes a stream of data in bytes to a memory instead of a disk. It stores data as an unsigned byte array, which is initialized when a MemoryStream object is created. An advantage of the MemoryStream class is that it saves data storage in buffers and files.
Answer: A is incorrect. The TextReader class is used to provide a reader that can read a sequential chain of characters. It is the abstract base class of the StreamReader and StringReader classes. These derived classes can be used to open a text file for reading a specified range of characters, or to create a reader based on an existing stream. A derived class must at least implement the Peek and Read methods to make a functional instance of the TextReader class.

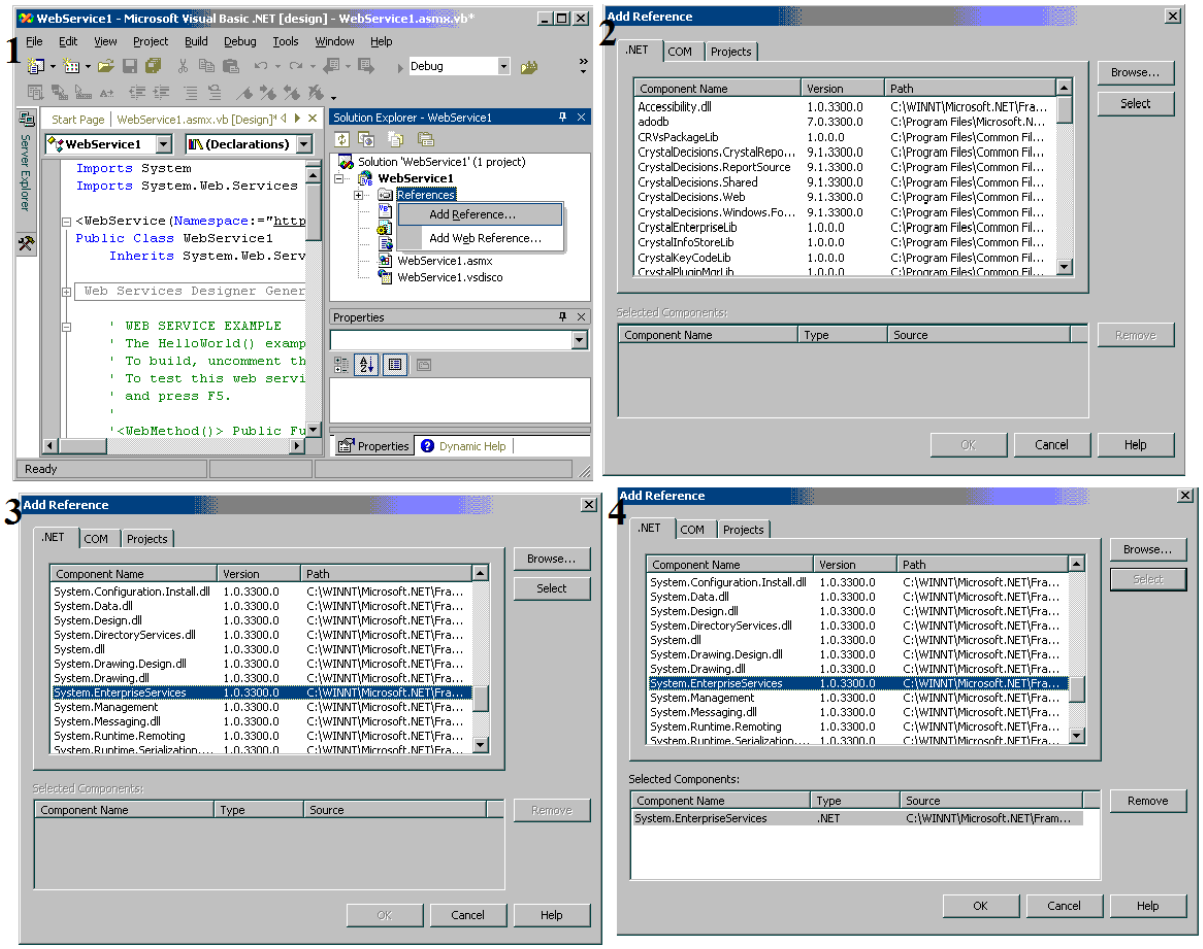
Question: 49

Consider the following scenario.
Ryan has just started an internship with Company Inc., as a developer. He is updating the company's inventory system to use barcode and GPS technologies for improving the package tracking. Ryan's manager asked him to use classes from the company's existing inventory system as much as possible to save time because the older code has been tested thoroughly. The classes are part of a Microsoft Visual Studio project called InventorySystem; Ryan's Visual Studio project is called TrackingSystem. Ryan is having problems because some of his classes, such as Package, Barcode, and Destination, have names that already exist in the InventorySystem. However, both projects use the default namespaces defined by Visual Studio .NET 2010 when the projects were created. Which of the following is the best way for Ryan to use classes from InventoryProject?

A. Add a class library to the other project's classes.
B. Add a reference to the other project's classes.
C. Use the using directive.
D. Copy and paste the code into the project.

Answer: B

Explanation:
The best way for Ryan is to add a reference to the other project's classes to use classes from InventoryProject. Take the following steps to add a reference to a .NET Framework component in a project:
1.In Solution Explorer, right-click the References node for the project, and then select Add Reference.
2.In the Add Reference dialog box, select the .NET tab.
3.Select a component from the list, and click the Select button. This adds the component to the Selected Components pane of the Add Reference dialog box.
4.Click the OK button. This adds the selected reference under the References node of the project.



Answer: D is incorrect. Copying and pasting the code into the project will not do anything.

Answer: A is incorrect. The .NET Framework class library is prepared of namespaces. Each namespace holds types that can be used in classes, structures, enumerations, delegates, and interfaces. When a Visual Basic or Visual C# project is created in Visual Studio, the most common base class DLLs (assemblies) are already referenced. However, if a type has been used that is in a DLL not already referenced, it will be required to add a reference to the DLL.

Answer: C is incorrect. The using directive has two uses, which are as follows:

Allow the use of types in a namespace so that developers are not required to qualify the use of a type in that namespace:

using System.Text; //This defines a namespace

Create an alias for a namespace or a type. This is known as a using alias directive.

using Project = PC.MyCompany.Project; // This defines an alias for the nested namespace

Question: 50

You create an application using .NET Framework 4.0. You are creating a new collection type that must be iterated using a for-each loop in the application. Which of the following interfaces will you implement?

A. IOrderedDictionary
B. IEnumerable
C. IDictionary
D. IEqualityComparer

Answer: B

Explanation:
You will implement the IEnumerable interface. The IEnumerable interface is used to represent the enumerator that supports a simple iteration over a non-generic collection. It supports the for-each loop. Therefore, IEnumerable interface must be implemented to support the for-each loop. All types of COM classes that use enumerators can also implement the IEnumerable interface. It contains only one method named as GetEnumerator().
Answer: C is incorrect. The IDictionary interface represents a non-generic collection of key/value pairs. It is the base interface for all the non-generic collections of key/value pairs. The IDictionary implementations fall into three categories, which are as follows:
1.Read-only: An IDictionary object cannot be modified.
2.Fixed size: An IDictionary object cannot be allowed to add or remove elements.
3.Variable size: An IDictionary object can add, remove, or modify elements.
The IDictionary interface does not allow any sorting.
Answer: A is incorrect. The IOrderedDictionary interface represents an indexed collection of key and value pairs. It is a new interface introduced by .NET Framework 2.0. The contents of the IOrderedDictionary interface can be accessed either with the key or with the index.
Each element (key and value pair) is stored in a DictionaryEntry structure. It is similar to the IList and IDictionary interfaces. Each pair should have a unique key that is not null, but the value can be null and does not have to be unique. It ensures that items can be accessed, inserted, and removed by index or key.
Answer: D is incorrect. The IEqualityComparer interface provides a method to support the comparison of objects for equality. It provides two methods, namely Equal() and GetHashCode(). Equal() checks two objects for equality, whereas GetHashCode() returns a hash code for the specified object. It supports only equality comparisons.

Question: 51

You are creating an application using .NET Framework 4.0. The application uses an instance of the short type. Which of the following values can be stored in the instance of the short type? Each correct answer represents a complete solution. Choose all that apply.

A. -34,210
B. 34,210
C. 65,535
D. -12
E. 127,236
F:16,633

Answer: D and F

Explanation:
The short type can only store values between -32,768 and 32,767. The short (Signed 16-bit integer) keyword indicates an integral data type that stores values according to the size and range.
You can declare and initialize a short variable as follows:
short x = 32767;
In the above declaration, the integer literal 32767 is implicitly converted from int to short. If the integer literal does not fit into a short storage location, a compilation error will arise.

Question: 52

Which of the following allow users to create external, user-defined functions using any common language runtime (CLR) language?

A. Directives
B. Assemblies
C. Generics
D. Common language runtime

Answer: B

Explanation:
Assemblies allow users to create external, user-defined functions using any common language runtime (CLR) language, such as Microsoft Visual Basic .NET or Microsoft Visual C#. It is possible to extend the business functionality of DMX and MDX. The functionality that a user wants into a library, such as dynamic link library (DLL), is first built. This library is then added as an instance of Analysis Services or to an Analysis Services database. The public methods in the library are then exposed as the user-defined functions to MDX and DMX expressions, procedures, calculations, actions, and client applications.
Answer: D is incorrect. Common language runtime (CLR) is a core component of Microsoft's .NET initiative. It is Microsoft's implementation of the Common Language Infrastructure standard, which defines an execution environment for program code. In the CLR, code is expressed in a form of bytecode called the Common Intermediate Language.
Answer: A is incorrect. Directives are commands that specify optional settings used by ASP.NET pages and compilers when ASP.NET files are processed.
Answer: C is incorrect. The .NET Framework version has provided a new feature of generics that introduce to the .NET Framework the concept of type parameters, which make it possible to design classes and methods that postpone the specification of one or more types until the class or method is declared and instantiated by client code.

Question: 53

Which of the following types can store the numeric value 2.25? Each correct answer represents a complete solution. Choose all that apply.

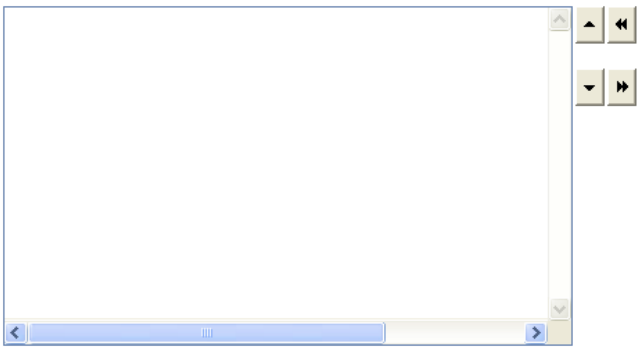
A. Double
B. Decimal
C. Float
D. long
E. int

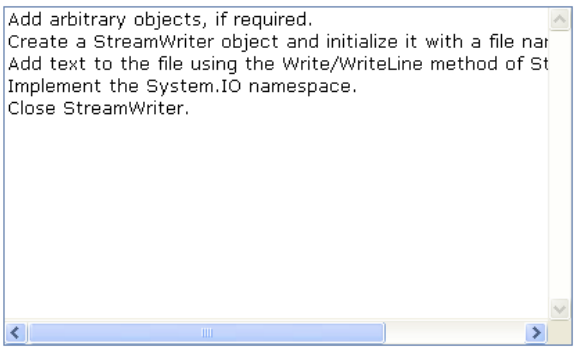
Answer: A, B, and C

Explanation:
The double, decimal, and float types can each store fractional numbers.
Answer: E and D are incorrect. The int and long types can be used to store only integers.

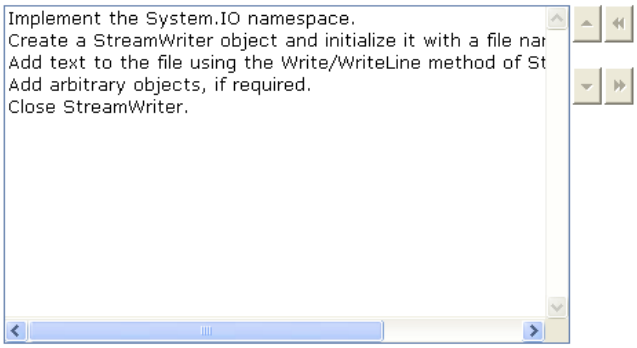
Question: 54

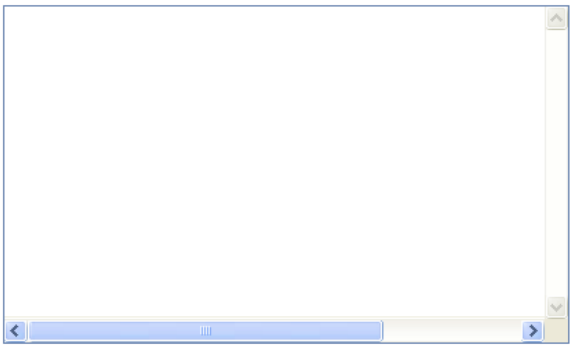
What are the steps required to write text to a file?





Answer:





Explanation:

The steps required to write text to a file are as follows:
1.Implement the System.IO namespace using the following code.
using System.IO;
2.Create a StreamWriter class object and initialize it with a file name.
StreamWriter sw = new StreamWriter("TestFile.txt");
or
StreamWriter sw;
sw = new StreamWriter("TestFile.txt");
3.Add text to the file using Write() or WriteLine() method of StreamWriter class.
sw.Write("This is my first Line to the file");
sw.Write("This is my second Line to the file");
sw.Write("This is my third line to the file");
sw.WriteLine("This is my fourth line to the file");
4.Add arbitrary objects, if required.
sw.WriteLine(DateTime.Now);
5.Now, close the StreamWriter class.
sw.close();

Question: 55

Which of the following methods is inherited from the ICloneable interface?

A. Clone
B. CompareTo
C. Dispose

D. ToString

Answer: A

Explanation:
The Clone method is a member of the ICloneable interface. The Clone method of the ICloneable interface is used to create a new object that is a copy of the current instance. The Clone method can be implemented either as a deep copy or a shallow copy. In a deep copy, all objects are duplicated; whereas, in a shallow copy, just the top-level objects are duplicated and the lower levels hold references. The resulting clone needs to be of the identical type or a compatible type to the original instance.
Answer: C is incorrect. The Dispose method of the IDisposable interface executes application defined tasks related with freeing, releasing, or resetting unmanaged resources. It is used to close or release unmanaged resources such as files, streams, and handles held by the object of a class that implements IDisposable interface. By principle, the Dispose method is used for all tasks related with freeing resources held by an object, or preparing an object to be reused.
Answer: B is incorrect. The CompareTo method is a member of the IComparable interface.
Answer: D is incorrect. All classes inherit the ToString, Equals, and GetType methods from the base Object class.

Question: 56

You are creating an application using .NET Framework 4.0. You need to use an ArrayList instance. By default, what is the initial capacity of the ArrayList instance?

A. 0
B. 4
C. 2
D. 8

Answer: A

Explanation:
By default, the initial capacity of ArrayList is zero. ArrayList grows dynamically. The ArrayList class implements IList interface using an array. The size of an array is dynamically increased or decreased as per the requirements. The two important methods used in the ArrayList class are as follows:
Add(): It adds an object to the end of the ArrayList.
Remove(): It removes an object from the ArrayList.
The following code snippet displays the use of the ArrayList class:

```
using System;
using System.Collections;
public class MyArrayListClass
{
  public static void Main()
  {
    ArrayList MyArray = new ArrayList();
    MyArray.Add("Microsoft");
    MyArray.Add("Corporation");
    MyArray.Add("Limited");
    PrintTheValues(MyArray);
  }
  public static void PrintTheValues(IEnumerable MyList)
```

```
  {
    foreach(Object list in myList)
    Console.Write(list);
  }
}
```

Question: 57

Which Object Oriented (OO) principle is used to hide the behavior of an object from its implementation?

A. Inheritance
B. Polymorphism
C. Encapsulation
D. Abstraction

Answer: C

Explanation:
Encapsulation is the Object Oriented principle that is used to hide the behavior of an object from its implementation. It is used to separate what an object looks like from how it implements its behavior.
Encapsulation refers to one of the two related but distinct notions or to the combination thereof:
A language mechanism to restrict access to some of the components of an object.
A language construct that assists in bundling of data with the methods operating on that data.
Many programming language experts use the first meaning alone, or combine it with the second meaning as a unique feature of OOP.
However, other programming languages that provide closures view encapsulation as a feature of the language independent of object orientation. The second definition is based on the fact that in various OOP languages hiding of components is not automatic, and can be overridden. Therefore, those who support the second definition define information hiding as a detach notion .
Answer: D is incorrect. Abstraction supports data hiding so that only the relevant data is exposed to the users and the remaining information remains hidden. It is the process where logic/program details are not accessible by the programmer. Instead of viewing things in detail, users are only shown an abstraction or just what is required to be communicated. This information comprises the module inputs and what is returned as outputs.
Answer: B is incorrect. In object-oriented programming, polymorphism is the ability to create variables, functions, or objects having more than one form. The word polymorphism is derived from the Greek word meaning "having multiple forms". Polymorphism is used for implementing a programming technique called message-passing in which different types of objects define common interfaces for users' operations.
Polymorphism is a feature that allows programmers to device methods that have the same name but different parameters. It simplifies the complexity of the program and provides an effective method of reusing modules. Polymorphism permits creation of two methods with the same name having different parameters. One version will accept two integer numbers and the other will accept two double numbers. The program will decide the method to be used at runtime based on the numbers entered; this feature is called dynamic binding.
Answer: A is incorrect. Inheritance is the technique to classify and reuse code by creating collections of attributes and behaviors called objects, that can be based on the earlier created objects. In traditional inheritance, classes define objects and they can inherit other classes. The new class called sub-class/derived class, inherits attributes and behaviors of the existing classes called super classes or ancestor classes. The inheritance relationship of a class gives rise to a hierarchy. Objects can be defined directly from other objects without defining classes in prototype-based programming.
Inheritance is the ability of classes to inherit other classes and makes reuse of code possible. When a class file inherits from another class, it inherits all its members (variables and methods). Different languages use different terms to categorize the two parties in inheritance.

Question: 58

Which class reads and writes a stream of data in bytes to a memory instead of a disk?

A. StorageStream class
B. DiskStream class
C. NetworkStream class
D. MemoryStream class

Answer: D

Explanation:
The MemoryStream class is contained in the System.IO namespace. It inherits the Stream class. It reads and writes a stream of data in bytes to a memory instead of a disk. It stores data as an unsigned byte array, which is initialized when a MemoryStream object is created. An advantage of the MemoryStream class is that it saves data storage in buffers and files.
Answer: C is incorrect. The NetworkStream class provides methods for sending and receiving data over Stream sockets in blocking mode. It can be used for both synchronous as well as asynchronous data transfer. This class does not support random access to the network data stream. However, read and write operations can be executed at the same time on a NetworkStream class instance without the need for synchronization.
Answer: A and B are incorrect. There is no such class as StorageStream or DiskStream in the .NET Framework.

Question: 59

Which of the following does XML Schema define? Each correct answer represents a complete solution. Choose all that apply.

A. Order of child elements
B. Static and dynamic values for tags and attributes
C. Attributes that can appear in a document
D. Elements that can appear in a document
E. Data types for tags and attributes

Answer: D, C, and A

Explanation:
XML schema describes the structure of an XML document. It is an XML-based alternative to DTD. An XML Schema defines the following:
1.Elements that can appear in a document.
2.Attributes that can appear in a document.
3.Elements that are child elements.
4.Order of child elements.
5.Number of child elements.
6.Whether an element is empty or can include text.
7.Data types for elements and attributes.
8.Default and fixed values for elements and attributes.

Question: 60

Which of the following collections can be accessed by a key? Each correct answer represents a complete solution. Choose all that apply.

A. BitArray
B. SortedList
C. An implementation of IList
D. An implementation of IDictionary

Answer: B and D

Explanation:
Both SortedList as well as an implementation of IDictionary can be accessed by using a key. The IDictionary interface represents a non-generic collection of key/value pairs. It is the base interface for all the non-generic collections of key/value pairs. The IDictionary implementations fall into three categories, which are as follows:
1.Read-only: An IDictionary object cannot be modified.
2.Fixed size: An IDictionary object cannot be allowed to add or remove elements.
3.Variable size: An IDictionary object can add, remove, or modify elements.
The IDictionary interface does not allow any sorting.
Answer: A is incorrect. Elements of a BitArray collection are accessed by using an integer index.
Answer: C is incorrect. An implementation of IList can be accessed by using an integer index.

Question: 61

Allen is creating an application using .NET Framework 4.0. He needs a utility class to provide static methods to create, copy, delete, move, and open files.
Which utility class will he use?

A. FileAccess
B. File
C. FileMode
D. FileShare

Answer: B

Explanation:
The File class is an utility class that is used to provide static methods to create, copy, delete, move, and open files. It is used to provide support in the creation of FileStream objects. It can also be used to get and set file attributes or DateTime information related to the creation, access, and writing of a file. It is more efficient to use the methods of the File class when only one task is to be performed. All methods of the File class require a specified path to the file that is to be manipulated.
Answer: A is incorrect. The FileAccess enumeration is used to specify read and write access to a file.
Answer: D is incorrect. The FileShare enumeration is used to specify the level of access permitted for a file that is already in use.
Answer: C is incorrect. The FileMode enumeration is used to specify whether the contents of an existing file are preserved/overwritten, and whether requests to create an existing file cause an exception.

Question: 62

You are creating an application using .NET Framework 4.0. You use the following code segment in the application. (Line numbers are given for reference only.)

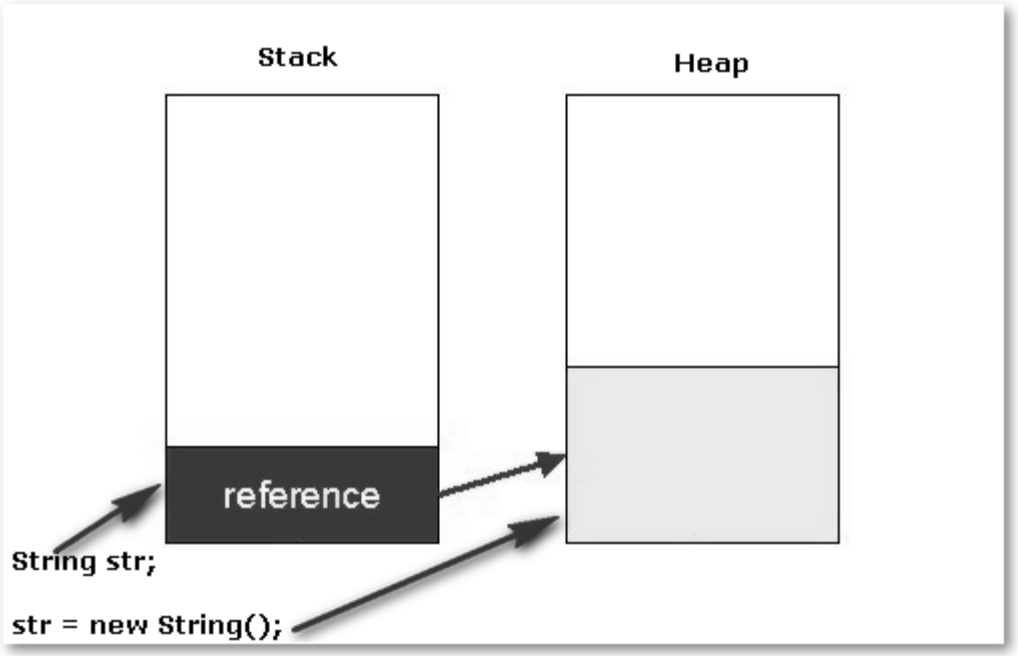
```
01 string string1 = "hello";
02 string string2 = "h";
03 string2 += "ello";
04 Console.WriteLine(string1 == string2);
05 Console.WriteLine((object)string1 == (object)string2);
```

What is the output of the above code segment?

A. True
False
B. False
True
C. False
False
D. True
True

Answer: A

Explanation:
The first comparison, at line 04, is true, as the values in both string1 and string2 are equal. In C#, the second comparison, at line 05, is false, as string is a reference type, and string1 and string2 are two different objects with different references. However, in Visual Basic, the second comparison is true, as comparing the strings after converting them to Objects still compares the values in string1 and string2. The String object is an object that is used to manipulate strings. Strings have the values of words, numbers, and special characters, which are enclosed in single or double quotes. The String object contains many functions that are used to manipulate strings. String manipulation consists of joining strings, searching words and characters in a long string, etc.



Question: 63

How to define a fixed value, Yellow, for an XML schema simple element?

A. <xs:element name="ColorName" default="Yellow"/>

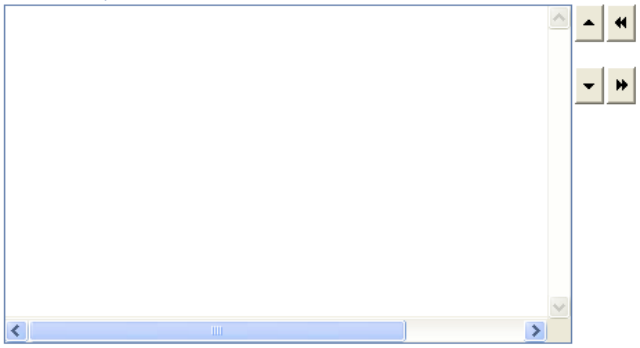
B. <xs:element name="ColorName" type="xs:string" fixed="Yellow"/>
C. <xs:element name="ColorName" type="string" fixed="Yellow"/>
D. <xs:element name="ColorName" type="xs:string" Default="Yellow"/>

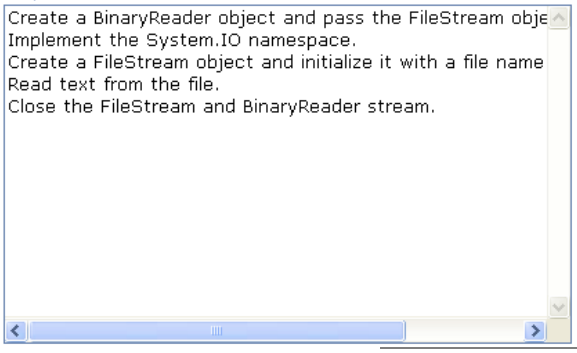
Answer: B

Explanation:
In XML schema, a fixed value is automatically assigned to the element, and it is not possible to specify another value.
The following is the syntax for the fixed value:
<xs:element name="element_name" type="data_type" fixed="value"/>
For example::
<xs:element name="ColorName" type="xs:string" fixed="Yellow"/>
Here, the fixed value is "Yellow".

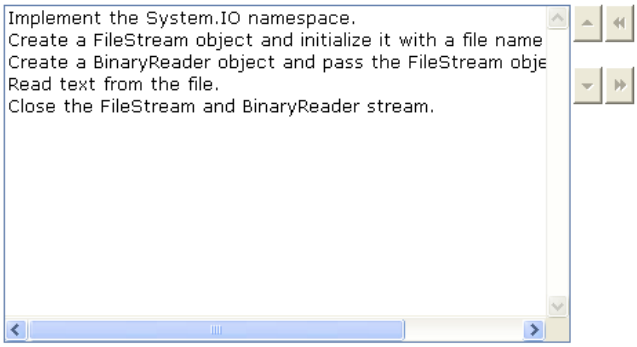
Question: 64

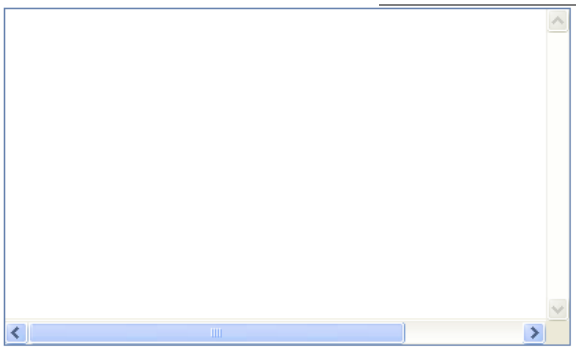
What are the steps required to read text from a newly created data file?





Answer:





Explanation:
The steps required to read text from a newly created data file are as follows:
1.Implement the System.IO namespace using the following code:
using System.IO;
2.Create a FileStream class object and initialize it with a file name.
FileStream fs = new FileStream("TestFile.data", FileMode.Open, FileAccess.Read);
or
FileStream fs;
fs = new FileStream("TestFile.data", FileMode.Open, FileAcces.Read);
3.Create a BinaryReader object and pass the FileStream object in it.
BinaryReader br = new BinaryReader(fs);
4.Read text from the file.

```
for(int i=1;i<=10;i++)
Console.WriteLine(br.ReadInt32());
```
5.Close the FileStream and BinaryReader stream.
```
fs.Close();
br.Close();
```

Question: 65

You are creating an application using .NET Framework 4.0. You need to use a first-in, first-out collection in the application. Which of the following is a first-in, first-out collection?

A. List
B. LinkListNode <T>
C. Stack
D. Queue

Answer: D

Explanation:
The Queue class is a first-in, first-out collection. The Queue is a data structure that stores a object in such a manner that the object inserted first is the first to come out. The queue is also called first in first out (FIFO) list. The two important methods used in the queue class are as follows:
Enqueue(): Inserts an object in the queue.
Dequeue(): Removes an object from the queue.
The following code snippet displays the use of the Queue class:

```
using System;
using System.Collections;
public class SamplesQueue
{
  public static void Main()
  {
    Queue MyQueue = new Queue();
    MyQueue.Enqueue("Microsoft");
    MyQueue.Enqueue("Corporation");
    MyQueue.Enqueue("Limited");
    PrintTheValues(myqueue);
  }
  public static void PrintTheValues(IEnumerable MyCollection)
  {
    foreach (Object list in MyCollection)
    Console.Write(list);
  }
}
```

Answer: C is incorrect. The Stack collection is a last-in, first-out collection.
Answer: A is incorrect. The List class does not support ordered retrieval.
Answer: B is incorrect. The LinkListNode <T> class represents a node in a LinkedList. Each element of the LinkedList <T> class is a LinkedListNode. It contains a value, a reference, a reference to the next node, and a reference to the previous node. The following example creates a new LinkedListNode of type String:

```
LinkedListNode<String> lln = new LinkedListNode<String>( "Company" );
```

Question: 66

Which of the following types of constraints can you apply to a generic? Each correct answer represents a complete solution. Choose all that apply.

A. Name pattern matching
B. Base classes
C. Interfaces
D. Method

Answer: C and B

Explanation:
There are four types of constraints that you can apply to generics, which are as follows:
Interfaces
Base classes
Constructors
Making them a reference or value type
Answer: D is incorrect. You do not need types to have a particular method or property in a generic class.
Answer: A is incorrect. You cannot use name pattern matching in a generic constraint.

Question: 67

You are creating an application using .NET Framework 4.0. You need to create a text file using the static File.CreateText method. Which of the following values is an acceptable parameter that you can use? Each correct answer represents a complete solution. Choose all that apply.

A. http://server/root/text.txt
B. \\server\text.txt
C. C:\text.txt
D. file://server/root.txt
E. C:\server\text.txt

Answer: B, C, and E

Explanation:
The File.CreateText method is used to create or open a file for writing UTF-8 encoded text. The File.CreateText method can accept local file paths or universal naming convention (UNC) paths.
The File class is an utility class that is used to provide static methods to create, copy, delete, move, and open files. It is used to provide support in the creation of FileStream objects. It can also be used to get and set file attributes or DateTime information related to the creation, access, and writing of a file. It is more efficient to use the methods of the File class when only one task is to be performed. All methods of the File class require a specified path to the file that is to be manipulated.
Answer: A and D are incorrect. The File.CreateText method cannot accept URLs.

Question: 68

Allen is creating an application using .NET Framework 4.0. What structure will he use to handle exceptions in the application?

A. Catch-exception
B. Catch-finally
C. Try-catch
D. Throw-catch

Answer: C

Explanation:
The try...catch block is used to handle runtime errors. In an event procedure, the try statement is placed just before the statements that might cause an error. The catch statement is placed just before the list of statements that are to be run if a runtime error occurs. For example:

```
try
 {
  //Statements that might cause a runtime error.
 }
    catch
   {
     //Statements to be run if a runtime error occurs.
   }
```

Answer: D is incorrect. The throw statement creates an exception within a procedure and explicitly throws the exception. The occurrence of the statement within a code enforces the program to use a pre-existing exception handling code, even if no runtime error has occurred. This statement is generally used with either a try-catch statement or a try-finally statement. It can also be used to rethrow the caught exception.
Answer: A is incorrect. Exception is an object that is generated at runtime. It describes a problem encountered during the execution of a program.
Answer: B is incorrect. A block of code that appears just after the finally statement is called a finally block. The statements in a finally block are executed immediately after execution of the try/catch block. The finally block is optional. However, each try statement must have at least one catch block or a finally block. When a finally block is defined in a source code, it is guaranteed to execute, regardless of whether or not an exception is thrown.

Question: 69

What is the name of the system that manages memory in .NET applications?

A. Cluster resource
B. Memory manager
C. Memory Advisor
D. Garbage collector

Answer: D

Explanation:
Garbage collector manages memory in .NET applications. Garbage collection is a process of reclaiming the memory resources used by an object. An object not referenced by any variable becomes eligible for garbage collection. The garbage collector, or just collector, attempts to reclaim garbage, or memory occupied by objects that are no longer in use by the program.
Answer: B is incorrect. Memory management is the act of managing computer memory.
Answer: A is incorrect. A cluster resource is any physical or logical component in a cluster, which has the following characteristics:
Can be brought online and taken offline.

Can be managed in a cluster.
Can be owned by only one node at a time. However, it can be moved between nodes.
The Cluster service manages cluster resources by communicating with a resource DLL through Resource Monitor. When the Cluster service requests for a cluster resource, the Resource Monitor calls the appropriate entry-point function in the resource DLL to check and control the state of the cluster resource.
Answer: C is incorrect. The Memory Advisor performs the overall supervision of an instance. It helps in tuning the size of the memory structures of the database. The Memory Advisor can be used to provide a graphical analysis of the total memory target settings, including the System Global Area (SGA) and other memory structures. The Memory Advisor can be accessed from the Memory Advisor main window.

Question: 70

You are creating an application using .NET Framework 4.0. You need to provide asymmetric digital signatures in the application. Which of the following classes provides asymmetric digital signatures?

A. TripleDES
B. DES
C. DSACryptoServiceProvider
D. RijndaelManaged
E. RSACryptoServiceProvider

Answer: C

Explanation:
DSACryptoServiceProvider provides asymmetric digital signatures. The DSACryptoServiceProvider class defines a wrapper object to access the cryptographic service provider (CSP) implementation of the DSA algorithm. It is used to create digital signatures and protect the integrity of data.
Answer: E is incorrect. The RSACryptoServiceProvider class provides asymmetric encryption. However, it does not provide digital signatures.
Answer: D, A, and B are incorrect. The RijndaelManaged, DES, and TripleDES classes are symmetric encryption classes.

Question: 71

Which is the first algorithm known to be suitable for signing as well as encryption and one of the first great advances in public key cryptography?

A. 3DES
B. SEAL
C. TDE
D. RSA

Answer: D

Explanation:
RSA (which stands for Rivest, Shamir, and Adleman who first publicly described it) is an algorithm for public-key cryptography. It is the first algorithm known to be suitable for signing as well as encryption, and one of the first great advances in public key cryptography. RSA is widely used in electronic commerce protocols, and is believed to be secure. The RSA algorithm involves three steps: key generation, encryption, and decryption.
Answer: C is incorrect. Transparent data encryption (TDE) performs real-time I/O encryption and decryption of the log and data files. It makes use of a database encryption key (DEK), which is stored in the database boot record for

availability during recovery. It gives the ability to abide by many laws, regulations, and guidelines established in various industries. This facilitates software developers to encrypt data by using AES and 3DES encryption algorithms without changing existing applications.
Answer: A is incorrect. 3DES, also referred to as triple DES, is a mode of the Data Encryption Standard (DES) encryption algorithm.
3DES uses three 64-bit keys to encrypt data thrice. Primarily, it encrypts data with a 64-bit key. Then, the output data is again encrypted with the second 64-bit key. Finally, the third 64-bit key is used for encryption. DES uses the block cipher method to break a data file into 64-bit blocks, which are then encrypted.
Answer: B is incorrect. SEAL is an alternative encryption algorithm to software-based DES, 3DES, and AES. It uses a 160-bit encryption key. SEAL provides less impact to the CPU than other software-based encryption algorithms. In Cisco IOS IPSec implementations, SEAL supports the SEAL algorithm. It can be configured through the command-line interface using the crypto ipsec transform-set command and the esp-seal transform option.

Question: 72

Allen is creating an application using .NET Framework 4.0. He needs a tool to generate portable executable files from Microsoft intermediate language (MSIL)?
Which tool will he use?

A. Svcutil.exe tool
B. publicize.exe tool
C. ILDasm.exe tool
D. Ilasm.exe tool

Answer: D

Explanation:
MSIL Assembler (Ilasm.exe) is a tool used to generate portable executable files from Microsoft intermediate language (MSIL). Running the resulting executable determines whether or not MSIL performs as expected. Following is the syntax for using Ilasm.exe: ilasm [options] filename [[options]filename...]
where, filename specifies the name of the source file comprising metadata declaration directives and MSIL instructions, and the term options specifies the options to be used. Following are the options that are commonly used with Ilasm.exe:

Option	Description
/dll	It specifies that a .dll file is to be produced as output.
/exe	It specifies that an .exe file is to be produced as output. By default, Ilasm.exe produces an .exe file as output.
/debug	It specifies debug information.
/quiet	It specifies that assembly progress should not be reported.
/resource	It specifies that a specified resource file is to be included in the resulting .dll or .exe file.

Answer: A is incorrect. The Svcutil.exe tool stands for ServiceModel Metadata Utility Tool that is used to generate service model code from metadata documents and metadata documents from service model code. The Svcutil.exe tool can be found at the Windows SDK installation location, particularly at C:\Program Files\Microsoft SDKs\Windows\v6.0\Bin.
Answer: C is incorrect. The Microsoft Intermediate Language Disassembler (ILDasm.exe) is a tool that comes with the Microsoft Intermediate Language Assembler (ILasm.exe). It allows users to view the internal types, underlying IL, metadata, and assembly manifest for a given managed binary. It operates only on Portable Executable (PE) files.
Answer: B is incorrect. The publicize.exe tool is a command-line tool that generates an assembly that holds public types. These public types bind all the private types in another assembly. A user uses publicize.exe tool to help create unit tests that target private types.
The generated assembly is also identified as a private accessor. The user can also generate private accessors from the Integrated Development Environment (IDE), but he might use publicize.exe instead in Automation, scripting, and build scenarios.

Question: 73

Which of the following are the goals of cryptography? Each correct answer represents a complete solution. Choose all that apply.

A. Nonrepudiation
B. Integrity
C. Code access security
D. Confidentiality
E. Access control

Answer: B, A, and D

Explanation:
The following are the goals of cryptography:
1.Confidentiality: It makes sure that the message remains private and cannot be accessed by any unauthorized user when transmitted between two or more parties. There are two types of cryptosystems that ensure message confidentiality. They are as follows:
Symmetric key cryptosystem: It uses the shared key that is available to all the users of the cryptosystem.
Public key cryptosystem: It makes use of a combination of public and private keys for each user of the cryptosystem.
2.Integrity: It makes sure that the message remains unaltered when transmitted between two or more parties. If the goal of integrity is attained, the recipient is ensured that the received message is identical to the message that was sent.
3.Authentication: It verifies the user's identity.
4.Nonrepudiation: It assures the recipient that the message was really sent by the sender and someone is not masquerading as the sender.

Question: 74

Dennis has just started an internship with Company Inc., as a developer. He develops an application named App1 using .NET Framework 4.0. App1 contains a class named Class1, which is stored in a namespace named BlueWell.Namespace1. Dennis wants to create another class named Class2, and use Class1 from Class2. For this, he wants to define an alias named Alias1, and use it in Class2. Which of the following statements will Dennis use to define Alias1?

A. Alias1 = BlueWell.Namespace1.Class1;
B. BlueWell.Namespace1.Class1, Alias1;
C. BlueWell.Namespace1.Class1 : Alias1;
D. using Alias1 = BlueWell.Namespace1.Class1;

Answer: D

Explanation:
A namespace allows developers to organize and uniquely qualify element names and relationships defined in an assembly. When an object reference is prefixed with the name of the namespace where it is defined, it is known as the fully qualified name of the object. Since the fully qualified names can be long, they can be used by defining aliases for them. Following is the syntax for defining an alias for a fully qualified name:using Alias1 = BlueWell.Namespace1.Class1;
Here, if developers will attempt to use Class1 without using the fully qualified name or the alias, Visual C# .NET will

produce an error.

Question: 75

Which class reads lines of data from a byte stream stored in a text file in a particular encoding?

A. TextReader class
B. BufferedStream class
C. StreamReader class
D. BinaryReader class

Answer: C

Explanation:
The StreamReader class is derived from the System.IO namespace. It is implemented by the TextReader class. It reads lines of data from a byte stream stored in a text file in a particular encoding. By default, it supports UTF-8 encoding for character input.
Answer: D is incorrect. The BinaryReader class is used to read primitive data types as binary values in a specific encoding. Characters can be read from the stream using the given encoding system. The default encoding system is equal to New UTF8Encoding.
Answer: A is incorrect. The TextReader class is used to provide a reader that can read a sequential chain of characters. It is the abstract base class of the StreamReader and StringReader classes. These derived classes can be used to open a text file for reading a specified range of characters, or to create a reader based on an existing stream. A derived class must at least implement the Peek and Read methods to make a functional instance of the TextReader class.
Answer: B is incorrect. The BufferedStream class adds a buffering layer to read and write operations on another stream. It can be composed more or less for specific types of streams. It provides implementations for reading and writing bytes to an underlying data source.
The BufferedStream class is designed to prevent the buffer from slowing down input and output when the buffer is not required. It also buffers reads and writes in a shared buffer.

Question: 76

Which class is used to provide support in the creation of FileStream objects?

A. File class
B. FileInfo class
C. FileShare class
D. FileAccess class

Answer: B

Explanation:
The FileInfo class is an informational class that is used to provide instance methods to create, copy, delete, move, and open files. It is used to provide support in the creation of FileStream objects. Most of the FileInfo methods return other I/O types in case of creating or opening files. You can use these other types to further manipulate a file. It is better to use the instance method of the FileInfo class when an object is to be reused several times. The methods of the FileInfo class do not require any specified path to the file.
Answer: D is incorrect. FileAccess is not a class but an enumeration. It defines constants for read, write, or read/write access to a file.
Answer: C is incorrect. FileShare is not a class but an enumeration. It holds constants for controlling the kind of access

other FileStream objects can have to the identical file.
Answer: C is incorrect. FileShare is not a class but an enumeration. It holds constants for controlling the kind of access other FileStream objects can have to the identical file.
Answer: A is incorrect. The File class is an utility class that is used to provide static methods to create, copy, delete, move, and open files. It is used to provide support in the creation of FileStream objects. It can also be used to get and set file attributes or DateTime information related to the creation, access, and writing of a file. It is more efficient to use the methods of the File class when only one task is to be performed. All methods of the File class require a specified path to the file that is to be manipulated.

Question: 77

Allen is creating an application using .NET Framework 4.0. He needs a tool to view and manipulate the contents of the global assembly cache. He also needs to ensure that the tool allows developers to install or remove assemblies from the cache, and to display the contents of the cache. Which tool will he use?

A. ILDasm.exe
B. Ilasm.exe
C. Svcutil.exe
D. Gacutil.exe

Answer: D

Explanation:
Global Assembly Cache (Gacutil.exe) is a tool used to view and manipulate the contents of the global assembly cache. It allows developers to install or remove assemblies from the cache, and to display the contents of the cache. Following is the syntax for using Gacutil.exe:
gacutil [options] [assemblyFile] where, assemblyFile specifies the name of the file containing an assembly manifest, and the term options specifies the options to be used.
Following are the options that are commonly used with Gacutil.exe:

Option	Description
/cdl	It specifies that the contents of the download cache are to be deleted.
/i	It specifies that an assembly is to be installed into the global assembly cache.
/l	It is used to list the contents of the global assembly cache.
/ldl	It is used to list the contents of the downloaded files cache.
/silent	It is used to suppress the display of all output.
/u[ngen]	It specifies that a specified assembly is to be deleted from the global assembly cache.

Answer: C is incorrect. The Svcutil.exe tool stands for ServiceModel Metadata Utility Tool that is used to generate service model code from metadata documents and metadata documents from service model code. The Svcutil.exe tool can be found at the Windows SDK installation location, particularly at C:\Program Files\Microsoft SDKs\Windows\v6.0\Bin.
Answer: A is incorrect. The Microsoft Intermediate Language Disassembler (ILDasm.exe) is a tool that comes with the Microsoft Intermediate Language Assembler (ILasm.exe). It allows users to view the internal types, underlying IL, metadata, and assembly manifest for a given managed binary. It operates only on Portable Executable (PE) files.
Answer: B is incorrect. MSIL Assembler (Ilasm.exe) is a tool used to generate portable executable files from Microsoft intermediate language (MSIL). Running the resulting executable determines whether or not MSIL performs as expected.

Question: 78

In the .NET Framework, code access security performs which of the following functions? Each correct answer

represents a complete solution. Choose all that apply.

A. It enables administrators to configure security policy by associating sets of permissions with various codes.
B. It enforces restrictions on code at run time.
C. It grants permissions to the call stack.
D. It defines permissions and permission sets that represent the right to access various system resources.
E. It grants permissions to each assembly that is loaded.
F:It specifies those permissions that will remove code.

Answer: D, A, B, and E

Explanation:
Code access security is a security system that authorizes managed assemblies to access system resources. It allows administrators and developers to control application authorization similar to the way they have always been able to authorize users. In the .NET Framework, code access security performs the following functions:
It defines permissions and permission sets that represent the right to access various system resources.
It enables administrators to configure security policy by associating sets of permissions with various codes.
It enables code to request the permissions that it requires to run. It also specifies those permissions that would be useful if provided to code, and those permissions the code must never have.
It grants permissions to each assembly that is loaded. Those permissions which are provided, are based on the permissions requested by the code and on the operations permitted by security policy.
It enforces restrictions on code at run time. It performs it by comparing the granted permissions of every caller on the call stack to the permissions that callers must have.
CAS identifies assemblies using evidence. Evidence is the information that the runtime gathers about an assembly to determine which code groups the assembly belongs to.

Question: 79

Which is an encryption standard that comprises three block ciphers, AES-128, AES-192, and AES-256, adopted from a larger collection originally published as Rijndael?

A. Data Encryption Standard
B. Transparent data encryption
C. Advanced Encryption Standard
D. International Data Encryption Algorithm

Answer: C

Explanation:
The Advanced Encryption Standard (AES) is an encryption standard that comprises three block ciphers, AES-128, AES-192, and AES-256, adopted from a larger collection originally published as Rijndael. Each AES cipher has a 128-bit block size, with key sizes of 128, 192, and 256 bits, respectively. The AES ciphers have been analyzed extensively and are now used worldwide, as was the case with its predecessor, the
Data Encryption Standard (DES).AES is one of the most popular algorithms used in symmetric key cryptography. It is available in many different encryption packages. AES is the first publicly accessible and open cipher approved by the NSA for top secret information.
Answer: A is incorrect. The Data Encryption Standard (DES) is a block cipher (a form of shared secret encryption) that was selected by the National Bureau of Standards as an official Federal Information Processing Standard (FIPS) for the United States in 1976 and which has subsequently enjoyed widespread use internationally. It is based on a symmetric-

key algorithm that uses a 56-bit key. The algorithm was initially controversial with classified design elements, a relatively short key length, and suspicions about a National Security Agency (NSA) backdoor. DES consequently came under intense academic scrutiny, which motivated the modern understanding of block ciphers and their cryptanalysis.
Answer: D is incorrect. International Data Encryption Algorithm (IDEA) is a block cipher. It operates on 64-bit blocks using a 128-bit key. This algorithm was intended as a replacement for the Data Encryption Standard. IDEA was used in Pretty Good Privacy (PGP) v2.0, and was incorporated after the original cipher used in v1.0, BassOmatic, was found to be insecure. It is an optional algorithm in OpenPGP. The cipher is patented in a number of countries but is freely available for non-commercial use. IDEA is a minor revision of an earlier cipher, PES (Proposed Encryption Standard). It was originally called IPES (Improved PES).
Answer: B is incorrect. Transparent data encryption (TDE) performs real-time I/O encryption and decryption of the log and data files. It makes use of a database encryption key (DEK), which is stored in the database boot record for availability during recovery. It gives the ability to abide by many laws, regulations, and guidelines established in various industries. This facilitates software developers to encrypt data by using AES and 3DES encryption algorithms without changing existing applications.

Question: 80

Which tool is used to generate portable executable files from Microsoft intermediate language (MSIL)?

A. Common language runtime
B. Microsoft Intermediate Language Disassembler
C. Managed Code
D. MSIL Assembler

Answer: D

Explanation:
MSIL Assembler (Ilasm.exe) is a tool used to generate portable executable files from Microsoft intermediate language (MSIL). Running the resulting executable determines whether or not MSIL performs as expected. Following is the syntax for using Ilasm.exe: ilasm [options] filename [[options]filename...]
where, filename specifies the name of the source file comprising metadata declaration directives and MSIL instructions, and the term options specifies the options to be used. Following are the options that are commonly used with Ilasm.exe:

Option	Description
/dll	It specifies that a .dll file is to be produced as output.
/exe	It specifies that an .exe file is to be produced as output. By default, Ilasm.exe produces an .exe file as output.
/debug	It specifies debug information.
/quiet	It specifies that assembly progress should not be reported.
/resource	It specifies that a specified resource file is to be included in the resulting .dll or .exe file.

Answer: A is incorrect. Common language runtime (CLR) is a core component of Microsoft's .NET initiative. It is Microsoft's implementation of the Common Language Infrastructure standard, which defines an execution environment for program code. In the CLR, code is expressed in a form of bytecode called the Common Intermediate Language.
Answer: B is incorrect. The Microsoft Intermediate Language Disassembler (ILDasm.exe) is a tool that comes with the Microsoft Intermediate Language Assembler (ILasm.exe). It allows users to view the internal types, underlying IL, metadata, and assembly manifest for a given managed binary. It operates only on Portable Executable (PE) files.
Answer: C is incorrect. Managed code is written in a .NET language and is executed by the common language runtime (CLR). It requires passing metadata that is necessary for the CLR to provide services. Code based on Microsoft intermediate language (MSIL) executes as managed code.

Question: 81

What are the differences between XML schema and DTD?
Each correct answer represents a complete solution. Choose all that apply.

A. XML supports classes, whereas DTD supports namespaces.
B. XML supports interfaces, whereas DTD supports structures.
C. XML supports namespaces, whereas DTD does not.
D. XML schema is an XML-based alternative to DTD, whereas DTD is not.

Answer: D and C

Explanation:
The following table depicts the differences between XML schema and DTD.

XML Schema	DTD
XML schema is an XML-based alternative to DTD.	DTD is not XML based.
It supports namespaces.	It does not support namespaces.
It is strongly typed.	It is not strongly typed.
It does not allow inline definitions.	It allows inline definitions.
It has a wealth of derived and built-in data types.	It does not have built-in and derived data types.
These are extensible to future additions.	These are not extensible.

Question: 82

Which class provides methods for sending and receiving data over Stream sockets in blocking mode?

A. Stream class
B. NetworkStream class
C. NetStream class
D. MemoryStream class

Answer: B

Explanation:
The NetworkStream class provides methods for sending and receiving data over Stream sockets in blocking mode. It can be used for both synchronous as well as asynchronous data transfer. This class does not support random access to the network data stream. However, read and write operations can be executed at the same time on a NetworkStream class instance without the need for synchronization.
Answer: A is incorrect. The Stream class offers a generic view of a sequence of bytes.
Answer: D is incorrect. The MemoryStream class is contained in the System.IO namespace. It inherits the Stream class. It reads and writes a stream of data in bytes to a memory instead of a disk. It stores data as an unsigned byte array, which is initialized when a MemoryStream object is created. An advantage of the MemoryStream class is that it saves data storage in buffers and files.
Answer: C is incorrect. There is no such class as NetStream in the System.IO namespace.

Question: 83

Which Object Oriented (OO) principle is used to deal with objects without the need to know what exact class they

belong to?

A. Abstraction
B. Polymorphism
C. Class
D. Inheritance

Answer: B

Explanation:
Polymorphism is the Object Oriented (OO) principle that is used to deal with objects without the need to know what exact class they belong to. This is an extension of the inheritance concept.
In object-oriented programming, polymorphism is the ability to create variables, functions, or objects having more than one form. The word polymorphism is derived from the Greek word meaning "having multiple forms". Polymorphism is used for implementing a programming technique called message-passing in which different types of objects define common interfaces for users' operations.
Polymorphism is a feature that allows programmers to device methods that have the same name but different parameters. It simplifies the complexity of the program and provides an effective method of reusing modules. Polymorphism permits creation of two methods with the same name having different parameters. One version will accept two integer numbers and the other will accept two double numbers. The program will decide the method to be used at runtime based on the numbers entered; this feature is called dynamic binding.
Answer: C is incorrect. A class is a set of objects that share the same properties and behavior. It is the instinctive view of a kind of objects.
Answer: A is incorrect. Abstraction supports data hiding so that only the relevant data is exposed to the users and the remaining information remains hidden. It is the process where logic/program details are not accessible by the programmer. Instead of viewing things in detail, users are only shown an abstraction or just what is required to be communicated. This information comprises the module inputs and what is returned as outputs.
Answer: D is incorrect. Inheritance is the technique to classify and reuse code by creating collections of attributes and behaviors called objects, that can be based on the earlier created objects. In traditional inheritance, classes define objects and they can inherit other classes. The new class called sub-class/derived class, inherits attributes and behaviors of the existing classes called super classes or ancestor classes. The inheritance relationship of a class gives rise to a hierarchy. Objects can be defined directly from other objects without defining classes in prototype-based programming.
Inheritance is the ability of classes to inherit other classes and makes reuse of code possible. When a class file inherits from another class, it inherits all its members (variables and methods). Different languages use different terms to categorize the two parties in inheritance.

Question: 84

Which class is used to provide a reader that can read a sequential chain of characters?

A. StringReader class
B. TextReader class
C. ChainReader class
D. SequentialReader class

Answer: B

Explanation:
The TextReader class is used to provide a reader that can read a sequential chain of characters. It is the abstract base

class of the StreamReader and StringReader classes. These derived classes can be used to open a text file for reading a specified range of characters, or to create a reader based on an existing stream. A derived class must at least implement the Peek and Read methods to make a functional instance of the TextReader class.
Answer: D and C are incorrect. There is no such class as SequentialReader or ChainReader in the System.IO namespace.
Answer: A is incorrect. The StringReader class is used to implement a TextReader that reads from a string. It constructs and initializes a new instance of the StringReader class that reads from the specified string. It consists of the following methods:
Close
Dispose
Peek
Read(char[], int, int)
Read
ReadLine
ReadToEnd

Question: 85

What is the purpose of using a delegate in the context of .NET Framework 4.0?

A. To provide identical member methods and properties from numerous associated classes
B. To copy member methods and properties from an existing class
C. To generate an additional thread to provide parallel processing
D. To enable an assembly to respond to an event that takes place inside a class

Answer: D

Explanation:
An assembly declares a delegate when it needs to respond to an event that takes place inside a class. A delegate is a form of type-safe function pointer used by the .NET Framework. It specifies a method to call and optionally an object to call the method on. It is used, among other things, to implement callbacks and event listeners. It encapsulates a reference to a method inside a delegate object. The delegate object can then be passed to code which can call the referenced method, without having to know at compile time which method will be invoked.
Answer: C is incorrect. Delegates are not related to threading.
Answer: A is incorrect. Interfaces provide identical members from numerous associated classes, not delegates.
Answer: B is incorrect. Inheritance copies members from an existing class, not a delegate.

Question: 86

Which of the following is a block cipher that was selected by the National Bureau of Standards as an official Federal Information Processing Standard (FIPS) for the United States in 1976?

A. Advanced Encryption Standard
B. Data Encryption Standard
C. Federal Data Encryption Standard
D. International Data Encryption Algorithm

Answer: B

Explanation:

The Data Encryption Standard (DES) is a block cipher (a form of shared secret encryption) that was selected by the National Bureau of Standards as an official Federal Information Processing Standard (FIPS) for the United States in 1976 and which has subsequently enjoyed widespread use internationally. It is based on a symmetric-key algorithm that uses a 56-bit key. The algorithm was initially controversial with classified design elements, a relatively short key length, and suspicions about a National Security Agency (NSA) backdoor. DES consequently came under intense academic scrutiny, which motivated the modern understanding of block ciphers and their cryptanalysis.
Answer: D is incorrect. International Data Encryption Algorithm (IDEA) is a block cipher. It operates on 64-bit blocks using a 128-bit key. This algorithm was intended as a replacement for the Data Encryption Standard. IDEA was used in Pretty Good Privacy (PGP) v2.0, and was incorporated after the original cipher used in v1.0, BassOmatic, was found to be insecure. It is an optional algorithm in OpenPGP. The cipher is patented in a number of countries but is freely available for non-commercial use. IDEA is a minor revision of an earlier cipher, PES (Proposed Encryption Standard). It was originally called IPES (Improved PES).
Answer: C is incorrect. There is no such standard as Federal Data Encryption Standard.
Answer: A is incorrect. The Advanced Encryption Standard (AES) is an encryption standard that comprises three block ciphers, AES-128, AES-192, and AES-256, adopted from a larger collection originally published as Rijndael. Each AES cipher has a 128-bit block size, with key sizes of 128, 192, and 256 bits, respectively. The AES ciphers have been analyzed extensively and are now used worldwide, as was the case with its predecessor, the Data Encryption Standard (DES).
AES is one of the most popular algorithms used in symmetric key cryptography. It is available in many different encryption packages. AES is the first publicly accessible and open cipher approved by the NSA for top secret information.

Question: 87

Which of the following is installed as part of the .NET Framework that would run the executables?

A. Runtime host
B. Visual Studio
C. Application programming interface (API)
D. Common Language Runtime (CLR)

Answer: D

Explanation:
Common Language Runtime (CLR) is installed as part of the .NET Framework that would run the executables. Common language runtime (CLR) is a core component of Microsoft's .NET initiative. It is Microsoft's implementation of the Common Language Infrastructure standard, which defines an execution environment for program code. In the CLR, code is expressed in a form of bytecode called the Common Intermediate Language.
Answer: A is incorrect. A runtime host manages the execution of application code and provides various services to the application. The Common Language Runtime (CLR) has been designed by Microsoft to support different types of applications such as Windows applications, Web applications, Mobile applications, etc. Each of these applications requires a runtime host to start its application. The .NET Framework provides different types of runtime hosts for different types of applications. Following are examples of some runtime hosts:
ASP.NET
Shell Executables
Microsoft Internet Explorer
Answer: B and C are incorrect. Both Visual Studio and the API are application development tools.

Question: 88

Which of the following is a valid key length for the TripleDES symmetric cryptography class?

A. 1024
B. 256
C. 512
D. 128

Answer: D

Explanation:
TripleDES is used to support key lengths from 128 bits to 192 bits in increments of 64 bits. The TripleDES class exposes the base class for Triple Data Encryption Standard algorithms from which all TripleDES implementations must inherit. The TripleDES class makes use of three successive iterations of the DES algorithm. It can use either two or three 56-bit keys.

Question: 89

You are creating an application using .NET Framework 4.0. You write the following code segment in the application:
NewClass x; bool y;
x = 42;
// Convert using ToBoolean.
y = Convert.ToBoolean(x);
Console.WriteLine("x = {0}, y = {1}", x.ToString(), y.ToString());
Which interface should the custom class NewClass implement?

A. IComparable<T>
B. IConvertible
C. FormatterConverter
D. IComparable

Answer: B

Explanation:
The custom class NewClass should implement the IConvertible interface. Use the IConvertible interface to enable a custom class to be converted to other types. The IConvertible interface of the System namespace defines methods that convert the value of an object of an implementing type into a common language runtime (CLR) type that has an equivalent value. The CLR uses the Convert class for exposing the IConvertible interface. It uses types that include Boolean, SByte, Byte, Int16, UInt16, Int32, UInt32, Int64, UInt64, Single, Double, Decimal, DateTime, Char, and String. Some of the methods defined by this interface are ToBoolean, ToDateTime, ToSingle, ToString, etc. The ToBoolean method converts the value of an object that is equivalent to the CLR Boolean value by using the specified culture-specific formatting information. The ToDateTime method converts the value of an object that is equivalent to the CLR DateTime value by using the specified culture-specific
formatting information. Similarly, the ToSingle method converts the value of an object that is equivalent single-precision floating-point number by using the specified culture-specific formatting information. The ToString method converts the value of an object that is equivalent to the CLR String value by using the specified culture-specific formatting information.
Answer: D is incorrect. Implementing the IComparable interface does not allow a class to be converted. The IComparable interface of the System namespace is used to define a generalized comparison method. When a value type or class implements this interface, it creates a type-specific comparison method that is the CompareTo method. The CompareTo method compares the current object of a class with another object of the same type. The

IComparable interface is also suitable for the sorting mechanism.
Answer: A is incorrect. Implementing the IComparable<T> interface does not allow a class to be converted.
Answer: C is incorrect. The FormatterConverter class is used to represent a base implementation of the IFormatterConverter interface. The IFormatterConverter interface uses the Convert class and the IConvertible interface. Any public static members of this type are thread safe. However, any instance members are not guaranteed to be thread safe.

Question: 90

In your C# version, every variable must have an explicit data type. What is the name of this language feature?

A. Type safety
B. Strong typing
C. Coercion
D. Type casting

Answer: B

Explanation:
In computer science and computer programming, a type system is said to feature strong typing when it specifies one or more restrictions on how operations involving values of different data types can be intermixed. The opposite of strong typing is weak typing. Strong name is a name consisting of an assembly's identity, public key, and digital signature. It includes the assembly's name, version number, and other related information (if any). Assemblies are identical, if they have the same strong name. In your C# version, every variable must have an explicit data type. The name of this language feature is called strong typing.
Answer: D and C are incorrect. In computer science, type conversion, typecasting, and coercion refer to different ways of, implicitly or explicitly, changing an entity of one data type into another.
Answer: A is incorrect. In computer science, type safety is the point to which a programming language discourages or prevents type errors. A type error is erroneous or undesirable program behavior caused by a discrepancy between differing data types.

Question: 91

You are creating an application using .NET Framework 4.0. You write the following delegate:
public delegate void AlertEventHandler(object sender, AlertEventArgs e);
Based on the above delegate, which of the following declarations can respond to an event?

A. public void AlertStart()
B. public void AlertStart(object sender, EventArgs e)
C. public EventArgs AlertStart(object sender, AlertEventArgs e)
D. public void AlertStart(object sender, AlertEventArgs e)

Answer: D

Explanation:
The following declaration can respond to an event:
public void AlertStart(object sender, AlertEventArgs e)
Event handlers must match the signature of the delegate. In this case, the delegate needs two parameters, i.e., Object and AlertEventArgs, and returns void.
The delegate declaration takes the following form:

[attributes] [modifiers] delegate result-type identifier ([formal-parameters]);
where,
attributes is optional for additional declarative information
modifiers is optional and the allowed modifiers are new and the four access modifiers
result-type matches the return type of the method
identifier is the delegate name
formal-parameters is an optional parameter list

Question: 92

Which of the following statements is TRUE about inheritance?

A. It does not allow you to reuse code.
B. It allows you to reuse code from the base class.
C. It requires changes in code when a class connects to the base class.
D. It prevents you from accessing the super class.

Answer: B

Explanation:
Inheritance allows you to create a sub class that extends the functionality of a base class, letting the developer reuse code from the base class.

Question: 93

Consider the following scenario.
Ryan has just started an internship with Company Inc., as a developer. He is updating the company's inventory system to use barcode and GPS technologies for improving the package tracking. Ryan's manager asked him to use classes from the company's existing inventory system as much as possible to save time because the older code has been tested thoroughly. The classes are part of a Microsoft Visual Studio project called InventorySystem; Ryan's Visual Studio project is called TrackingSystem. Ryan is having problems because some of his classes, such as Package, Barcode, and Destination, have names that already exist in the InventorySystem. However, both projects use the default namespaces defined by Visual Studio .NET 2010 when the projects were created. Which of the following code segments will allow Ryan to avoid having to use fully qualified names for the DataSource class in InventoryProject?

A. using DataSource.InventoryProject;
B. using TrackingSystem.DataSource;
C. using TrackingSystem.InventoryProject;
D. using InventoryProject.DataSource;

Answer: D

Explanation:
The following code segment will allow Ryan to avoid having to use fully qualified names for the DataSource class in InventoryProject:
using InventoryProject.DataSource;
Namespaces and types have unique titles described by fully qualified names that specify a logical hierarchy. For instance, the statement X.Y
implies that X is the name of the namespace or type, and Y is nested within it.
Consider the following example that contains nested classes and namespaces. The fully qualified name is specified as

a comment following each entity.

```
namespace A1 // A1
{
    class B1 // A1.B1
    {
        class B2 // A1.B1.B2
        {
        }
    }
    namespace A2 // A1.A2
    {
        class B2 // A1.A2.B2
        {
        }
    }
}
```

In the above code segment:

The namespace A1 is a member of the global namespace. Its fully qualified name is A1.

The namespace A2 is a member of A1. Its fully qualified name is A1.A2.

The class B1 is a member of A1. Its fully qualified name is A1.B1.

The class name B2 is used two times in this code. However, the fully qualified names are unique. The first instance of B2 is declared within B1; therefore, its fully qualified name is A1.B1.B2. The second instance of B2 is declared within the namespace A2; therefore, its fully qualified name is A1.A2.B2.

Using the above code segment, a new class member can be added named B3 to the namespace A1.A2 as follows:

```
namespace A1.A2
{
    class B3 // A1.A2.B3
    {
    }
}
```

Use :: to reference a namespace alias or global:: to reference the global namespace and . to qualify types or members. It is incorrect to use ::

with an alias that references a type rather than a namespace. For example:

```
using Alias = System.Console;
class TestClass
{
    static void Main()
    {
    // Error
    //Alias::WriteLine("Hello");
    // OK
    Alias.WriteLine("Hello");
    }
}
```

Keep in mind that the word global is not a predefined alias so global.X does not have any special meaning. It obtains a special meaning only when it is used with ::.

Compiler warning CS0440 is generated if an alias named global is defined because global:: always references the global namespace and not an alias. Consider the following example, it generates the warning:

```
using global = System.Collections; // Warning
```

Using :: with aliases is a good idea and protects against the unexpected introduction of additional types. For instance, consider the following example:

```
using Alias = System;
namespace Library
{
    public class C : Alias.Exception { }
}
```

The code works, but if a type named Alias were to later be introduced, Alias, would bind to that type instead. Using Alias::Exception ensures that Alias is considered as a namespace alias and not a type.

Question: 94

Which of the following code segments is the most efficient way to rename a file from "File1.txt" to "File2.txt"?

A. File.Replace("File1.txt", "File2.txt");
B. File.Move("File1.txt", "File2.txt");
C. File.Copy("File1.txt", "File2.txt");
File.Delete("File1.txt");
D. File.Rename("File1.txt", "File2.txt");

Answer: B

Explanation:
You use the static System.IO.File.Move method to rename files. The File.Move method is used to move a given file to a new location, providing the option to give a new file name.
Answer: C is incorrect. The code segment will rename the file from "File1.txt" to "File2.txt but it is not the most efficient way to rename the file.
Answer: D is incorrect. There is no such method as File.Rename in the File class.
Answer: A is incorrect. The File.Replace method is used to copy a file while overwriting the destination file. It does not rename files.

Question: 95

Which class can be used to write an object to a string, to write strings to a file, or to serialize XML?

A. OutputWriter class
B. StringWriter class
C. TextWriter class
D. StreamWriter class

Answer: C

Explanation:
The TextWriter class is used to provide a writer that can write a sequential chain of characters. It is the abstract base class of the StreamWriter and StringWriter classes. It can be used to write an object to a string, write strings to a file, or to serialize XML. It can also be used to write text to a custom backing store using the same APIs. By default, it is not thread safe. A derived class must at least implement the Write method to make a functional instance of the TextWriter.
Answer: D is incorrect. The StreamWriter class is used to implement a TextWriter for writing characters to a stream in a specific encoding.
Answer: B is incorrect. The StringWriter class is used to implement a TextWriter for writing information to a string.
Answer: A is incorrect. There is no such class as OutputWriter in the System.IO namespace.

Question: 96

Consider the following scenario:
Ryan has just started an internship with Company Inc., as a developer. He is updating the company's inventory system to use barcode and GPS technologies for improving the package tracking. Ryan's manager asked him to use classes from the company's existing inventory system as much as possible to save time because the older code has been tested thoroughly. The classes are part of a Microsoft Visual Studio project called InventorySystem; Ryan's Visual Studio project is called TrackingSystem. Ryan is having problems because some of his classes, such as Package, Barcode, and Destination, have names that already exist in the InventorySystem. However, both projects use the default namespaces defined by Visual Studio .NET 2010 when the projects were created.
Which of the following is most likely the fully qualified name of Ryan's new Package class?

A. System.Package
B. Windows.Package
C. InventorySystem.Package
D. System.Default.Package

Answer: C

Explanation:
The fully qualified name of Ryan's new Package class is InventorySystem.Package. By default, Visual Studio creates a namespace with the same name as the project name. Namespaces and types have unique titles described by fully qualified names that specify a logical hierarchy. For instance, the statement X.Y implies that X is the name of the namespace or type, and Y is nested within it. Consider the following example that contains nested classes and namespaces. The fully qualified name is specified as a comment following each entity.

```
namespace A1 // A1
{
   class B1 // A1.B1
   {
      class B2 // A1.B1.B2
      {
      }
   }
   namespace A2 // A1.A2
   {
      class B2 // A1.A2.B2
      {
      }
   }
}
```

In the above code segment:
The namespace A1 is a member of the global namespace. Its fully qualified name is A1.
The namespace A2 is a member of A1. Its fully qualified name is A1.A2.
The class B1 is a member of A1. Its fully qualified name is A1.B1.
The class name B2 is used two times in this code. However, the fully qualified names are unique. The first instance of B2 is declared
within B1; therefore, its fully qualified name is A1.B1.B2. The second instance of B2 is declared within the namespace A2; therefore, its fully qualified name is A1.A2.B2.
Using the above code segment, a new class member can be added named B3 to the namespace A1.A2 as follows:

```
namespace A1.A2
```

```
{
    class B3 // A1.A2.B3
    {
    }
}
```

Use :: to reference a namespace alias or global:: to reference the global namespace and . to qualify types or members. It is incorrect to use ::
with an alias that references a type rather than a namespace. For example:

```
using Alias = System.Console;
class TestClass
{
    static void Main()
    {
    // Error
    //Alias::WriteLine("Hello");
    // OK
    Alias.WriteLine("Hello");
    }
}
```

Keep in mind that the word global is not a predefined alias so global.X does not have any special meaning. It obtains a special meaning only when it is used with ::.
Compiler warning CS0440 is generated if an alias named global is defined because global:: always references the global namespace and not an alias. Consider the following example, it generates the warning:

```
using global = System.Collections; // Warning
```

Using :: with aliases is a good idea and protects against the unexpected introduction of additional types. For instance, consider the
following example:

```
using Alias = System;
namespace Library
{
    public class C : Alias.Exception { }
}
```

The code works, but if a type named Alias were to later be introduced, Alias, would bind to that type instead. Using Alias::Exception ensures that Alias is considered as a namespace alias and not a type.

Question: 97

In which namespace is the Console class found?

A. System.Web namespace
B. System.Diagnostics namespace
C. System.Data namespace
D. System namespace

Answer: D

Explanation:
The Console class is found in the System namespace. The Console class exposes the standard input, output, and error streams for console applications. The Console class cannot be inherited. The System namespace contains the following members:
Classes

Interfaces
Structures
Delegates
Enumerations
These members define commonly used value and reference data types, events and event handlers, interfaces, attributes, and exceptions. These members also provide services supporting data type conversion, method parameter manipulation, remote application invocation, local application invocation, application environment management, and supervision of managed and unmanaged applications.

Namespaces	Description
System	This namespace includes all common datatypes, string values, arrays, methods for data conversion, and methods related to mathematical operations.
System.Data, System.Data.Common, System.Data.OleDb, System.Data.SqlClient, System.Data.SqlTypes	These namespaces are used to access a database, perform commands on a database, and retrieve and manipulate a database.
System.IO, System.DirectoryServices, System.IO.IsolatedStorage	These namespaces are used to access, read, and write files, and retrieve file paths.
System.Diagnostics	This namespace is used to debug and trace the execution of an application.
System.Net, System.Net.Sockets	These namespaces are used to communicate over the Internet when creating peer-to-peer applications.
System.Windows.Forms, System.Windows.Forms.Design	These namespaces are used to create Windows-based applications using Windows user interface components.
System.Web, System.WebCaching, System.Web.UI, System.Web.UI.Design, System.Web.UI.WebControls, System.Web.UI.HtmlControls, System.Web.Configuration, System.Web.Hosting, System.Web.Mail, System.Web.SessionState	These namespaces are used to create ASP.NET Web applications that execute over the Internet.
System.Web.Services, System.Web.Services.Description, System.Web.Services.Configuration, System.Web.Services.Discovery, System.Web.Services.Protocols	These namespaces are used to create XML Web services and components that can be published over the Internet.
System.Security, System.Security.Permissions, System.Security.Policy, System.WebSecurity, System.Security.Cryptography	These namespaces are used for authentication, authorization, and encryption.
System.Xml, System.Xml.Schema, System.Xml.Serialization, System.Xml.XPath, System.Xml.Xsl	These namespaces are used to create and access XML files.

Question: 98

Which of the following types can store the numeric value -9? Each correct answer represents a complete solution. Choose all that apply.

A. decimal
B. int
C. ulong
D. long
E. uint
F:double

Answer: A, F, B, and D

Explanation:
The decimal, double, int, and long types can all store negative integers.

Answer: E and C are incorrect. The uint and ulong types are unsigned and therefore can be used to store only zero and positive numbers.

Question: 99

Which structure is used to describe the source and destination of a specified serialized stream, as well as to provide an extra caller-defined context?

A. Streaming
B. StreamingContext
C. StreamingContextStates
D. StreamingStates

Answer: B

Explanation:
The StreamingContext structure is used to describe the source and destination of a specified serialized stream, as well as to provide an extra caller-defined context. It specifies the source/destination of the bits that the formatter uses. Any class with substitute or that implement ISerializable can serialize or ignore fields and values based on the information stored in the streaming context. For example, a window handle is still applicable if the State property is set to System.Runtime.Serialization.StreamingContextStates.CrossProcess.
Answer: A and D are incorrect. There is no such structure as Streaming and StreamingStates in the .NET Framework.
Answer: C is incorrect. StreamingContextStates is an enumeration. It is used to define a set of flags indicating the source/destination context for the stream during serialization.

Question: 100

Which is a set of objects that share the same properties and behavior and is the instinctive view of a "kind" of objects?

A. Class
B. Inheritance
C. Interface
D. Attribute

Answer: A

Explanation:
A class is a set of objects that share the same properties and behavior. It is the instinctive view of a kind of objects.
A class is a construct used as a blueprint/template to create objects of that specific class. The blueprint describes the state and behavior shared by all the objects of the class. An object of a specific class is known as an instance of the class. The class that consists of that instance can be considered as the type of that object, e.g., an object instance of the "AutoMobile" class will be of "AutoMobile" type.
A class represents a noun, such as a person, place, or an abstract thing. It is a model of a concept inside a computer program. It is used to encapsulate the state and behavior of the concept that it exposes through data placeholders called attributes, and to encapsulate behavior through reusable sections of code known as methods.
Answer: C is incorrect. An interface, also known as contract, describes a group of related behaviors that can belong to a class or a struct. It can be defined by using the interface keyword in C# language specification. It consists of methods, properties, events, and/or indexers. A class or a struct can inherit multiple interfaces and a single interface itself can also be inherited from more than one interface.
When any class or struct inherits an interface, it inherits only the method names and signatures. Interfaces are left

completely unimplemented, i.e., no method in the interface is implemented. All methods of an interface are public and are abstract, but the method body is absent. The structure of the IComparable interface of the System namespace is as follows:

```
interface IComparable
{
  int CompareTo(object obj1);
}
```

Answer: D is incorrect. An attribute is a data element that exists in every object of a class. It is represented by a specific value in each object. Attributes have no identity outside the object to which they belong. Attributes are controlled by those objects of which they are a part. An attribute is a role that a property takes. An attribute represents a data definition for an instance of a classifier. It describes a range of values for that data definition.

A classifier can have any number of attributes or none at all. Attributes describe the structure and value of an instance of a class. Each attribute is described by its name.

Answer: B is incorrect. Inheritance is the technique to classify and reuse code by creating collections of attributes and behaviors called objects, that can be based on the earlier created objects. In traditional inheritance, classes define objects and they can inherit other classes. The new class called sub-class/derived class, inherits attributes and behaviors of the existing classes called super classes or ancestor classes. The inheritance relationship of a class gives rise to a hierarchy. Objects can be defined directly from other objects without defining classes in prototype-based programming.

Inheritance is the ability of classes to inherit other classes and makes reuse of code possible. When a class file inherits from another class, it inherits all its members (variables and methods). Different languages use different terms to categorize the two parties in inheritance.

Question: 101

Which of the following are value types?
Each correct answer represents a complete solution. Choose all that apply.

A. double
B. interface
C. bool
D. long
E. string
F:char

Answer: D, C, A, and F

Explanation:

The types bool, char, double, and long are value types. A value type is a variable that contains data values, which are stored in a memory storage area known as the stack. Following are the three general value types:

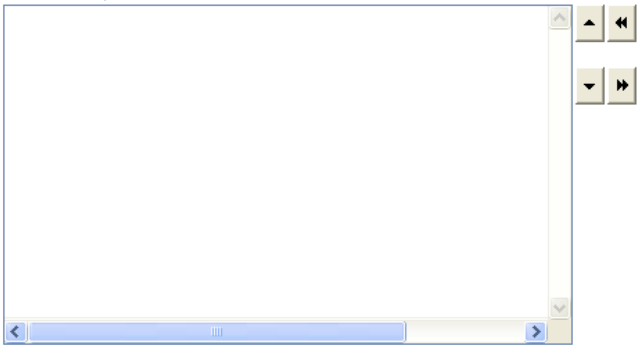
Built-in Types: These value types are the base types provided by the .NET Framework, on the basis of which other value types are built. Built-in value types can be either numeric or non-numeric types. Some of the numeric built-in value types are sbyte, byte, int, float, double, etc. Some of the non-numeric built-in value types are char, bool, and date. User-defined Types: These value types are known as structures or structs that are defined by users. The keyword struct is used for the user-defined value types in C# language specification. These user-defined types are used to create more than one variable encapsulated in a small group of related data. The struct is a combined unit of various data types that are grouped into a single unit. These different data types are known as members. Members can be constructors, constants, fields, methods, properties, events, operators, indexers, etc.

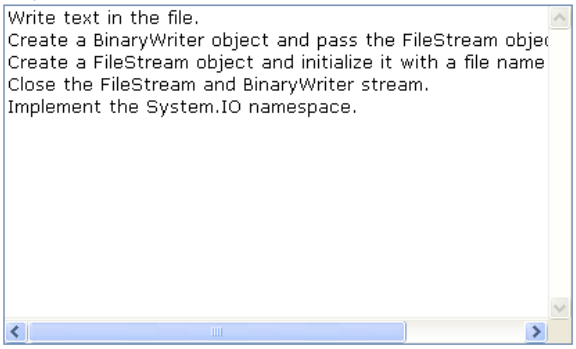
Enumerations: These provide symbols to a fixed set of related data values. The keyword used in C# for enumerations

is enum.
These enumerations improve code readability to users. Generally, the sequence of elements starts from zero. Note: When one value type variable is assigned to another variable, data is also copied from one variable to another variable. Hence, the same data is stored in two different locations on the stack of the memory.
Answer: B and E are incorrect. The types interface and string are reference types.

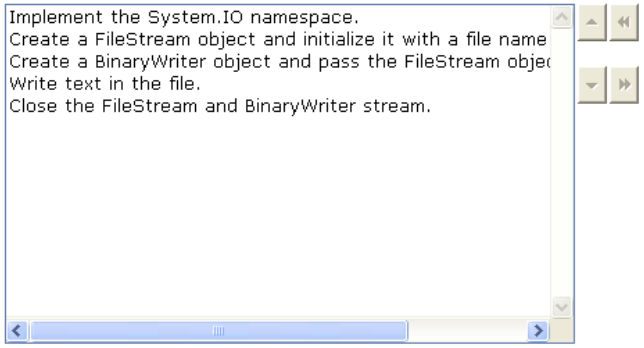
Question: 102

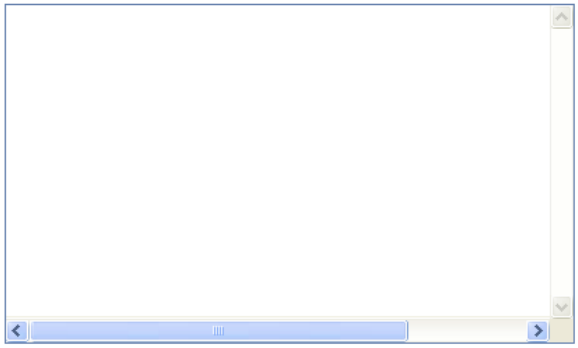
What are the steps required to write text to a newly created data file?





Answer:





Explanation:
The steps required to write text to a newly created data file are as follows:
1.Implement the System.IO namespace using the following code:
using System.IO;
2.Create a FileStream class object and initialize it with a file name.
FileStream fs = new FileStream("TestFile.data", FileMode.Create);
or
FileStream fs;
fs = new FileStream("TestFile.data", FileMode.Create);
3.Create a BinaryWriter object and pass the FileStream object in it.
BinaryWriter bw = new BinaryWriter(fs);
4.Write text in the file as follows:
for(int i=1;i<=10;i++)
  bw.Write((int)i);
5.Close the FileStream and BinaryWriter stream.
fs.Close();
br.Close();

Question: 103

You are creating an application using .NET Framework 4.0. The application uses an interop assembly that will be accessed by multiple .NET Framework applications on each computer. You need to make a single version of the interop assembly available to all applications. What is the best way to accomplish this?

A. Place the interop assembly in the system directory.
B. Place the interop assembly in a shared folder on the network.
C. Install the interop assembly in the root of the C:\ drive.
D. Install the interop assembly in the global assembly cache (GAC).

Answer: D

Explanation:
You should install the interop assembly in the global assembly cache (GAC). Assemblies shared by multiple applications need to be installed in a centralized storage area called the global assembly cache (GAC). The .NET clients can access the identical copy of the interop assembly, which is signed and installed in the GAC. Global assembly cache (GAC) is a machine-wide cache. It stores assemblies that are designed to be shared amongst multiple applications on a computer. All assemblies stored in the global assembly cache must have strong names. While you can reference assemblies placed in a particular directory, installing the assembly in the GAC provides greater reliability as well as easy maintenance.

Question: 104

Which of the following goals is NOT required to be achieved by Cryptography?

A. Data integrity
B. Authentication
C. Confidentiality
D. Authorization

Answer: D

Explanation:
Authorization is the function of specifying access rights to resources, which is related to information security and computer security in general and to access control in particular.
Answer: C, B, and A are incorrect. Cryptography is used to protect the privacy and integrity of the data that an application stores or transfers. Data is encrypted using cryptographic algorithms, transmitted in an encrypted state, and later decrypted. Cryptography is used to achieve the following goals:
Confidentiality: To help protect a user's identity or data from being readAuthentication: To assure that data originates from a particular party Data integrity: To help protect data from being altered

Question: 105

You are creating an application using .NET Framework 4.0. You need to use an iterator in the application. What is the purpose of using an iterator in a C# application?

A. It improves the performance of value types.
B. It is the only way for a class to be compatible with a for-each loop.

C. It enables an array to be sorted.
D. It simplifies the implementation of the IEnumerable interface.

Answer: D

Explanation:
An iterator in C# simplifies the implementation of the IEnumerable interface. When the compiler detects an iterator, it will automatically generate the Current, MoveNext, and Dispose methods of the IEnumerable or IEnumerable interface. An iterator is an object that allows a programmer to traverse through all the elements of a collection, regardless of its specific implementation. An iterator may be thought of as a type of pointer which has two primary operations: referencing one particular element in
the object collection and modifying itself so it points to the next element. The primary purpose of an iterator is to allow a user to process every element of a container while isolating the user from the internal structure of the container. This allows the container to store elements in any manner it wishes while allowing the user to treat it as if it were a simple sequence or list. An iterator class is usually designed in tight coordination with the corresponding container class. Usually the container provides the methods for creating iterators.
Answer: B is incorrect. An iterator does make a class compatible with a for-each loop. However, it is not the only way; you can also implement the IEnumerable interface.
Answer: A is incorrect. An iterator does not enable an array to be sorted.
Answer: C is incorrect. An iterator does not improve performance.

Question: 106

The Public Key Encryption, also called asymmetric encryption, has five stages. Which of the following is NOT a stage in the Public Key Encryption?

A. Encoded text
B. Encryption Algorithm
C. Decryption Algorithm
D. Plain Text
E. Private Key
F:Public Key

Answer: A

Explanation:
The Public Key Encryption also called asymmetric encryption was first publicly proposed by Diffie and Hellman in 1976. Public Key Encryption is more secure than non-public key encryption. It is based on the mathematical functionality rather than on the simple operations on bit patterns. It uses two separate keys. It has five stages as follows:
Plain Text: It is the original message.
Encryption Algorithm: It performs different transformations on plain text.
Public and Private Key: It is the input to the encryption algorithm.
Cipher Text: It is the scrambled message as an output.
Decryption Algorithm: It performs on cipher text and gives the original message as an output.

Question: 107

You are creating an application using .NET Framework 4.0. The application implements a custom authentication mechanism. You need to write entries related to unsuccessful authentication attempts to an event log. To which event

log will you write entries related to unsuccessful authentication attempts?

A. Active Directory
B. System
C. Application
D. Security

Answer: C

Explanation:
You will always write events to the Application event log or a custom event log. There are three default event logs, which are as follows:
1.Application
2.System
3.Security
Other installed applications and services, such as Active Directory, can have additional event logs.
Answer: D is incorrect. The Security log is reserved for the operating system to store auditing events.
Answer: B is incorrect. The System event log is reserved for operating system events.
Answer: A is incorrect. The Active Directory event log is reserved for events related to an Active Directory domain controller.

Question: 108

An assembly can be classified into which of the following?
Each correct answer represents a complete solution. Choose all that apply.

A. Single-file and Multi-file assemblies
B. Public and Protected assemblies
C. Private and Shared assemblies
D. Single-source or Multi-source assemblies
E. Satellite or Earth-only assemblies

Answer: A and C

Explanation:
An assembly can exist in various forms depending on how they are used in a .NET Framework. An assembly can be classified into the following manner:
Single-file and Multi-file Assemblies: A single-file assembly can consist of a single .DLL or .EXE file containing application code, embedded resources, and the assembly's assembly manifest. On the other hand, a multi-file assembly can have multiple files in an assembly. Out of these multiple files, one file should be an .EXE or a .DLL file. The assembly manifest can be attached to any of the assembly files, or a separate file can be created to store the assembly manifest. However, multi-file assemblies are not used in ASP .NET. Static and Dynamic Assemblies: Static assemblies are those that generate files responsible for creating an assembly when a program is compiled. These files are stored on a disk for later use. Dynamic assemblies are those that create assemblies during a program execution. ASP .NET extensively supports dynamic assemblies. During the execution of an .aspx page, the ASP .NET process generates the related assemblies at runtime and saves them on a disk. Dynamic assemblies can be created through the classes available in the System.Reflection.Emit namespace.
Private and Shared Assemblies: Private assemblies are those that are deployed using only a single application. These assemblies are deployed in the directory or sub-directory on the same computer where the related application is installed. There is no strict security policy and version requirement while installing a private assembly in the

application's directory. On the other hand, shared assemblies are those that are deployed using multiple applications in shared mode. All the shared assemblies are deployed on the same computer and are installed in a specific area known as the Global Assembly Cache (GAC).
The Global Assembly Cache is a machine-wide cache that stores assemblies to be shared amongst several applications residing on the same computer. In the Global Assembly Cache, each assembly is identified by a strong name that consists of an assembly's name, a version number, a culture, a public key, and a digital signature. The common language runtime enforces security policies and version requirements while installing shared assemblies in the Global Assembly Cache. The GAC has the capability to maintain multiple copies of an assembly with a same name but different versions.
Satellite or Resource-only Assemblies: The assemblies that contain culture-neutral resources are referred to as satellite assemblies. These assemblies are used to deploy language-specific resources for an application. The application that uses language-specific resources has a separate identification for each language. The satellite assemblies are installed in a language-specific sub-directory for each language. Therefore, satellite assemblies work in a side-by-side execution.
Satellite assemblies do not contain any executable code, but contain only such resources that are culture-neutral. The Assembly Linker (Al.exe) tool is used to compile .resources files into satellite assemblies. So, the Al.exe command creates a satellite assembly for an application from the .resources file. The .NET Framework provides a class known as System.Resources.ResourceManager. The ResourceManager class first of all reads the culture-specific information from a .resource file, the name of the satellite assembly, and the name of the sub-directory, and then loads the satellite assembly to obtain the localized resource.

Question: 109

In which of the following types of objects is a Hashtable collection used to store its entries?

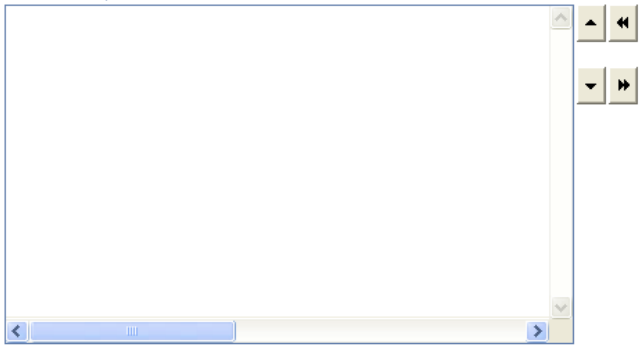
A. Stack
B. DictionaryBase
C. Queue
D. DictionaryEntry

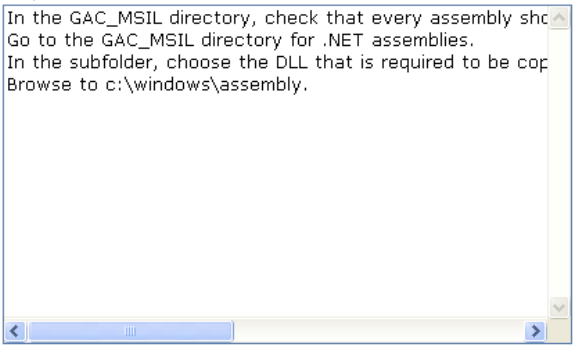
Answer: D

Explanation:
The Hashtable collection is used to store entries in DictionaryEntry objects. The DictionaryEntry structure is used to define a dictionary key/value pair that can be set or retrieved. The Entry method of the IDictionaryEnumerator structure returns an instance of this type. The foreach statement of the C# language needs the type of each element in the collection. Since each element of IDictionary is a key/value pair, the element type is not the type of the key or value. Instead, the element type is DictionaryEntry.
Answer: C is incorrect. The Hashtable collection does not store entries in instances of the Queue class.
Answer: B is incorrect. The Hashtable collection does not store entries in instances of the DictionaryBase class.
Answer: A is incorrect. The Hashtable collection does not store entries in instances of the Stack class.

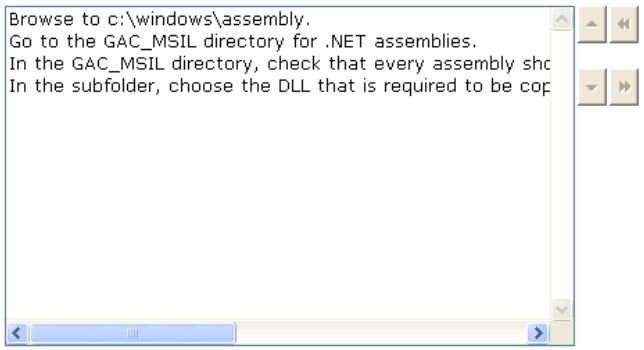
Question: 110

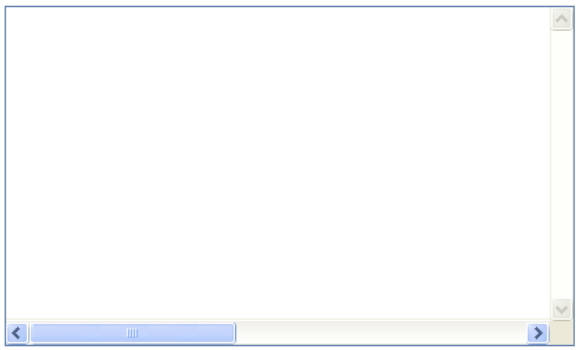
What are the steps required to easily copy DLL from the GAC?





Answer:





Explanation:
The steps required to easily copy DLL from the GAC are as follows:
1.Browse to c:\windows\assembly.
2.Go to the GAC_MSIL directory for .NET assemblies.
3.In the GAC_MSIL directory, check that every assembly should have a folder, with every version being a subfolder under that.
4.In the subfolder, choose the DLL that is required to be copied to a specified folder.

Question: 111

What are the weaknesses of symmetric key cryptography?
Each correct answer represents a complete solution. Choose all that apply.

A. Symmetric key cryptography does not apply Nonrepudiation.
B. It often requires the keys to be regenerated.
C. The algorithm used for symmetric key cryptography is not scalable.
D. The key distribution is easy.

Answer: A, C, and B

Explanation:
The following are the weaknesses of symmetric key cryptography:
1.The key distribution is difficult. Symmetric key cryptography requires the secure method to exchange the secret keys before the communication is initiated.
2.Symmetric key cryptography does not apply Nonrepudiation. It becomes difficult to determine the real originator of the message.
3.The algorithm used for symmetric key cryptography is not scalable. It becomes difficult for large groups to

communicate using symmetric key cryptography.
4.It often requires the keys to be regenerated. All the keys used by a participant are discarded when the participant leaves the group.

Question: 112

When you create an instance, where does the .NET Framework allocate memory for the instance?

A. On the heap
B. On the stack
C. On the ROM
D. On the hard disk

Answer: A

Explanation:
When you create an instance, the .NET Framework allocates memory on the heap for the instance. Reference types are stored on the heap, whereas value types are stored on the stack.
Answer: D is incorrect. A hard disk drive is a non-volatile storage device that stores digitally encoded data on rapidly rotating rigid platters with magnetic surfaces. Strictly speaking, "drive" refers to the motorized mechanical aspect that is distinct from its medium, such as a tape drive and its tape, or a floppy disk drive and its floppy disk. Early HDDs had removable media; however, an HDD today is typically a sealed unit with fixed media.
Answer: B is incorrect. A stack is the Last in First Out (LIFO) abstract data type and data structure. It can have any abstract data type as an element. However, a stack is characterized by only two basic operations: push and pop. The push operation is used to add an item to the top of the stack, hiding any items already on the stack, or initializing the stack if it is empty. The pop operation is used to remove an item from the top of the stack, and returns this value to the caller. A pop either exposes previously hidden items or results in an empty stack. A stack is a restricted data structure, as only a limited number of operations are carried out on it. The nature of the pop and push operations also indicates that the stack elements have a natural order. The elements are removed from the stack in the reverse order to the order of their addition. Consequently, the lower elements are those that have been on the stack the longest.
Answer: C is incorrect. ROM or Read Only Memory can only be read. It is the non-volatile memory since contents remain stored even when the power is off. Computer's software, such as firmware is stored on Read Only Memory chips. Firmware initiates the booting process when the computer is switched on and the instructions are taken from ROM.

Question: 113

Which of the following is an accurate description of generics?

A. A type minimizing the reusability of code and type safety
B. A type storing a pointer to the data, instead of the actual data
C. A class enabling the compiler to catch type-casting errors during runtime
D. A class using placeholders for one or more of the types it uses

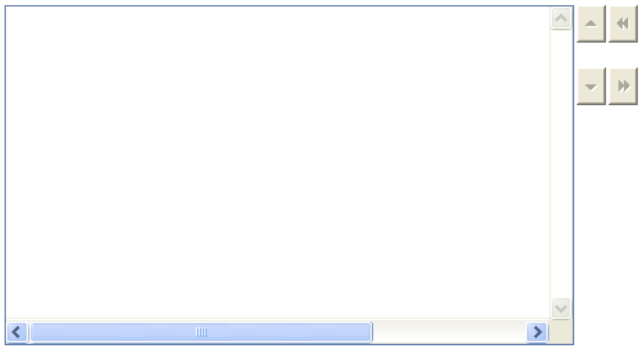
Answer: D

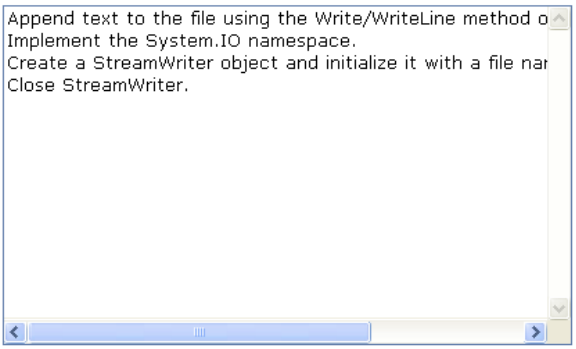
Explanation:
Generics make use of placeholders for their types, which permit multiple types of objects to be used as a parameter.
The .NET Framework version has provided a new feature of generics that introduce to the .NET Framework the concept of type parameters, which make it possible to design classes and methods that postpone the specification of

one or more types until the class or method is declared and instantiated by client code. For instance, by using a generic type parameter T, a single class can be written that other client code can exploit without incurring the cost or risk of runtime casts or boxing operations. The following are the benefits of using generics:
1.Generic types are used to maximize the reusability of code, type safety, and performance of .NET applications.
2.Generics are used to create new generic collection classes contained in the System.Collections.Generic namespace.
3.Custom generics can be created that include generic interfaces, classes, methods, events and delegates.
4.The type information used in a generic data type can be obtained by reflection during runtime.
5.Generics enable the compiler to catch type-casting errors during compilation.
6.Generics do not require casting or boxing, and therefore, it improves runtime performance.
Answer: B is incorrect. Reference types store a pointer to the data, instead of the actual data.

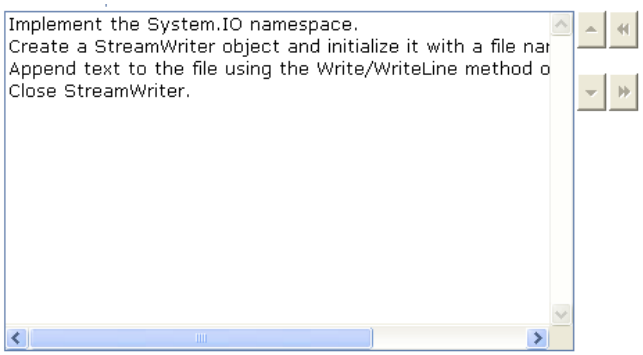
Question: 114

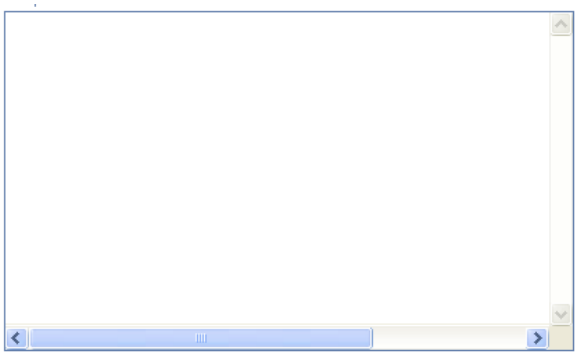
What are the steps required to append text to a file?





Answer:





Explanation:
The steps required to append text to a file are as follows:
1.Implement the System.IO namespace using the following code:
using System.IO;
2.Create a StreamWriter class object and initialize it with a file name.
StreamWriter sw = File.AppendText("TestFile.txt");
or
StreamWriter sw;
sw = File.AppendText("TestFile.txt");
3.Append text to the file using Write() or WriteLine() method of StreamWriter class.
sw.Write("This is my first Line to the file");
sw.Write("This is my second Line to the file");

sw.Write("This is my third line to the file");
sw.WriteLine("This is my fourth line to the file");
4.Close the StreamWriter class.
sw.Close();

Question: 115

Consider the following scenario:
Allen has created a Windows Presentation Foundation (WPF) database application using .NET Framework 4.0. The application helps users keep track of their e-Book collection. Allen identifies that some computers might have many users, such as two roommates might share a computer, with both individuals using the same application on the same computer to manage their e-Book collections. Allen sets up a database to handle many users without mixing up the collections.
How will the database connection string be stored in Allen's WPF database application?

A. As a setting with code behind
B. As a setting with application scope
C. As a setting with user scope
D. As a setting with machine scope

Answer: B

Explanation:
The database connection string will be stored in Allen's WPF database application as a setting with application scope. Given that all users on a computer make use of the same database, it does not require being different for different users.
Application settings provide a simple means to store application-scoped and user-scoped settings on a client computer. Using Visual Studio, a setting is defined for a specified property by providing its name, data type, and application/user scope. Related settings can also be placed into named groups for easy use and readability. Once defined, these settings are persisted and read back into memory automatically at runtime. A pluggable architecture makes possible the persistence mechanism to be altered, but by default, the local file system is used. Application settings work by persisting data as XML to different configuration files (.config) related to whether the setting is application/user scoped. In most cases, the application-scoped settings are read-only, as they are program information that need not be overwritten. By contrast, user-scoped settings can be read and written safely at runtime, even if the application runs under partial trust. Settings are stored as XML fragments in configuration files. Application-scoped settings are represented by the <application.Settings> element, and are located in app.exe.config, where app is the name of the main executable file.
User-scoped settings are represented by the <userSettings> element and are located in user.config, where user is the username of the person presently running the application.
The app.exe.config file must be deployed with the application. The settings architecture will create the user.config files on demand when the first time the application saves settings for that user. A <userSettings> block is defined inside app.exe.config to supply default values for user-scoped settings.

Question: 116

Allen creates an application using .NET Framework 4.0. He is unable to compile the application due to errors. What type of errors is he experiencing?

A. Syntax errors
B. Logical errors

C. Runtime errors
D. Exceptions

Answer: A

Explanation:
Allen is experiencing syntax errors. Syntax errors are those errors that occur when a compiler is unable to compile the supplied code. An application with syntax errors does not compile successfully. Syntax errors are the most common type of errors and can be easily identified as soon as they occur.
Answer: D is incorrect. An exception is an unexpected event that interrupts the normal execution of an application. It is generated if an unexpected condition occurs in the application. Developers write the exception handling code in the application's source code to deal with unexpected conditions that may arise during the application execution. When an error occurs during an application execution, the common language runtime throws an exception that contains error information. The application in turn, handles the exception that is thrown.
Answer: B is incorrect. Logical errors are those errors that appear in an application once it is in use. An application with logical errors compiles and executes correctly. However, it does not produce the desired result. Logical errors are the most difficult ones to locate because there is generally no information available about the source of error.
Answer: C is incorrect. Runtime errors are those errors that occur when an application attempts to perform an operation that is not allowed. They are called runtime errors because they appear only when an application executes. When a runtime error occurs, an exception that describes the error is thrown.

Question: 117

Which of the following methods is inherited from the IComparable interface?

A. GetType
B. Dispose
C. CompareTo
D. Clone
E. ToString

Answer: C

Explanation:
The CompareTo method is a member of the IComparable interface. The IComparable interface of the System namespace is used to define a generalized comparison method. When a value type or class implements this interface, it creates a type-specific comparison method that is the CompareTo method. The CompareTo method compares the current object of a class with another object of the same type. The IComparable interface is also suitable for the sorting mechanism.
Answer: E and A are incorrect. All classes inherit the ToString and GetType methods from the base Object class.
Answer: B is incorrect. The Dispose method is a member of the IDisposable interface.
Answer: D is incorrect. The Clone method is a member of the ICloneable interface.

Question: 118

Allen is creating an application using .NET Framework 4.0. He needs to provide static methods for creating, moving, and enumerating through directories and subdirectories? Which class will he use?

A. DirectoryInfo
B. Directory

C. File
D. FileInfo

Answer: B

Explanation:
The Directory class represents static methods for creating, moving, and enumerating by using directories and sub-directories. It is used for usual operations, such as copying, moving, renaming, creating, and deleting directories. The Directory class can also be used to get and set DateTime information associated to the creation, access, and writing of a directory. The Directory class cannot be inherited.
Some members of the Directory class accept a path; the path can pass on to a file/directory. The given path can also pass on to a relative path or a Universal Naming Convention (UNC) path for a server as well as share name. For example, all of the following are legal paths:
"c:\\MyDir" in C#, or "c:\MyDir" in Visual Basic.
"MyDir\\MySubdir" in C#, or "MyDir\MySubDir" in Visual Basic.
"\\\\MyServer\\MyShare" in C#, or "\\MyServer\MyShare" in Visual Basic.
Answer: C is incorrect. The File class is an utility class that is used to provide static methods to create, copy, delete, move, and open files. It is used to provide support in the creation of FileStream objects. It can also be used to get and set file attributes or DateTime information related to the creation, access, and writing of a file. It is more efficient to use the methods of the File class when only one task is to be performed. All methods of the File class require a specified path to the file that is to be manipulated.
Answer: D is incorrect. The FileInfo class is an informational class that is used to provide instance methods to create, copy, delete, move, and open files. It is used to provide support in the creation of FileStream objects. Most of the FileInfo methods return other I/O types in case of creating or opening files. You can use these other types to further manipulate a file. It is better to use the instance method of the FileInfo class when an object is to be reused several times. The methods of the FileInfo class do not require any specified path to the file.
Answer: A is incorrect. The DirectoryInfo class is used to provide methods for creating, moving, and enumerating through directories and subdirectories. This class can be used for common operations such as creating, copying, moving, renaming, and deleting directories. If an object is going to be used several times, consider using the methods of the DirectoryInfo class because a security check will not always be necessary.

Question: 119

Which of the following are valid key lengths for the RijndaelManaged symmetric cryptography class?
Each correct answer represents a complete solution. Choose all that apply.

A. 512
B. 1024
C. 256
D. 128

Answer: D and C

Explanation:
The RijndaelManaged class can use key lengths of 128 through 256 bits, in 32-bit increments. The RijndaelManaged class is used to access the managed version of the Rijndael algorithm. The RijndaelManaged class cannot be inherited. In other words, this algorithm supports key lengths of 128, 192, or 256 bits.
Answer: A and B are incorrect. 512 and 1024 bits are too large for the RijndaelManaged class.

Question: 120

Which of the following comprises a name consisting of an assembly's identity, public key, and digital signature?

A. Assembly version attribute
B. Strong name
C. Primary interop assembly
D. Global assembly cache

Answer: B

Explanation:
Strong name is a name consisting of an assembly's identity, public key, and digital signature. It includes the assembly's name, version number, and other related information (if any). Assemblies are identical, if they have the same strong name.
Answer: A is incorrect. The AssemblyVersionAttribute class specifies the version of the assembly being attributed. The version number is part of an assembly's identity and plays a vital role in binding to the assembly and in version policy. The default version policy for the runtime is that applications run only with the versions they were built and tested with, unless overridden by explicit version policy in configuration files. The version number has four parts, which are as follows:
<major version>
<minor version>
<build number>
<revision>
Note: Version checking only occurs with strong-named assemblies.
Answer: D is incorrect. Global assembly cache (GAC) is a machine-wide cache. It stores assemblies that are designed to be shared amongst multiple applications on a computer. All assemblies stored in the global assembly cache must have strong names.
Answer: C is incorrect. A primary interop assembly is an exclusive assembly that is supplied by a vendor. It holds type definitions (as metadata) of types implemented with COM.