

## 70-483.exam.165q

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70-483

**Programming in C#**

### Sections

1. Volume A
2. Volume B

### Exam A

**QUESTION 1**

You are creating an application that manages information about zoo animals. The application includes a class named Animal and a method named Save.

The Save() method must be strongly typed. It must allow only types inherited from the Animal class that uses a constructor that accepts no parameters.

You need to implement the Save() method.

Which code segment should you use?

- A. 

```
public static void Save<T>(T target) where T : new(), Animal
{
    ...
}
```
- B. 

```
public static void Save<T>(T target) where T : Animal
{
    ...
}
```
- C. ~~```
public static void Save<T>(T target) where T : Animal, new()
{
    ...
}
```~~
- D. 

```
public static void Save(Animal target)
{
    ...
}
```



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- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** C

**Section:** Volume A

**Explanation**



**Explanation/Reference:**

Explanation:

When you define a generic class, you can apply restrictions to the kinds of types that client code can use for type arguments when it instantiates your class. If client code tries to instantiate your class by using a type that is not allowed by a constraint, the result is a compile-time error. These restrictions are called constraints. Constraints are specified by using the where contextual keyword.

References: <http://msdn.microsoft.com/en-us/library/d5x73970.aspx>

## QUESTION 2

You are developing an application. The application includes classes named Employee and Person and an interface named IPerson.

The Employee class must meet the following requirements:

- It must either inherit from the Person class or implement the IPerson interface. ▪
- It must be inheritable by other classes in the application.

You need to ensure that the Employee class meets the requirements.

Which two code segments can you use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. sealed class Employee : Person
  - {
  - ...
  - }
- B. abstract class Employee : Person
  - {
  - ...
  - }
- C. sealed class Employee : IPerson
  - {
  - ...
  - }
- D. abstract class Employee : IPerson
  - {
  - ...
  - }

- A. Option A
- B. Option B
- C. Option C

D. Option D

**Correct Answer:** BD

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

Sealed - When applied to a class, the sealed modifier prevents other classes from inheriting from it.

References: [http://msdn.microsoft.com/en-us/library/88c54tsw\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/88c54tsw(v=vs.110).aspx)

### QUESTION 3

You are developing an application that will convert data into multiple output formats.

The application includes the following code. (Line numbers are included for reference only.)

```
01 public class TabDelimitedFormatter : IOutputFormatter<string>
02 {
03     readonly Func<int, char> suffix = col => col % 2 == 0 ? '\n' : '\t';
04     public string GetOutput(IEnumerator<string> iterator, int recordSize)
05     {
06
07     }
08 }
```

You are developing a code segment that will produce tab-delimited output. All output routines implement the following interface:

```
public interface IOutputFormatter<T>
{
    string GetOutput(IEnumerator<T> iterator, int recordSize);
}
```

You need to minimize the completion time of the GetOutput() method.

Which code segment should you insert at line 06?

- C A. 

```
string output = null;
for (int i = 1; iterator.MoveNext(); i++)
{
    output = string.Concat(output, iterator.Current, suffix(i));
}
return output;
```
- C B. 

```
var output = new StringBuilder();
for (int i = 1; iterator.MoveNext(); i++)
{
    output.Append(iterator.Current);
    output.Append(suffix(i));
}
return output.ToString();
```
- C C. 

```
string output = null;
for (int i = 1; iterator.MoveNext(); i++)
{
    output = output + iterator.Current + suffix(i);
}
return output;
```
- C D. 

```
string output = null;
for (int i = 1; iterator.MoveNext(); i++)
{
    output += iterator.Current + suffix(i);
}
return output;
```

- A. Option A
- B. Option B
- C. Option C

D. Option D

**Correct Answer: B**

**Section: Volume A**

**Explanation**

**Explanation/Reference:**

Explanation:

A String object concatenation operation always creates a new object from the existing string and the new data.

A StringBuilder object maintains a buffer to accommodate the concatenation of new data. New data is appended to the buffer if room is available; otherwise, a new, larger buffer is allocated, data from the original buffer is copied to the new buffer, and the new data is then appended to the new buffer.

The performance of a concatenation operation for a String or StringBuilder object depends on the frequency of memory allocations. A String concatenation operation always allocates memory, whereas a StringBuilder concatenation operation allocates memory only if the StringBuilder object buffer is too small to accommodate the new data. Use the String class if you are concatenating a fixed number of String objects. In that case, the compiler may even combine individual concatenation operations into a single operation. Use a StringBuilder object if you are concatenating an arbitrary number of strings; for example, if you're using a loop to concatenate a random number of strings of user input.

References: [http://msdn.microsoft.com/en-us/library/system.text.stringbuilder\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/system.text.stringbuilder(v=vs.110).aspx)

**QUESTION 4**

You are developing an application by using C#.



The application includes an object that performs a long running process.

You need to ensure that the garbage collector does not release the object's resources until the process completes.

Which garbage collector method should you use?

- A. ReRegisterForFinalize()
- B. SuppressFinalize()
- C. Collect()
- D. WaitForFullGCApproach()

**Correct Answer: B**

**Section: Volume A**

**Explanation**

**Explanation/Reference:**

**QUESTION 5**

You are creating a class named Employee. The class exposes a string property named EmployeeType. The following code segment defines the Employee class. (Line numbers are included for reference only.)

```
01 public class Employee
02 {
03     internal string EmployeeType
04     {
05         get;
06         set;
07     }
08 }
```

The EmployeeType property value must be accessed and modified only by code within the Employee class or within a class derived from the Employee class.

You need to ensure that the implementation of the EmployeeType property meets the requirements.

Which two actions should you perform? (Each correct answer represents part of the complete solution. Choose two.)

- A. Replace line 05 with the following code segment:`protected get;`
- B. Replace line 06 with the following code segment:`private set;`
- C. Replace line 03 with the following code segment:`public string EmployeeType`
- D. Replace line 05 with the following code segment:`private get;`
- E. Replace line 03 with the following code segment:`protected string EmployeeType`
- F. Replace line 06 with the following code segment:`protected set;`

**Correct Answer:** BE

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

**QUESTION 6**

You are implementing a method named Calculate that performs conversions between value types and reference types. The following code segment implements the method. (Line numbers are included for reference only.)

```
01 public static void Calculate(float amount)
02 {
03     object amountRef = amount;
04
05     Console.WriteLine(balance);
06 }
```

You need to ensure that the application does not throw exceptions on invalid conversions.

Which code segment should you insert at line 04?

- A. int balance = (int) (float)amountRef;
- B. int balance = (int)amountRef;
- C. int balance = amountRef;
- D. int balance = (int) (double) amountRef;

**Correct Answer:** A

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

#### QUESTION 7

You are creating a console application by using C#.

You need to access the application assembly.

Which code segment should you use?

- A. Assembly.GetAssembly(this);
- B. this.GetType();
- C. Assembly.Load();
- D. Assembly.GetExecutingAssembly();

**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

- `Assembly.GetExecutingAssembly` - Gets the assembly that contains the code that is currently executing.
- `Assembly.GetAssembly` - Gets the currently loaded assembly in which the specified class is defined.

References:

<http://msdn.microsoft.com/en-us/library/system.reflection.assembly.getassembly.aspx> [http://msdn.microsoft.com/en-us/library/system.reflection.assembly.getexecutingassembly\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/system.reflection.assembly.getexecutingassembly(v=vs.110).aspx)

#### **QUESTION 8**

You use the `Task.Run()` method to launch a long-running data processing operation. The data processing operation often fails in times of heavy network congestion.

If the data processing operation fails, a second operation must clean up any results of the first operation.

You need to ensure that the second operation is invoked only if the data processing operation throws an unhandled exception.

What should you do?

- A. Create a `TaskCompletionSource<T>` object and call the `TrySetException()` method of the object.
- B. Create a task by calling the `Task.ContinueWith()` method.
- C. Examine the `Task.Status` property immediately after the call to the `Task.Run()` method.
- D. Create a task inside the existing `Task.Run()` method by using the `AttachedToParent` option.

**Correct Answer:** B

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

#### **QUESTION 9**

You are modifying an application that processes leases. The following code defines the `Lease` class. (Line numbers are included for reference only.)

```
01 public class Lease
02 {
03
04     private int _term;
05     private const int MaximumTerm = 5;
06     private const decimal Rate = 0.034m;
07     public int Term
08     {
09         get
10        {
11            return _term;
12        }
13        set
14        {
15            if (value <= MaximumTerm)
16            {
17                _term = value;
18            }
19            else
20            {
21
22            }
23        }
24    }
25 }
26 public delegate void MaximumTermReachedHandler(object source, EventArgs e);
```



Leases are restricted to a maximum term of 5 years. The application must send a notification message if a lease request exceeds 5 years.

You need to implement the notification mechanism.



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Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)



- A. Insert the following code segment at line 03:

```
public event MaximumTermReachedHandler OnMaximumTermReached;
```

- B. Insert the following code segment at line 21:

```
if (OnMaximumTermReached != null)
{
    OnMaximumTermReached(this, new EventArgs());
}
```

- C. Insert the following code segment at line 21:

```
value = MaximumTerm;
```



- D. Insert the following code segment at line 03:

```
public string MaximumTermReachedEvent { get; set; }
```

- E. Insert the following code segment at line 03:

```
private string MaximumTermReachedEvent;
```

- F. Insert the following code segment at line 21:

```
value = 5;
```

- A. Option A
- B. Option B
- C. Option C

- D. Option D
- E. Option E
- F. Option F

**Correct Answer:** AB

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

#### **QUESTION 10**

You are developing an application that uses structured exception handling. The application includes a class named ExceptionLogger.

The ExceptionLogger class implements a method named LogException by using the following code segment:

```
public static void LogException(Exception ex)
```

You have the following requirements:

- Log all exceptions by using the LogException() method of the ExceptionLogger class.
- Rethrow the original exception, including the entire exception stack.

You need to meet the requirements.

Which code segment should you use?

- C A. 

```
catch (Exception ex)
{
    ExceptionLogger.LogException(ex);
    throw;
}
```
- C B. 

```
catch (Exception ex)
{
    ExceptionLogger.LogException(ex);
    throw ex;
}
```
- C C. 

```
catch
{
    ExceptionLogger.LogException(new Exception());
    throw;
}
```
- C D. 

```
catch
{
    var ex = new Exception();
    throw ex;
}
```

A. Option A

- B. Option B C. Option C
- D. Option D

**Correct Answer:** A

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

Once an exception is thrown, part of the information it carries is the stack trace. The stack trace is a list of the method call hierarchy that starts with the method that throws the exception and ends with the method that catches the exception. If an exception is re-thrown by specifying the exception in the throw statement, the stack trace is restarted at the current method and the list of method calls between the original method that threw the exception and the current method is lost. To keep the original stack trace information with the exception, use the throw statement without specifying the exception. References: [http://msdn.microsoft.com/en-us/library/ms182363\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/ms182363(v=vs.110).aspx)

#### **QUESTION 11**

You are developing an application that includes a class named UserTracker. The application includes the following code segment. (Line numbers are included for reference only.)



```
01 public delegate void AddUserCallback(int i);
02 public class UserTracker
03 {
04     List<User> users = new List<User>();
05     public void AddUser(string name, AddUserCallback callback)
06     {
07         users.Add(new User(name));
08         callback(users.Count);
09     }
10 }
11
12 public class Runner
13 {
14
15     UserTracker tracker = new UserTracker();
16     public void Add(string name)
17     {
18
19     }
20 }
```



You need to add a user to the UserTracker instance.

What should you do?

- C A. Insert the following code segment at line 14:

```
private static void PrintUserCount(int i)
{
    ...
}
```

Insert the following code segment at line 18:

```
AddUserCallback callback = PrintUserCount;
```

- C B. Insert the following code segment at line 11:

```
delegate void AddUserDelegate(UserTracker userTracker);
```

Insert the following code segment at line 18:

```
AddUserDelegate addDelegate = (userTracker) =>
{
    ...
};
addDelegate(tracker);
```

- C C. Insert the following code segment at line 11:

```
delegate void AddUserDelegate(string name, AddUserCallback callback);
```

Insert the following code segment at line 18:

```
AddUserDelegate adder = (i, callback) =>
{
    ...
};
```

- C D. Insert the following code segment at line 18:

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

#### **QUESTION 12**

You are adding a public method named UpdateScore to a public class named ScoreCard.

The code region that updates the score field must meet the following requirements:

- It must be accessed by only one thread at a time. ▪
- It must not be vulnerable to a deadlock situation.

You need to implement the `UpdateScore()` method.

What should you do?



- A. Place the code region inside the following lock statement:

```
lock (this)
{
    ...
}
```

- B. Add a private object named **lockObject** to the **ScoreCard** class. Place the code region inside the following lock statement:

```
lock (lockObject)
{
    ...
}
```

- C. Apply the following attribute to the **UpdateScore()** method signature:

[MethodImpl(MethodImplOptions.Synchronized)]

- D. Add a public static object named **lockObject** to the **ScoreCard** class. Place the code region inside the following lock statement:

```
lock (typeof(ScoreCard))
{
    ...
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** B

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

References: <http://blogs.msdn.com/b/bclteam/archive/2004/01/20/60719.aspx>

### QUESTION 13

You are developing a C# application that has a requirement to validate some string input data by using the Regex class.

The application includes a method named `ContainsHyperlink`. The `ContainsHyperlink()` method will verify the presence of a URI and surrounding markup. The following code segment defines the `ContainsHyperlink()` method. (Line numbers are included for reference only.)

```
01 bool ContainsHyperLink(string inputData)
02 {
03     string regExPattern = "href\\s*=\\s*(?:\"(?<1>[^\""]*)\"|(?<1>\\s+))";
04
05     return evaluator.IsMatch(inputData);
06 }
```

The expression patterns used for each validation function are constant.

You need to ensure that the expression syntax is evaluated only once when the `Regex` object is initially instantiated.

Which code segment should you insert at line 04?

```
var evaluator = new Regex(regExPattern, RegexOptions.CultureInvariant);

var evaluator = new Regex(inputData);

var assemblyName = "Validation";
var compilationInfo = new RegexCompilationInfo(inputData, RegexOptions.IgnoreCase,
    "Href", assemblyName, true);
Regex.CompileToAssembly(new[] { compilationInfo }, new AssemblyName(assemblyName));
var evaluator = new Regex(regExPattern, RegexOptions.CultureInvariant);

var evaluator = new Regex(regExPattern, RegexOptions.Compiled );
```

A.

B.

C.

D.

**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

RegexOptions.Compiled - Specifies that the regular expression is compiled to an assembly. This yields faster execution but increases startup time. This value should not be assigned to the Options property when calling the CompileToAssembly method.

References:

<http://msdn.microsoft.com/en-us/library/system.text.regularexpressions.regexoptions.aspx> <http://stackoverflow.com/questions/513412/how-does-regexoptions-compiled-work>

**QUESTION 14**

You are developing an application by using C#.

You have the following requirements:

- Support 32-bit and 64-bit system configurations.
- Include pre-processor directives that are specific to the system configuration.
- Deploy an application version that includes both system configurations to testers.
- Ensure that stack traces include accurate line numbers.

You need to configure the project to avoid changing individual configuration settings every time you deploy the application to testers.

Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Update the platform target and conditional compilation symbols for each application configuration.
- B. Create two application configurations based on the default Release configuration.
- C. Optimize the application through address rebasing in the 64-bit configuration.
- D. Create two application configurations based on the default Debug configuration.

**Correct Answer:** BD

**Section:** Volume A

**Explanation**

**Explanation/Reference:****QUESTION 15**

You are developing a method named CreateCounters that will create performance counters for an application.

The method includes the following code. (Line numbers are included for reference only.)

```
01 void CreateCounters()
02 {
03     if (!PerformanceCounterCategory.Exists("Contoso"))
04     {
05         var counters = new CounterCreationDataCollection();
06         var ccdCounter1 = new CounterCreationData
07         {
08             CounterName = "Counter1",
09             CounterType = PerformanceCounterType.SampleFraction
10         };
11         counters.Add(ccdCounter1);
12         var ccdCounter2 = new CounterCreationData
13         {
14             CounterName = "Counter2",
15             CounterType = PerformanceCounterType.SampleFraction
16         };
17         counters.Add(ccdCounter2);
18         PerformanceCounterCategory.Create("Contoso", "Help string",
19             PerformanceCounterCategoryType.MultiInstance, counters);
20     }
21 }
22 }
```

You need to ensure that Counter1 is available for use in Windows Performance Monitor (PerfMon).

Which code segment should you insert at line 16?

- A. CounterType = PerformanceCounterType.RawBase
- B. CounterType = PerformanceCounterType.AverageBase
- C. CounterType = PerformanceCounterType.SampleBase
- D. CounterType = PerformanceCounterType.CounterMultiBase

**Correct Answer:** C

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

PerformanceCounterType.SampleBase - A base counter that stores the number of sampling interrupts taken and is used as a denominator in the sampling fraction. The sampling fraction is the number of samples that were 1 (or true) for a sample interrupt. Check that this value is greater than zero before using it as the denominator in a calculation of SampleFraction.

PerformanceCounterType.SampleFraction - A percentage counter that shows the average ratio of hits to all operations during the last two sample intervals. Formula:  $((N_1 - N_0) / (D_1 - D_0)) \times 100$ , where the numerator represents the number of successful operations during the last sample interval, and the denominator represents the change in the number of all operations (of the type measured) completed during the sample interval, using counters of type SampleBase. Counters of this type include Cache\Pin Read Hits %.

References: <http://msdn.microsoft.com/en-us/library/system.diagnostics.performancecountertype.aspx>

### QUESTION 16

You are developing an application that will transmit large amounts of data between a client computer and a server.

You need to ensure the validity of the data by using a cryptographic hashing algorithm.

Which algorithm should you use?

- A. HMACSHA256
- B. RNGCryptoServiceProvider
- C. DES
- D. Aes



**Correct Answer:** A

**Section:** Volume A

**Explanation**

#### **Explanation/Reference:**

Explanation:

The .NET Framework provides the following classes that implement hashing algorithms:

- HMACSHA1.
- MACTripleDES.
- MD5CryptoServiceProvider.
- RIPEMD160.
- SHA1Managed.
- SHA256Managed.
- SHA384Managed.
- SHA512Managed.

HMAC variants of all of the Secure Hash Algorithm (SHA), Message Digest 5 (MD5), and RIPEMD-160 algorithms.

CryptoServiceProvider implementations (managed code wrappers) of all the SHA algorithms.

Cryptography Next Generation (CNG) implementations of all the MD5 and SHA algorithms. [http://msdn.microsoft.com/en-us/library/92f9ye3s.aspx#hash\\_values](http://msdn.microsoft.com/en-us/library/92f9ye3s.aspx#hash_values)

### QUESTION 17

You are developing an assembly that will be used by multiple applications.

You need to install the assembly in the Global Assembly Cache (GAC).

Which two actions can you perform to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. Use the Assembly Registration tool (regasm.exe) to register the assembly and to copy the assembly to the GAC.
- B. Use the Strong Name tool (sn.exe) to copy the assembly into the GAC.
- C. Use Microsoft Register Server (regsvr32.exe) to add the assembly to the GAC.
- D. Use the Global Assembly Cache tool (gacutil.exe) to add the assembly to the GAC.



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- E. Use Windows Installer 2.0 to add the assembly to the GAC.

**Correct Answer:** DE

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

There are two ways to deploy an assembly into the global assembly cache:

Use an installer designed to work with the global assembly cache. This is the preferred option for installing assemblies into the global assembly cache.

Use a developer tool called the Global Assembly Cache tool (Gacutil.exe), provided by the Windows

Software Development Kit (SDK).

**Note:**

In deployment scenarios, use Windows Installer 2.0 to install assemblies into the global assembly cache. Use the Global Assembly Cache tool only in development scenarios, because it does not provide assembly reference counting and other features provided when using the Windows Installer.

References: <http://msdn.microsoft.com/en-us/library/yf1d93sz%28v=vs.110%29.aspx>

**QUESTION 18**

You are debugging an application that calculates loan interest. The application includes the following code. (Line numbers are included for reference only.)

```
01 private static decimal CalculateInterest(decimal loanAmount, int loanTerm, decimal loanRate)
02 {
03
04     decimal interestAmount = loanAmount * loanRate * loanTerm;
05
06     return interestAmount;
07 }
```

You need to ensure that the debugger breaks execution within the CalculateInterest() method when the loanAmount variable is less than or equal to zero in all builds of the application.

What should you do?

- A. Insert the following code segment at line 03:Trace.Assert(loanAmount > 0);
- B. Insert the following code segment at line 03:Debug.Assert(loanAmount > 0);
- C. Insert the following code segment at line 05:Debug.Write(loanAmount > 0);
- D. Insert the following code segment at line 05:Trace.Write(loanAmount > 0);

**Correct Answer:** A

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

By default, the Debug.Assert method works only in debug builds. Use the Trace.Assert method if you want to do assertions in release builds. For more information, see Assertions in Managed Code.

References: <http://msdn.microsoft.com/en-us/library/kssw4w7z.aspx>

**QUESTION 19**

You are developing an application that accepts the input of dates from the user.

Users enter the date in their local format. The date entered by the user is stored in a string variable named `inputDate`. The valid date value must be placed in a `DateTime` variable named `validatedDate`.

You need to validate the entered date and convert it to Coordinated Universal Time (UTC). The code must not cause an exception to be thrown.

Which code segment should you use?

- A. 

```
bool validDate = DateTime.TryParse(inputDate,
    CultureInfo.CurrentCulture, DateTimeStyles.AdjustToUniversal | DateTimeStyles.AssumeLocal,
    out validatedDate);
```
- B. 

```
bool validDate = DateTime.TryParse(inputDate,
    CultureInfo.CurrentCulture, DateTimeStyles.AssumeUniversal, out validatedDate);
```
- C. 

```
bool validDate = true;
try
{
    validatedDate = DateTime.Parse(inputDate);
}
catch
{
    validDate = false;
}
```
- D. 

```
validatedDate = DateTime.ParseExact(inputDate, "g",
    CultureInfo.CurrentCulture, DateTimeStyles.AdjustToUniversal | DateTimeStyles.AssumeUniversal);
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** A

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

AdjustToUniversal parses s and, if necessary, converts it to UTC.

Note: The DateTime.TryParse method converts the specified string representation of a date and time to its DateTime equivalent using the specified culture-specific format information and formatting style, and returns a value that indicates whether the conversion succeeded.

**QUESTION 20**

DRAG DROP

You are developing an application by using C#. The application will process several objects per second.

You need to create a performance counter to analyze the object processing.

Which three actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

**Select and Place:**



Add the **CounterCreationData** objects to the collection by calling the **Add()** method of the collection.

Create a **PerformanceCounterPermissionEntryCollection** collection.

Call the **Create()** method of the **PerformanceCounterCategory** class and pass the collection to the method.

Get the **CategoryName** property of the **PerformanceCounterPermissionEntry** class.

Create a **CounterCreationDataCollection** collection. Then create the counters as **CounterCreationData** objects and set the necessary properties.

Correct Answer:

|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Create a <b>PerformanceCounterPermissionEntryCollection</b> collection.</p> | <p>Create a <b>CounterCreationDataCollection</b> collection. Then create the counters as <b>CounterCreationData</b> objects and set the necessary properties.</p> <p>Add the <b>CounterCreationData</b> objects to the collection by calling the <b>Add()</b> method of the collection.</p> <p>Call the <b>Create()</b> method of the <b>PerformanceCounterCategory</b> class and pass the collection to the method.</p> |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## Section: Volume A

### Explanation

#### Explanation/Reference:

Explanation:

```
CounterCreationDataCollection counterDataCollection = new CounterCreationDataCollection(); // Box1
// Add the counter. Box 1
CounterCreationData averageCount64 = new CounterCreationData();
averageCount64.CounterType = PerformanceCounterType.AverageCount64;
averageCount64.CounterName = "AverageCounter64Sample";
counterDataCollection.Add(averageCount64);
// Add the base counter.
CounterCreationData averageCount64Base = new CounterCreationData(); averageCount64Base.CounterType = PerformanceCounterType.AverageBase;
averageCount64Base.CounterName = "AverageCounter64SampleBase";
```

```
counterDataCollection.Add(averageCount64Base); // Box 2  
// Create the category. Box 3  
PerformanceCounterCategory.Create("AverageCounter64SampleCategory",  
"Demonstrates usage of the AverageCounter64 performance counter type.",  
PerformanceCounterCategoryType.SingleInstance, counterDataCollection);
```

**QUESTION 21**

You are developing an application by using C#. You provide a public key to the development team during development.

You need to specify that the assembly is not fully signed when it is built.

Which two assembly attributes should you include in the source code? (Each correct answer presents part of the solution. Choose two.)

- A. AssemblyKeyNameAttribute
- B. ObfuscateAssemblyAttribute
- C. AssemblyDelaySignAttribute
- D. AssemblyKeyFileAttribute

**Correct Answer:** CD

**Section:** Volume A

**Explanation**



**Explanation/Reference:**

References: [http://msdn.microsoft.com/en-us/library/t07a3dye\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/t07a3dye(v=vs.110).aspx)

**QUESTION 22**

You are adding a public method named UpdateGrade to a public class named ReportCard.

The code region that updates the grade field must meet the following requirements:

- It must be accessed by only one thread at a time. ▪
- It must not be vulnerable to a deadlock situation.

You need to implement the UpdateGrade() method.

What should you do?

- C A. Add a private object named **lockObject** to the **ReportCard** class. Place the code region inside the following lock statement:

```
lock (lockObject)
{
    ...
}
```

- C B. Place the code region inside the following lock statement:

```
lock (this)
{
    ...
}
```

- C C. Add a public static object named **lockObject** to the **ReportCard** class. Place the code region inside the following lock statement:

```
lock (typeof(ReportCard))
{
    ...
}
```



- C D. Apply the following attribute to the **UpdateGrade()** method signature:

```
[MethodImpl(MethodImplOptions.Synchronized)]
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** A

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

**QUESTION 23**

You are developing an application that includes a class named BookTracker for tracking library books. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 public delegate void AddBookCallback(int i);
02 public class BookTracker
03 {
04     List<Book> books = new List<Book>();
05     public void AddBook(string name, AddBookCallback callback)
06     {
07         books.Add(new Book(name));
08         callback(books.Count);
09     }
10 }
11
12 public class Runner
13 {
14
15     BookTracker tracker = new BookTracker();
16     public void Add(string name)
17     {
18
19     }
20 }
```

You need to add a user to the BookTracker instance. What should you do?

- C A. Insert the following code segment at line 14:

```
private static void PrintBookCount(int i)
{
    ...
}
```

Insert the following code segment at line 18:

```
AddBookCallback callback = PrintBookCount;
```

- C B. Insert the following code segment at line 18:

```
tracker.AddBook(name, delegate(int i)
{
    ...
});
```



- C C. Insert the following code segment at line 11:

```
delegate void AddBookDelegate(BookTracker bookTracker);
```

Insert the following code segment at line 18:

```
AddBookDelegate addDelegate = (bookTracker) =>
{
    ...
};
addDelegate(tracker);
```

- C D. Insert the following code segment at line 11:

```
delegate void AddBookDelegate(string name, AddBookCallback callback);
```

Insert the following code segment at line 18:

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** B

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

#### **QUESTION 24**

You are creating a console application by using C#.

You need to access the assembly found in the file named car.dll.

Which code segment should you use?

- A. Assembly.Load();
- B. Assembly.GetExecutingAssembly();
- C. This.GetType();
- D. Assembly.LoadFile("car.dll");



**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

Assembly.LoadFile - Loads the contents of an assembly file on the specified path.

References: <http://msdn.microsoft.com/en-us/library/b61s44e8.aspx>

#### **QUESTION 25**

You are developing an application by using C#.

The application includes an object that performs a long running process.

You need to ensure that the garbage collector does not release the object's resources until the process completes.

Which garbage collector method should you use?

- A. WaitForFullGCComplete()
- B. WaitForFullGCApproach()
- C. KeepAlive()
- D. WaitForPendingFinalizers()

**Correct Answer:** C

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

The GC.KeepAlive method references the specified object, which makes it ineligible for garbage collection from the start of the current routine to the point where this method is called.

The purpose of the KeepAlive method is to ensure the existence of a reference to an object that is at risk of being prematurely reclaimed by the garbage collector. The KeepAlive method performs no operation and produces no side effects other than extending the lifetime of the object passed in as a parameter.

## QUESTION 26

An application includes a class named Person. The Person class includes a method named GetData.



You need to ensure that the `GetData()` method can be used only by the Person class and not by any class derived from the Person class.

Which access modifier should you use for the `GetData()` method?

- A. Public
- B. Protected internal
- C. Internal
- D. Private
- E. Protected

**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

The `GetData()` method should be private. It would then only be visible within the Person class.

**QUESTION 27**

You are developing an application. The application includes classes named Mammal and Animal and an interface named IAnimal.

The Mammal class must meet the following requirements:

- It must either inherit from the Animal class or implement the IAnimal interface. ▪
- It must be inheritable by other classes in the application.

You need to ensure that the Mammal class meets the requirements.

Which two code segments can you use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)



A. abstract class Mammal : IAnimal  
{  
    ...  
}

B. sealed class Mammal : IAnimal  
{  
    ...  
}

C. abstract class Mammal : Animal  
{  
    ...  
}

D. sealed class Mammal : Animal  
{  
    ...  
}

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Correct Answer: AC

Section: Volume A

Explanation

**Explanation/Reference:**

Explanation:

When applied to a class, the sealed modifier prevents other classes from inheriting from it.

References: [http://msdn.microsoft.com/en-us/library/88c54tsw\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/88c54tsw(v=vs.110).aspx)

#### QUESTION 28

An application receives JSON data in the following format:

```
{ "FirstName" : "David",
  "LastName" : "Jones",
  "Values" : [0, 1, 2] }
```

The application includes the following code segment. (Line numbers are included for reference only.)

```
01 public class Name
02 {
03     public int[] Values { get; set; }
04     public string FirstName { get; set; }
05     public string LastName { get; set; }
06 }
07 public static Name ConvertToName(string json)
08 {
09     var ser = new JavaScriptSerializer();
10
11 }
```

You need to ensure that the `ConvertToName()` method returns the JSON input string as a `Name` object.

Which code segment should you insert at line 10?

- A. Return ser.Deserialize (json, typeof(Name));
- B. Return ser.ConvertToType<Name>(json);
- C. Return ser.Deserialize<Name>(json);
- D. Return ser.ConvertToType (json, typeof (Name));

**Correct Answer:** C

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

**QUESTION 29**

You are developing an application that includes the following code segment. (Line numbers are included for reference only.)



```
01 class Customer
02 {
03     public string CompanyName { get; set; }
04     public string Id { get; set; }
05 }
06 const string sqlSelectCustomers = "SELECT CustomerID, CompanyName FROM Customers";
07 private static IEnumerable<Customer> GetCustomers(string sqlConnectionString)
08 {
09     List<Customer> customers = new List<Customer>();
10     SqlConnection sqlConnection = new SqlConnection(sqlConnectionString);
11     using (sqlConnection)
12     {
13         SqlCommand sqlCommand = new SqlCommand(sqlSelectCustomers, sqlConnection);
14
15         using (SqlDataReader sqlDataReader = sqlCommand.ExecuteReader())
16         {
17             while (sqlDataReader.Read())
18             {
19                 Customer customer = new Customer();
20                 customer.Id = (string)sqlDataReader["CustomerID"];
21                 customer.CompanyName = (string)sqlDataReader["CompanyName"];
22                 customers.Add(customer);
23             }
24         }
25     }
26     return customers;
27 }
```

The GetCustomers() method must meet the following requirements:

- Connect to a Microsoft SQL Server database.
- Populate Customer objects with data from the database.
- Return an IEnumerable<Customer> collection that contains the populated Customer objects.

You need to meet the requirements.

Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Insert the following code segment at line 17: while (sqlDataReader.GetValues())

- B. Insert the following code segment at line 14: `sqlConnection.Open();`
- C. Insert the following code segment at line 14: `sqlConnection.BeginTransaction();`
- D. Insert the following code segment at line 17: `while (sqlDataReader.Read())`
- E. Insert the following code segment at line 17: `while (sqlDataReader.NextResult())`

**Correct Answer:** BD

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

`SqlConnection.Open` - Opens a database connection with the property settings specified by the `ConnectionString`.

`SqlDataReader.Read` - Advances the `SqlDataReader` to the next record.

References:

<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlconnection.open.aspx> <http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqldatareader.read.aspx>

### QUESTION 30

An application will upload data by using HTML form-based encoding. The application uses a method named `SendMessage`.

The `SendMessage()` method includes the following code. (Line numbers are included for reference only.)

```
01 public Task<byte[]> SendMessage(string url, int intA, int intB)
02 {
03     var client = new WebClient();
04
05 }
```

The receiving URL accepts parameters as form-encoded values.

You need to send the values `intA` and `intB` as form-encoded values named `a` and `b`, respectively.

Which code segment should you insert at line 04?

- A. 

```
var data = string.Format("a={0}&b={1}", intA, intB);
return client.UploadStringTaskAsync(new Uri(url), data);
```
- B. 

```
var data = string.Format("a={0}&b={1}", intA, intB);
return client.UploadFileTaskAsync(new Uri(url), data);
```
- C. 

```
var data = string.Format("a={0}&b={1}", intA, intB);
return client.UploadDataTaskAsync(new Uri(url), Encoding.UTF8.GetBytes(data));
```
- D. 

```
var nvc = new NameValueCollection() { { "a", intA.ToString() }, { "b", intB.ToString() } };
return client.UploadValuesTaskAsync(new Uri(url), nvc);
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

WebClient.UploadValuesTaskAsync - Uploads the specified name/value collection to the resource identified by the specified URI as an asynchronous operation using a task object. These methods do not block the calling thread.

References: <http://msdn.microsoft.com/en-us/library/system.net.webclient.uploadvaluestaskasync.aspx>

### QUESTION 31

You are developing an application. The application converts a Location object to a string by using a method named WriteObject.

The WriteObject() method accepts two parameters, a Location object and an XmlObjectSerializer object.

The application includes the following code. (Line numbers are included for reference only.)

```
01 public enum Compass
02 {
03     North,
04     South,
05     East,
06     West
07 }
08 [DataContract]
09 public class Location
10 {
11     [DataMember]
12     public string Label { get; set; }
13     [DataMember]
14     public Compass Direction { get; set; }
15 }
16 void DoWork()
17 {
18     var location = new Location { Label = "Test", Direction = Compass.West };
19     Console.WriteLine(WriteObject(location,
20
21     ));
22 }
```

You need to serialize the Location object as XML.

Which code segment should you insert at line 20?

- A. new XmlSerializer(typeof(Location))
- B. new NetDataContractSerializer()
- C. new DataContractJsonSerializer(typeof (Location))
- D. new DataContractSerializer(typeof(Location))

**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

The code is using [DataContract] attribute here so need to used DataContractSerializer class.

**QUESTION 32**

You are developing an application that includes a class named Order. The application will store a collection of Order objects.

The collection must meet the following requirements:

- Internally store a key and a value for each collection item.
- Provide objects to iterators in ascending order based on the key.
- Ensure that items are accessible by zero-based index or by key.

You need to use a collection type that meets the requirements.

Which collection type should you use?

- A. LinkedList
- B. Queue
- C. Array
- D. HashTable
- E. SortedList

**Correct Answer:** E

**Section:** Volume A

**Explanation**



**Explanation/Reference:**

Explanation:

SortedList<TKey, TValue> - Represents a collection of key/value pairs that are sorted by key based on the associated IComparer<T> implementation.

References: <http://msdn.microsoft.com/en-us/library/ms132319.aspx>

**QUESTION 33**

You are developing an application that includes the following code segment. (Line numbers are included for reference only.)

```
01 using System;
02 class MainClass
03 {
04     public static void Main(string[] args)
05     {
06         bool bValidInteger = false;
07         int value = 0;
08         do
09         {
10             Console.WriteLine("Enter an integer:");
11             bValidInteger = GetValidInteger(ref value);
12         } while (!bValidInteger);
13         Console.WriteLine("You entered a valid integer, " + value);
14     }
15     public static bool GetValidInteger(ref int val)
16     {
17         string sLine = Console.ReadLine();
18         int number;
19
20         {
21             return false;
22         }
23         else
24         {
25             val = number;
26             return true;
27         }
28     }
29 }
```

You need to ensure that the application accepts only integer input and prompts the user each time non-integer input is entered.

Which code segment should you add at line 19?

- A. If (!int.TryParse(sLine, out number))

- B. If ((number = Int32.Parse(sLine)) == Single.NaN)
- C. If ((number = int.Parse(sLine)) > Int32.MaxValue)
- D. If (Int32.TryParse(sLine, out number))

**Correct Answer:** A

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

Int32.TryParse - Converts the string representation of a number to its 32-bit signed integer equivalent. A return value indicates whether the conversion succeeded.

Incorrect Answers:

B, C: These will throw an exception when user enters non-integer value.

D: This is exactly the opposite what we want to achieve.

References: <http://msdn.microsoft.com/en-us/library/f02979c7.aspx>

#### QUESTION 34

You are debugging an application that calculates loan interest. The application includes the following code. (Line numbers are included for reference only.)

```
01 private static decimal CalculateInterest(decimal loanAmount, int loanTerm, decimal loanRate)
02 {
03
04     decimal interestAmount = loanAmount * loanRate * loanTerm;
05
06     return interestAmount;
07 }
```

You have the following requirements:

- The debugger must break execution within the `CalculateInterest()` method when the `loanAmount` variable is less than or equal to zero.
- The release version of the code must not be impacted by any changes.

You need to meet the requirements.

What should you do?



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- A. Insert the following code segment at line 05: Debug.WriteLine(loanAmount > 0);
- B. Insert the following code segment at line 05: Trace.WriteLine(loanAmount > 0);
- C. Insert the following code segment at line 03: Debug.Assert(loanAmount > 0);
- D. Insert the following code segment at line 03: Trace.Assert(loanAmount > 0);

**Correct Answer:** C

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

By default, the Debug.Assert method works only in debug builds. Use the Trace.Assert method if you want to do assertions in release builds. For more information, see Assertions in Managed Code.

References: <http://msdn.microsoft.com/en-us/library/kssw4w7z.aspx>



### QUESTION 35

You are developing an application that will process orders. The debug and release versions of the application will display different logo images.

You need to ensure that the correct image path is set based on the build configuration.

Which code segment should you use? A.

```
#if (DEBUG)
    imgPath = "TempFolder/Images/";
#elif (RELEASE)
    imgPath = "DevFolder/Images/";
#endif
```

```
if (DEBUG)
    imgPath = "TempFolder/Images/";
else
    imgPath = "DevFolder/Images/";
endif

#if (DEBUG)
    imgPath = "TempFolder/Images/";
#else
    imgPath = "DevFolder/Images/";
#endif

if(Debugger.IsAttached)
{
    imgPath = "TempFolder/Images/";
}
else
{
    imgPath = "DevFolder/Images/";
}
```

B.

C.

D.



Correct Answer: C

Section: Volume A

Explanation

**Explanation/Reference:**

Explanation:

There is no such constraint (unless you define one explicitly) RELEASE.

References: <http://stackoverflow.com/questions/507704/will-if-release-work-like-if-debug-does-in-c>

### QUESTION 36

You are testing an application. The application includes methods named CalculateInterest and LogLine.

The CalculateInterest() method calculates loan interest. The LogLine() method sends diagnostic messages to a console window.

The following code implements the methods. (Line numbers are included for reference only.)

```
01
02 private static decimal CalculateInterest(decimal loanAmount, int loanTerm, decimal loanRate)
03 {
04     decimal interestAmount = loanAmount * loanRate * loanTerm;
05
06     LogLine("Interest Amount : ", interestAmount.ToString("c"));
07
08     return interestAmount;
09 }
10
11 public static void LogLine(string message, string detail)
12 {
13     Console.WriteLine("Log: {0} = {1}", message, detail);
14 }
```

You have the following requirements:

▪ The CalculateInterest() method must run for all build configurations. ▪

The LogLine() method must run only for debug builds.

You need to ensure that the methods run correctly.

What are two possible ways to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. Insert the following code segment at line 01: #region DEBUG  
Insert the following code segment at line 10: #endregion
- B. Insert the following code segment at line 10:  
[Conditional ("MDEBUG") ]
- C. Insert the following code segment at line 05: #region DEBUG  
Insert the following code segment at line 07: #endregion
- D. Insert the following code segment at line 01: #if DE30G Insert the  
following code segment at line 10 :#endif
- E. Insert the following code segment at line 01:  
[Conditional ("MDEBUG") ]
- F. Insert the following code segment at line 05 :#if DEBUG Insert  
the following code segment at line 07: #endif
- G. Insert the following code segment at line 10:  
[Conditional ("RELEASE") ]

**Correct Answer:** BF

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

#if DEBUG: The code in here won't even reach the IL on release.

[Conditional("DEBUG")]: This code will reach the IL, however the calls to the method will not execute unless DEBUG is on.

References: <http://stackoverflow.com/questions/3788605/if-debug-vs-conditionaldebug>

### QUESTION 37

You are developing a method named CreateCounters that will create performance counters for an application. The method includes the following code. (Line numbers are included for reference only.)



```
01 void CreateCounters()
02 {
03     if (!PerformanceCounterCategory.Exists("Contoso"))
04     {
05         var counters = new CounterCreationDataCollection();
06         var ccdCounter1 = new CounterCreationData
07         {
08             CounterName = "Counter1",
09             CounterType = PerformanceCounterType.AverageTimer32
10         };
11         counters.Add(ccdCounter1);
12         var ccdCounter2 = new CounterCreationData
13         {
14             CounterName = "Counter2",
15             CounterType = PerformanceCounterType.RawBase
16         };
17         counters.Add(ccdCounter2);
18         PerformanceCounterCategory.Create("Contoso", "Help string",
19             PerformanceCounterCategoryType.MultiInstance, counters);
20     }
21 }
22 }
```

You need to ensure that Counter2 is available for use in Windows Performance Monitor (PerfMon).

Which code segment should you insert at line 16?

- A. CounterType = PerformanceCounterType.RawBase
- B. CounterType = PerformanceCounterType.AverageBase
- C. CounterType = PerformanceCounterType.SampleBase
- D. CounterType = PerformanceCounterType.CounterMultiBase

**Correct Answer:** B

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

PerformanceCounterType.AverageTimer32 - An average counter that measures the time it takes, on average, to complete a process or operation. Counters of this type display a ratio of the total elapsed time of the sample interval to the number of processes or operations completed during that time. This counter type measures time in ticks of the system clock. Formula:  $((N_1 - N_0)/F)/(B_1 - B_0)$ , where  $N_1$  and  $N_0$  are performance counter readings,  $B_1$  and  $B_0$  are their corresponding AverageBase values, and  $F$  is the number of ticks per second. The value of  $F$  is factored into the equation so that the result can be displayed in seconds.

Thus, the numerator represents the numbers of ticks counted during the last sample interval,  $F$  represents the frequency of the ticks, and the denominator represents the number of operations completed during the last sample interval. Counters of this type include PhysicalDisk\ Avg. Disk sec/Transfer.

PerformanceCounterType.AverageBase - A base counter that is used in the calculation of time or count averages, such as AverageTimer32 and AverageCount64. Stores the denominator for calculating a counter to present "time per operation" or "count per operation".

References: <http://msdn.microsoft.com/en-us/library/system.diagnostics.performancecountertype.aspx>

### QUESTION 38

You are developing an application that will transmit large amounts of data between a client computer and a server.

You need to ensure the validity of the data by using a cryptographic hashing algorithm.

Which algorithm should you use?

- A. ECDsa
- B. RNGCryptoServiceProvider
- C. Rfc2898DeriveBytes
- D. HMACSHA512



**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

### QUESTION 39

You are developing an application by using C#.

The application includes an object that performs a long running process.

You need to ensure that the garbage collector does not release the object's resources until the process completes.

Which garbage collector method should you use?

- A. WaitForFullGCComplete()
- B. SuppressFinalize()
- C. collect()
- D. RemoveMemoryPressure()

**Correct Answer:** B

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

#### QUESTION 40

You are implementing a method named `FloorTemperature` that performs conversions between value types and reference types. The following code segment implements the method. (Line numbers are included for reference only.)

```
01 public static void FloorTemperature(float degrees)
02 {
03     object degreesRef = degrees;
04
05     Console.WriteLine(result);
06 }
```



You need to ensure that the application does not throw exceptions on invalid conversions.

Which code segment should you insert at line 04?

- A. int result = (int)degreesRef;
- B. int result = (int)(double)degreesRef;
- C. int result = degreesRef;
- D. int result = (int)(float)degreesRef;

**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

**QUESTION 41**

You are developing an application by using C#.

The application includes an object that performs a long running process.

You need to ensure that the garbage collector does not release the object's resources until the process completes.

Which garbage collector method should you use?

A. `WaitForFullGCComplete()` B.

`SuppressFinalize()`

C. `WaitForFullGCApproach()`

D. `WaitForPendingFinalizers()`

**Correct Answer:** B

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

**QUESTION 42**

You are developing an application that uses structured exception handling. The application includes a class named `Logger`. The `Logger` class implements a method named `Log` by using the following code segment:

```
public static void Log(Exception ex) { }
```

You have the following requirements:

- Log all exceptions by using the `Log()` method of the `Logger` class.
- Rethrow the original exception, including the entire exception stack.

You need to meet the requirements. Which code segment should you use?

- A. `catch`  
{  
 var ex = new Exception();  
 throw ex;  
}
- B. `catch (Exception ex)`  
{  
 Logger.Log(ex);  
 throw ex;  
}
- C. `catch`  
{  
 Logger.Log(new Exception());  
 throw;  
}
- D. `catch (Exception ex)`  
{  
 Logger.Log(ex);  
 throw;  
}

- A. Option A  
B. Option B C. Option C

D. Option D

**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

**QUESTION 43**

You are developing an application that includes a class named BookTracker for tracking library books. The application includes the following code segment. (Line numbers are included for reference only.)



```
01 public delegate void AddBookCallback(int i);
02 public class BookTracker
03 {
04     List<Book> books = new List<Book>();
05     public void AddBook(string name, AddBookCallback callback)
06     {
07         books.Add(new Book(name));
08         callback(books.Count);
09     }
10 }
11
12 public class Book
13 {
14
15     BookTracker tracker = new BookTracker();
16     public void Add(string name)
17     {
18
19     }
20 }
```

You need to add a book to the BookTracker instance.

What should you do?



- A. Insert the following code segment at line 18:

```
tracker.AddBook(name, delegate(int i)
{
    ...
});
```

- B. Insert the following code segment at line 11:

```
delegate void AddBookDelegate(string name, AddBookCallback callback);
```

Insert the following code segment at line 18:

```
AddBookDelegate adder = (i, callback) =>
{
    ...
};
```



- C. Insert the following code segment at line 11:

```
delegate void AddBookDelegate(BookTracker bookTracker);
```

Insert the following code segment at line 18:

```
AddBookDelegate addDelegate = (bookTracker) =>
{
    ...
};
addDelegate(bookTracker);
```

- D. Insert the following code segment at line 14:

```
private static void PrintBookCount(int i)
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** A

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

#### **QUESTION 44**

You use the `Task.Run()` method to launch a long-running data processing operation. The data processing operation often fails in times of heavy network congestion.

If the data processing operation fails, a second operation must clean up any results of the first operation.

You need to ensure that the second operation is invoked only if the data processing operation throws an unhandled exception.

What should you do?

- A. Create a task within the operation, and set the `Task.StartOnError` property to `true`.
- B. Create a `TaskFactory` object and call the `ContinueWhenAll()` method of the object.
- C. Create a task by calling the `Task.ContinueWith()` method.
- D. Use the `TaskScheduler` class to create a task and call the `TryExecuteTask()` method on the class.

**Correct Answer:** C

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

`Task.ContinueWith` - Creates a continuation that executes asynchronously when the target `Task` completes. The returned `Task` will not be scheduled for execution until the current task has completed, whether it completes due to running to completion successfully, faulting due to an unhandled exception, or exiting out early due to being canceled.

References: <http://msdn.microsoft.com/en-us/library/dd270696.aspx>

#### **QUESTION 45**

You are developing an application by using C#. You provide a public key to the development team during development.

You need to specify that the assembly is not fully signed when it is built.

Which two assembly attributes should you include in the source code? (Each correct answer presents part of the solution. Choose two.)

- A. AssemblyFlagsAttribute
- B. AssemblyKeyFileAttribute
- C. AssemblyConfigurationAttribute
- D. AssemblyDelaySignAttribute

**Correct Answer:** BD

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

#### **QUESTION 46**

You are developing an application that will transmit large amounts of data between a client computer and a server.

You need to ensure the validity of the data by using a cryptographic hashing algorithm.

Which algorithm should you use?

- A. RSA
- B. HMACSHA2S6
- C. Aes
- D. RNGCryptoServiceProvider

**Correct Answer:** B

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

#### **QUESTION 47**

You are creating an application that manages information about your company's products. The application includes a class named Product and a method named Save.

The `Save()` method must be strongly typed. It must allow only types inherited from the `Product` class that use a constructor that accepts no parameters.

You need to implement the `Save()` method.

Which code segment should you use?

- A. 

```
public static void Save(Product target)
{
    ...
}
```
- B. 

```
public static void Save<T>(T target) where T : Product
{
    ...
}
```
- C. 

```
public static void Save<T>(T target) where T : new()
{
    ...
}
```
- D. 

```
public static void Save<T>(T target) where T : Product, new()
{
    ...
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** D

**Section: Volume A****Explanation****Explanation/Reference:****QUESTION 48**

You are creating a class named Employee. The class exposes a string property named EmployeeType. The following code segment defines the Employee class.  
(Line numbers are included for reference only.)

```
01 public class Employee
02 {
03     internal string EmployeeType
04     {
05         get;
06         set;
07     }
08 }
```

The EmployeeType property value must meet the following requirements:

- The value must be accessed only by code within the Employee class or within a class derived from the Employee class.
- The value must be modified only by code within the Employee class.

You need to ensure that the implementation of the EmployeeType property meets the requirements.

Which two actions should you perform? (Each correct answer represents part of the complete solution. Choose two.)

- A. Replace line 03 with the following code segment: public string EmployeeType
- B. Replace line 06 with the following code segment: protected set; C. Replace line 05 with the following code segment: private get;
- D. Replace line 05 with the following code segment: protected get;
- E. Replace line 03 with the following code segment: protected string EmployeeType
- F. Replace line 06 with the following code segment: private set;

**Correct Answer: EF****Section: Volume A****Explanation**

**Explanation/Reference:****QUESTION 49**

You are developing an application by using C#.

The application includes an object that performs a long running process.

You need to ensure that the garbage collector does not release the object's resources until the process completes.

Which garbage collector method should you use?

- A. RemoveMemoryPressure()
- B. ReRegisterForFinalize()
- C. WaitForFullGCComplete()
- D. KeepAlive()

**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:****QUESTION 50**

You are developing an application that will transmit large amounts of data between a client computer and a server.

You need to ensure the validity of the data by using a cryptographic hashing algorithm.

Which algorithm should you use?

- A. RSA
- B. Aes
- C. HMACSHA256
- D. DES

**Correct Answer:** C

**Section:** Volume A

**Explanation**

**Explanation/Reference:****QUESTION 51**

DRAG DROP

You are developing an application by using C#. The application will process several objects per second.

You need to create a performance counter to analyze the object processing.

Which three actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

**Select and Place:**

Add the **PerformanceCounterPermissionEntry** objects to the collection by calling the **Add()** method of the collection.

Add the **CounterCreationData** objects to the collection by calling the **Add()** method of the collection.

Create a **CounterCreationDataCollection** collection. Then create the counters as **CounterCreationData** objects and set the necessary properties.

Create a **PerformanceCounterPermissionEntryCollection** collection.

Call the **Create()** method of the **PerformanceCounterCategory** class and pass the collection to the method.

Get the **CategoryName** property of the **PerformanceCounterPermissionEntry** class.

**Correct Answer:**

Add the **PerformanceCounterPermissionEntry** objects to the collection by calling the **Add()** method of the collection.

Create a **CounterCreationDataCollection** collection. Then create the counters as **CounterCreationData** objects and set the necessary properties.

Add the **CounterCreationData** objects to the collection by calling the **Add()** method of the collection.

Call the **Create()** method of the **PerformanceCounterCategory** class and pass the collection to the method.

Create a **PerformanceCounterPermissionEntryCollection** collection.

Get the **CategoryName** property of the **PerformanceCounterPermissionEntry** class.

## Section: Volume A Explanation

### Explanation/Reference:

Explanation:

Note:

Example:

```
CounterCreationDataCollection counterDataCollection = new CounterCreationDataCollection(); // Box1
```

```
// Add the counter. Box 1
```

```
CounterCreationData averageCount64 = new CounterCreationData();
averageCount64.CounterType = PerformanceCounterType.AverageCount64;
averageCount64.CounterName = "AverageCounter64Sample";
counterDataCollection.Add(averageCount64);
```

```
// Add the base counter.
```

```
CounterCreationData averageCount64Base = new CounterCreationData();
averageCount64Base.CounterType = PerformanceCounterType.AverageBase;
averageCount64Base.CounterName = "AverageCounter64SampleBase";
counterDataCollection.Add(averageCount64Base); // Box 2
```

```
// Create the category. Box 3
```

```
PerformanceCounterCategory.Create("AverageCounter64SampleCategory",
"Demonstrates usage of the AverageCounter64 performance counter type.",
PerformanceCounterCategoryType.SingleInstance, counterDataCollection);
```

## QUESTION 52

HOTSPOT

You are reviewing the following code:

```
[System.FlagsAttribute()]
public enum Group
{
    Users = 1,
    Supervisors = 2,
    Managers = 4,
    Administrators = 8
}
public class User
{
    public Group UserGroup { get; set; }
}
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

**Hot Area:**



Yes      No

A user can be a member of more than one of the groups.

If the user belongs to only the Administrators group, the following code will return a value of true:

```
user.UserGroup == Group.Administrators
```

If the user belongs to only the Supervisors group, the following code will return a value of true:

```
user.UserGroup != Group.Administrators
```

Correct Answer:

Yes

No

A user can be a member of more than one of the groups.

If the user belongs to only the Administrators group, the following code will return a value of true:

```
user.UserGroup == Group.Administrators
```

If the user belongs to only the Supervisors group, the following code will return a value of true:

```
user.UserGroup != Group.Administrators
```

**Section: Volume A**  
**Explanation**

**Explanation/Reference:**

**QUESTION 53**

You are creating a class named Game.

The Game class must meet the following requirements:

- Include a member that represents the score for a Game instance.
- Allow external code to assign a value to the score member.
- Restrict the range of values that can be assigned to the score member.

You need to implement the score member to meet the requirements.

In which form should you implement the score member?



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- A. protected field
- B. public static field
- C. public static property
- D. public property

**Correct Answer:** D

**Section:** Volume A

**Explanation**



**Explanation/Reference:**

#### QUESTION 54

You have a List object that is generated by executing the following code:

```
List<string> departments = new List<string>()
{
    "Accounting", "Marketing", "Sales", "Manufacturing", "Information Systems", "Training"
};
```

You have a method that contains the following code (line numbers are included for reference only):

```
01 private bool GetMatches(List<string> departments, string searchTerm)
02 {
03     var findDepartment = departments.Exists(delegate(string deptName)
04     {
05         return deptName.Equals(searchTerm);
06     }
07 );
08     return findDepartment;
09 }
```

You need to alter the method to use a lambda statement.

How should you rewrite lines 03 through 06 of the method?

- A. var findDepartment = departments.First(x => x == searchTerm);
  - B. var findDepartment = departments.Where(x => x == searchTerm);
  - C. var findDepartment = departments.Exists(x => x.Equals(searchTerm));
  - D. var findDepartment = departments.Where(x => x.Equals(searchTerm));
- 
- A. Option A
  - B. Option B
  - C. Option C
  - D. Option D

**Correct Answer:** C

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

**QUESTION 55**

You are developing code for a class named Account. The Account class includes the following method:

```
public void Deposit(int dollars, int cents)
{
    int totalCents = cents + this.cents;
    int extraDollars = totalCents / 100;
    this.cents = totalCents - 100 * extraCents;
    this.dollars += dollars + extraDollars;
}
```

You need to ensure that overflow exceptions are thrown when there is an error.

Which type of block should you use?

- A. checked
- B. try
- C. using
- D. unchecked

**Correct Answer:** A

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

**QUESTION 56**

You are developing an application that uses a .config file.

The relevant portion of the .config file is shown as follows:

```
<system.diagnostics>
  <trace autoflush="false" indentsize="0">
    <listeners>
      <add name="appListener"
        type="System.Diagnostics.EventLogTraceListener"
        initializeData="TraceListenerLog" />
    </listeners>
  </trace>
</system.diagnostics>
```

You need to ensure that diagnostic data for the application writes to the event log by using the configuration specified in the .config file.

What should you include in the application code?

- A. EventLog log = new EventLog();  
log.WriteEntry("Trace data...");
- B. Debug.WriteLine("Trace data...");
- C. Console.SetOut(new StreamWriter("System.Diagnostics.EventLogTraceListener"));  
Console.WriteLine("Trace data...");
- D. Trace.WriteLine("Trace data...");

A. Option A

B. Option B C. Option C  
D. Option D

**Correct Answer:** D

**Section: Volume A**  
**Explanation****Explanation/Reference:**

Explanation:

```
Public static void Main(string[] args) {  
    Create a trace listener for the event log.  
    EventLogTraceListener myTraceListener = new  
    EventLogTraceListener("myEventLogSource"); Add the event log trace listener to the  
    collection. Trace.Listeners.Add(myTraceListener); // Write output to the event log.  
    Trace.WriteLine("Test output");  
}
```

References: <http://msdn.microsoft.com/en-us/library/vstudio/system.diagnostics.eventlogtracelistener>

**QUESTION 57**

You have the following code (line numbers are included for reference only):



```
01class Bar
02{
03    public string barColor { get; set; }
04    public string barName { get; set; }
05    private static IEnumerable<Bar> GetBars(string sqlConnectionString)
06    {
07        var bars = new List<Bar>();
08        SqlConnection fooSqlConn = new SqlConnection();
09        using (fooSqlConn)
10        {
11            SqlCommand fooSqlCmd = new SqlCommand
12                ("Select sqlName,sqlColor from Animals", fooSqlConn);
13            fooSqlConn.Open();
14            using (SqlDataReader fooSqlReader = fooSqlCmd.ExecuteReader())
15            {
16                while (fooSqlReader.Read())
17                {
18                    var bar = new Bar();
19                    bar.barName = (String)fooSqlReader["sqlName"];
20                    bar.barColor = (String)fooSqlReader["sqlColor"];
21                    bars.Add(bar);
22                }
23            }
24        return bars;
25    }
26}
```



You need to identify the missing line of code at line 15. Which line of code should you identify?

- A. using (fooSqlConn.BeginTransaction())
- B. while (fooSqlReader.Read())

- C. while (fooSqlReader.NextResult())
- D. while (fooSqlReader.GetBoolean(0))

**Correct Answer:** B

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

#### QUESTION 58

You are creating a console application named App1.

App1 retrieves data from the Internet by using JavaScript Object Notation (JSON).

You are developing the following code segment (line numbers are included for reference only):

```
01 public bool ValidateJson(string json, Dictionary<string, object> result)
02 {
03
04     try
05     {
06         result = serializer.Deserialize<Dictionary<string, object>>(json);
07         return true;
08     }
09     catch
10     {
11         return false;
12     }
13 }
```



You need to ensure that the code validates the JSON string.

Which code should you insert at line 03?

- A. DataContractSerializer serializer = new DataContractSerializer();
- B. var serializer = new DataContractSerializer();
- C. XmlSerlalizer serializer = new XmlSerlalizer();
- D. var serializer = new JavaScriptSerializer();

**Correct Answer:** D

**Section:** Volume A

**Explanation**

**Explanation/Reference:**

Explanation:

The JavaScriptSerializer Class Provides serialization and deserialization functionality for AJAX-enabled applications.

The JavaScriptSerializer class is used internally by the asynchronous communication layer to serialize and deserialize the data that is passed between the browser and the Web server. You cannot access that instance of the serializer. However, this class exposes a public API. Therefore, you can use the class when you want to work with JavaScript Object Notation (JSON) in managed code.

#### **QUESTION 59**

You are developing an application that uses several objects. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 private bool IsNull(object obj)
02 {
03
04     return false;
05 }
```



You need to evaluate whether an object is null.

Which code segment should you insert at line 03?

A. if (obj = null)  
{  
 return true;  
}

B. if (null)  
{  
 return true;  
}

C. if (obj == 0)  
{  
 return true;  
}

D. if (obj == null)  
{  
 return true;  
}

- A. Option A
- B. Option B
- C. Option C

D. Option D

**Correct Answer: D**

**Section: Volume A**

**Explanation**

**Explanation/Reference:**

Explanation:

Use the == operator to compare values and in this case also use the null literal.

**QUESTION 60**

You are developing an application.

The application contains the following code segment (line numbers are included for reference only):

```
01 ArrayList array1 = new ArrayList();
02 int var1 = 10;
03 int var2;
04 array1.Add(var1);
05 var2 = array1[0];
```

When you run the code, you receive the following error message: "Cannot implicitly convert type 'object' to 'int'. An explicit conversion exists (are you missing a cast?)."

You need to ensure that the code can be compiled.

Which code should you use to replace line 05?

- A. var2 = array1[0] as int;
- B. var2 = ((List<int>)array1) [0];
- C. var2 = array1[0].Equals(typeof(int));
- D. var2 = (int) array1 [0];

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:****QUESTION 61**

You need to write a method that retrieves data from a Microsoft Access 2013 database.

The method must meet the following requirements:

- Be read-only.
- Be able to use the data before the entire data set is retrieved.
- Minimize the amount of system overhead and the amount of memory usage.

Which type of object should you use in the method?

- A. SqlDataAdapter
- B. DataContext
- C. DbDataAdapter
- D. OleDbDataReader

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

OleDbDataReader Class

Provides a way of reading a forward-only stream of data rows from a data source.

Example:

```
OleDbConnection cn = new OleDbConnection();
OleDbCommand cmd = new OleDbCommand();
DataTable schemaTable;
OleDbDataReader myReader;

//Open a connection to the SQL Server Northwind database.
cn.ConnectionString = "Provider=SQLOLEDB;Data Source=server;User ID=login;
Password=password;Initial Catalog=Northwind";
```



## QUESTION 62

You have the following code:

```
List<Int32> items = new List<int>() {
    100,
    95,
    80,
    75,
    95
};
```

You need to retrieve all of the numbers from the items variable that are greater than 80.

Which code should you use?

A. `var result = from i in items  
where i > 80  
select i;`

B. `var result = items.Take(80);`

C. `var result = items.First(i => i > 80);`

D. `var result = items.Any(i => i > 80);`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

### QUESTION 63

HOTSPOT

You are developing the following classes named:

- Class1
- Class2
- Class3

All of the classes will be part of a single assembly named Assembly.dll. Assembly.dll will be used by multiple applications.

All of the classes will implement the following interface, which is also part of Assembly.dll:

```
public interface Interface1
{
    void Method1(decimal
amount);    void Method2(decimal
amount);
}
```

You need to ensure that the Method2 method for the Class3 class can be executed only when instances of the class are accessed through the Interface1 interface. The solution must ensure that calls to the Method1 method can be made either through the interface or through an instance of the class.

Which signature should you use for each method? (To answer, select the appropriate signature for each method in the answer area.)

**Hot Area:**



Method1:

```
internal void Method1(decimal amount)
private void Method1(decimal amount)
public void Method1(decimal amount)
void Interface1.Method1(decimal amount)
```

Method2:

```
internal void Method2(decimal amount)
private void Method2(decimal amount)
public void Method2(decimal amount)
void Inteface1. Method2 (decimal amount)
```

Correct Answer:

Method1:

```
internal void Method1(decimal amount)
private void Method1(decimal amount)
public void Method1(decimal amount)
void Interface1.Method1(decimal amount)
```

Method2:

```
internal void Method2(decimal amount)
private void Method2(decimal amount)
public void Method2(decimal amount)
void Interface1.Method2 (decimal amount)
```

**Section: Volume B****Explanation****Explanation/Reference:****QUESTION 64**

You are implementing a method named `ProcessReports` that performs a long-running task. The `ProcessReports()` method has the following method signature:

```
public void ProcessReports(List<decimal> values, CancellationTokenSource cts, CancellationToken ct)
```

If the calling code requests cancellation, the method must perform the following actions:

- Cancel the long-running task.
- Set the task status to `TaskStatus.Canceled`.

You need to ensure that the `ProcessReports()` method performs the required actions.

Which code segment should you use in the method body?

- A. if (ct.IsCancellationRequested) return;
- B. ct.ThrowIfCancellationRequested();
- C. cts.Cancel();
- D. throw new AggregateException();

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 65**

You are developing an application that will be deployed to multiple computers. You set the assembly name.

You need to create a unique identity for the application assembly.

Which two assembly identity attributes should you include in the source code? (Each correct answer presents part of the solution. Choose two.)

- A. AssemblyTitleAttribute
- B. AssemblyCultureAttribute
- C. AssemblyVersionAttribute
- D. AssemblyKeyNameAttribute
- E. AssemblyFileVersion

**Correct Answer:** BC

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

The AssemblyName object contains information about an assembly, which you can use to bind to that assembly. An assembly's identity consists of the following:

- Simple name
- Version number
- Cryptographic key pair
- Supported culture

**B: AssemblyCultureAttribute**

Specifies which culture the assembly supports.

The attribute is used by compilers to distinguish between a main assembly and a satellite assembly. A main assembly contains code and the neutral culture's resources. A satellite assembly contains only resources for a particular culture, as in [assembly:AssemblyCultureAttribute("de")]

**C: AssemblyVersionAttribute**

Specifies the version of the assembly being attributed.

The assembly version number is part of an assembly's identity and plays a key part in binding to the assembly and in version policy.

**QUESTION 66**

You are developing an application.

You need to declare a delegate for a method that accepts an integer as a parameter, and then returns an integer.

Which type of delegate should you use?

- A. Action<int>
- B. Action<int, int>
- C. Func<int, int>
- D. Func<int>



**Correct Answer:** C

**Section:** Volume B

**Explanation****Explanation/Reference:****QUESTION 67**

You are writing the following method (line numbers are included for reference only):

```
01 public T CreateObject<T>()
02
03 {
04     T obj = new T();
05     return obj;
06 }
```

You need to ensure that CreateObject compiles successfully.

What should you do?

- A. Insert the following code at line 02: where T : new()
- B. Replace line 01 with the following code: public void CreateObject<T>()
- C. Replace line 01 with the following code: public Object CreateObject<T>()
- D. Insert the following code at line 02: where T : Object

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 68**

You are developing an application that includes the following code segment. (Line numbers are included for reference only.)

```
01 public class ItemBase
02 {
03 }
04 public class Widget : ItemBase
05 {
06 }
07 class Worker
08 {
09     void DoWork(object obj)
10    {
11        Console.WriteLine("In DoWork(object)");
12    }
13    void DoWork(Widget widget)
14    {
15        Console.WriteLine("In DoWork(Widget)");
16    }
17    void DoWork(ItemBase itembase)
18    {
19        Console.WriteLine("In DoWork(ItemBase)");
20    }
21    private void Run()
22    {
23        object o = new Widget();
24        DoWork(o);
25    }
26 }
```

You need to ensure that the DoWork(Widget widget) method runs.

With which code segment should you replace line 24?

- A. DoWork((Widget)o);
- B. DoWork(new Widget(o));

- C. DoWork(o is Widget);
- D. DoWork((ItemBase)o);

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 69**

An application uses X509 certificates for data encryption and decryption. The application stores certificates in the Personal certificates collection of the Current User store. On each computer, each certificate subject is unique.

The application includes a method named `LoadCertificate`. The `LoadCertificate()` method includes the following code. (Line numbers are included for reference only.)

```
01 X509Certificate2 LoadCertificate(string searchValue)
02 {
03     var store = new X509Store(StoreName.My, StoreLocation.CurrentUser);
04     store.Open(OpenFlags.ReadOnly | OpenFlags.OpenExistingOnly);
05     var certs = store.Certificates.Find(
06
07         searchValue, false);
08     ...
09 }
```

The `LoadCertificate()` method must load only certificates for which the subject exactly matches the `searchValue` parameter value.

You need to ensure that the `LoadCertificate()` method loads the correct certificates.

Which code segment should you insert at line 06?

- A. X509FindType.FindBySubjectName,
- B. X509FindType.FindBySubjectKeyIdentifier,
- C. X509FindType.FindByIssuerName,
- D. X509FindType.FindBySubjectDistinguishedName,

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 70**

You are developing a class named Scorecard. The following code implements the Scorecard class. (Line numbers are included for reference only.)

```
01 public class Scorecard
02 {
03     private Dictionary<string, int> players = new Dictionary<string, int>();
04     public void Add(string name, int score)
05     {
06         players.Add(name, score);
07     }
08
09 }
```

You create the following unit test method to test the Scorecard class implementation:

```
[TestMethod]
public void UnitTest1()
{
    Scorecard scorecard = new Scorecard();
    scorecard.Add("Player1", 10);
    scorecard.Add("Player2", 15);
    int expectedScore = 15;
    int actualScore = scorecard["Player2"];
    Assert.AreEqual(expectedScore, actualScore);
}
```

You need to ensure that the unit test will pass.

What should you do?

- A. Insert the following code segment at line 08:

```
public int this[string name]
{
    get
    {
        return players[name];
    }
}
```

- B. Insert the following code segment at line 08:

```
public Dictionary<string, int> Players
{
    get
    {
        return players;
    }
}
```

- C. Replace line 03 with the following code segment:

```
public Dictionary<string, int> Players = new Dictionary<string, int>();
```

- D. Insert the following code segment at line 08:

```
public int score(string name)
{
    return players[name];
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 71**

You are developing an application that will parse a large amount of text.

You need to parse the text into separate lines and minimize memory use while processing data.

Which object type should you use?

- A. DataContractSerializer
- B. StringBuilder
- C. StringReader



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- D. JsonSerializer

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:****QUESTION 72**

You are developing code for an application that retrieves information about Microsoft .NET Framework assemblies.

The following code segment is part of the application (line numbers are included for reference only):

```
01 public void ViewMetadata(string filePath)
02 {
03     var bytes = File.ReadAllBytes(filePath);
04
05     ...
06 }
```

You need to insert code at line 04. The code must load the assembly. Once the assembly is loaded, the code must be able to read the assembly metadata, but the code must be denied access from executing code from the assembly.

Which code segment should you insert at line 04?

- A. Assembly.ReflectionOnlyLoadFrom(bytes);
- B. Assembly.ReflectionOnlyLoad(bytes);
- C. Assembly.Load(bytes);
- D. Assembly.LoadFrom(bytes);

**Correct Answer: C****Section: Volume B****Explanation****Explanation/Reference:****QUESTION 73**

You are developing a method named GenerateHash that will create the hash value for a file. The method includes the following code. (Line numbers are included for reference only.)

```
01 public byte[] GenerateHash(string filename, string hashAlgorithm)
02 {
03     var signatureAlgo = HashAlgorithm.Create(hashAlgorithm);
04     var fileBuffer = System.IO.File.ReadAllBytes(filename);
05
06 }
```

You need to return the cryptographic hash of the bytes contained in the fileBuffer variable.

Which code segment should you insert at line 05?

- A. 

```
var outputBuffer = new byte[fileBuffer.Length];
signatureAlgo.TransformBlock(fileBuffer, 0, fileBuffer.Length, outputBuffer, 0);
signatureAlgo.TransformFinalBlock(fileBuffer, fileBuffer.Length - 1, fileBuffer.Length);
return outputBuffer;
```
- B. 

```
signatureAlgo.ComputeHash(fileBuffer);
return signatureAlgo.GetHashCode();
```
- C. 

```
var outputBuffer = new byte[fileBuffer.Length];
signatureAlgo.TransformBlock(fileBuffer, 0, fileBuffer.Length, outputBuffer, 0);
return outputBuffer;
```
- D. 

```
return signatureAlgo.ComputeHash(fileBuffer);
```

- A. Option A
- B. Option B
- C. Option C

D. Option D

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 74**

You are modifying an existing application that manages employee payroll. The application includes a class named PayrollProcessor. The PayrollProcessor class connects to a payroll database and processes batches of paychecks once a week.

You need to ensure that the PayrollProcessor class supports iteration and releases database connections after the batch processing completes.

Which two interfaces should you implement? (Each correct answer presents part of the complete solution. Choose two.)

- A. IEquatable
- B. IEnumerable
- C. IDisposable
- D. IComparable

**Correct Answer:** BC

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

IEnumerable

IDisposable Interface

Exposes an enumerator, which supports a simple iteration over a non-generic collection.

Defines a method to release allocated resources.

The primary use of this interface is to release unmanaged resources.

#### **QUESTION 75**

You are developing an application that will read data from a text file and display the file contents.

You need to read data from the file, display it, and correctly release the file resources.

Which code segment should you use?

```
string inputLine;
using (StreamReader reader = new StreamReader("data.txt"))
{
    while ((inputLine = reader.ReadLine()) != null)
    {
        Console.WriteLine(inputLine);
    }
}

string inputLine;
StreamReader reader = null;
using (reader = new StreamReader("data.txt")) ;
while ((inputLine = reader.ReadLine()) != null)
{
    Console.WriteLine(inputLine);
}

string inputLine;
StreamReader reader = new StreamReader("data.txt");
while ((inputLine = reader.ReadLine()) != null)
{
    Console.WriteLine(inputLine);
}
```

A.

B.

C.

```
string inputLine;
StreamReader reader = null;
try
{
    reader = new StreamReader("data.txt");
    while ((inputLine = reader.ReadLine()) != null)
    {
        Console.WriteLine(inputLine);
    }
    reader.Close();
    reader.Dispose();
}
finally
{}
```

D.

**Correct Answer:** A**Section:** Volume B**Explanation****Explanation/Reference:****QUESTION 76**

You need to create a method that can be called by using a varying number of parameters.

What should you use?

- A. Method overloading
- B. Derived classes
- C. Named parameters
- D. Enumeration

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

Member overloading means creating two or more members on the same type that differ only in the number or type of parameters but have the same name. Overloading is one of the most important techniques for improving usability, productivity, and readability of reusable libraries. Overloading on the number of parameters makes it possible to provide simpler versions of constructors and methods. Overloading on the parameter type makes it possible to use the same member name for members performing identical operations on a selected set of different types.

#### QUESTION 77

You are developing an application.



The application contains the following code segment (line numbers are included for reference only):

```
01 ArrayList array1 = new ArrayList();
02 int var1 = 10;
03 int var2;
04 array1.Add(var1);
05 var2 = array1[0];
```

When you run the code, you receive the following error message: "Cannot implicitly convert type 'object' to 'int'. An explicit conversion exists (are you missing a cast?)."

You need to ensure that the code can be compiled.

Which code should you use to replace line 05?

- A. var2 = ((List<int>) array1) [0];
- B. var2 = array1[0].Equals(typeof(int));

- C. var2 = Convert.ToInt32(array1[0]);
- D. var2 = ((int[])array1)[0];

**Correct Answer:** C

**Section:** Volume B

#### **Explanation**

#### **Explanation/Reference:**

#### **QUESTION 78**

You have the following code (line numbers are included for reference only):



```
01 public class Program
02 {
03     private static System.Diagnostics.Stopwatch _execTimer =
04         new System.Diagnostics.Stopwatch();
05     public static void Delay(int delay)
06     {
07         Thread.Sleep(delay);
08     }
09     public static void LogLongExec(string msg)
10     {
11         if (_execTimer.Elapsed.Seconds >= 5)
12             throw new Exception(
13                 string.Format("Execution is too long > {0} > {1}",
14                 msg, _execTimer.Elapsed.TotalMilliseconds));
15     }
16     public static void Main()
17     {
18         _execTimer.Start();
19         try
20         {
21             Delay(10);
22             LogLongExec("Delay(10)");
23             Delay(5000);
24             LogLongExec("Delay(5000)");
25         }
26         catch (Exception ex)
27         {
28
29         }
30     }
31 }
```

You need to ensure that if an exception occurs, the exception will be logged.

Which code should you insert at line 28?

- A. 

```
System.Diagnostics.TraceSource trace = new TraceSource("./Trace.log");
trace.TraceEvent(TraceEventType.Error, ex.HResult, ex.Message);
```
- B. 

```
using (System.Diagnostics.XmlWriterTraceListener log1 =
    new XmlWriterTraceListener("./Error.log"))
{
    log1.TraceEvent(
        new TraceEventCache(), ex.Message, TraceEventType.Error, ex.HResult);
    log1.Flush();
}
```
- C. 

```
System.Diagnostics.EventInstance errorEvent =
    new System.Diagnostics.EventInstance(ex.HResult, 1, EventLogEntryType.Error);
System.Diagnostics.EventLog.WriteEvent("MyAppErrors", errorEvent, ex.Message);
```
- D. 

```
EventLog logEntry = new EventLog();
logEntry.Source = "Application";
logEntry.WriteEntry(ex.Message, EventLogEntryType.Error);
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer: B**

**Section: Volume B**

**Explanation**

**Explanation/Reference:**

Explanation:

- **XmlWriterTraceListener**

Directs tracing or debugging output as XML-encoded data to a `TextWriter` or to a `Stream`, such as a `FileStream`. ▪ `TraceListener.TraceEvent` Method (`TraceEventCache`, `String`, `TraceEventType`, `Int32`) Writes trace and event information to the listener specific output.

Syntax:

```
[ComVisibleAttribute(false)]
public virtual void TraceEvent(
    TraceEventCache eventCache,
    string source, TraceEventType
    eventType, int id )
```

### QUESTION 79

You write the following method (line numbers are included for reference only):

```
01 public static List<string> TestIfWebSite(string url)
02 {
03     const string pattern = @"http://(www\.)?([^\.]+)\.com";
04     List<string> result = new List<string>();
05
06     MatchCollection myMatches = Regex.Matches(url, pattern);
07 ...
08     return result;
09 }
```

You need to ensure that the method extracts a list of URLs that match the following pattern: `@http://(www\.)?([^\.]+)\.com;`

Which code should you insert at line 07?

- A. `result = (List<string>) myMatches.SyncRoot;`
- B. `result = (from System.Text.RegularExpressions.Match m in myMatches  
where m.Value.Contains(pattern)  
select m.Value).ToList<string>();`
- C. `foreach (Match currentMatch in myMatches)  
result.Add(currentMatch.Groups.ToString());`
- D. `foreach (Match currentMatch in myMatches)  
result.Add(currentMatch.Value);`

- A. Option A  
B. Option B  
C. Option C  
D. Option D

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

- MatchCollection

Represents the set of successful matches found by iteratively applying a regular expression pattern to the input string.

The collection is immutable (read-only) and has no public constructor. The Regex.Matches method returns a MatchCollection object. ▪

List<T>.Add Method

Adds an object to the end of the List<T>.

#### **QUESTION 80**

You are creating a class library that will be used in a web application.

You need to ensure that the class library assembly is strongly named.

What should you do?

- A. Use the gacutil.exe command-line tool.
- B. Use the xsd.exe command-line tool.
- C. Use the aspnet\_regiis.exe command-line tool.
- D. Use assembly attributes.

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

The Windows Software Development Kit (SDK) provides several ways to sign an assembly with a strong name:

- Using the Assembly Linker (Al.exe) provided by the Windows SDK.
- Using assembly attributes to insert the strong name information in your code. You can use either the AssemblyKeyFileAttribute or the AssemblyKeyNameAttribute, depending on where the key file to be used is located.
- Using compiler options such /keyfile or /delaysign in C# and Visual Basic, or the /KEYFILE or /DELAYSIGN linker option in C++. (For information on delay signing, see Delay Signing an Assembly.)

Note:

A strong name consists of the assembly's identity—its simple text name, version number, and culture information (if provided)—plus a public key and a digital signature. It is generated from an assembly file (the file that contains the assembly manifest, which in turn contains the names and hashes of all the files that make up the assembly), using the corresponding private key. Microsoft® Visual Studio® .NET and other development tools provided in the .NET Framework SDK can assign strong names to an assembly. Assemblies with the same strong name are expected to be identical.

### QUESTION 81

You are modifying an existing banking application.

The application includes an Account class and a Customer class. The following code segment defines the classes.

```
class Account
{
    public Account(decimal balance, int term, decimal rate)
    {
        Term = term;
        Balance = balance;
        Rate = rate;
    }
    public decimal Balance { get; set; }
    public decimal Rate { get; set; }
    public int Term { get; set; }
}

class Customer
{
    public Customer(string firstName, string lastName, Collection<Account> accounts)
    {
        FirstName = firstName;
        LastName = lastName;
        AccountCollection = accounts;
    }
    public string FirstName { get; set; }
    public string LastName { get; set; }
    public Collection<Account> AccountCollection { get; set; }
}
```

You populate a collection named customerCollection with Customer and Account objects by using the following code segment:

```
Collection<Customer> customerCollection = new Collection<Customer>();
Collection<Account> customerAccounts = new Collection<Account>();
customerAccounts.Add(new Account(1000m, 2, 0.025m));
customerAccounts.Add(new Account(3000m, 4, 0.045m));
customerAccounts.Add(new Account(5000m, 6, 0.045m));
customerCollection.Add(new Customer("David", "Jones", customerAccounts));
```

You create a largeCustomerAccounts collection to store the Account objects by using the following code segment:

```
Collection<Account> largeCustomerAccounts = new Collection<Account>();
```

All accounts with a Balance value greater than or equal to 1,000,000 must be tracked.

You need to populate the largeCustomerAccounts collection with Account objects.

Which code segment should you use?



- A. `foreach (Customer customer in customerCollection)  
{  
 foreach (Account account in customer.AccountCollection)  
 {  
 if (account.Balance >= 1000000m)  
 {  
 customer.AccountCollection.Add(account);  
 }  
 }  
}`
- B. `foreach (Account customer in customerCollection)  
{  
 foreach (Account account in largeCustomerAccounts)  
 {  
 if (account.Balance >= 1000000m)  
 {  
 largeCustomerAccounts.Add(account);  
 }  
 }  
}`
- C. `foreach (Customer customer in customerCollection)  
{  
 foreach (Account account in customer.AccountCollection)  
 {  
 if (account.Balance >= 1000000m)  
 {  
 largeCustomerAccounts.Add(account);  
 }  
 }  
}`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 82**

You have a C# application named App1 that invokes a method in an external assembly named Assembly1. Assembly1 is written in C++ and is natively compiled by using a debug build.

When you debug App1, you do not see any debug information for Assembly1.

You need to ensure that when you debug App1, you see the debug information for Assembly1.

What should you do?



- A. On the Debugging page of the configuration properties for the C++ project, set the Debugger Type to **Native Only**.
- B. On the Debugging page of the configuration properties for the C++ project, set the Debugger Type to **Mixed**.
- C. On the Debug page of the project properties for App1, click **Enable native code debugging**.
- D. In the project properties for App1, set the working directory to the same directory as Assembly1.

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Reference: <https://msdn.microsoft.com/en-us/library/kcw4dzyf.aspx>

#### **QUESTION 83**

You are creating an application that reads from a database.

You need to use different databases during the development phase and the testing phase by using conditional compilation techniques.

What should you do?

- A. Configure the assembly metadata to use the pre-existing public key for the assembly identity by using the AssemblySignatureKeyAttribute attribute.
- B. Disable the strong-name bypass feature of Microsoft .NET Framework in the registry.
- C. Configure the Define DEBUG constant setting in Microsoft Visual Studio.
- D. Decorate the code by using the [assembly:AssemblyDelaySignAttribute(true)] attribute.

**Correct Answer:** C

**Section:** Volume B

#### Explanation

##### Explanation/Reference:

Explanation:

Use one debug version to connect to the development database, and a standard version to connect to the live database.

#### QUESTION 84

You are troubleshooting an application that uses a class named FullName. The class is decorated with the DataContractAttribute attribute. The application includes the following code. (Line numbers are included for reference only.)

```
01 class Program
02 {
03     MemoryStream WriteName(Name name)
04     {
05         var ms = new MemoryStream();
06         var binary = XmlDictionaryWriter.CreateBinaryWriter(ms);
07         var ser = new DataContractSerializer(typeof(FullName));
08         ser.WriteObject(binary, name);
09
10         return ms;
11     }
12 }
```

You need to ensure that the entire FullName object is serialized to the memory stream object.

Which code segment should you insert at line 09?

- A. binary.WriteEndDocument(); B.
- binary.WriteEndDocumentAsync();
- C. binary.WriteEndElementAsync();
- D. binary.Flush();

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

- DataContractSerializer.WriteEndObject Method (XmlDictionaryWriter)

Writes the closing XML element using an XmlDictionaryWriter. ▪ Note  
on line 07:DataContractSerializer.WriteObject Method

    Writes all the object data (starting XML element, content, and closing element) to an XML document or stream.

#### **QUESTION 85**

You need to write a method that retrieves data from a Microsoft Access 2013 database. The method must meet the following requirements: ▪

Be read-only.

- Be able to use the data before the entire data set is retrieved.

▪ Minimize the amount of system overhead and the amount of memory usage.

Which type of object should you use in the method?

- A. DbDataReader
- B. DataContext
- C. unTyped DataSet
- D. DbDataAdapter

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

DbDataReader Class

Reads a forward-only stream of rows from a data source.

#### **QUESTION 86**

You are creating a console application named App1.

App1 will validate user input for order entries.

You are developing the following code segment (line numbers are included for reference only):

```
01 Console.WriteLine("Enter unit price: ");
02 string price = Console.ReadLine();
03
04 Console.WriteLine("Valid price");
05 else
06 Console.WriteLine("Invalid price")
```

You need to complete the code segment.

The solution must ensure that prices are positive and have two decimal places.

Which code should you insert at line 03?



- A. if (!Regex.IsMatch(price, @"^(-)?\d+(\.\d\d)?\$"))
- B. if (Regex.IsMatch(price, @"^(-)?\d+(\.\d\d)?\$"))
- C. Regex reg = new Regex(@"^(\d+(\.\d\d))\$");
 if (reg.IsMatch(price))
- D. Regex reg = new Regex(@"^(-)?\d+(\.\d\d)\$");
 if (reg.IsMatch(price))

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

Regex.IsMatch Method (String, String)

Indicates whether the specified regular expression finds a match in the specified input string.

Syntax:

```
public static bool IsMatch(  
    string input, string  
    pattern  
)
```

#### QUESTION 87

You have the following code:

```
List<Int32> items = new List<int>() {  
    100,  
    95,  
    80,  
    75,  
    95  
};
```



You need to retrieve all of the numbers from the items variable that are greater than 80.

Which code should you use?

A. var result = from i in items  
where i > 80  
select i;

B. var result = from i in items  
groupby i into grouped  
where grouped.Key > 80  
select i;

C. var result = items.Take(80);



D. var result = items.Skip(80);

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 88**

You are creating a console application named Appl.

App1 retrieves data from the Internet by using JavaScript Object Notation (JSON).

You are developing the following code segment (line numbers are included for reference only):

```
01 public bool ValidateJson(string json, Dictionary<string, object> result)
02 {
03
04     try
05     {
06         result = serializer.Deserialize<Dictionary<string, object>>(json);
07         return true;
08     }
09     catch
10     {
11         return false;
12     }
13 }
```

You need to ensure that the code validates the JSON string.



Which code should you insert at line 03?

- A. DataContractSerializer serializer = new DataContractSerializer();
- B. var serializer = new NetDataContractSerializer();
- C. NetDataContractSerializer serializer = new NetDataContractSerializer();
- D. JavaScriptSerializer serializer = new JavaScriptSerializer();

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

The JavaScriptSerializer Class Provides serialization and deserialization functionality for AJAX-enabled applications.

The JavaScriptSerializer class is used internally by the asynchronous communication layer to serialize and deserialize the data that is passed between the browser and the Web server. You cannot access that instance of the serializer. However, this class exposes a public API. Therefore, you can use the class when you want to work with JavaScript Object Notation (JSON) in managed code.

#### **QUESTION 89**

You are evaluating a method that calculates loan interest. The application includes the following code segment. (Line numbers are included for reference only.)



```
01 private static decimal CalculateInterest(decimal loanAmount, int loanTerm)
02 {
03     decimal interestAmount;
04     decimal loanRate;
05     if (loanTerm > 0 && loanTerm < 5 && loanAmount < 5000m)
06     {
07         loanRate = 0.045m;
08     }
09     else if (loanTerm > 5 && loanAmount > 5000m)
10     {
11         loanRate = 0.085m;
12     }
13     else
14     {
15         loanRate = 0.055m;
16     }
17     interestAmount = loanAmount * loanRate * loanTerm;
18     return interestAmount;
19 }
```



When the loanTerm value is 3 and the loanAmount value is 9750, the loanRate must be set to 8.25 percent.

You need to adjust the loanRate value to meet the requirements.

What should you do?



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- A. Replace line 04 with the following code segment: decimal loanRate = 0.0325m;
- B. Replace line 17 with the following code segment: interestAmount = loanAmount \* 0.0825m \* loanTerm;

C. Replace line 15 with the following code segment: `loanRate = 0.0825m;`

D. Replace line 07 with the following code segment: `loanRate = 0.0825m;`

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### QUESTION 90

You are implementing a new method named `ProcessData`. The `ProcessData()` method calls a third-party component that performs a long-running operation to retrieve stock information from a web service.

The third-party component uses the `IAsyncResult` pattern to signal completion of the long-running operation.

You need to ensure that the calling code handles the long-running operation as a `System.Threading.Tasks.Task` object.

Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Call the component by using the `TaskFactory.FromAsync()` method.
- B. Create a `TaskCompletionSource<T>` object.
- C. Apply the `async` modifier to the method signature.
- D. Apply the following attribute to the method signature: `[MethodImpl(MethodImplOptions.Synchronized)]`

**Correct Answer:** AB

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

A: `TaskFactory.FromAsync` Method

Creates a Task that represents a pair of begin and end methods that conform to the Asynchronous Programming Model pattern. Overloaded.

Example:

`TaskFactory.FromAsync` Method (`IAsyncResult`, `Action<IAsyncResult>`)

Creates a Task that executes an end method action when a specified `IAsyncResult` completes.

B: In many scenarios, it is useful to enable a `Task<TResult>` to represent an external asynchronous operation. `TaskCompletionSource<TResult>` is provided for this purpose. It enables the creation of a task that can be handed out to consumers, and those consumers can use the members of the task as they would any

other. However, unlike most tasks, the state of a task created by a TaskCompletionSource is controlled explicitly by the methods on TaskCompletionSource. This enables the completion of the external asynchronous operation to be propagated to the underlying Task. The separation also ensures that consumers are not able to transition the state without access to the corresponding TaskCompletionSource.

Note:

System.Threading.Tasks.Task

Represents an asynchronous operation.

### QUESTION 91

You are developing an application for a bank. The application includes a method named `ProcessLoan` that processes loan applications. The `ProcessLoan()` method uses a method named `CalculateInterest`. The application includes the following code:

```
static decimal CalculateInterest(decimal amount, decimal rate, int term)
{
    return amount * rate * term;
}
static decimal ProcessLoan()
{
    CalculateLoanInterest loanInterestProcessor = CalculateInterest;
    return loanInterestProcessor(4500m, 0.065m, 4);
}
```

You need to declare a delegate to support the `ProcessLoan()` method.

Which code segment should you use?

- A. public delegate decimal LoanProcessor(decimal loanAmount, decimal loanRate, int term);
  - B. public delegate int LoanProcessor(decimal loanAmount, decimal loanRate, int term);
  - C. public delegate decimal CalculateLoanInterest(decimal loanAmount, decimal loanRate, int term);
  - D. public delegate decimal ProcessLoan();
- A. Option A
  - B. Option B
  - C. Option C
  - D. Option D

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 92**

You are modifying an application that processes loans. The following code defines the Loan class. (Line numbers are included for reference only.)

```
01 public class Loan
02 {
03
04     private int _term;
05     private const int MaximumTerm = 10;
06     private const decimal Rate = 0.034m;
07     public int Term
08     {
09         get
10         {
11             return _term;
12         }
13         set
14         {
15             if (value <= MaximumTerm)
16             {
17                 _term = value;
18             }
19             else
20             {
21
22             }
23         }
24     }
25 }
26 public delegate void MaximumTermReachedHandler(object source, EventArgs e);
```



Loans are restricted to a maximum term of 10 years. The application must send a notification message if a loan request exceeds 10 years.

You need to implement the notification mechanism.

Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Insert the following code segment at line 03:

```
public string MaximumTermReachedEvent { get; set; }
```

- B. Insert the following code segment at line 21:

```
if (OnMaximumTermReached != null)
{
    OnMaximumTermReached(this, new EventArgs());
}
```

- C. Insert the following code segment at line 03:

```
private string MaximumTermReachedEvent;
```

- D. Insert the following code segment at line 03:

```
public event MaximumTermReachedHandler OnMaximumTermReached;
```

- E. Insert the following code segment at line 21:

```
value = MaximumTerm;
```

- F. Insert the following code segment at line 21:

- A. Option A
- B. Option B
- C. Option C
- D. Option D
- E. Option E
- F. Option F

**Correct Answer:** BD

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 93**

An application contains code that measures reaction times. The code runs the timer on a thread separate from the user interface. The application includes the following code. (Line numbers are included for reference only.)



```
01 static int RunTimer(CancellationToken cancellationToken)
02 {
03     var time = 0;
04     while (!cancellationToken.IsCancellationRequested)
05         time++;
06     return time;
07 }
08 static void Main(string[] args)
09 {
10     var tokenSource = new CancellationTokenSource();
11     var task = Task.Factory.StartNew<int>(() => RunTimer(tokenSource.Token));
12     Console.WriteLine("Press [Enter] to stop the timer.");
13     Console.ReadLine();
14
15     Console.WriteLine("Timer stopped at {0}", task.GetAwaiter().GetResult());
16     Console.ReadLine();
17 }
```



You need to ensure that the application cancels the timer when the user presses the Enter key.

Which code segment should you insert at line 14?

- A. tokenSource.Token.Register( () => tokenSource.Cancel() );
- B. tokenSource.Cancel();
- C. tokenSource.IsCancellationRequested = true;
- D. tokenSource.Dispose();

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 94**

You are developing an application that generates code. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 public string GenerateCode(string className, string methodName)
02 {
03     ...
04     var ct = new CodeTypeDeclaration(className);
05
06     ...
07 }
```

You need to ensure that code generated by the GenerateCode() method represents a class that can be accessed by all objects in its application domain.

Which two code segments can you insert at line 05 to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. `ct.Attributes = MemberAttributes.Public;`
  - B. `ct.IsStruct = true;`  
`ct.Attributes = MemberAttributes.Public;`
  - C. `ct.IsClass = true;`  
`ct.Attributes = MemberAttributes.Public;`
  - D. `ct.IsClass = true;`  
`ct.Attributes = MemberAttributes.Private;`
- 
- A. Option A
  - B. Option B
  - C. Option C
  - D. Option D

**Correct Answer:** AC

**Section: Volume B**  
**Explanation****Explanation/Reference:****QUESTION 95**

You are developing an application that will process personnel records.

The application must encrypt highly sensitive data.

You need to ensure that the application uses the strongest available encryption.

Which class should you use?

- A. System.Security.Cryptography.DES
- B. System.Security.Cryptography.Aes
- C. System.Security.Cryptography.TripleDES
- D. System.Security.Cryptography.RC2

**Correct Answer: B**

**Section: Volume B****Explanation****Explanation/Reference:****QUESTION 96**

You develop a class named MyClass. MyClass has a method that uses a COM object.

You need to ensure that when MyClass is instantiated by using the using keyword, the COM object is released at the end of the using scope.

Which interface should you implement?

- A. ISerializable
- B. IDisposable
- C. ICloneable
- D. IFormattable

**Correct Answer:** B

**Section:** Volume B

### **Explanation**

#### **Explanation/Reference:**

Reference: [https://msdn.microsoft.com/en-us/library/system.idisposable\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.idisposable(v=vs.110).aspx)

### **QUESTION 97**

You are developing an application that includes a class named Employee and a generic list of employees. The following code segment declares the list of employees:

```
List<Employee> employeesList = new List<Employee>();
```

You populate the employeesList object with several hundred Employee objects.

The application must display the data for five Employee objects at a time.

You need to create a method that will return the correct number of Employee objects.

Which code segment should you use?



- A. 

```
public static IEnumerable<int> Page(IEnumerable<int> source, int page, int pageSize)
{
    return source.Take((pageSize - 1) * page).Skip(pageSize);
}
```
- B. 

```
public static IEnumerable<TSource> Page<TSource>(this IEnumerable<TSource> source, int page, int pageSize)
{
    return source.Skip((page - 1) * pageSize).Take(pageSize);
}
```
- C. 

```
public static IEnumerable<int> Page(IEnumerable<int> source, int page, int pageSize)
{
    return source.Skip((pageSize - 1) * page).Take(pageSize);
}
```
- D. 

```
public static IEnumerable<TSource> Page<TSource>(this IEnumerable<TSource> source, int page, int pageSize)
{
    return source.Take((page - 1) * pageSize).Skip(pageSize);
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 98**

DRAG DROP You  
create an assembly

named  
Assembly1.dll.

You need to ensure that Assembly1.dll can be deployed to the global assembly cache (GAC).

Which commands should you run? (To answer, drag the appropriate programs to the correct locations. Each program may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.) **Select and Place:**



**Correct Answer:**



#### Section: Volume B

##### Explanation

##### Explanation/Reference:

**QUESTION 99**

You are developing an application that uses multiple asynchronous tasks to optimize performance. The application will be deployed in a distributed environment.

You need to retrieve the result of an asynchronous task that retrieves data from a web service. The data will be later being parsed by a separate task.

Which code segment should you use?



A. `protected async void StartTask()  
{  
 string result = await GetData();  
 ...  
}  
public Task<string> GetData()  
{  
 ...  
}`

B. `protected async void StartTask()  
{  
 string result = GetData();  
 ...  
}  
public Task<string> GetData()  
{  
 ...  
}`

C. `protected async void StartTask()  
{  
 string result = await GetData();  
 ...  
}  
public async Task<string> GetData()  
{  
 ...  
}`

D. `protected async void StartTask()  
{  
 string result = await GetData();  
 ...  
}`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 100**

You are developing an application.

The application contains the following code:



```
class Program
{
    static void ProcessOrders (string orderRefNumber)
    {
        if (orderRefNumber == null)
        {
            throw new ArgumentNullException();
        }
        ...
    }

    static void Main()
    {
        try
        {
            string orderRefNumber = null;
            ProcessOrders(orderRefNumber);
        }
        catch (ArgumentNullException e)
        {
            Console.WriteLine("{0} An exception caught.", e);
        }

        catch (Exception e)
        {
            Console.WriteLine("{0} An exception caught.", e);
        }
    }
}
```

When you compile the code, you receive the following syntax error message: "A previous catch clause already catches all exceptions of this or a super type ('System.Exception')."

You need to ensure that the code can be compiled. What should you do?

- A. Catch the ArgumentException exception instead of the ArgumentNullException exception.
- B. Throw a new exception in the second catch block.
- C. Catch the ArgumentNullException exception first.
- D. Re-throw the exception caught by the second catch block.

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 101**

You are developing an application that includes a method named SendMessage.

You need to ensure that the SendMessage() method is called with the required parameters.

Which two code segments can you use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. static void Main(string[] args)  
{  
 dynamic message = new { From = "Jon Morris", To = "Mary North", Content = "Hello World" };  
 SendMessage(message);  
}  
private static void SendMessage(Object msg)  
{  
 Console.WriteLine(msg.From);  
 Console.WriteLine(msg.To);  
 Console.WriteLine(msg.Content);  
}
- B. static void Main(string[] args)  
{  
 var message = new Object();  
 message.From = "Jon Morris";  
 message.To = "Mary North";  
 message.Content = "Hello World";  
 SendMessage(message);  
}  
private static void SendMessage(dynamic msg)  
{  
 Console.WriteLine(msg.From);  
 Console.WriteLine(msg.To);  
 Console.WriteLine(msg.Content);  
}
- C. static void Main(string[] args)  
{  
 var message = new { From = "Jon Morris", To = "Mary North", Content = "Hello World" };  
 SendMessage(message);  
}  
private static void SendMessage(dynamic msg)  
{  
 Console.WriteLine(msg.From);  
 Console.WriteLine(msg.To);  
 Console.WriteLine(msg.Content);  
}
- D. static void Main(string[] args)  
{  
 dynamic message = new RandomObject();  
 message.From = "Jon Morris";  
 message.To = "Mary North";  
 message.Content = "Hello World";  
 SendMessage(message);  
}

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** CD

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

D: ExpandoObject

Represents an object whose members can be dynamically added and removed at run time.

- The ExpandoObject class enables you to add and delete members of its instances at run time and also to set and get values of these members. This class supports dynamic binding, which enables you to use standard syntax like sampleObject.sampleMember instead of more complex syntax like sampleObject.GetAttribute("sampleMember").
- You can pass instances of the ExpandoObject class as parameters. Note that these instances are treated as dynamic objects in C# and late-bound objects in Visual Basic. This means that you do not have IntelliSense for object members and you do not receive compiler errors when you call non-existent members. If you call a member that does not exist, an exception occurs.

Note:

Visual C# 2010 introduces a new type, dynamic. The type is a static type, but an object of type dynamic bypasses static type checking. In most cases, it functions like it has type object. At compile time, an element that is typed as dynamic is assumed to support any operation. Therefore, you do not have to be concerned about whether the object gets its value from a COM API, from a dynamic language such as IronPython, from the HTML Document Object Model (DOM), from reflection, or from somewhere else in the program. However, if the code is not valid, errors are caught at run time.

## QUESTION 102

You have an application that accesses a Web server named Server1.

You need to download an image named Image1.jpg from Server1 and store the image locally as File1.jpg.

Which code should you use?

- A. 

```
WebRequest request = HttpWebRequest.Create("http://server1/image1.jpg");
StreamWriter writer = new StreamWriter(request.GetResponse().GetResponseStream());
writer.WriteLine("C:\\\\file1.jpg");
writer.Dispose();
```
- B. 

```
WebClient client = new WebClient();
StreamWriter writer = new StreamWriter("C:\\\\file1.jpg");
writer.Write(client.DownloadData("http://server1/image1.jpg"));
writer.Dispose();
client.Dispose();
```
- C. 

```
WebClient client = new WebClient();
client.DownloadFile("http://server1/image1.jpg", "C:\\\\file1.jpg");
client.Dispose();
```
- D. 

```
WebRequest request = HttpWebRequest.Create("http://server1/image1.jpg");
StreamWriter writer = new StreamWriter(request.GetResponse().GetResponseStream());
writer.Write("C:\\\\file1.jpg");
writer.Dispose();
```



- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 103**

You are developing a C# application. The application references and calls a RESTful web service named EmployeeService. The EmployeeService web service includes a method named GetEmployee, which accepts an employee ID as a parameter. The web service returns the following JSON data from the method.

```
{"Id":1,"Name":"David Jones"}
```

The following code segment invokes the service and stores the result:

```
WebClient client = new WebClient();
byte[] employeeData = client.DownloadData("http://localhost:2588/EmployeeService.svc/GetEmployee/1");
```

You need to convert the returned JSON data to an Employee object for use in the application.

Which code segment should you use?



```
A. using (Stream stream = new MemoryStream(employeeData))
{
    XmlSerializer xmlSerializer = new XmlSerializer(typeof(Employee));
    Employee retrievedEmployee = xmlSerializer.Deserialize(stream) as Employee;
    ...
}

B. using (Stream stream = new MemoryStream(employeeData))
{
    DataContractSerializer dataContractSerializer = new DataContractSerializer(typeof(Employee));
    Employee retrievedEmployee = dataContractSerializer.ReadObject(stream) as Employee;
    ...
}

C. using (Stream stream = new MemoryStream(employeeData))
{
    DataContractJsonSerializer dataContractJsonSerializer = new DataContractJsonSerializer(typeof(Employee));
    Employee retrievedEmployee = dataContractJsonSerializer.ReadObject(stream) as Employee;
    ...
}

D. using (Stream stream = new MemoryStream(employeeData))
{
    NetDataContractSerializer netDataContractSerializer = new NetDataContractSerializer();
    Employee retrievedEmployee = netDataContractSerializer.ReadObject(stream) as Employee;
    ...
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer: C**

**Section: Volume B**

**Explanation**

**Explanation/Reference:****QUESTION 104**

You are developing an assembly.

You plan to sign the assembly when the assembly is developed.

You need to reserve space in the assembly for the signature.

What should you do?

- A. Run the Assembly Linker tool from the Windows Software Development Kit (Windows SDK).
- B. Run the Strong Name tool from the Windows Software Development Kit (Windows SDK).
- C. Add the AssemblySignatureKeyAttribute attribute the assembly.
- D. Add the AssemblyDelaySignAttribute attribute to the assembly.

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:****QUESTION 105**

You are troubleshooting an application that uses a class named FullName. The class is decorated with the DataContractAttribute attribute. The application includes the following code. (Line numbers are included for reference only.)

```
01 class Program
02 {
03     MemoryStream WriteName(Name name)
04     {
05         var ms = new MemoryStream();
06         var binary = XmlDictionaryWriter.CreateBinaryWriter(ms);
07         var ser = new DataContractSerializer(typeof(FullName));
08         ser.WriteObject(binary, name);
09
10         return ms;
11     }
12 }
```

You need to ensure that the entire FullName object is serialized to the memory stream object.

Which code segment should you insert at line 09?

- A. binary.WriteLine();
- B. binary.NrитеEndDocument();
- C. ms.Close();
- D. binary.Flush();

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

- DataContractSerializer.WriteEndObject Method (XmlDictionaryWriter)

Writes the closing XML element using an XmlDictionaryWriter. ▪ Note

on line 07: DataContractSerializer.WriteObject Method

    Writes all the object data (starting XML element, content, and closing element) to an XML document or stream.

XmlDictionaryWriter

#### QUESTION 106

You write the following method (line numbers are included for reference only):

```
01 public static List<string> TestIfWebSite(string url)
02 {
03     const string pattern = @"http://(www\.)?([^\.]+)\.com";
04     List<string> result = new List<string>();
05
06     MatchCollection myMatches = Regex.Matches(url, pattern);
07 ...
08     return result;
09 }
```

You need to ensure that the method extracts a list of URLs that match the following pattern:

@http://(www\.)?([^\.]+)\.com;

Which code should you insert at line 07?



- A. 

```
foreach (Match currentMatch in myMatches)
    result.Add(currentMatch.Groups.ToString());
```
  
- B. 

```
result = (List<string>) myMatches.GetEnumerator();
```
  
- C. 

```
foreach (Match currentMatch in myMatches)
    result.Add(currentMatch.Value);
```
  
- D. 

```
result = (List<string>) myMatches.SyncRoot;
```



- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

- MatchCollection

Represents the set of successful matches found by iteratively applying a regular expression pattern to the input string.

The collection is immutable (read-only) and has no public constructor. The Regex.Matches method returns a MatchCollection object. ▪

List<T>.Add Method

Adds an object to the end of the List<T>.

**Incorrect Answers:**

B: The MatchCollection.GetEnumerator method returns an enumerator that iterates through a collection. However, To iterate through the members of the collection, you should use the collection iteration (foreach) instead of retrieving the enumerator that is returned by the GetEnumerator method.

References: [https://msdn.microsoft.com/en-us/library/system.text.regularexpressions.matchcollection\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.text.regularexpressions.matchcollection(v=vs.110).aspx)

### QUESTION 107

You have the following code:

```
List<Int32> items = new List<int>() {  
    100,  
    95,  
    80,  
    75,  
    95  
};
```

You need to retrieve all of the numbers from the items variable that are greater than 80.

Which code should you use?



- A. var result = items.First(i => i > 80);
- B. var result = items.Where(i => i > 80);
- C. var result = from i in items  
groupby i into grouped  
where grouped.Key > 80  
select i;
- D. var result = items.Any(i => i > 80);



- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** B

**Section:** Volume B

#### **Explanation**

#### **Explanation/Reference:**

Explanation:

Enumerable.Where<TSource> Method (IEnumerable<TSource>, Func<TSource, Boolean>)  
Filters a sequence of values based on a predicate.

#### **Example:**

```
List<string> fruits =  
new List<string> { "apple", "passionfruit", "banana", "mango",  
"orange", "blueberry", "grape", "strawberry" };
```

```
IEnumerable<string> query = fruits.Where(fruit => fruit.Length < 6);

foreach (string fruit in query)
{
Console.WriteLine(fruit);
}
/*
This code produces the following output:
```

```
apple
mango
grape
*/
```

**QUESTION 108**

You are developing an application that uses several objects. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 private bool IsNull(object obj)
02 {
03
04     return false;
05 }
```



You need to evaluate whether an object is null.

Which code segment should you insert at line 03?

A. if (null = obj)  
{  
 return true;  
}

B. if (null == obj)  
{  
 return true;  
}

C. if (null)  
{  
 return true;  
}

D. if (!obj)  
{  
 return true;  
}

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer: B Section: Volume B**

## Explanation

### Explanation/Reference:

Explanation:

Use the == operator to compare values and in this case also use the null literal.

### QUESTION 109

You are developing a class named Account that will be used by several applications.

The applications that will consume the Account class will make asynchronous calls to the Account class to execute several different methods.

You need to ensure that only one call to the methods is executed at a time.

Which keyword should you use?

- A. sealed
- B. protected
- C. checked
- D. lock



<https://vceplus.com/>



Correct Answer: D

Section: Volume B

Explanation

### Explanation/Reference:

### QUESTION 110

You are developing an application by using C#. The application will write events to an event log. You plan to deploy the application to a server.

You create an event source named MySource and a custom log named MyLog on the server.

You need to write events to the custom log.

Which code segment should you use?

```
A. public void WriteToEventLog(string message)
{
    EventLog eventLog = new EventLog() { Source = "Application" };
    eventLog.WriteEntry(message);
}

B. public void WriteToEventLog(string message)
{
    EventLog eventLog = new EventLog() { Source = "MyLog", EnableRaisingEvents = true };
    EventInstance eventInstance = new EventInstance(0, 1);
    eventLog.WriteEvent(eventInstance, message);
}

C. public void WriteToEventLog(string message, EventLogEntryType eventLogEntryType)
{
    EventLog eventLog = new EventLog() { Source = "MyLog" };
    eventLog.WriteEntry(message, eventLogEntryType);
}

D. public void WriteToEventLog(string message, EventLogEntryType eventLogEntryType)
{
    EventLog eventLog = new EventLog() { Source = "MySource", EnableRaisingEvents = true };
    eventLog.WriteEntry(message, eventLogEntryType);
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 111**

You plan to store passwords in a Windows Azure SQL Database database.

You need to ensure that the passwords are stored in the database by using a hash algorithm,

Which cryptographic algorithm should you use?

- A. ECDSA
- B. RSA-768
- C. AES-256
- D. SHA-256

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 112**

You are developing an application that includes methods named ConvertAmount and TransferFunds.

You need to ensure that the precision and range of the value in the amount variable is not lost when the TransferFunds() method is called.

Which code segment should you use?

A. `private static void ConvertAmount(float amount)  
{  
 TransferFunds(amount);  
}  
private static void TransferFunds(int funds)  
{  
 ...  
 Console.WriteLine(funds);  
}`

B. `private static void ConvertAmount(float amount)  
{  
 TransferFunds((int) funds);  
}  
private static void TransferFunds(float funds)  
{  
 ...  
}`

C. `private static void ConvertAmount(float amount)  
{  
 TransferFunds(amount);  
}  
private static void TransferFunds(float funds)  
{  
 ...  
}`

D. `private static void ConvertAmount(float amount)  
{`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

Simply use float for the TransferFunds parameter.

Note:

- The float keyword signifies a simple type that stores 32-bit floating-point values.
- The double keyword signifies a simple type that stores 64-bit floating-point values

### QUESTION 113

HOTSPOT

You have the following code (line numbers are included for reference only):

```
01 using (StreamWriter writer = new StreamWriter(@"C:\console.txt"))
02 {
03     Console.SetOut(writer);
04     using (FileStream stream = new FileStream(@"C:\file.txt", FileMode.Open))
05     {
06         using (StreamReader reader = new StreamReader(stream))
07         {
08             while (!reader.EndOfStream) Console.WriteLine(reader.ReadLine());
09         }
010     }
011 }
```

To answer, complete each statement according to the information presented in the code.

**Hot Area:**

If File.txt does NOT exist in the root of C:, ... will be thrown.

|                       |
|-----------------------|
| ArgumentNullException |
| FileLoadException     |
| FileNotFoundException |
| PipeException         |

The final output of the streaming operation will be ...

|                                  |
|----------------------------------|
| a console window.                |
| the Console.txt file.            |
| the file.txt file.               |
| the Visual Studio Debug console. |

**Correct Answer:**

If File.txt does NOT exist in the root of C:, ... will be thrown.

|                       |
|-----------------------|
| ArgumentNullException |
| FileLoadException     |
| FileNotFoundException |
| PipeException         |

The final output of the streaming operation will be ...

|                                  |
|----------------------------------|
| a console window.                |
| the Console.txt file.            |
| the file.txt file.               |
| the Visual Studio Debug console. |

**Section: Volume B**  
**Explanation**

**Explanation/Reference:**

References:

<https://www.returngis.net/en/2014/12/save-console-writeline-output-to-a-file-with-c/>

**QUESTION 114**

You are implementing a method named `GetValidPhoneNumbers`. The `GetValidPhoneNumbers()` method processes a list of string values that represent phone numbers.

The `GetValidPhoneNumbers()` method must return only phone numbers that are in a valid format.

You need to implement the `GetValidPhoneNumbers()` method.

Which two code segments can you use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. `private static List<String> GetValidPhoneNumbers(string input, string pattern)  
{  
 var regex = new Regex(pattern);  
 var matches = regex.Matches(input);  
 var validPhoneNumbers = new List<String>();  
 foreach (Match match in matches)  
 {  
 if (match.Success)  
 {  
 validPhoneNumbers.Add(match.Value);  
 }  
 }  
 return validPhoneNumbers;  
}`
- B. `private static List<String> GetValidPhoneNumbers(string input, string pattern)  
{  
 var regex = new Regex(pattern);  
 var matches = regex.Matches(input);  
 return (from Match match in matches where match.Success select match.Value).ToList();  
}`
- C. `private static List<String> GetValidPhoneNumbers(string input, string pattern)  
{  
 var regex = new Regex(pattern);  
 var matches = regex.Matches(input);  
 return (from Match match in matches where match.Success select match.Success.ToString()).ToList();  
}`
- D. `private static List<String> GetValidPhoneNumbers(string input, string pattern)  
{  
 var regex = new Regex(pattern);  
 var matches = regex.Matches(input);  
 var validPhoneNumbers = new List<String>();  
 foreach (Match match in matches)  
 {  
 if (!match.Success)  
 {  
 validPhoneNumbers.Add(match.Value);  
 }  
 }  
 return validPhoneNumbers;  
}`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** AB

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

- Regex.Matches
  - Searches an input string for all occurrences of a regular expression and returns all the matches.
- MatchCollection
  - Represents the set of successful matches found by iteratively applying a regular expression pattern to the input string.
  - The collection is immutable (read-only) and has no public constructor. The Regex.Matches method returns a MatchCollection object.
- List<T>.Add Method
  - Adds an object to the end of the List<T>.



**QUESTION 115**

You need to create a method that can be called by using a varying number of parameters.

What should you use?

- A. derived classes
- B. interface
- C. enumeration
- D. method overloading

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

Member overloading means creating two or more members on the same type that differ only in the number or type of parameters but have the same name. Overloading is one of the most important techniques for improving usability, productivity, and readability of reusable libraries. Overloading on the number of parameters makes it possible to provide simpler versions of constructors and methods. Overloading on the parameter type makes it possible to use the same member name for members performing identical operations on a selected set of different types.

**QUESTION 116**

You are creating an application that reads from a database.

You need to use different databases during the development phase and the testing phase by using conditional compilation techniques.

What should you do?

- A. Configure the Define TRACE constant setting in Microsoft Visual Studio.
- B. Decorate the code by using the [DebuggerDisplay("Mydebug")] attribute.
- C. Configure the Define DEBUG constant setting in Microsoft Visual Studio.
- D. Disable the strong-name bypass feature of Microsoft .NET Framework in the registry.

**Correct Answer:** C

**Section:** Volume B

**Explanation****Explanation/Reference:**

Explanation:

Use one debug version to connect to the development database, and a standard version to connect to the live database.

**QUESTION 117**

You are creating a class named Loan.

The Loan class must meet the following requirements:

- Include a member that represents the rate for a Loan instance.
- Allow external code to assign a value to the rate member.
- Restrict the range of values that can be assigned to the rate member.

You need to implement the rate member to meet the requirements.

In which form should you implement the rate member?

- A. public static property
- B. public property
- C. public static field
- D. protected field

**Correct Answer:** B

**Section:** Volume B

## Explanation

### Explanation/Reference:

#### QUESTION 118

You are creating a class library that will be used in a web application.

You need to ensure that the class library assembly is strongly named.

What should you do?

- A. Use the csc.exe /target:Library option when building the application.
- B. Use the AL.exe command-line tool.
- C. Use the aspnet\_regiis.exe command-line tool.
- D. Use the EdmGen.exe command-line tool.

**Correct Answer:** B

**Section:** Volume B

## Explanation



### Explanation/Reference:

Explanation:

The Windows Software Development Kit (SDK) provides several ways to sign an assembly with a strong name:

- Using the Assembly Linker (AL.exe) provided by the Windows SDK.
- Using assembly attributes to insert the strong name information in your code. You can use either the AssemblyKeyFileAttribute or the AssemblyKeyNameAttribute, depending on where the key file to be used is located.
- Using compiler options such /keyfile or /delaysign in C# and Visual Basic, or the /KEYFILE or /DELAYSIGN linker option in C++. (For information on delay signing, see Delay Signing an Assembly.) Note:

A strong name consists of the assembly's identity—it's simple text name, version number, and culture information (if provided)—plus a public key and a digital signature. It is generated from an assembly file (the file that contains the assembly manifest, which in turn contains the names and hashes of all the files that make up the assembly), using the corresponding private key. Microsoft® Visual Studio® .NET and other development tools provided in the .NET Framework SDK can assign strong names to an assembly. Assemblies with the same strong name are expected to be identical.

#### QUESTION 119

You are creating a console application named App1.

App1 retrieves data from the Internet by using JavaScript Object Notation (JSON).

You are developing the following code segment (line numbers are included for reference only):

```
01 public bool ValidateJson(string json, Dictionary<string, object> result)
02 {
03
04     try
05     {
06         result = serializer.Deserialize<Dictionary<string, object>>(json);
07         return true;
08     }
09     catch
10     {
11         return false;
12     }
13 }
```

You need to ensure that the code validates the JSON string.

Which code should you insert at line 03?

- A. var serializer = new DataContractSerializer();
- B.DataContractSerializer serializer = new DataContractSerializer();
- C. var serializer = new XmlSerializer();
- D. var serializer = new JavaScriptSerializer();
- A. Option A
- B. Option B C. Option C
- D. Option D

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

The JavaScriptSerializer Class Provides serialization and deserialization functionality for AJAX-enabled applications.

The JavaScriptSerializer class is used internally by the asynchronous communication layer to serialize and deserialize the data that is passed between the browser and the Web server. You cannot access that instance of the serializer. However, this class exposes a public API. Therefore, you can use the class when you want to work with JavaScript Object Notation (JSON) in managed code.

#### **QUESTION 120**

You are developing an application that includes methods named EvaluateLoan, ProcessLoan, and FundLoan. The application defines build configurations named TRIAL, BASIC, and ADVANCED.

You have the following requirements:

- The TRIAL build configuration must run only the EvaluateLoan() method.
- The BASIC build configuration must run all three methods.
- The ADVANCED build configuration must run only the EvaluateLoan() and ProcessLoan() methods.

You need to meet the requirements.

Which code segment should you use?

A. #if TRIAL  
#warning EvaluateLoan();  
#error ProcessLoan();  
#error FundLoan();  
#elif ADVANCED  
#warning EvaluateLoan();  
#warning ProcessLoan();  
#warning FundLoan();  
#else  
#warning EvaluateLoan();  
#warning ProcessLoan();  
#error FundLoan();  
#endif

B. #if TRIAL  
EvaluateLoan();  
#elif ADVANCED  
EvaluateLoan();  
ProcessLoan();  
FundLoan();  
#else  
EvaluateLoan();  
ProcessLoan();  
#endif

C. #if TRIAL  
EvaluateLoan();  
#elif BASIC  
EvaluateLoan();  
ProcessLoan();  
FundLoan();  
#else

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 121**

You are creating an application that processes a list of numbers.

The application must define a method that queries the list and displays a subset of the numbers to the user. The method must not update the list.

You need to create an extendable query by using LINQ.

What should you do?



- A. Create an in-memory array of numbers. Process the numbers in the array by using the following code segment:

```
int[] numbersList = new int[8] { 1, 3, 5, 7, 11, 13, 17, 19 };
var numbers = from p in numbersList where p > 10;
foreach (int p in numbers)
{
    ...
}
```

- B. Create an in-memory array of numbers. Process the numbers in the array by using the following code segment:

```
int[] numbersList = new int[8] { 1, 3, 5, 7, 11, 13, 17, 19 };
var numbers = new Query<int>(from p in numbersList where p > 10 select p);
foreach (int p in numbers)
{
    ...
}
```



- C. Create an in-memory array of numbers. Process the numbers in the array by using the following code segment:

```
int[] numbersList = new int[8] { 1, 3, 5, 7, 11, 13, 17, 19 };
var numbers = from p in numbersList where p > 10 select p;
foreach (int p in numbers)
{
    ...
}
```

- D. Create a query to return data from a SQL database table named **Numbers**. Process the returned data by using the following code segment:

```
var numbers = "select p from Numbers where p > 10";
foreach (int p in numbers)
{
    ...
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 122**

You have an assembly named Assembly named Assembly1 that is written in C#.

Your company plans to sell Assembly =1 to customers. The customers might debug Assembly1.

You need to minimize the amount of information contained within the debug symbols that are shipped with Assembly1.

How should you create the debug symbols for Assembly1?

- A. Create a new PDB file by running `pdbcopy.exe`.
- B. Build Assembly1 by using a Debug configuration.
- C. On the Build page of the project properties for Assembly1, click Define TRACE constant and clear Define DEBUG constant.
- D. Build Assembly1 by using a Release configuration.



**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Reference: <https://docs.microsoft.com/en-us/dotnet/csharp/language-reference/preprocessor-directives/preprocessor-define>

#### **QUESTION 123**

You are developing an application that contains a class named `TheaterCustomer` and a method named `ProcessTheaterCustomer`. The `ProcessTheaterCustomer()` method accepts a `TheaterCustomer` object as the input parameter.

You have the following requirements:

- Store the TheaterCustomer objects in a collection.
- Ensure that the `ProcessTheaterCustomer()` method processes the TheaterCustomer objects in the order in which they are placed into the collection.

You need to meet the requirements.

What should you do?

- A. Create a `System.Collections.Stack` collection. Use the `Push()` method to add `TheaterCustomer` objects to the collection. Use the `Peek()` method to pass the objects to the `ProcessTheaterCustomer()` method.
- B. Create a `System.Collections.Queue` collection. Use the `Enqueue()` method to add `TheaterCustomer` objects to the collection. Use the `Dequeue()` method to pass the objects to the `ProcessTheaterCustomer()` method.
- C. Create a `System.Collections.SortedList` collection. Use the `Add()` method to add `TheaterCustomer` objects to the collection. Use the `Remove()` method to pass the objects to the `ProcessTheaterCustomer()` method.
- D. Create a `System.Collections.ArrayList` collection. Use the `Insert()` method to add `TheaterCustomer` objects to the collection. Use the `Remove()` method to pass the objects to the `ProcessTheaterCustomer()` method.

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**



#### **QUESTION 124**

You are debugging a 64-bit C# application.

Users report `System.OutOfMemoryException` exceptions. The system is attempting to use arrays larger than 2 GB in size.

You need to ensure that the application can use arrays larger than 2 GB.

What should you do?

- A. Add the `/3GB` switch to the `boot.ini` file for the operating system.
- B. Set the `IMAGE_FILE_LARGE_ADDRESS_AWARE` flag in the image header for the application executable file.
- C. Set the value of the `gcAllowVeryLargeObjects` property to true in the application configuration file.
- D. Set the value of the user-mode virtual address space setting for the operating system to MAX.

**Correct Answer:** C

**Section:** Volume B

## Explanation

### Explanation/Reference:

#### QUESTION 125

You develop an application by using C#. The application counts the number of times a specific word appears within a set of text files. The application includes the following code. (Line numbers are included for reference only.)

```
01 class Counter
02 {
03     System.Collections.Concurrent.ConcurrentDictionary<string, int> _wordCounts =
04         new System.Collections.Concurrent.ConcurrentDictionary<string, int>();
05     public Action<DirectoryInfo> ProcessDirectory()
06     {
07         return (dirInfo =>
08         {
09             var files = dirInfo.GetFiles("*.cs").AsParallel<FileInfo>();
10             files.ForAll<FileInfo>(
11                 fileInfo =>
12                 {
13                     var fileContent = File.ReadAllText(fileInfo.FullName);
14                     var sb = new StringBuilder();
15                     foreach (var val in fileContent)
16                     {
17                         sb.Append(char.IsLetter(val) ? val.ToString().ToLowerInvariant() : " ");
18                     }
19                     string[] wordsInFile = sb.ToString().Split(new []{' '},
20                         StringSplitOptions.RemoveEmptyEntries);
21                     foreach (var word in wordsInFile)
22                     {
23                         }
24                     });
25                 var directories = dirInfo.GetDirectories().AsParallel< DirectoryInfo >();
26                 directories.ForAll< DirectoryInfo >(ProcessDirectory());
27             });
28         });
29     }
30 }
```

You have the following requirements:

- Populate the `_wordCounts` object with a list of words and the number of occurrences of each word.
- Ensure that updates to the `ConcurrentDictionary` object can happen in parallel.

You need to complete the relevant code.

Which code segment should you insert at line 23?

- A. `_wordCounts.AddOrUpdate(word, 1, (s, n) => n + 1);`
- B. 

```
int value;
if (_wordCounts.TryGetValue(word, out value))
{
    _wordCounts[word] = value++;
}
else
{
    _wordCounts[word] = 1;
}
```
- C. `var value = _wordCounts.GetOrAdd(word, 0);
_wordCounts[word] = value++;`
- D. `var value = _wordCounts.GetOrAdd(word, 0);
_wordCounts.TryUpdate(word, value + 1, value);`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** A  
**Section:** Volume B

## Explanation

### Explanation/Reference:

#### QUESTION 126

You are evaluating a method that calculates loan interest. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 private static decimal CalculateInterest(decimal loanAmount, int loanTerm)
02 {
03     decimal interestAmount;
04     decimal loanRate;
05     if (loanTerm > 0 && loanTerm < 5 && loanAmount < 5000m)
06     {
07         loanRate = 0.045m;
08     }
09     else if (loanTerm > 5 && loanAmount > 5000m)
10     {
11         loanRate = 0.085m;
12     }
13     else
14     {
15         loanRate = 0.055m;
16     }
17     interestAmount = loanAmount * loanRate * loanTerm;
18     return interestAmount;
19 }
```



When the loanTerm value is 5 and the loanAmount value is 4500, the loanRate must be set to 6.5 percent.

You need to adjust the loanRate value to meet the requirements.

What should you do?

- A. Replace line 15 with the following code segment: `loanRate = 0.065m;`
- B. Replace line 07 with the following code segment: `loanRate = 0.065m;`
- C. Replace line 17 with the following code segment: `interestAmount = loanAmount * 0.065m * loanTerm;`
- D. Replace line 04 with the following code segment: `decimal loanRate = 0.065m;`

Correct Answer: A

Section: Volume B

Explanation

Explanation/Reference:

**QUESTION 127**

You are developing an application that will manage customer records. The application includes a method named **FindCustomer**.

Users must be able to locate customer records by using the customer identifier, customer name, or a combination of the two values.

You need to implement the **FindCustomer()** method to meet the requirement.

Which two sets of method signatures can you use to achieve this goal? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A    public static Customer FindCustomer(int id)  
      public static Customer FindCustomer(string name)  
      public static Customer FindCustomer(int id, String name)
  
- B    public static Customer FindCustomer(int id)  
      public static Customer FindCustomer(string name)  
      public static void FindCustomer(int id)
  
- C.    public static Customer FindCustomer(int id)  
      public static Customer FindCustomer(string name)  
      public static Customer FindCustomer(Int32 id)
  
- D.    public static Customer FindCustomer(int id)  
      public static Customer FindCustomer(string name)  
      public static Customer FindCustomer(int? id)

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** AB

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

References: <https://docs.microsoft.com/en-us/dotnet/csharp/programming-guide/classes-and-structs/static-classes-and-static-class-members>

### QUESTION 128

You are developing an application that will use multiple asynchronous tasks to optimize performance.

You create three tasks by using the following code segment. (Line numbers are included for reference only.)

```
01 protected void ProcessTasks()
02 {
03     Task[] tasks = new Task[3]
04     {
05         Task.Factory.StartNew(() => MethodA()),
06         Task.Factory.StartNew(() => MethodB()),
07         Task.Factory.StartNew(() => MethodC())
08     };
09
10     ...
11 }
```



You need to ensure that the `ProcessTasks()` method waits until all three tasks complete before continuing.

Which code segment should you insert at line 09?



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- A. Task.WaitFor(3);
- B. tasks.Yield();
- C. tasks.WaitForCompletion();
- D. Task.WaitAll(tasks);

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 129**

You are developing a C# application. The application includes the following code segment. (Line numbers are included for reference only.)



```
01 class Beam
02 {
03     public string Description { get; set; }
04     public int Weight { get; set; }
05     public int Id { get; set; }
06     public decimal Length { get; set; }
07 }
08 Dictionary<int, Beam> beams = new Dictionary<int, Beam>
09 {
10     { 111, new Beam { Description = "Iron", Weight = 4297, Id = 211, Length = 22.23m } },
11     { 112, new Beam { Description = "Copper", Weight = 6822, Id = 317, Length = 11.13m } },
12     { 113, new Beam { Description = "Steel", Weight = 88021, Id = 198, Length = 7.91m } },
13     { 114, new Beam { Description = "Titanium", Weight = 14014, Id = 192, Length = 17.13m } },
14     { 115, new Beam { Description = "Aluminum", Weight = 3263, Id = 196, Length = 8.45m } }
15 };
16
17 beams.Add(115, new Beam { Description = "Brass", Weight = 24331, Id = 214, Length = 28.15m });
18
```

The application fails at line 17 with the following error message: "An item with the same key has already been added."

You need to resolve the error.

Which code segment should you insert at line 16?

- A. `if (!beams.ContainsKey(115))`
  
- B. `foreach (Beam beam in beams.Values.Where(t => t.Id != 115))`
  
- C. `foreach (KeyValuePair<int, Beam> key in beams.Where(t => t.Key != 115))`
  
- D. `foreach (int key in beams.Keys.Where(k => k != 115))`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 130**

You are developing an application by using C#. The application includes a method named SendMessage. The SendMessage () method requires a string input.

You need to replace "Hello" with "Goodbye" in the parameter that is passed to the SendMessage () method.

Which two code segments can you use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)



- A. `var message = "Hello World";  
SendMessage(message.Replace("Goodbye", "Hello"));`
- B. `var message = "Hello World";  
SendMessage(message.Replace("Hello", "Goodbye"));`
- C. `var message = "Hello World";  
message = message.Replace("Hello", "Goodbye");  
SendMessage(message);`
- D. `var message = "Hello World";  
message.Replace("Goodbye", "Hello");  
SendMessage(message);`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** BC

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

- The first parameter should be Hello.

- **String.Replace Method (String, String)**

Returns a new string in which all occurrences of a specified string in the current instance are replaced with another specified string.

This method does not modify the value of the current instance. Instead, it returns a new string in which all occurrences of oldValue are replaced by newValue.

**QUESTION 131**

You are developing an application that includes the following code segment:

```
interface IHome
{
    void Start();
}

interface IOffice
{
    void Start();
}
```

You need to implement both `Start()` methods in a derived class named `UseStart` that uses the `Start()` method of each interface. Which two code segments should you use? (Each correct answer presents part of the solution. Choose two.) A.

```
var starter = new UseStart();
((IHome, IOffice)starter).Start();
```

```
class UseStart : IHome, IOffice
{
    public void IHome.Start()
    {
        ...
    }
    public void IOffice.Start()
    {
        ...
    }
}

class UseStart : IHome, IOffice
{
    void IHome.Start()
    {
        ...
    }
    void IOffice.Start()
    {
        ...
    }
}

var starter = new UseStart();
((IHome)starter).Start();
((IOffice)starter).Start();
```

B. C.

D.

```
var starter = new UseStart();
starter.Start(IHome);
starter.Start(IOffice);

var starter = new UseStart();
starter.Start();
```

E.

F.

**Correct Answer:** CD  
**Section:** Volume B  
**Explanation**

**Explanation/Reference:**

Explanation:

C:

Implementing Multiple Interfaces

A class can implement multiple interfaces using the following syntax:

C#

```
public class CDAndDVDComboPlayer : ICDPlayer, IDVDPlayer
```

If a class implements more than one interface where there is ambiguity in the names of members, it is resolved using the full qualifier for the property or method name. In other words, the derived class can resolve the conflict by using the fully qualified name for the method to indicate to which interface it belongs

In C#, both inheritance and interface implementation are defined by the : operator, equivalent to extends and implements in Java. The base class should always be leftmost in the class declaration.

**QUESTION 132**

You are developing an application by using C#. The application will write events to an event log. You plan to deploy the application to a server.

You create an event source named AppSource and a custom log named AppLog on the server.

You need to write events to the custom log.

Which code segment should you use?

- A. 

```
public void WriteToEventLog(string message, EventLogEntryType eventLogEntryType)
{
    EventLog eventLog = new EventLog() { Source = "AppSource", EnableRaisingEvents = true };
    eventLog.WriteEntry(message, eventLogEntryType);
}
```
- B. 

```
public void WriteToEventLog(string message)
{
    EventLog eventLog = new EventLog() { Source = "AppLog", EnableRaisingEvents = true };
    EventInstance eventInstance = new EventInstance(0, 1);
    eventLog.WriteEvent(eventInstance, message);
}
```
- C. 

```
public void WriteToEventLog(string message)
{
    EventLog eventLog = new EventLog() { Source = "Application" };
    eventLog.WriteEntry(message);
}
```
- D. 

```
public void WriteToEventLog(string message, EventLogEntryType eventLogEntryType)
{
    EventLog eventLog = new EventLog() { Source = "AppLog" };
    eventLog.WriteEntry(message, eventLogEntryType);
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer: A**

**Section: Volume B**

**Explanation**

**Explanation/Reference:**

Explanation:

Source should be AppSource:

New-EventLog

Creates a new event log and a new event source on a local or remote

computer. Parameters include: -Source<String[]>

Specifies the names of the event log sources, such as application programs that write to the event log. This parameter is required.

### QUESTION 133

You have the following class definition.

```
public class ProcessManagement
{
    public int DegreeOfParallelism;
    private int NumberOfTasks = 0;
    public void SpawnTasks()
    {
        if (DegreeOfParallelism>20) { DegreeOfParallelism = 20};
        while (NumberOfTasks != DegreeOfParallelism)
        {
            CreateNewTask();
            NumberOfTasks++;
        }
    }
}
```

You discover that when you execute the following code, the `SpawnTasks` method enters an infinite loop.

```
ProcessManagement pm = new ProcessManagement();
pm.DegreeOfParallelism = -1;
pm.SpawnTasks();
```

You need to prevent the `SpawnTasks` method from entering an infinite loop.

Which two changes should you make to the code? Each correct answer presents part of the solution.

**NOTE:** Each correct selection is worth one point.

- A. Add a property to the ProcessManagement class. Modify the property to allow only positive values to be stored in the DegreeOfParallelism member variable.
- B. Add a property to the ProcessManagement class. Modify the property to allow only positive values to be stored in the NumberOfTasks member variable.
- C. Change the accessor of the ProcessManagement class to internal.
- D. Change the accessor of the DegreeOfParallelism member variable to private.
- E. Change the accessor of the SpawnTasks method to private.

**Correct Answer:** AB

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### QUESTION 134

You are implementing a method named ProcessFile that retrieves data files from web servers and FTP servers. The ProcessFile() method has the following method signature:

```
Public void ProcessFile(Guid dataFileId, string dataFileUri)
```

Each time the ProcessFile() method is called, it must retrieve a unique data file and then save the data file to disk.

You need to complete the implementation of the ProcessFile() method. Which code segment should you use?

```
WebResponse response;
StreamReader reader;
WebRequest request = WebRequest.Create(dataFileUri);
using(response = request.GetResponse())
{
    reader = new StreamReader(response.GetResponseStream());
    response.Close();
}
using (StreamWriter writer = new StreamWriter (dataField + ".dat"))
{
    writer.Write(reader.ReadToEnd());
}

FileWebRequest request = FileWebRequest.Create(dataFileUri) as FileWebRequest;
using (FileWebResponse response = request.GetResponse() as FileWebResponse)
using (StreamReader reader = new StreamReader(response.GetResponseStream()))
using (StreamWriter writer = new StreamWriter(dataField + ".dat"))
{
    writer.Write(reader.ReadToEnd());
}

WebRequest request = WebRequest.Create(dataFileUri).com
using (WebResponse response = request.GetResponse)
using (Stream responseStream = response.GetResponseStream())
{
    StreamWriter writer = new StreamWriter (responseStream);
    writer.Write(dataField + ".dat");
}

WebRequest request = WebRequest.Create(dataFileUri)
using (WebResponse response = request.GetResponse)
using (StreamReader reader = new StreamReader(response.GetResponseStream()))
using (StreamWriter writer = new StreamWriter(dataField + ".dat"))
{
    writer.Write(reader.ReadToEnd());
}
```

A.

B. C.

D.

**Correct Answer:** D

**Section:** Volume B

**Explanation**



**Explanation/Reference:**

Explanation:

WebRequest.Create Method (Uri)

Initializes a new WebRequest instance for the specified URI scheme.

Example:

1. To request data from a host server

Create a WebRequest instance by calling Create with the URI of the resource.

C#

```
WebRequest request = WebRequest.Create("http://www.contoso.com/");
```

2. Set any property values that you need in the WebRequest. For example, to enable authentication, set the Credentials property to an instance of the NetworkCredential class.

C# request.Credentials =

```
CredentialCache.DefaultCredentials;
```

3. To send the request to the server, call GetResponse. The actual type of the returned WebResponse object is determined by the scheme of the requested URI.

C#

```
WebResponse response = request.GetResponse();
```

4. To get the stream containing response data sent by the server, use the GetResponseStream method of the WebResponse.

C#

```
Stream dataStream = response.GetResponseStream();
```

### QUESTION 135

You are creating a class library that will be used in a web application.

You need to ensure that the class library assembly is strongly named.

What should you do?

- A. Use assembly attributes.
- B. Use the csc.exe /target:Library option when building the application.
- C. Use the xsd.exe command-line tool.
- D. Use the EdmGen.exe command-line tool.

**Correct Answer:** A

**Section: Volume B**

**Explanation**

**Explanation/Reference:**

Explanation:

The Windows Software Development Kit (SDK) provides several ways to sign an assembly with a strong name:

- (A) Using assembly attributes to insert the strong name information in your code. You can use either the AssemblyKeyFileAttribute or the AssemblyKeyNameAttribute, depending on where the key file to be used is located.
- Using the Assembly Linker (Al.exe) provided by the Windows SDK.
- Using compiler options such /keyfile or /delaysign in C# and Visual Basic, or the /KEYFILE or /DELAYSIGN linker option in C++. (For information on delay signing, see Delay Signing an Assembly.)



### QUESTION 136

You are developing an application that will manage customer records. The application includes a method named `FindCustomer`.

Users must be able to locate customer records by using the customer identifier or customer name.

You need to implement the `FindCustomer()` method to meet the requirement.

Which two sets of method signatures can you use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. `public static Customer FindCustomer(int id)`  
`public static Customer FindCustomer(string id)`  
`public static void FindCustomer(int id)`
- B. `public static Customer FindCustomer(int id)`  
`public static Customer FindCustomer(string id)`  
`public static Customer FindCustomer(int id, string name)`
- C. `public static Customer FindCustomer(int id)`  
`public static Customer FindCustomer(string id)`  
`public static Customer FindCustomer(Int32 id)`
- D. `public static Customer FindCustomer(int id)`  
`public static Customer FindCustomer(string id)`  
`public static Customer FindCustomer(int? id)`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** BD

**Section:** Volume B  
**Explanation**

**Explanation/Reference:**

#### QUESTION 137

You need to write a method that combines an unknown number of strings. The solution must minimize the amount of memory used by the method when the method executes.

What should you include in the code?

- A. The String.Concat method
- B. The StringBuilder.Append method
- C. The + operator
- D. The += operator

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

The StringBuilder.Append method appends the string representation of a specified object to this instance.

Incorrect Answers:

A: String.Concat Method concatenates one or more instances of String, or the String representations of the values of one or more instances of Object. However, all strings to concatenate must be given as parameters. In this scenario we have an unknown number of string and therefore cannot pass them as parameters.

References: <https://coders-corner.net/2014/08/20/concatenate-strings-in-c-operator-vs-string-concat-vs-stringbuilder/>

**QUESTION 138**

You are modifying an existing application.



The application includes a Loan class and a Customer class. The following code segment defines the classes.

```
class Loan
{
    public Loan(decimal amount, int term, decimal rate)
    {
        Term = term;
        Amount = amount;
        Rate = rate;
    }
    public decimal Amount { get; set; }
    public decimal Rate { get; set; }
    public int Term { get; set; }
}

class Customer
{
    public Customer(string firstName, string lastName, Collection<Loan> loans)
    {
        FirstName = firstName;
        LastName = lastName;
        LoanCollection = loans;
    }
    public string FirstName { get; set; }
    public string LastName { get; set; }
    public Collection<Loan> LoanCollection { get; set; }
}
```

You populate a collection named customer-Collection with Customer and Loan objects by using the following code segment:

```
Collection<Customer> customerCollection = new Collection<Customer>();
Collection<Loan> customerLoans = new Collection<Loan>();
customerLoans.Add(new Loan(1000m, 2, 0.025m));
customerLoans.Add(new Loan(3000m, 4, 0.045m));
customerLoans.Add(new Loan(5000m, 6, 0.045m));
customerCollection.Add(new Customer("Steve", "Jones", customerLoans));
```

You create a largeCustomerLoans collection to store the Loan objects by using the following code segment:

```
Collection<Loan> largeCustomerLoans = new Collection<Loan>();
```

All loans with an Amount value greater than or equal to 4000 must be tracked.

You need to populate the largeCustomerLoans collection with Loan objects.

Which code segment should you use?



- C A. `foreach (Customer customer in customerCollection)  
{  
 foreach (Loan loan in customer.LoanCollection)  
 {  
 if (loan.Amount >= 4000m)  
 {  
 customer.LoanCollection.Add(loan);  
 }  
 }  
}`
- C B. `foreach (Loan customer in customerCollection)  
{  
 foreach (Loan loan in largeCustomerLoans)  
 {  
 if (loan.Amount >= 4000m)  
 {  
 largeCustomerLoans.Add(loan);  
 }  
 }  
}`
- C C. `foreach (Loan loan in largeCustomerLoans)  
{  
 foreach (Customer customer in customerCollection)  
 {  
 if (loan.Amount >= 4000m)  
 {  
 customer.LoanCollection.Add(loan);  
 }  
 }  
}`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

Must add to the largeCustomerLoans collection, not the customerLoanCollection.

We iterate through each customer in customerCollection and check each loan belonging to this customer.

### QUESTION 139

DRAG DROP

You are developing a C# application. The application includes a class named Rate. The following code segment implements the Rate class:

```
public class Rate
{
    public string Category { get; set; }
    public DateTime Date { get; set; }
    public decimal Value { get; set; }
```

You define a collection of rates named rateCollection by using the following code segment:

```
Collection<Rate> rateCollection = new Collection<Rate>();
```

The application receives an XML file that contains rate information in the following format:

```
<?xml version="1.0" encoding="utf-8" ?>
<RateSheet>
    <rate category="buyout" date="2012-03-22">
        <value>0.0375</value>
    </rate>
    <rate category="fixed" date="2012-03-23">
        <value>0.0475</value>
    </rate>
</RateSheet>
```

You need to parse the XML file and populate the rateCollection collection with Rate objects.

You have the following code:



```
using (XmlReader reader = XmlReader.Create(new StringReader(rateXML)))
{
    Target 1
    {
        Rate rate = new Rate();
        Target 2
        rate.Category = reader.Value;
        Target 3
        DateTime rateDate;
        if (DateTime.TryParse(reader.Value, out rateDate))
        {
            rate.Date = rateDate;
        }
        Target 4
        decimal value;
        if (decimal.TryParse(reader.ReadElementContentAsString(), out value))
        {
            rate.Value = value;
        }
        rateCollection.Add(rate);
    }
}
```

Which code segments should you include in Target 1, Target 2, Target 3 and Target 4 to complete the code? (To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

**Select and Place:**

**Code Segments**

```
while(reader.ReadToFollowing("RateSheet"))
```

```
while(reader.ReadToFollowing("rate"))
```

```
reader.MoveToElement();
```

```
reader.MoveToFirstAttribute();
```

```
reader.MoveToContent();
```

```
reader.MoveToNextAttribute();
```

```
reader.ReadToFollowing("value");
```

**Answer Area**

Target 1:	Code Segment
Target 2:	Code Segment
Target 3:	Code Segment
Target 4:	Code Segment

**Correct Answer:**

**Code Segments**

```
while(reader.ReadToFollowing("RateSheet"))
```

  
reader.MoveToContent();  
reader.ReadToFollowing("value");**Answer Area**

Target 1: `while(reader.ReadToFollowing("rate"))`

Target 2: `reader.MoveToFirstAttribute();`

Target 3: `reader.MoveToNextAttribute();`

Target 4: `reader.MoveToElement();`

**Section: Volume B****Explanation****Explanation/Reference:**

Explanation:

\* Target 1: The element name is rate not Ratesheet.

The Xmlreader readToFollowing reads until the named element is found.

\* Target 2:

The following example gets the value of the first attribute.

```
reader.ReadToFollowing("book");
reader.MoveToFirstAttribute();
string genre = reader.Value;
Console.WriteLine("The genre value: " + genre);
```

\* Target 3, Target 4:

The following example displays all attributes on the current node.

```
C#VB if
(reader.HasAttributes) {
    Console.WriteLine("Attributes of <" + reader.Name + ">");
    while (reader.MoveToNextAttribute()) {
        Console.WriteLine(" {0}={1}", reader.Name, reader.Value);
    }
    // Move the reader back to the element node.
    reader.MoveToElement(); }
```

The XmlReader.MoveToElement method moves to the element that contains the current attribute node.

Reference: XmlReader Methods [https://msdn.microsoft.com/en-us/library/System.Xml.XmlReader\\_methods\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/System.Xml.XmlReader_methods(v=vs.110).aspx)

#### QUESTION 140

You have the following code. (Line numbers are included for reference only.)

```
01 List<Product> products = new List<Product>()
02 {
03     new Product() { Name = "Strawberry", CategoryID = 1 },
04     new Product() { Name = "Banana", CategoryID = 1 },
05 };
06 List<Product> B_Products = (List<Product>)
07 (
08     from product in products
09     where (product.Name.StartsWith("B"))
10     select new { Name = product.Name }
11 );
```

When you execute the code, you get an exception.

You need to ensure that B\_Products contain all of the products that start with the letter “B”.

What should you do?

- C A. Replace line 06 with the following code.

```
Product[] B_Products = (Product[])
```

- C B. Replace line 10 with the following code.

```
select product.Name
```

- C C. Replace line 06 with the following code.

```
Array<Product> B_Products = (Array <Product>)
```

- C D. Replace line 10 with the following code.

```
select product
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

Simply select the product items.

#### QUESTION 141

You have the following code:

```
List<Int32> items = new List<int>() {  
    100,  
    95,  
    80,  
    75,  
    95  
};
```

You need to retrieve all of the numbers from the items variable that are greater than 80.

Which code should you use?



- A. `var result = items.Skip(80);`
- B. `var result = items.Where(i => i > 80);`
- C. `var result = from i in items  
groupby i into grouped  
where grouped.Key > 80  
select i;`
- D. `var result = items.Take(80);`

A. Option A

B. Option B

C. Option C

D. Option D

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

Example: All number larger than 15 from a list using the var query = from num in numbers... construct:

```
var largeNumbersQuery = numbers2.Where(c => c > 15);
```

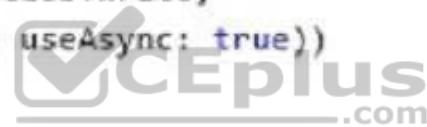
Reference: How to: Write LINQ Queries in C# <https://msdn.microsoft.com/en-us/library/bb397678.aspx>

#### **QUESTION 142**

You have the following code. (Line numbers are included for reference only).



```
01 public async void ProcessWrite()
02 {
03     string filePath = @"temp2.txt";
04     string text = "Hello World\r\n";
05     await WriteTextAsync(filePath, text);
06 }
07 private async Task WriteTextAsync(string filePath, string text)
08 {
09     byte[] encodedText = Encoding.Unicode.GetBytes(text);
10     using (FileStream sourceStream = new FileStream(
11         filePath, FileMode.Append, FileAccess.Write,
12         FileShare.None, bufferSize: 4096, useAsync: true))
13     {
14 }
```



You need to complete the WriteTextAsync method. The solution must ensure that the code is not blocked while the file is being written.

Which code should you insert at line 12?

- A. `async sourceStream.Write(encodedText, 0, encodedText.Length);`
- B. `async sourceStream.WriteAsync(encodedText, 0, encodedText.Length);`
- C. `await sourceStream.Write(encodedText, 0, encodedText.Length);`
- D. `await sourceStream.WriteAsync(encodedText, 0, encodedText.Length);`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation: `await sourceStream.WriteAsync(encodedText, 0, encodedText.Length);`

The following example has the statement `await sourceStream.WriteAsync(encodedText, 0, encodedText.Length);`, which is a contraction of the following two statements:

```
Task theTask = sourceStream.WriteAsync(encodedText, 0, encodedText.Length);
await theTask;
```

Example: The following example writes text to a file. At each await statement, the method immediately exits. When the file I/O is complete, the method resumes at the statement that follows the await statement. Note that the `async` modifier is in the definition of methods that use the `await` statement.

```
public async void ProcessWrite()
{
    string filePath =
@"temp2.txt";    string text =
"Hello World\r\n";

    await WriteTextAsync(filePath, text);
}

private async Task WriteTextAsync(string filePath, string text)
{
    byte[] encodedText = Encoding.Unicode.GetBytes(text);

    using (FileStream sourceStream = new FileStream(filePath,
 FileMode.Append, FileAccess.Write, FileShare.None,
 bufferSize: 4096, useAsync: true))
    {
        await sourceStream.WriteAsync(encodedText, 0,
encodedText.Length);
    };
}
```

Reference: Using Async for File Access (C# and Visual Basic) <https://msdn.microsoft.com/en-us/library/jj155757.aspx>

#### QUESTION 143

You need to write a method that retrieves data from a Microsoft Access 2013 database. The method must meet the following requirements:

- Be read-only.
- Be able to use the data before the entire data set is retrieved.
- Minimize the amount of system overhead and the amount of memory usage.

Which type of object should you use in the method?

- A. DbDataAdapter
- B. unTyped DataSet
- C. OleDbDataAdapter
- D. DbDataReader

**Correct Answer: D**

**Section: Volume B**

**Explanation**

**Explanation/Reference:**

**Explanation:**

The DbDataReader class reads a forward-only stream of rows from a data source.

Reference: DbDataReader Class [https://msdn.microsoft.com/en-us/library/system.data.common.dbdatareader\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.data.common.dbdatareader(v=vs.110).aspx)

**QUESTION 144**

You are developing an application that contains a class named TheaterCustomer and a method named `ProcessTheaterCustomer`. The `ProcessTheaterCustomer()` method accepts a `TheaterCustomer` object as the input parameter.

You have the following requirements:

- Store the `TheaterCustomer` objects in a collection.
- Ensure that the `ProcessTheaterCustomer()` method processes the `TheaterCustomer` objects in the reverse order in which they are placed into the collection.

You need to meet the requirements.

What should you do?

- A. Create a `System.Collections.Queue` collection. Use the `Enqueue()` method to add `TheaterCustomer` objects to the collection. Use the `Dequeue()` method to pass the objects to the `ProcessTheaterCustomer()` method.
- B. Create a `System.Collections.ArrayList` collection. Use the `Insert()` method to add `TheaterCustomer` objects to the collection. Use the `Remove()` method to pass the objects to the `ProcessTheaterCustomer()` method.
- C. Create a `System.Collections.Stack` collection. Use the `Push()` method to add `TheaterCustomer` objects to the collection. Use the `Pop()` method to pass the objects to the `ProcessTheaterCustomer()` method.
- D. Create a `System.Collections.Queue` collection. Use the `Enqueue()` method to add `TheaterCustomer` objects to the collection. Use the `Peek()` method to pass the objects to the `ProcessTheaterCustomer()` method.

**Correct Answer:** C

**Section:** Volume B

**Explanation****Explanation/Reference:**

Explanation:

A stack is the appropriate collection here. In computer science, a stack or LIFO (last in, first out) is an abstract data type that serves as a collection of elements, with two principal operations: push, which adds an element to the collection, and pop, which removes the last element that was added.

Reference: [https://en.wikipedia.org/wiki/Stack\\_\(abstract\\_data\\_type\)](https://en.wikipedia.org/wiki/Stack_(abstract_data_type))

**QUESTION 145**

You have the following code (line numbers are included for reference only):

```
01 public class Connection
02 {
03     public static Connection Create()
04     {
05         return new Connection();
06     }
07
08 }
```

You need to ensure that new instances of Connection can be created only by other classes by calling the Create method. The solution must allow classes to inherit from Connection.

What should you do?



- A. Replace line 01 with the following code:

```
public abstract class Connection
```

- B. Replace line 01 with the following code:

```
public static class Connection
```

- C. Insert the following code at line 07:

```
private Connection () {}
```

- D. Insert the following code at line 07:

```
protected Connection () {}
```

- A. Option A  
B. Option B  
C. Option C  
D. Option D

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Explanation:

The following list provides the main features of a static class:

- Contains only static members.

- Cannot be instantiated.
- Is sealed.
- Cannot contain Instance Constructors.

Creating a static class is therefore basically the same as creating a class that contains only static members and a private constructor. A private constructor prevents the class from being instantiated.

Reference: Static Classes and Static Class Members (C# Programming Guide) <https://msdn.microsoft.com/en-us/library/79b3xss3.aspx>

#### QUESTION 146

You have a class named Customer and a variable named customers.

You need to test whether the customers' variable is a generic list of Customer objects.

Which line of code should you use?

- C A. `if (customers is List<Customer>)`
- C B. `if (customers is List<Customer>[])`
- C C. `if(customers.GetType() is List<Customer>[])`
- C D. `if(customers.GetType() is List<Customer>)`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** D

**Section: Volume B**  
**Explanation**

**Explanation/Reference:**

Explanation:

If you want to check if it's an instance of a generic type:

```
return list.GetType().IsGenericType; If you  
want to check if it's a generic List<T>:
```

```
return list.GetType().GetGenericTypeDefinition() == typeof(List<>);
```

Reference: Testing if object is of generic type in C# <http://stackoverflow.com/questions/982487/testing-if-object-is-of-generic-type-in-c-sharp>

**QUESTION 147**

You have a C# application.

The application requires 500 MB of available memory.

You need to identify whether there is enough available memory when the application starts.

Which class should you use?



<https://vceplus.com/>

- A. OutOfmemoryException
- B. MemoryStream
- C. PerformanceCounter
- D. DiagnosticsConfigurationHandler

**Correct Answer: C**

**Section: Volume B**

**Explanation****Explanation/Reference:****QUESTION 148**

You plan to create a list of customers named customers. Each customer will have a name and a key. The name and key will be strings.

You will use the following code to retrieve customers from the list.

```
customers[aKey].toString();
```

You need to identify which class must be used to declare the customers list. The solution must ensure that each key is unique.

Which class should you identify?

- A. ArrayList
- B. Dictionary
- C. List
- D. Array

**Correct Answer:** B

**Section:** Volume B

**Explanation****Explanation/Reference:****QUESTION 149**

You are developing a Windows Forms (WinForms) application. The application displays a TreeView that has 1,000 nodes.

You need to ensure that if a user expands a node, and then collapses the TreeView, the node object is kept in memory unless the Garbage Collector requires additional memory.

Which object should you use to store the node?

- A. GC
- B. Handle
- C. Cache
- D. WeakReference

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

References: <https://msdn.microsoft.com/en-us/library/ms404247.aspx>

**QUESTION 150**

You have the following line of code.

```
Type type1 = typeof(Myclass);
```

You need to create an object named obj that has a type of type1.

Which line of code should you use?

```
object obj = Activator.CreateInstance("type1".GetType());  
  
type obj = Activator.CreateInstance(type1);  
  
type1 obj = Activator.CreateInstance("type1".GetType());  
  
object obj = Activator.CreateInstance(type1);
```

A.

B.

C.

D.

**Correct Answer:** B

**Section:** Volume B

## Explanation

### Explanation/Reference:

#### QUESTION 151

DRAG DROP

You need to validate whether string strJson is a valid JSON string.

You write the following code:

```
var serializer = new Target 1();
var result = serializer.Target 2<Dictionary<string, object>>(strJson);
```

How should you complete the code? To answer, drag the appropriate code segments to the correct targets in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

Select and Place:



## Code segments

DataContractJsonSerializer  
Deserialize  
JavaScriptSerializer  
ReadObject  
SerializationInfo  
Serialize  
XmlSerializer

## Answer Area

Target 1:

Target 2:

Correct Answer:



## Code segments

Deserialize

JavaScriptSerializer

## Answer Area

Target 1:DataContractJsonSerializer

Target 2:ReadObject

SerializationInfo

Serialize

XmlSerializer

### Section: Volume B

#### Explanation

#### Explanation/Reference:

Explanation:

```
serializer = new DataContractJsonSerializer(); var result =  
serializer.ReadObject<Dictionary<string, object>>(StrJson);
```

#### QUESTION 152

You need to write a console application that meets the following requirements:

If the application is compiled in Debug mode, the console output must display Entering debug mode.

If the application is compiled in Release mode, the console output must display Entering release mode.

Which code should you use?

```
#define DEBUG
    Console.WriteLine("Entering debug mode");
#define RELEASE
    Console.WriteLine("Entering release mode")

#if (DEBUG)
    Console.WriteLine("Entering debug mode");
#else
    Console.WriteLine("Entering release mode");
#endif

#region DEBUG
    Console.WriteLine("Entering debug mode");
#endregion
#region RELEASE
    Console.WriteLine("Entering release mode")
#endregion

if(System.Reflection.Assembly.GetExecutingAssembly().IsDefined
    (typeof(System.Diagnostics.Debugger), false))
    Console.WriteLine("Entering debug mode");
else
    Console.WriteLine("Entering release mode")
```

A.

B. C.

D.

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 153**

You plan to debug an application remotely by using Microsoft Visual Studio 2013.

You set a breakpoint in the code.

When you compile the application, you get the following error message: "The breakpoint will not currently be hit. No symbols have been loaded for this document."

You need to ensure that you can debug the application remotely.

What should you do?

- A. Modify the AssemblyInfo.cs file.
- B. Copy .exe files to the Symbols folder on the local computer.
- C. Copy .cs files to the remote server.
- D. Use .NET Remote Symbol Loading.

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

References: <https://msdn.microsoft.com/en-us/library/y7f5zaaa.aspx>

**QUESTION 154**

You are troubleshooting an application that uses a class named `FullName`. The class is decorated with the `DataContractAttribute` attribute. The application includes the following code. Line numbers are included for reference only.

```
01 class Program
02 {
03     MemoryStream WriteName(Name name)
04     {
05         var ms = new MemoryStream();
06         var binary = XmlDictionaryWriter.CreateBinaryWriter(ms);
07         var ser = new DataContractSerializer(typeof(FullName));
08         ser.WriteObject(binary, name);
09
10         return ms;
11     }
12 }
```

You need to ensure that the entire `FullName` object is serialized to the memory stream object.

Which code segment should you insert at line 09?



- A. `binary.WriteEndElement();`
- B. `binary.WriteEndDocument();`
- C. `binary.WriteEndElementAsync();`
- D. `binary.Flush();`

**Correct Answer:** B

**Section:** Volume B

### Explanation

#### Explanation/Reference:

Explanation:

- `DataContractSerializer.WriteEndObject` Method (`XmlDictionaryWriter`) Writes the closing XML element using an `XmlDictionaryWriter`.
- Note on line 07: `DataContractSerializer.WriteObject` Method Writes all the object data (starting XML element, content, and closing element) to an XML document or stream.

`XmlDictionaryWriter`

**QUESTION 155**

You are creating an assembly named Assembly1 by using the Class Library project template in Microsoft Visual Studio. Assembly1 is used by a C# application named App1.

You do not have access to the Visual Studio project for App1.

You need to ensure that you can debug Assembly1.

What should you configure in the project properties?

- A. On the Application page, set the Output type to **Windows Application**.
- B. On the Build page, click **Allow unsafe code**.
- C. On the Debug page, set the **Start external program** option for App1.
- D. On the Debug page, click **Enable native code debugging**.

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

Reference: <https://msdn.microsoft.com/en-us/library/2wcdezs5.aspx>

**QUESTION 156**

You are creating an application that reads from a database.

You need to use different databases during the development phase and the testing phase by using conditional compilation techniques.

What should you do?

- A. Specify the /define compiler option.
- B. Decorate the code by using the `[DebuggerDisplay("Mydebug")]` attribute.
- C. Decorate the code by using the `[assembly:AssemblyDelaySignAttribute(true)]` attribute.
- D. Run the Assembly Linker tool from the Windows Software Development Kit (Windows SDK).

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 157**

You have a List object that is generated by executing the following code:

```
List<string> departments = new List<string>()
{
    "Accounting", "Marketing", "Sales", "Manufacturing", "Information Systems", "Training"
};
```

You have a method that contains the following code (line numbers are included for reference only):

```
01 private bool GetMatches(List<string> departments, string searchTerm)
02 {
03     var findDepartment = departments.Exists(delegate(string deptName)
04     {
05         return deptName.Equals(searchTerm);
06     });
07 }
08 return findDepartment;
09 }
```



You need to alter the method to use a lambda statement.

How should you rewrite lines 03 through 06 of the method?

- A. var findDepartment = departments.Where(x => x == searchTerm);
  - B. var findDepartment = departments.Where(x => x.Equals(searchTerm));
  - C. var findDepartment = departments.First(x => x == searchTerm);
  - D. var findDepartment = departments.Exists(x => x == searchTerm);
- 
- A. Option A
  - B. Option B

- C. Option C
- D. Option D

**Correct Answer:** B

**Section:** Volume B

#### **Explanation**

#### **Explanation/Reference:**

#### **QUESTION 158**

You are developing an application.

You need to declare a delegate for a method that accepts a string as a parameter, and then returns a string.

Which type of delegate should you use?

- A. Func<string, string>
- B. Action< string, string>
- C. Func< string>
- D. Action< string>



**Correct Answer:** A

**Section:** Volume B

#### **Explanation**

#### **Explanation/Reference:**

#### **QUESTION 159**

You are developing an application that will use multiple asynchronous tasks to optimize performance.

You create three tasks by using the following code segment. (Line numbers are included for reference only.)

```
01 protected void ProcessTasks()
02 {
03     Task[] tasks = new Task[3]
04     {
05         Task.Factory.StartNew(() => MethodA()),
06         Task.Factory.StartNew(() => MethodB()),
07         Task.Factory.StartNew(() => MethodC())
08     };
09
10     ...
11 }
```

You need to ensure that the `ProcessTasks()` method waits until all three tasks complete before continuing.

Which code segment should you insert at line 09?

- A. `Task.WaitAll(tasks);`
- B. `Task.Delay(3);`
- C. `Task.WaitAny(tasks);`
- D. `Task.Yield(tasks);`

**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### QUESTION 160

You have the following code.



```
List<string> myData = new List<string>();  
  
    myData.Add("string1");  
    myData.Add("string2");  
    myData.Add("string3");
```

You need to remove all of the data from the myData list.

Which code should you use?

- A. 

```
for (int i = 0; i <= myData.Count; i++)  
    myData.RemoveAt(i);
```
- B. 

```
while (myData.Count != 0) myData.RemoveAt(0);
```
- C. 

```
foreach(string currentString in myData)  
    myData.Remove(currentString);
```
- D. 

```
for (int i = 0; i <= myData.Count; i++)  
    myData.RemoveAt(0);
```



**Correct Answer:** A

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### QUESTION 161

You are developing an application that uses multiple asynchronous tasks to optimize performance.

You need to retrieve the result of an asynchronous task.

Which code segment should you use?

- A. `protected async void StartTask()  
{  
 string result = await GetData();  
 ...  
}  
public Task<string> GetData()  
{  
 ...  
}`
- B. `protected async void StartTask()  
{  
 string result = GetData();  
 ...  
}  
public Task<string> GetData()  
{  
 ...  
}`
- C. `protected async void StartTask()  
{  
 string result = await GetData();  
 ...  
}  
public async Task<string> GetData()  
{  
 ...  
}`

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Correct Answer:** C

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

#### **QUESTION 162**

HOTSPOT

You are writing a code to handle exceptions for a C# application.

You need to identify different ways to handle an exception named ex.

Which line of code should you use for each task? To answer, select the appropriate line of code for each task in the answer area.

**Hot Area:**

**Answer Area**

Rethrow the original exception and keep the exception type.

throw;
throw ex;
throw new Exception();

Rethrow the original exception type and reset the exception stack trace.

throw;
throw ex;
throw new Exception();

Reset the exception stack trace and reset the exception type.

throw;
throw ex;
throw new Exception();

**Correct Answer:**

**Answer Area**

Rethrow the original exception and keep the exception type.

throw;  
throw ex;  
throw new Exception();

Rethrow the original exception type and reset the exception stack trace.

throw;  
throw ex;  
throw new Exception();

Reset the exception stack trace and reset the exception type.

throw;  
throw ex;  
throw new Exception();

**Section: Volume B****Explanation****Explanation/Reference:**

References: <https://blogs.msdn.microsoft.com/perfworld/2009/06/15/how-can-i-throw-an-exception-without-losing-the-original-stack-trace-information-in-net/>

**QUESTION 163**

You are developing an application.

The application contains the following code segment (Line numbers are included for reference only):

```
01 ArrayList array1 = new ArrayList();
02 int var1 = 10;
03 int var2;
04 array1.Add(var1);
05 var2 = array1[0];
```

When you run the code, you receive the following error message: "Cannot implicitly convert type 'object' to 'int'. An explicit conversion exists (are you missing a cast?)."

You need to ensure that the code can be compiled.

Which code should you use to replace line 05?

- A. var2 = ((List<int>)array1) [0];
- B. var2 = (int) array1[0];
- C. var2 = int.Parse(array1[0]);
- D. var2 = array1[0] as int;

**Correct Answer:** B

**Section:** Volume B

**Explanation**

**Explanation/Reference:**



**QUESTION 164**

You need to create a method that can be called by using a varying number of parameters.

What should you use?

- A. enumeration
- B. Language-Integrated Query (LINQ) query expressions
- C. interface
- D. optional parameters

**Correct Answer:** D

**Section:** Volume B

**Explanation**

**Explanation/Reference:**

**QUESTION 165**

DRAG DROP

You have an application that uses paging. Each page displays five items from a list.

You need to display the second page.

Which three code blocks should you use to develop the solution? To answer, move the appropriate code blocks from the list of code blocks to the answer area and arrange them in the correct order.

**Select and Place:**



## Code Snippets

```
.Take(1)
```

```
.Skip(2)
```

```
.First(5)
```

```
.Skip(5)
```

```
.Skip(1)
```

```
.Take(5)
```

```
var page = items
```

```
int page = items
```

## Answer Area

1

2

3



Correct Answer:

## Code Snippets

```
.Take(1)
```

```
.Skip(2)
```

```
.First(5)
```

```
.Skip(1)
```

```
var page = items
```

## Answer Area

1

```
int page = items
```

2

```
.Skip(5)
```

3

```
.Take(5)
```



## Section: Volume B

## Explanation

## Explanation/Reference:

References: <https://stackoverflow.com/questions/2380413/paging-with-linq-for-objects>



<https://vceplus.com/>

