Vendor: Microsoft

Exam Code: 70-483

Exam Name: Programming in C#

Version: Demo

QUESTION 1
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:
- Use strongly typed members.
- Process Order objects in first-in-first-out order.
- Store values for each Order object.
- Use zero-based indices.

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

Which collection type should you use?

A. Queue<T>
B. SortedList
C. LinkedList<T>
D. HashTable
E. Array<T>

Correct Answer: A

QUESTION 2
You are developing an application. The application calls a method that returns an array of integers named employeeIds. You define an integer variable named employeeIdToRemove and assign a value to it. You declare an array named filteredEmployeeIds.

You have the following requirements:
- Remove duplicate integers from the employeeIds array.
- Sort the array in order from the highest value to the lowest value.
- Remove the integer value stored in the employeeIdToRemove variable from the employeeIds array.

You need to create a LINQ query to meet the requirements.

Which code segment should you use?

A.
```
int[] filteredEmployeeIds = employeeIds.Where(value => value !=
  employeeIdToRemove).OrderBy(x => x).ToArray();
```

B.
```
int[] filteredEmployeeIds = employeeIds.Where(value => value !=
  employeeIdToRemove).OrderByDescending(x => x).ToArray();
```

C.
```
int[] filteredEmployeeIds = employeeIds.Distinct().Where(value => value !=
  employeeIdToRemove).OrderByDescending(x => x).ToArray();
```

D.
```
int[] filteredEmployeeIds = employeeIds.Distinct().OrderByDescending(x => x).ToArray();
```

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

Correct Answer: C

QUESTION 3
You are developing an application that includes the following code segment. (Line numbers are included for reference only.)

```
01 class Animal
02 {
03   public string Color { get; set; }
04   public string Name { get; set; }
05 }
06 private static IEnumerable<Animal> GetAnimals(string sqlConnectionString)
07 {
08   var animals = new List<Animal>();
09   SqlConnection sqlConnection = new SqlConnection(sqlConnectionString);
10   using (sqlConnection)
11   {
12     SqlCommand sqlCommand = new SqlCommand("SELECT Name, ColorName FROM Animals", sqlConnection);
13
14     using (SqlDataReader sqlDataReader = sqlCommand.ExecuteReader())
15     {
16
17       {
18         var animal = new Animal();
19         animal.Name = (string)sqlDataReader["Name"];
20         animal.Color = (string)sqlDataReader["ColorName"];
21         animals.Add(animal);
22       }
23     }
24   }
25   return customers;
26 }
```

The GetAnimals() method must meet the following requirements:
- Connect to a Microsoft SQL Server database.
- Create Animal objects and populate them with data from the database.
- Return a sequence of populated Animal 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 16:
   while (sqlDataReader.NextResult())
B. Insert the following code segment at line 13:
   sqlConnection.BeginTransaction();
C. Insert the following code segment at line 13:
   sqlConnection.Open();
D. Insert the following code segment at line 16:
   while (sqlDataReader.Read())
E. insert the following code segment at line 16:
   while (sqlDataReader.GetValues())

Correct Answer: CD

QUESTION 4
You are developing an application that uses the Microsoft ADO.NET Entity Framework to retrieve order information from a Microsoft SQL Server database. The application includes the following code. (Line numbers are included for reference only.)

```
01 public DateTime? OrderDate;
02 IQueryable<Order> LookupOrdersForYear(int year)
03 {
04   using (var context = new NorthwindEntities())
05   {
06     var orders =
07      from order in context.Orders
08
09       select order;
10     return orders.ToList().AsQueryable();
11   }
12 }
```

The application must meet the following requirements:
- Return only orders that have an OrderDate value other than null.
- Return only orders that were placed in the year specified in the OrderDate property or in a later year.

You need to ensure that the application meets the requirements.

Which code segment should you insert at line 08?

A. Where order.OrderDate.Value != null && order.OrderDate.Value.Year > = year
B. Where order.OrderDate.Value = = null && order.OrderDate.Value.Year = = year
C. Where order.OrderDate.HasValue && order.OrderDate.Value.Year = = year
D. Where order.OrderDate.Value.Year = = year

Correct Answer: A

QUESTION 5
You are developing an application. The application includes a method named ReadFile that reads data from a file.

The ReadFile() method must meet the following requirements:
- It must not make changes to the data file.
- It must allow other processes to access the data file.
- It must not throw an exception if the application attempts to open a data file that does not exist.

You need to implement the ReadFile() method.

Which code segment should you use?

A.
```
var fs = File.ReadAllBytes(Filename);
```

B.
```
var fs = File.Open(Filename, FileMode.OpenOrCreate, FileAccess.Read, FileShare.ReadWrite);
```

C.
```
var fs = File.ReadAllLines(Filename);
```

D.
```
var fs = File.Open(Filename, FileMode.Open, FileAccess.Read, FileShare.ReadWrite);
```

E.
```
var fs = File.Open(Filename, FileMode.OpenOrCreate, FileAccess.Read, FileShare.Write);
```

A. Option A
B. Option B
C. Option C
D. Option D
E. Option E

Correct Answer: B

QUESTION 6
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.ConvertToType<Name>(json);
B. Return ser.DeserializeObject(json);
C. Return ser.Deserialize<Name>(json);
D. Return (Name)ser.Serialize(json);

Correct Answer: C

QUESTION 7
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 a JSON object.
Which code segment should you insert at line 20?

A. New DataContractSerializer(typeof(Location))
B. New XmlSerializer(typeof(Location))
C. New NetDataContractSenalizer()
D. New DataContractJsonSerializer(typeof(Location))

Correct Answer: D

QUESTION 8
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 or a class derived from the Person class.

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

A. Internal
B. Protected
C. Private
D. Protected internal

E. Public

Correct Answer: B

QUESTION 9
You are developing an application by using C#. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 public interface IDataContainer
02 {
03   string Data { get; set; }
04 }
05 void DoWork(object obj)
06 {
07
08   if (dataContainer != null)
09   {
10     Console.WriteLine(dataContainer.Data);
11   }
12 }
```

The DoWork() method must not throw any exceptions when converting the obj object to the IDataContainer interface or when accessing the Data property.

You need to meet the requirements. Which code segment should you insert at line 07?

A. var dataContainer = (IDataContainer)obj;
B. dynamic dataContainer = obj;
C. var dataContainer = obj is IDataContainer;
D. var dataContainer = obj as IDataContainer;

Correct Answer: D

QUESTION 10
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)
{
   ...
}
```

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

Correct Answer: C

QUESTION 11
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

QUESTION 12
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?

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

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

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

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

QUESTION 13
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

QUESTION 14
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: AF

QUESTION 15
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

QUESTION 16
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

QUESTION 17
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

QUESTION 18
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 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);
```

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.

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 = 4;
```

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

Correct Answer: AB

QUESTION 19
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?

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

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

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

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

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

Correct Answer: A

QUESTION 20
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?

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;
```

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. 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) =>
  {
    ...
  };
```

D. Insert the following code segment at line 18:

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

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

Correct Answer: D

QUESTION 21
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

QUESTION 22
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?

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

B.
```
var evaluator = new Regex(inputData);
```

C.
```
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);
```

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

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

Correct Answer: D

QUESTION 23
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

QUESTION 24
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
11     };
12     counters.Add(ccdCounter1);
13     var ccdCounter2 = new CounterCreationData
14     {
15       CounterName = "Counter2",
16
17     };
18     counters.Add(ccdCounter2);
19     PerformanceCounterCategory.Create("Contoso", "Help string",
20      PerformanceCounterCategoryType.MultiInstance, counters);
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 = PerformanccCounterType.RawBase
B. CounterType = PerformanceCounterType.AverageBase
C. CounterType = PerformanceCounterType.SampleBase
D. CounterType = PerformanceCounterType.CounterMultiBase

Correct Answer: C

QUESTION 25
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

QUESTION 26
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.
E. Use Windows Installer 2.0 to add the assembly to the GAC.

Correct Answer: BD

QUESTION 27
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

QUESTION 28
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

QUESTION 29
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

QUESTION 30
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?

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

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

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

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

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

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

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

QUESTION 31
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?

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;
```

B. Insert the following code segment at line 18:

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

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);
```

D. 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) =>
  {
    ...
  };
```

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

Correct Answer: B

QUESTION 32
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

QUESTION 33
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

QUESTION 34
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

QUESTION 35
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 : new(), Product
{
    ...
}
```

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

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

QUESTION 36
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

QUESTION 37
You are developing an application by using C#. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 public interface IDataContainer
02 {
03   string Data { get; set; }
04 }
05 void DoWork(object obj)
06 {
07
08   if (dataContainer != null)
09   {
10     Console.WriteLine(dataContainer.Data);
11   }
12 }
```

The DoWork() method must throw an InvalidCastException exception if the obj object is not of type IDataContainer when accessing the Data property.

You need to meet the requirements.
Which code segment should you insert at line 07?

A. var dataContainer = (IDataContainer) obj;
B. var dataContainer = obj as IDataContamer;
C. var dataContainer = obj is IDataContainer;
D. dynamic dataContainer = obj;

Correct Answer: A

QUESTION 38
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.Desenalize (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

QUESTION 39
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
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

QUESTION 40
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

QUESTION 41
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 BataContractJsonSerializer (typeof (Location))
D. New DataContractSerializer(typeof(Location))

Correct Answer: D

QUESTION 42
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 item 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

QUESTION 43

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

QUESTION 44
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?

A. Insert the following code segment at tine 05:
Debug.Write(loanAmount > 0);
B. Insert the following code segment at line 05:
Trace.Write(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

QUESTION 45
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
```

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

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

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

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

Correct Answer: C

QUESTION 46
You are testing an application. The application includes methods named CalculateInterest aid 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

QUESTION 47
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
11     };
12     counters.Add(ccdCounter1);
13     var ccdCounter2 = new CounterCreationData
14     {
15       CounterName = "Counter2",
16
17     };
18     counters.Add(ccdCounter2);
19     PerformanceCounterCategory.Create("Contoso", "Help string",
20      PerformanceCounterCategoryType.MultiInstance, counters);
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 = PerformanccCounterType.RawBase
B. CounterType = PerformanceCounterType.AverageBase
C. CounterType = PerformanceCounterType.SampleBase
D. CounterType = PerformanceCounterType.CounterMultiBase

Correct Answer: D

QUESTION 48
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

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

Correct Answer: B

QUESTION 50

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

QUESTION 51
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

QUESTION 52
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

QUESTION 53
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:

```
delegatevoidAddBookDelegate(stringname, AddBookCallback callback);
```

Insert the following code segment at line 18:

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

C. Insert the following code segment at line 11:

```
delegatevoidAddBookDelegate(BookTracker bookTracker);
```

Insert the following code segment at line 18:

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

D. 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;
```

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

Correct Answer: A

QUESTION 54
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

QUESTION 55
You are developing an application by using G#. 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

QUESTION 56
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

QUESTION 57
You are developing an application that uses the Microsoft ADO.NET Entity Framework to retrieve order information from a Microsoft SQL Server database. The application includes the following code. (Line numbers are included for reference only.)

```
01 public DateTime? OrderDate;
02 IQueryable<Order> LookupOrdersForYear(int year)
03 {
04   using (var context = new NorthwindEntities())
05   {
06     var orders =
07      from order in context.Orders
08
09       select order;
10     return orders.ToList().AsQueryable();
11   }
12 }
```

The application must meet the following requirements:
- Return only orders that have an OrderDate value other than null.
- Return only orders that were placed in the year specified in the year parameter.

You need to ensure that the application meets the requirements. Which code segment should you insert at line 08?

A.
```
where order.OrderDate.Value.Year == year
```

B.
```
where order.OrderDate.HasValue && order.OrderDate.Value.Year == year
```

C.
```
where order.OrderDate.Value != null && order.OrderDate.Value.Year >= year
```

D.
```
where order.OrderDate.Value == null && order.OrderDate.Value.Year == year
```

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

Correct Answer: B

QUESTION 58
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

QUESTION 59
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: BE

QUESTION 60
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

QUESTION 61
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

QUESTION 62
You are developing an application. The application calls a method that returns an array of integers named customerIds. You define an integer variable named customerIdToRemove and assign a value to it. You declare an array named filteredCustomerIds.

You have the following requirements.
- Remove duplicate integers from the customerIds array.
- Sort the array in order from the highest value to the lowest value.
- Remove the integer value stored in the customerIdToRemove variable from the customerIds array.

You need to create a LINQ query to meet the requirements.
Which code segment should you use?

A.
```
int[] filteredCustomerIds = customerIds.Distinct().OrderByDescending(x => x).ToArray();
```

B.
```
int[] filteredCustomerIds = customerIds.Where(value => value !=
  customerIdToRemove).OrderByDescending(x => x).ToArray();
```

C.
```
int[] filteredCustomerIds = customerIds.Distinct().Where(value => value !=
  customerIdToRemove).OrderByDescending(x => x).ToArray();
```

D.
```
int[] filteredCustomerIds = customerIds.Where(value => value !=
  customerIdToRemove).OrderBy(x => x).ToArray();
```

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

Correct Answer: C

QUESTION 63
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. DES
B. HMACSHA512
C. RNGCryptoServiceProvider
D. ECDsa

Correct Answer: B

QUESTION 64
You are developing a C# application that includes a class named Product. The following code segment defines the Product class:

```
public class Product
{
  public int Id { get; set; }
  public int CategoryId { get; set; }
  public string Name { get; set; }
  public bool IsValid { get; set; }
}
```

You implement System.ComponentModel.DataAnnotations.IValidateableObject interface to provide a way to validate the Product object.

The Product object has the following requirements:
- The Id property must have a value greater than zero.
- The Name property must have a value other than empty or null.

You need to validate the Product object. Which code segment should you use?

A.
```
public bool Validate()
{
  IsValid = Id > 0 || !string.IsNullOrEmpty(Name);
  return IsValid;
}
```

B.
```
public IEnumerable<ValidationResult> Validate(ValidationContext validationContext)
{
  if (Id <= 0)
    yield return new ValidationResult("Product Id is required.", new[] { "Id" });
  if (string.IsNullOrEmpty(Name))
    yield return new ValidationResult("Product Name is required.", new[] { "Name" });
}
```

C.
```
public bool Equals(Product productToValidate)
{
  productToValidate.IsValid = productToValidate.Id > 0 || !string.IsNullOrEmpty(productToValidate.Name);
  return productToValidate.IsValid;
}
```

D.
```
public ValidationResult Validate()
{
  ValidationResult validationResult = null;
  if (Id <= 0)
  {
    validationResult = new ValidationResult("Product Id is required.");
  }
  if (string.IsNullOrEmpty(Name))
  {
    validationResult = new ValidationResult("Product Name is required.");
  }
  return validationResult;
}
```

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

Correct Answer: B

QUESTION 65
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?

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

D. public property

Correct Answer: D

QUESTION 66
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

QUESTION 67
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

QUESTION 68
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 tog 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

QUESTION 69
You have the following code (line numbers are included for reference only):

```
01class Bar
02{
03  pub lic 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
         ("Select sqlName,sqlColor from Animals", fooSqlConn);
12      fooSqlConn.Open();
13      using (SqlDataReader fooSqlReader = fooSqlCmd.ExecuteReader())
14      {
15
16        {
17          var bar = new Bar();
18          bar.barName = (String)fooSqlReader["sqlName"];
19          bar.barColor = (String)fooSqlReader["sqlColor"];
20          bars.Add(bar);
21        }
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

QUESTION 70
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

QUESTION 71
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

QUESTION 72
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 = arrayl[0] is int;
B. var2 = ((List<int>)arrayl) [0];
C. var2 = arrayl[0].Equals(typeof(int));
D. var2 = (int) arrayl [0];

Correct Answer: D

QUESTION 73
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

QUESTION 74
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

QUESTION 75
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

QUESTION 76
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

QUESTION 77
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

QUESTION 78
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

QUESTION 79
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

QUESTION 80
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

QUESTION 81
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

QUESTION 82
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
D. JsonSerializer

Correct Answer: C

QUESTION 83
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.ReflectionOniyLoad(bytes);
C. Assembly.Load(bytes);
D. Assembly.LoadFrom(bytes);

Correct Answer: C

QUESTION 84
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

QUESTION 85
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

QUESTION 86
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?

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

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

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

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

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

Correct Answer: A

QUESTION 87
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. interface
C. named parameters
D. lambda expressions

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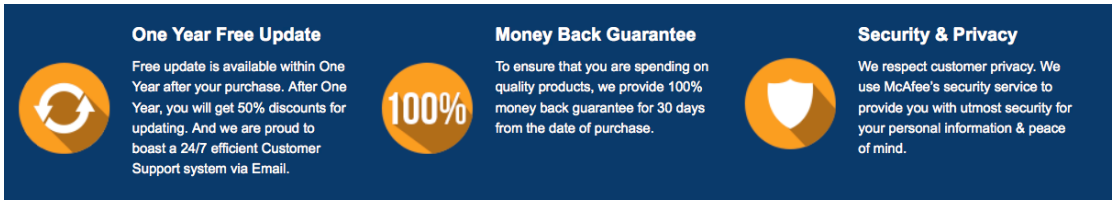

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