70-487.90q

Number: 70-487
Passing Score: 800
Time Limit: 120 min

70-487

Developing Windows Azure and Web Services

Testlet 1

Background
You are developing a flight information consolidation service. The service retrieves flight information from a number of sources and combines them into a single data set. The consolidated flight information is stored in a SQL Server database. Customers can query and retrieve the data by using a REST API provided by the

service.

The service also offers access to historical flight information. The historical flight information can be filtered and queried in an ad hoc manner.

The service runs on a Windows Azure Web Role. SSL is not used.

Business Requirements

- A new data source for historical flight information is being developed by a contractor located on another continent.
- If a time zone is not specified, then it should be interpreted as Coordinated Universal Time (UTC).
- When you upgrade a service from a staging deployment to a production deployment, the time that the service is unavailable must be minimized.
- The default port must be used for HTTP.

Technical Requirements

The existing sources of flight information and the mechanism of exchange are listed below.

- Blue Yonder Airlines provides flight information in an XML file.
- Consolidated Messenger provides flight information in a Microsoft Access database that is uploaded every 12 hours to the service using SFTP. The company uses port 22 for SFTP.
- Margie's Travel provides and consumes flight information using serialized ADO.NET DataSets. Data is periodically synced between the service and Margie's Travel.
- Trey Research provides data from multiple sources serialized in proprietary binary formats. The data must be read by using .NET assemblies provided by Trey Research. The assemblies use a common set of dependencies. The current version of the Trey Research assemblies is 1.2.0.0. All assemblies provided by Trey Research are signed with a key pair contained in a file named Trey.snk, which Trey Research also supplies.
- The application specification requires that any third-party assemblies must have strong names.

Application Structure

FlightInfo.cs

```
public class FlightInfo
{
  string DataSource { get; set; }
  public string Airline { get; set; }
  public string Flight { get; set; }
  public DateTimeOffset Arrival { get; set; }
  public int Seats { get; set; }
  public bool WasLate { get; set; }
}
```

BlueYonderLoader.cs

```
public class BlueYonderLoader
{
  public IEnumerable<RawFlightData> LoadFlights(XDocument feed)
  {
    ...
  }

  private RawFlightData Parse(XElement flightElement)
  {
    ...
  }
}
```

HistoricalDataLoader.cs

```
public class HistoricalDataLoader
{
  public static IEnumerable<HistoricalFlightInfo> LoadHistoricalFlights()
  {
    ...
  }

  public void StreamHistoricalFlights(XmlWriter responseWriter, string airline)
  {

    ...
  }

  private XElement ConvertToHistoricalFlight(XElement flight)
  {
    return new XElement("Flight", flight);
  }

  private string GetAirline(XElement flightName)
  {
    return flightName.Value.Substring(0, 2);
  }

  IEnumerable<XElement> RemoteDataStream()
  {
    return XDocument.Load("").Elements();
  }
}
```

MargiesTravelSync.cs

```
public class MargiesTravelSync
{
  public void Sync()
  {
    ...
  }

  private DataSet LoadLocal()
  {
    var dataSet = new DataSet();
    dataSet.ReadXml("local");
    return dataSet;
  }

  private StreamWriter SendStream()
  {
    return new StreamWriter("SendStream");
  }

  private StreamReader ReceiveStream()
  {
    return new StreamReader("ReceiveStream");
  }
}
```

FlightInfoContext.cs

```
public class FlightInfoContext : DbContext
{
  public DbSet<FlightInfo> FlightInfo { get; set; }

  public override int SaveChanges()
  {
    return base.SaveChanges();
  }

  private bool IsTransient(int ex)
  {
    var errors = new[] { 10053, 10054, 64 };
    return errors.Contains(ex);
  }
}
```

FlightDataController.cs


```
public class FlightDataController : ApiController
{
  FlightInfoContext _Context;

  public FlightDataController()
  {
    _Context = new FlightInfoContext();
  }

  [HttpGet]
  public IEnumerable<FlightInfo> GetFlightInfo()
  {
    return _Context.FlightInfo.Select(x => x).AsEnumerable();
  }

  private IEnumerable<HistoricalFlightInfo> LoadHistorical()
  {
    return HistoricalDataLoader.LoadHistoricalFlights();
  }
}
```

QUESTION 1
Errors occasionally occur when saving data using the FlightInfoContext ADO.NET Entity Framework context. Updates to the data are being lost when an error occurs.

You need to ensure that data is still saved when an error occurs by retrying the operation. No more than five retries should be performed.

Which code segment should you use as the body of the SaveChanges() method in the FlightInfoContext.es file?

A.
```
for (var i = 0; i < 5; i++)
{
  try
  {
    return base.SaveChanges();
  }
  catch (SqlException ex)
  {
    if (IsTransient(ex.Number))
    {
      continue;
    }
  }
}
return base.SaveChanges();
```

B.
```
var exception = new EntitySqlException();
while (exception.Data != 0 && exception.Data.Count < 5)
{
  try
  {
    return base.SaveChanges();
  }
  catch (EntitySqlException ex)
  {
    if (IsTransient(ex.HResult))
    {
      exception = ex;
    }
  }
}
return base.SaveChanges();
```

C.
```
for (var i = 0; i < 5; i++)
{
  try
  {
    return base.SaveChanges();
  }
  catch (SqlException ex)
  {
    if (IsTransient(ex.Number))
    {
      break;
    }
  }
}
return base.SaveChanges();
```

D.
```
for (var i = 0; i < 5; i++)
{
  try
  {
    return base.SaveChanges();
  }
  catch (SqlException ex)
  {
    if (!IsTransient(ex.Number))
    {
      continue;
    }
  }
}
return base.SaveChanges();
```


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

Correct Answer: A **Section: [none]**

Explanation

Explanation/Reference:

QUESTION 2
You are adding a new REST service endpoint to the FlightDataController controller. It returns flights from the consolidated data sources only for flights that are late.

You need to write a LINQ to Entities query to extract the required data.

Which code segment should you use?

A.
```
var historical = LoadHistorical();
var query = _Context.FlightInfo.AsQueryable()
 .Join(historical, x => x.Flight, y => y.Flight, (x, y) => new { Current = x,
Historical = y })
 .Where(x => x.Historical.WasLate)
 .Select(x => x.Current);
```

B.
```
var historical = LoadHistorical();
var query = _Context.FlightInfo.AsEnumerable()
 .Where(x => historical.All(y => y.WasLate && x.Flight == y.Flight))
 .Select(x => x);
```

C.
```
var historical = LoadHistorical();
var query = _Context.FlightInfo.AsQueryable()
 .Where(x => historical.Select(y => y.Flight).Contains(x.Flight))
 .Where(x => historical.Any(y => y.WasLate))
 .Select(x => x);
```

D.
```
var historical = LoadHistorical();
var query = _Context.FlightInfo.AsEnumerable()
 .Join(historical, x => x.Flight, y => y.Flight, (x, y) => new { Current = x,
Historical = y })
 .Where(x => x.Historical.WasLate)
 .Select(x => x.Current);
```

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

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:

QUESTION 3
Data provided by Consolidated Messenger is cached in the HttpContext.Cache object. You need to ensure that the cache is correctly updated when new data arrives.

What should you do?

A. Ensure that the EffectivePrivateBytesLimit value is greater than the size of the database file.
B. Change the sliding expiration of the cache item to 12 hours.
C. Use the SqlCacheDependency type configured with a connection string to the database file.
D. Use the CacheDependency type configured to monitor the SFTP target folder.

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:

QUESTION 4
You need to load flight information provided by Consolidated Messenger.

 Which should you use?

A. SQL Server Data Transformation Services (DTS)
B. EntityTransaction and EntityCommand
C. Office Open XML
D. OleDbConnection and OleDbDataReader

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:

QUESTION 5
DRAG DROP
You need to parse flight information from Blue Yonder Airlines. The content of the XML file is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<AirlineFeed>
  <Flight xmlns="urn:CFI" name="AS515">
    <Seats>123</Seats>
    <Arrival>5/2/2011 12:01:13</Arrival>
  </Flight>
  <Flight name="UN24">
    <Seats>123</Seats>
    <Arrival>5/1/2012 10:17:57 PM +02:00</Arrival>
  </Flight>
  <FlightManifest>
    ...
  </FlightManifest>
</AirlineFeed>
```

Some airlines do not specify the timezone of the arrival time. If the timezone is not specified, then it should be interpreted per the business requirements.

You need to implement the LoadFlights() and Parse() methods of the BlueYonderLoader class.
What should you do? (To answer, drag the appropriate code segments to the correct location in the answer area. Each 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:

```
var flights = feed.Elements(
 feed.Root.GetPrefixOfNamespace("{urn:CFI}")+"Flight");
```

```
var flights = feed.Descendants().Where(x =>
 x.NodeType !=XmlNodeType.XmlDeclaration && (string)x ==
"Flight");
```

```
var flights = feed.Descendants("{urn:CFI}Flight")
 .Concat(feed.Descendants("Flight"));
```



```
 fi.Arrival = DateTimeOffset.Parse(arrivalRaw, null,
System.Globalization.DateTimeStyles.AssumeUniversal);
```

```
fi.Arrival = DateTimeOffset.Parse(arrivalRaw, null,
System.Globalization.DateTimeStyles.AdjustToUniversal);
```

```
fi.Arrival = XmlConvert.ToDateTimeOffset(arrivalRaw,
 new[] { "Local", "Universal" });
```

●●●●

Answer area

Correct Answer:

```
var flights = feed.Elements(
 feed.Root.GetPrefixOfNamespace("{urn:CFI}")+"Flight");
```

```
var flights = feed.Descendants().Where(x =>
 x.NodeType !=XmlNodeType.XmlDeclaration && (string)x ==
"Flight");
```



```
 fi.Arrival = DateTimeOffset.Parse(arrivalRaw, null,
System.Globalization.DateTimeStyles.AssumeUniversal);
```

```
fi.Arrival = XmlConvert.ToDateTimeOffset(arrivalRaw,
 new[] { "Local", "Universal" });
```

●●●●

Answer area

Section: [none]
Explanation

Explanation/Reference:

QUESTION 6
You are adding a new REST service endpoint to the FlightDataController controller that returns the total number of seats for each airline.

You need to write a LINQ to Entities query to extract the required data.
Which code segment should you use?

A.
```
var query = from flight in _Context.FlightInfo
 group flight by flight.Seats into agg
 let airline = agg.First()
 select new
 {
   TotalSeats = agg.Key,
   Airline = airline,
 };
```

B.
```
var query = from flight1 in _Context.FlightInfo
 from flight2 in _Context.FlightInfo
 where flight1.Airline == flight2.Airline
 select new
 {
   Airline = flight1.Airline,
   TotalSeats = Math.BigMul(flight1.Seats, flight2.Seats),
 };
```

C.
```
var query = from flight in _Context.FlightInfo
 from airline in flight.Airline
 group airline by airline into agg
 select new
 {
   Airline = agg.Key,
   TotalSeats = agg.Sum(x => Convert.ToInt32(x)),
 };
```

D.
```
var query = from flight in _Context.FlightInfo
 group flight by flight.Airline into agg
 select new
 {
   Airline = agg.Key,
   TotalSeats = agg.Sum(x => x.Seats),
 };
```

A. Option A

B. Option B C. Option C

D. Option D

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:

QUESTION 7
You need to load flight information provided by Consolidated Messenger.

What should you use?

A. Office Open XML
B. COM interop
C. OleDbConnection and OleDbDataReader
D. EntityConnection and EntityDataReader

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:

QUESTION 8
Historical flight information data will be stored in Windows Azure Table Storage using the FlightInfo class as the table entity.

There are millions of entries in the table. Queries for historical flight information specify a set of airlines to search and whether the query should return only late flights. Results should be ordered by flight name.

You need to specify which properties of the FlightInfo class should be used at the partition and row keys to ensure that query results are returned as quickly as possible.

What should you do? (Each correct answer presents part of the solution. Choose all that apply.)

A. Use the WasLate property as the row key.

B. Use the Airline property as the row key.

C. Use the WasLate property as the partition key
D. Use the Arrival property as the row key.
E. Use the Airline property as the partition key.
F. Use the Flight property as the row key.

Correct Answer: EF
Section: [none]
Explanation

Explanation/Reference:

QUESTION 9
Transformed historical flight information provided by the RemoteDataStream() method must be written to the response stream as a series of XML elements named Flight within a root element named Flights. Each Flight element has a child element named FlightName that contains the flight name that starts with the two-letter airline prefix.

You need to implement the StreamHistoricalFlights() method so that it minimizes the amount of memory allocated.

Which code segment should you use as the body of the StreamHistoricalFlights() method in the HistoricalDataLoader.es file?

A.
```
responseWriter.WriteStartElement("Flights");
var flights = RemoteDataStream()
 .OrderBy(x => GetAirline(x.Element("FlightName")));
var filteredFlights = flights
 .SkipWhile(x => GetAirline(x.Element("FlightName")) != airline);
foreach (var f in filteredFlights)
{
  var flight = ConvertToHistoricalFlight(f);
  flight.WriteTo(responseWriter);
}
responseWriter.WriteEndElement();
```

B.
```
responseWriter.WriteStartElement("Flights");
var flights = RemoteDataStream().Select(x =>
 {
   if (GetAirline(x) == airline)
   {
     return ConvertToHistoricalFlight(x);
   }
   return null;
 });
flights.TakeWhile(x =>
 {
   x.WriteTo(responseWriter);
   return x != null;
 });
responseWriter.WriteEndElement();
```

C.
```
var data = RemoteDataStream().ToDictionary(x =>
 GetAirline(x.Element("FlightName")),
 x => new XStreamingElement("Flights", ConvertToHistoricalFlight(x).Descendants()));
data[airline].WriteTo(responseWriter);
```

D.
```
var flights = new XStreamingElement("Flights",
 from flight in RemoteDataStream()
 where GetAirline(flight.Element("FlightName")) == airline
 select ConvertToHistoricalFlight(flight));
flights.WriteTo(responseWriter);
```

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

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
http://msdn.microsoft.com/en-us/library/system.xml.linq.xstreamingelement.aspx and http://msdn.microsoft.com/en-us/library/bb551307.aspx

QUESTION 10
Errors occasionally occur when saving data using the FlightInfoContext ADO.NET Entity Framework context. Updates to the data are being lost when an error occurs.

You need to ensure that data is still saved when an error occurs by retrying the operation. No more than five retries should be performed.

With which code segment should you replace the body of the SaveChanges() method in the FlightInfoContext.es file?

A.
```
var result = FlightInfo.SqlQuery("UPDATE WITH RETRY", FlightInfo, "IsTransient", 5);
if (result.Count() > 5)
{
  result.AsNoTracking();
  return -1;
}
return 0;
```

B.
```
try
{
  return base.SaveChanges();
}
catch (EntityCommandExecutionException ex)
{
  if (ex.Data.Keys.Cast<int>().Any(x => IsTransient(x)))
  {
    return 5 & SaveChanges();
  }
  return -1;
}
```

C.
```
for (var i = 0; i < 5; i++)
{
  try
  {
    return base.SaveChanges();
  }
  catch (SqlException ex)
  {
    if (IsTransient(ex.Number))
    {
      continue;
    }
  }
}
return base.SaveChanges();
```

D.
```
var exception = new EntitySqlException();
while (exception.HResult != 0 && exception.Data.Count < 5)
{
  try
  {
    return base.SaveChanges();
  }
  catch (EntitySqlException ex)
  {
    if (IsTransient(ex.HResult))
```

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

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:

Testlet 1

Background
You are developing an ASP.NET MVC application in Visual Studio 2012 that will be used to process orders.

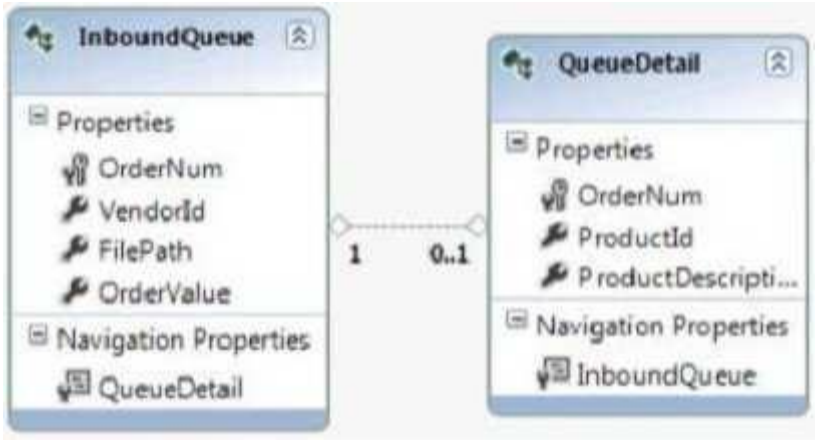
Business Requirements
The application contains the following three pages.
▪ A page that queries an external database for orders that are ready to be processed. The user can then process the order. ▪
A page to view processed orders.
▪ A page to view vendor information.

The application consumes three WCF services to retrieve external data.

Technical Requirements

Visual Studio Solution:
The solution contains the following four projects.
▪ ExternalQueue: A WCF service project used to communicate with the external order database.
▪ OrderProcessor: An ASP.NET MVC project used for order processing and logging order metadata.
▪ OrderUpload: A WCF service project used to submit order data to an external data source. ▪
Shipping: A WCF service project used to acquire shipping information.

ExternalQueue Project:
Entity Framework is used for data access. The entities are defined in the ExternalOrders.edmx file as shown in the following diagram.

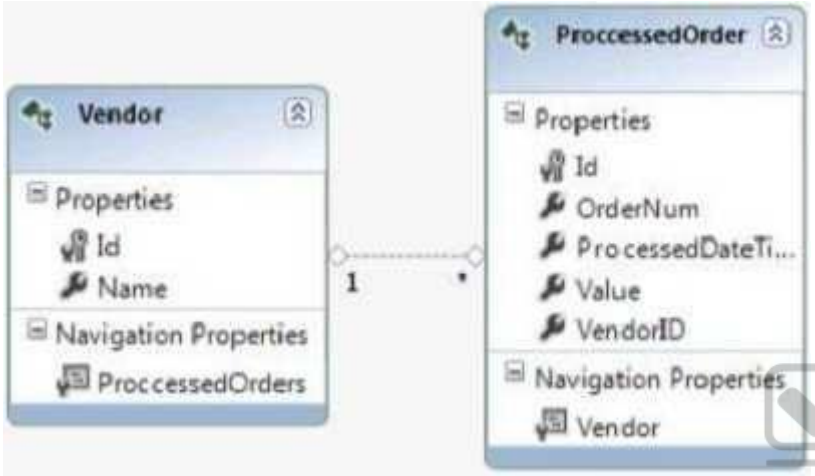


The project contains two services defined in the following files.

- IExternalQueueService.es
- ExternalQueueService.svc.

The ExternalQueue.Helpers namespace contains a definition for a class named OrderNotFound Exception.

OrderProcessor Project:
Entity Framework is used for data access. The entities are defined in the ProcessedOrders.edmx file as shown in the following diagram.



The classes are contained in the OrderProcessor.Entities namespace. The project contains the following two controllers.
- InboundQueueController.es
- ProcessedOrderController.es

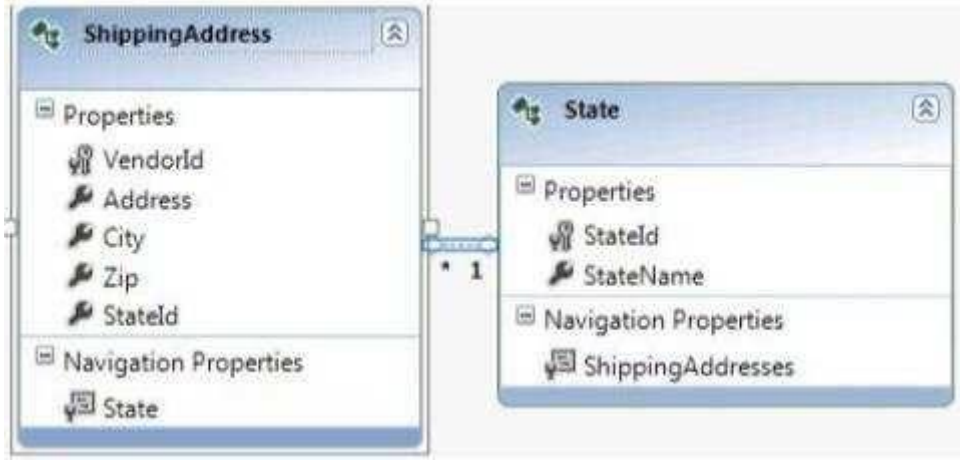
WCF service proxies to the ExternalQueue, Shipping and OrderUpload services have been generated by using the command prompt. The ExecuteCommandProcedure() method in the ExternalQueueService.svc file must run asynchronously.

The ProcessedOrderController controller has the following requirements.
- The GetVendorPolicy() method must enforce a 10 minute absolute cache expiration policy.
- The GetProcessedOrders() method must return a view of the 10 most recently processed orders.

OrderUpload Project:
The project contains two services defined in the following files.
- IUploadCallbackService.es
- UploadCallbackService.svc

Data Access is maintained in a file named UploadOrder.es.

Shipping Project:
Entity Framework is used for data access. The entities are defined in the ExternalOrders.edmx file as shown in the following diagram.



The Custom Tool property for ExternalOrders.edmx has been removed.

POCO classes for the Entity Model are located in the ShippingAddress.es file. The POCO entity must be loaded by using lazy loading.

The project contains two services defined in the following
files. ▪ IShippingService.es ▪ ShippingService.svc.

The IShippingService contract must contain an operation that receives an order number as a parameter. The operation must return a class named ShippingInfo that inherits from a class named State.

Application Structure

ExternalQueue\IExternalQueueService.cs

```
IQ01 using System.Collections.Generic;
IQ02 using System.ServiceModel;
IQ03 using ExternalQueue.Helpers;
IQ04
IQ05 namespace ExternalQueue
IQ06 {
IQ07   [ServiceContract]
IQ08   public interface IExternalQueueService
IQ09   {
IQ10     [OperationContract]
IQ11     List<Entities.InboundQueue> GetExternalOrders();
IQ12
IQ13     [FaultContract(typeof(OrderNotFoundException))]
IQ14     [OperationContract]
IQ15     void DeleteExternalOrder(int orderNum);
IQ16
IQ17     [OperationContract]
IQ18     Entities.InboundQueue GetExternalOrder(int orderNum);
IQ19   }
IQ20 }
```

OrderProcessor\IExternalQueueService.svc

```
EQ01 using System;
EQ02 using System.Collections.Generic;
EQ03 using System.Linq;
EQ04 using System.Data.EntityClient;
EQ05 using System.Data;
EQ06 using ExternalQueue.Entities;
EQ07 using System.Data.Objects;
EQ08 using ExternalQueue.Helpers;
EQ09 using System.ServiceModel;
EQ10 using System.Threading.Tasks;
EQ11
EQ12 namespace ExternalQueue
EQ13 {
EQ14   public class ExternalQueueService : IExternalQueueService
EQ15   {
EQ16     public List<Entities.InboundQueue> GetExternalOrders()
EQ17     {
EQ18       List<InboundQueue> queueItems = new List<InboundQueue>();
EQ19       return queueItems;
EQ20     }
EQ21
EQ22     public void DeleteExternalOrder(int orderNum)
EQ23     {
EQ24       using (var context = new ExternalOrdersEntities())
EQ25       {
EQ26         var orders = context.InboundQueues.Where(i => i.OrderNum ==
orderNum).ToList();
EQ27         if (orders.Count() > 0)
EQ28         {
EQ29           using (EntityCommand cmd = new EntityCommand())
EQ30           {
EQ31             cmd.CommandText = "ExternalOrdersEntities.uspInboundQueueDelete";
EQ32             cmd.CommandType = CommandType.StoredProcedure;
EQ33             EntityParameter param = new EntityParameter();
EQ34             param.Value = orderNum;
EQ35             param.ParameterName = "orderNum";
EQ36             cmd.Parameters.Add(param);
EQ37             ExecuteCommandProcedure(cmd);
EQ38           }
EQ39         }
EQ40         else
EQ41         {
EQ42           OrderNotFoundException ex = new OrderNotFoundException();
```

ExternalQueue\ProcessedOrderController.cs

```
PC01 using System;
PC02 using System.Collections.Generic;
PC03 using System.Linq;
PC04 using System.Runtime.Caching;
PC05 using System.Web.Mvc;
PC06 using OrderProcessor.Entities;
PC07 using OrderProcessor.Helpers;
PC08 using System.Configuration;
PC09
PC10 namespace OrderProcessor.Controllers
PC11 {
PC12   public class ProcessedOrderController : Controller
PC13   {
PC14     public ActionResult GetProcessedOrders()
PC15     {
PC16       using (var context = new ProcessedOrders())
PC17       {
PC18         List<Entities.ProccessedOrder> orders = new List<ProcessedOrder>();
PC19         return View(orders);
PC20       }
PC21     }
PC22
PC23     private ObjectCache cache {get { return MemoryCache.Default; }}
PC24
PC25     public ActionResult GetVendors()
PC26      {
PC27        List<Entities.Vendor> vendors = cache.Get
("vendorKey") as List<Entities.Vendor>;
PC28        if (vendors == null)
PC29        {
PC30          using (var context = new ProcessedOrders())
PC31          {
PC32            vendors = context.Vendors.ToList();
PC33
PC34          }
PC35        }
PC36        return View(vendors);
PC37      }
PC38
PC39      private CacheItemPolicy GetVendorPolicy()
PC40      {
PC41        CacheItemPolicy vendorPolicy = new CacheItemPolicy();
```

OrderProcessor\InboundQueueController.cs

```
IC01 using System;
IC02 using System.Collections.Generic;
IC03 using System.Web.Mvc;
IC04 using OrderProcessor.Entities;
IC05 using ExternalQueue.Entities;
IC06 using System.ServiceModel;
IC07 using System.Collections;
IC08 using ExternalQueue.Helpers;
IC09 using OrderProcessor.Helpers;
IC10 using System.Linq;
IC11
IC12 namespace OrderProcessor.Controllers
IC13 {
IC14   public class InboundQueueController : Controller
IC15   {
IC16     public ActionResult GetQueueItems()
IC17     {
IC18       IEnumerable<InboundQueue> inboundOrders = Enumerable.Empty<InboundQueue>();
IC19       return View(inboundOrders);
IC20     }
IC21
IC22     public ActionResult ProcessOrder(int orderNum)
IC23     {
IC24       ExternalQueueServiceClient qService = new ExternalQueueServiceClient();
IC25       InboundQueue externalOrder = qService.GetExternalOrder(orderNum);
IC26       if (externalOrder != null)
IC27       {
IC28         using (var context = new ProcessedOrders())
IC29         {
IC30           ProccessedOrder order = new ProccessedOrder();
IC31           order.OrderNum = externalOrder.OrderNum;
IC32           order.Value = Convert.ToDouble(externalOrder.OrderValue);
IC33           order.VendorID = Convert.ToInt32(externalOrder.VendorId);
IC34           order.ProcessedDateTime = DateTime.Now;
IC35           context.ProccessedOrders.Add(order);
IC36           context.SaveChanges();
IC37         }
IC38         qService.DeleteExternalOrder(orderNum);
IC39       }
IC40       return RedirectToAction("GetQueueItems");
IC41     }
IC42
```

OrderUpload\IUploadCallbackService.cs

```
IU01 using System.ServiceModel;
IU02
IU03 namespace OrderUpload
IU04 {
IU05   [ServiceContract(CallbackContract = typeof(IUploadCallback))]
IU06   public interface IUploadCallbackService
IU07   {
IU08     [OperationContract]
IU09     void UploadOrder(int orderNum);
IU10   }
IU11
IU12   public interface IUploadCallback
IU13   {
IU14     [OperationContract]
IU15     decimal GetOrderValue(int orderNum);
IU16   }
IU17 }
```

OrderUpload\UploadCallbackService.svc

```
US01 using System.ServiceModel;
US02
US03 namespace OrderUpload
US04 {
US05   public class UploadCallbackService : IUploadCallbackService
US06   {
US07     public void UploadOrder(int orderNum)
US08     {
US09     }
US10   }
US11 }
```

Shipping\IShippingService.cs

```
IS01 using System.Runtime.Serialization;
IS02 using System.ServiceModel;
IS03
IS04 namespace Shipping
IS05 {
IS06   public interface IShippingService
IS07   {
IS08
IS09   }
IS10 }
```

Shipping\ShippingAddress.cs

```
SA01 using System.Collections.Generic;
SA02 using System.Data.Objects;
SA03
SA04 namespace Shipping.POCO
SA05 {
SA06   public class ShippingAddress
SA07   {
SA08     public int VendorId { get; set; }
SA09     public string Address { get; set; }
SA10     public string City { get; set; }
SA11     public int StateId { get; set; }
SA12     public string Zip { get; set; }
SA13     public State State { get; set; }
SA14   }
SA15
SA16   public class State
SA17   {
SA18     public int StateId { get; set; }
SA19     public string StateName { get; set; }
SA20     public List<ShippingAddress> ShippingAddresses { get; set; }
SA21   }
SA22 }
```


QUESTION 1
You need to modify the ExecuteCommandProcedure() method to meet the technical requirements.

Which code segment should you use?

A.
```
private async Task ExecuteCommandProcedure(EntityCommand command)
{
  using (EntityConnection connection = new EntityConnection
("name=ExternalOrdersEntities"))
  {
    command.Connection = connection;
    await connection.OpenAsync();
    await command.ExecuteNonQueryAsync();
  }
}
```

B.
```
private void ExecuteCommandProcedure(EntityCommand command)
{
  using (EntityConnection connection = new EntityConnection
("name=ExternalOrdersEntities"))
  {
    command.Connection = connection;
    command.ExecuteNonQueryAsync();
  }
}
```


C.
```
private void ExecuteCommandProcedure(EntityCommand command)
{
  using (EntityConnection connection = new EntityConnection
("name=ExternalOrdersEntities"))
  {
    command.Connection = connection;
    connection.OpenAsync();
    command.ExecuteNonQueryAsync();
  }
}
```

D.
```
private async Task ExecuteCommandProcedure(EntityCommand command)
{
  using (EntityConnection connection = new EntityConnection
("name=ExternalOrdersEntities"))
  {
    command.Connection = connection;
    connection.OpenAsync();
    command.ExecuteNonQueryAsync();
  }
}
```

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

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:

QUESTION 2
The DeleteExternalOrder() method in the ExternalQueueService service is not throwing a FaultException exception as defined by the FaultContractAttribute attribute in the IExternalQueueService.cs file.

You need to throw the FaultException exception.

Which code segments can you insert at line EQ45 to achieve this goal? (Each correct answer presents a complete solution. Chose all that apply)

A.
```
throw new FaultException<OrderNotFoundException>(ex.ExceptionMessage);
```

B.
```
throw new FaultException<OrderNotFoundException>(ex, new
 FaultReason("Order not found."));
```

C.
```
throw new FaultException<OrderNotFoundException>(ex);
```

D.
```
throw new FaultException
 (new OrderNotFoundException(new Exception(ex.ExceptionMessage)), "Order not
found.");
```

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

Correct Answer: BC
Section: [none]
Explanation

Explanation/Reference:

QUESTION 3
The GetExternalOrder() method in the ExternalQueueService service is throwing a runtime error. The method must query the database for a record that matches the orderNum parameter passed to the method.

You need to modify the queryString string to retrieve the record.

With which code segment should you replace line EQ64?

A.
```
string queryString = @"SELECT q.OrderNum, q.VendorId, q.FilePath, q.OrderValue
  FROM ExternalOrdersEntities.InboundQueues AS q WHERE q.OrderNum = @orderNum";
```

B.
```
string queryString = @"SELECT * FROM ExternalOrdersEntities.InboundQueues
  WHERE OrderNum = @orderNum";
```

C.
```
string queryString = @"SELECT VALUE q FROM ExternalOrdersEntities.InboundQueues AS q
  WHERE q.OrderNum = @orderNum";
```

D.
```
string queryString = @"SELECT VALUE FROM ExternalOrdersEntities.InboundQueues
  WHERE OrderNum = @orderNum";
```

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

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:

QUESTION 4
You need to regenerate the service proxies to include task-based asynchronous method signatures.

Which command should you use?

A. aspnet_regiis.exe /t:code http://localhost:62965/UploadCallbackService.svc
B. svcutil.exe /t:code http://localhost:62965/UploadCallbackService.svc
C. aspnet_compiler.exe /t:code http://localhost:62965/UploadCallbackService.svc
D. aspnet_regiis.exe /t:code http://localhost:62965/UploadService.svc
E. svcutil.exe /t:code http://localhost:62965/UploadService.svc

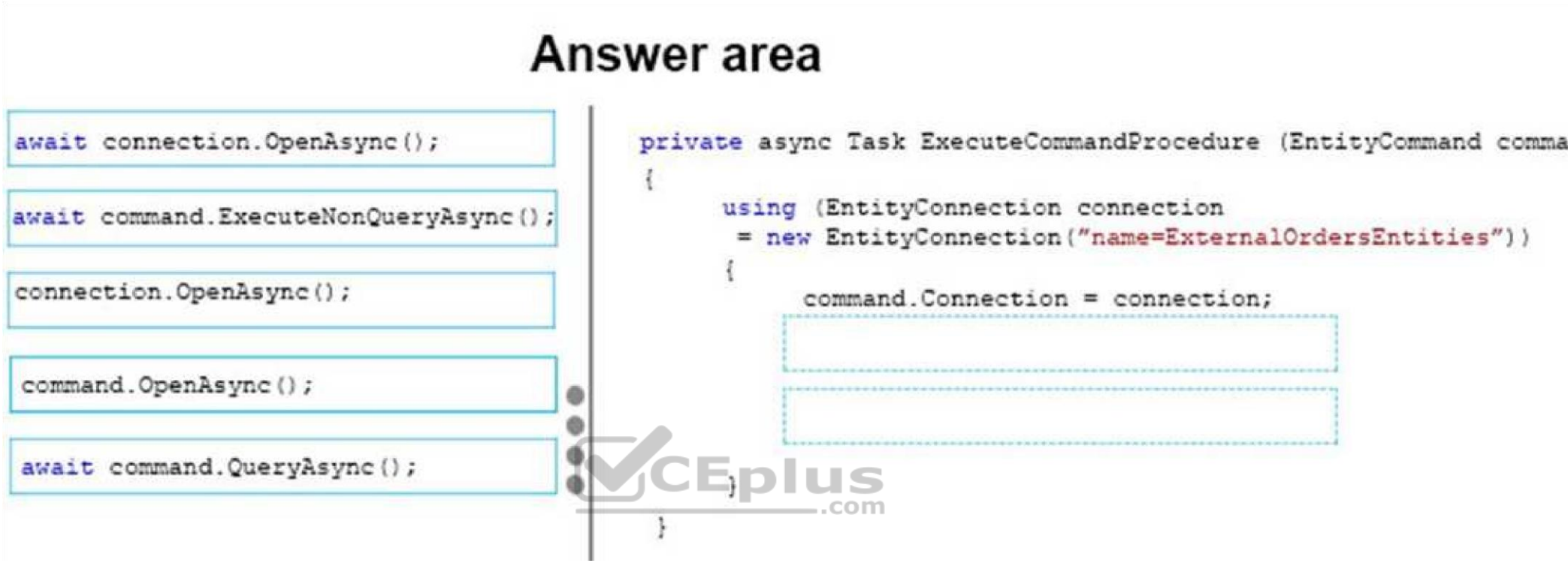
Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
http://msdn.microsoft.com/en-us/library/aa347733.aspx

QUESTION 5
DRAG DROP
You need to modify the ExecuteCommandProcedure() method to meet the technical requirements.

Which code segment should you use?

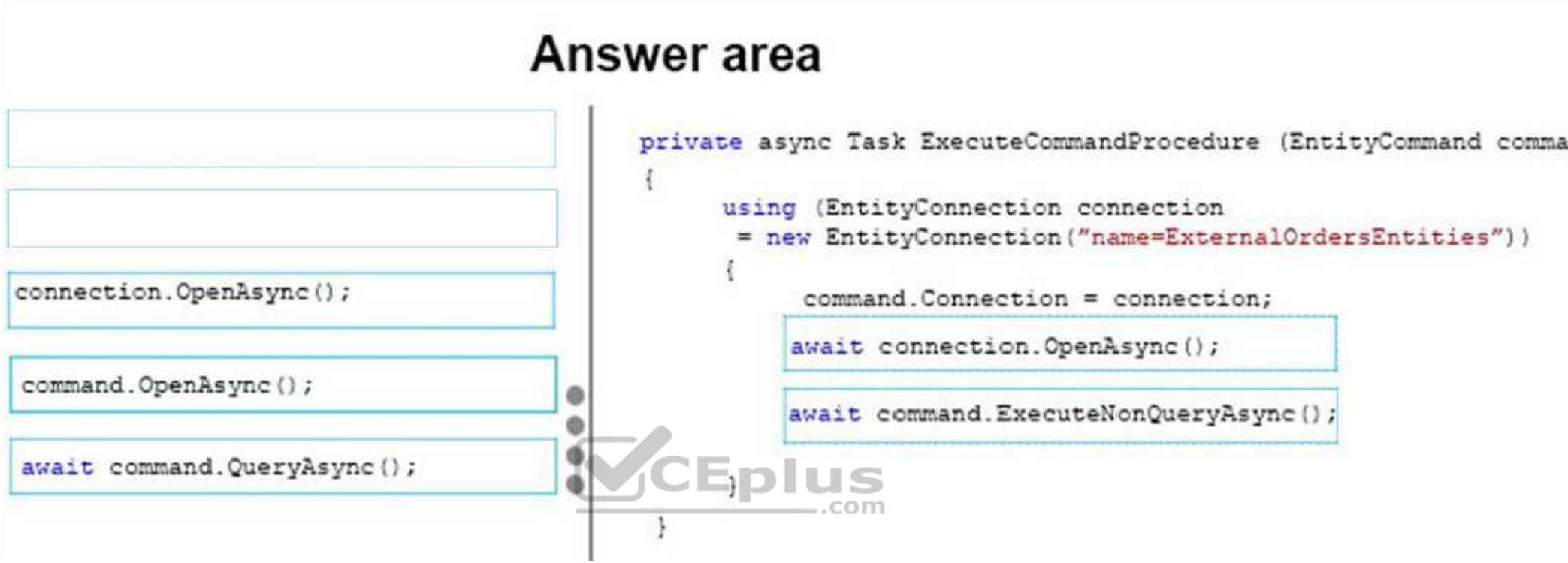
Select and Place:



Correct Answer:
Section: [none]
Explanation

Explanation/Reference:

QUESTION 6



The GetVendors() action in the ProcessedOrderController controller is querying the database each time it is run. The GetVendors() action must query the database only if the cache is null.

You need to add code to the action at line PC33 to cache the data.

Which code segment can you use? (Each correct answer presents a complete solution. Choose all that apply.)

A. cache.Set(new CacheItem("vendorKey", vendors), GetVendorPolicy());

B. cache.Add("vendors", vendors, new CacheItemPolicy());
C. cache.Add(new CacheItem("vendorKey", vendors) , GetVendorPolicy());
D. cache.AddOrGetExisting("vendorKey", context, new CacheItemPolicy());

Correct Answer: AC
Section: [none]
Explanation

Explanation/Reference:

QUESTION 7
The QueueDetail entity type must inherit from the InboundQueue entity type in the ExternalQueue service project using table-per-type inheritance.

You need to modify the entities in the designer.

What should you do? (Each correct answer presents part of the solution. Choose all that apply.)

A. Remove the OrderNum property in InboundQueue.
B. Remove the OrderNum property in QueueDetail.
C. Set the QueueDetail BaseType to InboundQueue.
D. Remove the association between the entities.
E. Set the InboundQueue BaseType to QueueDetail

Correct Answer: BCD
Section: [none]
Explanation

Explanation/Reference:
Explanation:

References: http://www.robbagby.com/entity-framework/entity-framework-modeling-table-per-type-inheritance/

Testlet 1

Background

You are developing an online bookstore web application that will be used by your company's customers.

Technical Requirements

General requirements:

- The web store application must be an ASP.NET MVC application written in Visual Studio.
- The application must connect to a Microsoft SQL database.
- TheGetTop100Books()method is mission critical and must return data as quickly as possible. It should take advantage of fast, forward-only, read-only methods of reading data.
- TheImportBooks()method must keep a copy of the data that can be accessed while new books are being imported without blocking reads.
- TheCreateMonthlyTotalsReport()method must lock the data and prevent others from updating or inserting new rows until complete.

- The college textbook area of the web application must get data from a daily updated CSV file.
- The children's book area of the web application must get data directly from a local database. It must use a connection string. It must also support access to the stored procedures on a database. Further, it is required to have strongly typed objects. Finally, it will require access to databases from multiple vendors and needs to support more than one-to-one mapping of database tables.
- The cookbook functionality is contained within a client-side application that must connect to the server using HTTP and requires access to the data using JavaScript.
- TheBookApiControllerclass must have a method that is able to perform ad-hoc queries using OData.

The RESTful API of the bookstore must expose the following endpoint.

Action: Get a list of all books
HTTP method: GET
Relative URI: /books

Action: Get a book by id
HTTP method: GET
Relative URI: /books/id

Action: Create a new book
HTTP method: POST
Relative URI: /books

Action: Update a book
HTTP method: PUT
Relative URI: /books/id

Action: Delete a book
HTTP method: DELETE
Relative URI: /books/id

Application Structure

Main

```
public class Book
{
    public int Id { get; set; }
    public string Name { get; set }
    public string Title { get; set; }
    public decimal Price { get; set; }
    public DateTime PublishDate { get; set; }
    public int Sales { get; set; }
    public static void SaveFeaturedBooks(IEnumerable<Book> books, string file)
    {
        ...
    }
}
```

```
publlic class BookApiController : ApiController
{
     private readonly IBookRepository bookRepository;
     public BookApiController(IBookRepository bookRepository)
     {
          this.bookRepository = bookRepository;
     }
     public List<Book> Get(int id)
     {
          var book = bookRepository.Find(id);
          if (book == null)
          {
               throw new HttpResponseException(HttpStatusCode.NotFound);
          }
          return new List<Book> { book };
     }
     public HttpResponseMessage Post(Book value)
     {
          if (ModelState.IsValid)
          {
               bookRepository.InsertOrUpdate(value);
               bookRepository.Save();
               var response = new HttpResponseMessage(HttpStatusCode.Created);
               string uri = Url.Route(null, new { id = value.Id });
               response.Headers.Location = new Uri(Request.RequestUri. uri);
               return response;
          }
          throw new HttpResponseException(HttpStatusCode.BadRequest);
     }
     public HttpResponseMessage Put(int id, Book value)
     {
          if (ModelState.IsValid)
          {
               bookRepository.InsertOrUpdate(value);
               bookRepository.Save();
               return new HttpsResponseMessage(HttpStatusCode.NoContent);
          }
          throw new HttpsResponseException(HttpsStatusCode.BadRequest);
     }
     public void Delete(int id)
     {
          var book = bookRepository.Find(id);
          if (book == null)
          {
               throw new HttpResponseException(HttpStatusCode.NotFound);
          }
          bookRepository.Delete(id);
     }
```

```
private static void ImportBooks()
{
     using (SqlConnection connection = new SqlConnection(_connectionString))
     {
          connection.Open();
          SqlCommand command = connection.CreateCommand();
          SqlTransaction transaction = connection.BeginTransaction();
          command.Connection = connection;
          command.Transaction = transaction;
          try
          {
               command.CommandText = _commandText;
               command.ExecuteNonQuery();
               transaction.Commit();
          }
          catch (Exception ex)
          {
               transaction.Rollback();
          }
     }
}

 private static void CreateMonthlyTotalsReports()
 {
      using (SqlConnection connection = new SqlConnection(_connectionString))
      {
           connection.Open();
           SqlCommand command = connection.CreateCommand();
           SqlTransaction transaction = connection.BeginTransaction();
           command.Connection = connection;
           command.Transaction = transaction;
           try
           {
                command.CommandText = _reportCommandText;
                command.ExecuteNonQuery();
                transaction.Commit();
           }
           catch (Exception ex)
           {
                transaction.Rollback();
           }
      }
 }
```

PurchaseOrders.xml

PurchaseOrders.xml

```
<?xml version="1.0"?>
<aw:PurchaseOrder>
          aw:PurchaseOrderNumber="99503"
          aw:OrderDate="1999-10-20"
          xmlns:aw="http://www.adventure-works.com">
     <aw:Address aw:Type="Shipping">
          <aw:Name>Ellen Adams</aw:Name>
          <aw:Street>123 Maple Street</aw:Street>
          <aw:City>Mill Valley</aw:City>
          <aw:State>CA</aw:State>
          <aw:Zip>10999</aw:Zip>
          <aw:Country>USA</aw:Country>
     </aw:Address>
     <aw:Address aw:Type="Billing">
          <aw:Name>Tai Yee</aw:Name>
          <aw:Street>8 Oak Avenue</aw:Street>
          <aw:City>Old Town</aw:City>
          <aw:State>PA</aw:State>
          <aw:Zip>95819</aw:Zip>
          <aw:Country>USA</aw:Country>
     </aw:Address>
     <aw:DeliveryNotes> Please leave packages in shed by driveway.</aw:DeliveryNotes>
     <aw:Items>
          <aw:Item aw:PartNumber="872-AA">
               <aw:ProductName>Lawnmower</aw:ProductName>
               <aw:Quantity>1</aw:Quantity>
               <aw:USPrice>148.95</aw:USPrice>
               <aw:Comment>Confirm this is electric</aw:Comment>
          </aw:Item>
          <aw:Item aw:PartNumber="926-AA">
               <aw:ProductName>Baby Monitor</aw:ProductName>
               <aw:Quantity>2</aw:Quantity>
               <aw:USPrice>39.98</aw:USPrice>
               <aw:ShipDate>1999-05-21</aw:ShipDate>
          </aw:Item>
     </aw:Items>
</aw:PurchaseOrder>
```

FeaturedBooks.xml

FeaturedBooks.xml

```
<?xml version="1.0" encoding="utf-8" ?>
<featured>
    <book>
        <id>1</id>
        <title>Science</title>
    </book>
    <book>
        <id>1</id>
        <title>Math</title>
    </book>
    <book>
        <id>1</id>
        <title>History</title>
    </book>
</featured>
```


QUESTION 1
You need to create an OData query expression to return the ten books with the smallest number of sales.
Which query expression should you use?

A. /books?orderby=sales desc&$count=10
B. /search?orderby=sales asc&$count=10
C. /search?orderby=sales desc&$top=10
D. /books?orderby=sales asc&$top=10

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
The get the smallest number of sales we should use ascending (asc) ordering.

From scenario: RESTful API endpoints include:
Action: Get a list of all books

HTTP method: GET

Relative URI: /books

QUESTION 2
You need to choose the appropriate data access technology for the children's book area of the web application.
Which data access technology should you choose?

A. ADO.NET Entity Framework
B. WCF Data Services
C. LINQ to SQLD. Web Service

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Scenario: The children's book area of the web application must get data directly from a local database. It must use a connection string. It must also support access to the stored procedures on a database. Further, it is required to have strongly typed objects. Finally, it will require access to databases from multiple vendors and needs to support more than one-to-one mapping of database tables.

QUESTION 3
You need to create an OData filter expression that returns bools that match the following characteristics: ▪ Published after 1/1/2000 ▪ Have "Science" as the first word

Which filter statement should you use?

A. /books?$filter=PublishDate gt datetime'2000-1-1' and startswith(Title, 'Science')
B. /books?$filter=PublishDate greaterthan datetime'2000-1-1' and startswith(Title, 'Science')
C. /search?$filter=PublishDate greaterthan datetime'2000-1-1' and beginswith (Title, 'Science')
D. /search?$filter=PublishDate gt datetime'2000-1-1' and beginswith(Title, 'Science')

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
The gt keyword is used for the greater than comparison.

The startswith keyword is used to compare the beginning of a string.

Example: Returns entry numbers611 and higher.
filter= Entry_No gt 610

Example: Returns all customers names beginning with “S”.
filter=startswith(Name, 'S')

References: https://msdn.microsoft.com/en-us/library/hh169248(v=nav.90).aspx

QUESTION 4
The PurchaseOrders.xml file contains all of the purchase orders for the day.
You need to query the XML file for all of the billing addresses.
Which code segment should you use?

A)

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable<XElement> address =
     from el in root.Elements(aw + "Items")
     where (string)el.Attribute(aw + "Type") == "Billing"
     select el;
foreach (XElement element in address)
{
     Console.WriteLine(element);
}
```

B)

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable<XElement> address =
     from el in root.Elements(aw + "Address")
     where (string)el.Attribute(aw + "Type") == "Shipping"
     select el;
foreach (XElement element in address)
{
     Console.WriteLine(element);
}
```

C)

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable<XElement> address =
     from el in root.Elements(aw + "Address")
     where (string)el.Attribute(aw + "Type") == "Billing"
     select el;
foreach (XElement element in address)
{
     Console.WriteLine(element);
}
```


D)

```
XElement root = XElement.Load("PurchaseOrders.xml");
XNamespace aw = "http://www.adventure-works.com";
IEnumerable<XElement> address =
     from el in root.Elements(aw + "Items")
     where (string)el.Attribute(aw + "Type") == "Shipping"
     select el;
foreach (XElement element in address)
{
     Console.WriteLine(element);
}
```

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

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
The root element attribute should be Address as per the following line:
From el in root.Elements(aw +"Address")

The Type should be Billing (not Shipping) as per the following line:
Where (string)e1.Attribute(aw + "Type") == "Billing"

QUESTION 5
You need to return the list of the top 100 books for the GetTopBooks() method.

Which type should you use to retrieve the data?

A. DataTable
B. SqlDataReader
C. DataView
D. DataSet

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:

From scenario: TheGetTop100Books() method is mission critical and must return data as quickly as possible. It should take advantage of fast, forward-only, readonly methods of reading data.

A SqlDataReader is a type that is good for reading data in the most efficient manner possible.

References: http://csharp-station.com/Tutorial/AdoDotNet/Lesson04

QUESTION 6
You are preparing to write the data access code for the children's book area of the web site.

You need to review the requirements and identify the appropriate data access technology.

 What should you do?

A. Use LINQ to SQL
B. Use the WCF Data Services.
C. Use a Web Service.
D. Use ADO.NET Entity Framework.

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Using the Entity Framework, developers issue queries using LINQ, then retrieve and manipulate data as strongly typed objects.

From scenario: The children's book area of the web application must get data directly from a local database. It must use a connection string. It must also support access to the stored procedures on a database. Further, it is required to have strongly typed objects. Finally, it will require access to databases from multiple vendors and needs to support more than one-to-one mapping of database tables.

References: http://www.entityframeworktutorial.net/what-is-entityframework.aspx

QUESTION 7
You need to create an OData query expression to return the ten books with the largest number of sales.

Which query expression should you use?

A. /books?orderby=sales desc&$count=10
B. /search?orderby=sales asc&$count=10

C. /search?orderby=sales asc&$top=10 D. /books?orderby=sales desc&$top=10

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
$top determines the maximum number of records to return.

From scenario:
Action: Get a list of all books
HTTP method: GET
Relative URI: /books

References: https://msdn.microsoft.com/en-us/library/gg309461(v=crm.7).aspx

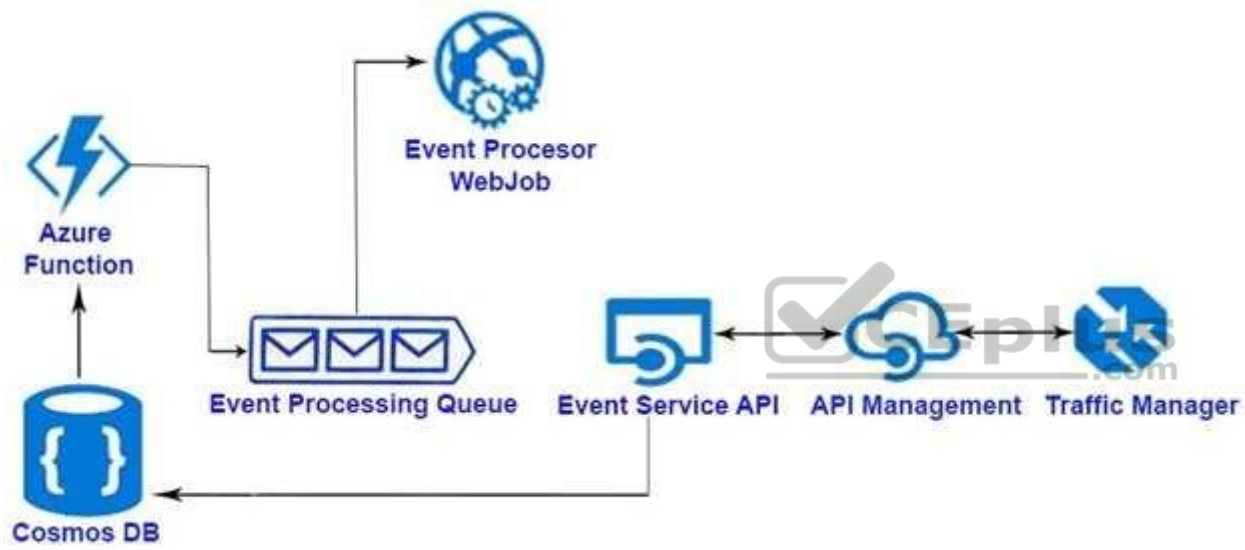
Testlet 1

Overview

Trey Research Inc. is a Software-as-a-Service (SaaS) company that provides hosted solutions for business partners around the world. The company is developing a solution that will allow business partners to manage events, including shareholder meetings and trade shows.

You hold meetings with key partners to identify requirements and constraints for the solution. You must minimize costs where possible.

You work with an Azure solutions architect to design the logical structure for the solution. The solution will use the following architecture:



Solution components

The solution will use Azure Traffic Manager to distribute traffic. The solution will use API Management to provide caching for the Event Service. Partner companies will interact with the solution by using the Event Service API. This API will be implemented as an ASP.NET Core Web API that runs as an Azure Web App. Event data will be stored in Cosmos DB using the Document API.

The solution will be highly available. You define regional Azure outages as periods of 60 seconds or more where the Event Service is not available.

An Azure WebJob named EventJob will be deployed with the Event Service Web App. The WebJob:

- Creates new computed events when partner events are created.

- Must be active whenever the Event Service is running.

Is updated once a quarter.

Trey Research Inc. has developer teams that work with a variety of operating systems including Windows, Linux, and MacOS.

Event Service

Individual events must be immutable. Event data can be up to 800 kilobytes (KB) in size. The Event Service must meet the following requirements:

- Use REST-based design
- Cache data whenever possible.
- Support both JSON and XML-based data.
- Log customer information whenever data is modified.
- Include the X-Customer header in all calls to identify the partner.

Regional access to the Event Service API

Data for partners in Germany and Brazil must be served from Azure datacenters in their respective geographies unless there is a regional Azure outage. All other partners must use the US West Azure datacenter.

Testing

All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

Event data

You identify the following requirements for the event data store:

- Each partner's event data must be stored in a Collection that is specific to the partner.
- Event data must be available if a regional Azure outage occurs.
- Event read and write operations for a single partner must always store events in the correct order.

Event API

Relevant portions of the app files are shown below. Line numbers are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

Event.cs

```
EE01 public class Event
EE02 {
EE03 public string Name { get; set; }
EE04 }
```

IEventDB

```
IE01 public interface IEventDB
IE02 {
IE03 IEnumerable<Event> LoadEvents();
IE04 void SaveEvent (Event @event);
IE05 string CurrentCustomer { get; set; }
IE06 }
```

EventDB.cs

```
ED01 public class EventDB : IEventDB
ED02 {
ED03 private DocumentClient client;
ED04 public IEnumerable<Event> LoadEvents ()
ED05 {
ED06     . . .
ED07 }
ED08 public void SaveEvent(Event @event)
ED09 {
ED10    . . .
ED11 }
ED12 public string CurrentCustomer { get; set; }
ED13 }
```

EventController.cs

```
EC01[Route("api/events")]
EC02 public class EventsController : Controller
EC03 {
EC04  public IFileProvider FileProvider { get; }
EC05  public IEventDB EventDB { get; }
EC06  public EventsController(IFileProvider fileProvider, IEventDB eventDB)
EC07 {
EC08    FileProvider = fileProvider;
EC09    EventDB = eventDB;
EC10 }
EC11
EC12 [HttpGet]
EC13 public IEnumerable<Event> GetEvents()
EC14 {
EC15   return EventDB.LoadEvents();
EC16 }
EC18
EC19)
```

Event processing

Relevant portions of the app files are shown below. Line numbers are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

Program.cs

```
PR01 using System
PR02 using System.Collections. Generic;
PR03 using System.Linq;
PR04 using System.Text;
PR05 using System.Threading.Tasks;
PR06 using Microsoft.Azure.WebJobs;
PR07 namespace EventJob
PR08 {
PR09 class Program
PR10 {
PR11     static void Main()
PR12     {
PR13         var config = new JobHostConfiguration();
PR14         var host = new JobHost(config);
PR15         host.RunAndBlock();
PR16       }
PR17 }
PR18 }
```

ComputedEventPprocessor.cs

```
CE01 public class ComputedEventProcessorBebJob
CE02 {
CE03  public static void ProcessQueueMessage ([QueueTrigger ("eventprocess")] string message, TextWriter log)
CE04  {
CE05    . . .
CE06  }
CE07 }
```

Middleware Relevant portions of the app files are shown below. Line numbers are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

CustomerMiddleware.cs

```
CM01 public class CustomerMiddleware
CM02 {
CM03  private readonly RequestDelegate _next;
CM04  public CustomerMiddleware (RequestDelegate next)
CM05  {
CM06     _next = next;
CM07  }
CM08  public async Task Invoke(HttpContext httpContext, IEventDB store)
CM09  {
CM10   var user = httpContext.Request.Headers["X-Customer"];
CM11   store.CurrentCustomer = user;
CM12   await _next(httpContext);
CM12   }
CM14 }
```


QUESTION 1
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to ensure that testing, development, and end user access requirements are met.

Solution: Move the Web App backend to a private VNet.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:

Explanation:
Scenario: All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

QUESTION 2
You need to ensure that computed events are processed correctly.

What should you do?

A. Move the WebJob to a different App Service plan.
B. Select a deployment slot for the WebJob.
C. Disable WebJobs during deployments.
D. Create an additional upgrade domain.

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Scenario: An Azure WebJob named EventJob will be deployed with the Event Service Web App. The WebJob:

- Creates new computed events when partner events are created.
- Must be active whenever the Event Service is running.

Is updated once a quarter.

References: https://stackify.com/azure-deployment-slots/

QUESTION 3
You need to configure DNS for the Event service.

How many DNS entries should you create?

A. 1
B. 2
C. 3
D. 4

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Scenario: Regional access to the Event Service API
Data for partners in Germany and Brazil must be served from Azure datacenters in their respective geographies unless there is a regional Azure outage. All other partners must use the US West Azure datacenter.

QUESTION 4
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to ensure that testing, development, and end user access requirements are met.

Solution: Add Web App backend endpoints to Azure Traffic Manager and use weighted routing.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Scenario: All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

QUESTION 5
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to ensure that testing, development, and end user access requirements are met.

Solution: Secure the Web App backend by using certificates.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-mutual-certificates

Question Set 1

QUESTION 1
You develop an ASP.NET MVC application that is secured by using SSL. You are ready to deploy the application to production.

The deployment package must include the installation of the SSL certificate.

You need to configure the deployment package to meet the requirement.

What should you do?

A. Create a web publish pipeline target file with a custom web deploy target.
B. In the Package/Publish settings of the project, select the All Files in this project option.
C. Extend the CopyAllFilesToSingleFolder target in the project file.
D. In the Build Events settings of the project, configure a pre-build event to include the SSL certificate.

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Extending the Web Publishing Pipeline
The Web Publishing Pipeline (WPP) is the process that Visual Studio uses when you create a deployment package or use one-click publish.
Some aspects of the WPP can be extended by modifying the XML files that control MSBuild behavior. For example, tasks that that you can handle by modifying XML files include the following:
* Installing SSL certificates on the destination server.
* Excluding specific Web application files or folders from the package.
* Precompiling the Web application before the package is created.
* Installing application assemblies in the GAC on the destination server. * Updating registry keys on the destination server.

References: https://msdn.microsoft.com/en-us/library/dd394698(v=vs.100)

QUESTION 2
You are developing a library to support multiple ASP.NET MVC web applications on a shared server. The library provides implementations of security algorithms.

If a problem with any of the security algorithms is discovered, a new version of the library must be created and deployed. Application downtime during the update must be minimized.

You need to ensure that the new version of the library will be used by all applications as soon as possible.

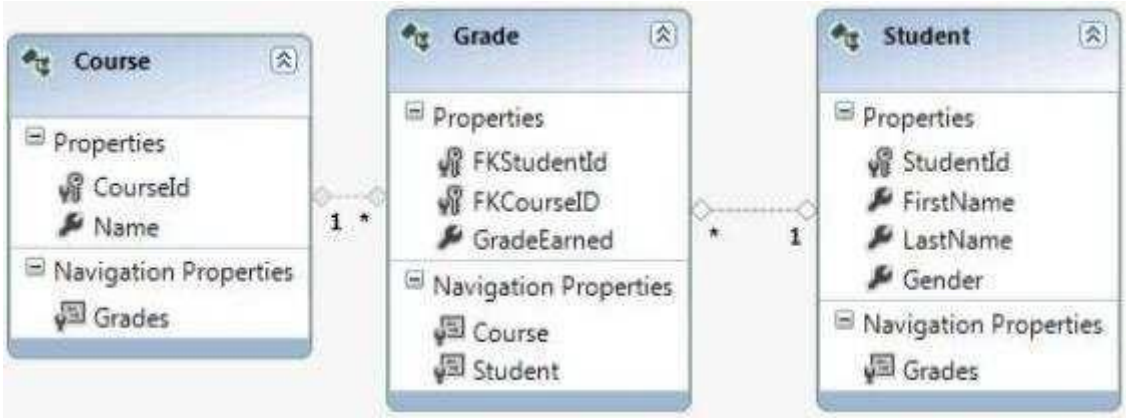
What should you do?

A. Build the web applications and include the security assembly as an embedded resource.
When an update is needed, copy the new assembly to the bin directory for the application.
B. Sign all assemblies in each application with the same key used to sign the security assembly. When an update is needed, create a new key pair and re-sign all assemblies.
C. Build the security assembly as a netmodule in a shared location.
Use the assembly linker to merge the netmodule into the assemblies for the application.
When an update is needed, update the netmodule in the shared location.
D. Install the security assembly in the Global Assembly Cache (GAC). When an update is needed, update the assembly in the GAC.

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:

QUESTION 3
You are developing an application in Visual Studio 2012 to display student information. The application contains the following Entity Framework model.



The application contains a WCF data service named DirectoryService.svc.

You need to create a query expression to display all of the grades for students whose first name is "John"

How should you build the expression?

A. http://localhost:54946/DirectoryService.svc/Students?$filter=FirstName eq 'John' &$expand=Grades
B. http://localhost:54946/DirectoryService.svc/Students?$filter=FirstName eq 'John'/Grades
C. http://localhost:54946/DirectoryService.svc/Students?$filter=FirstName = 'John' &$expand=Grades
D. http://localhost:54946/DirectoryService.svc/Grades/Students?$filter=FirstName eq 'John'

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:

QUESTION 4
You are developing an ASP.NET MVC application that reads and writes data from a SQL Server database.

You need to prevent the application from reading data that is locked by other transactions. You also need to prevent exclusive range locks.

Which isolation level should you use?

A. ReadCommitted
B. Serializable
C. Repeatable
D. ReadUncommitted

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:

QUESTION 5
You are developing a WCF service that compares several data sources. The service takes a long time to complete.

The service must meet the following requirements:
- The client must be able to continue processing while the service is running.
- The service must initiate communication with the client application when processing is complete.

You need to choose a message pattern to meet the requirements.

Which message pattern should you choose?

A. One Way
B. Streaming
C. Duplex
D. Request/Reply

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:

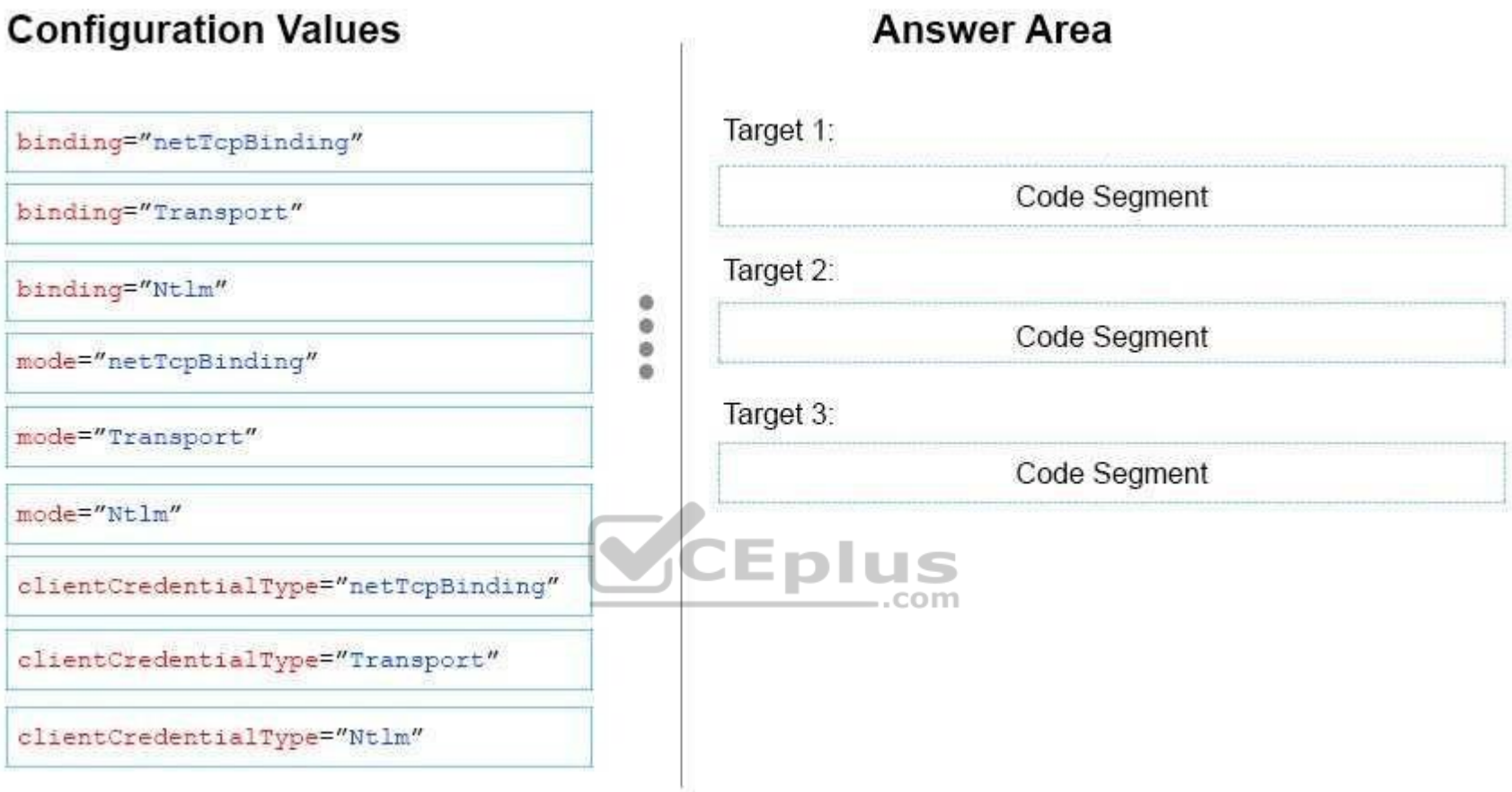
QUESTION 6
DRAG DROP
You are developing a WCF service.

You need to implement transport security by using NTLM authentication and NetTcpBindings.

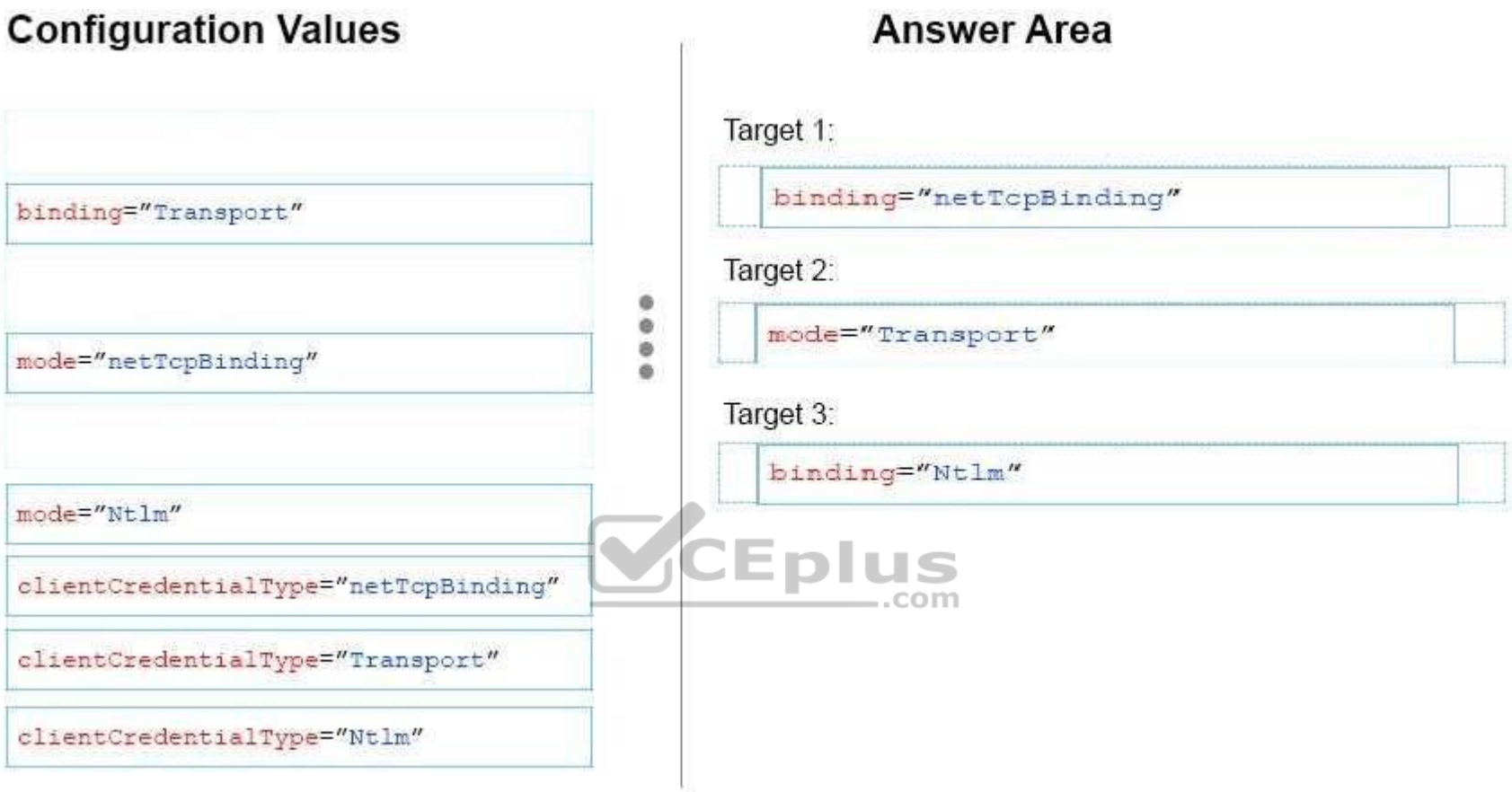
You have the following markup:

```
<system.serviceModel>
    <protocolMapping>
        <add scheme="https" Target 1/>
    </protocolMapping>
    <bindings>
        <netTcpBinding>
            <binding>
                <security Target 2>
                    <transport Target 3/>
                </security>
            </binding>
        </netTcpBinding>
    </bindings>
</system.serviceModel>
```

Which configuration values should you include in Target 1, Target 2, and Target 3 to complete the markup? (To answer, drag the appropriate configuration values to the correct location or locations in the answer area. Each configuration value 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: [none]
Explanation

Explanation/Reference:

QUESTION 7
You are developing a WCF service.

A new service instance must be created for each client session.

You need to choose an instancing mode.

Which instance mode should you use?

A. PerCall
B. Single
C. Multiple
D. PerSession
E. PerRequest

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
PerSession: A new InstanceContext (and therefore service object) is created for each new client session and maintained for the lifetime of that session (this requires a binding that supports sessions).

Incorrect: Answers
A: PerCall: A new InstanceContext (and therefore service object) is created for each client request.
B: Single: A single InstanceContext (and therefore service object) handles all client requests for the lifetime of the application.

References: https://msdn.microsoft.com/en-us/library/ms731193(v=vs.110)

QUESTION 8
You are developing a WCF service.

A new service instance must be created for each client request.

You need to choose an instancing mode.

Which instancing mode should you use?

A. Single
B. PerRequest
C. PerCall
D. Multiple

E. PerSession

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
PerCall: A new InstanceContext (and therefore service object) is created for each client request.

QUESTION 9
You are designing an ASP.NET Web API application.

You need to select an HTTP verb to allow blog administrators to remove a comment.

Which HTTP verb should you use?

A. PUT
B. DELETE
C. POST
D. GET

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:

QUESTION 10
You are developing an ASP.NET MVC application. The application is an order processing system that uses the ADO.NET Entity Framework against a SQL Server database. It has a controller that loads a page that displays all orders along with customer information. Lazy loading has been disabled.

The Order class is shown below.

```
public partial class Order
{
  ...
  public string CustomerID { get; set; }
  ...
  public virtual Customer Customer { get; set; }
}
```

You need to return the orders and customer information in a single round trip to the database.

Which code segment should you use?

A.
```
public ActionResult Index()
{
  IQueryable<Order> orders = db.Orders;
  orders = orders.Include("Customer");
  return View(orders.ToList());
}
```

B.
```
public ActionResult Index()
{
  IQueryable<Order> orders = db.Orders.Include("Order.Customer");
  return View(orders.ToList());
}
```

C.
```
public ActionResult Index()
{
  IQueryable<Order> orders = db.Orders;
  orders.Select(o => o.Customer).Load();
  return View(orders.ToList());
}
```

D.
```
public ActionResult Index()
{
  IQueryable<Order> orders = db.Orders;
  return View(orders.ToList());
}
```


A. Option A

B. Option B
C. Option C

D. Option D

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:

QUESTION 11
You are developing an ASP.NET MVC application that reads and writes data from a SQL Server database.

You need to maintain data integrity in all situations that use transactions.

A. ReadUncommitted
B. Repeatable
C. Serializable
D. ReadCommitted

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
The highest isolation level, serializable, guarantees that a transaction will retrieve exactly the same data every time it repeats a read operation.

References:https://technet.microsoft.com/en-us/library/ms189122(v=sql.105)

QUESTION 12
You are developing an ASP.NET MVC application.

Deployment administrators do not have access to Visual Studio 2102, but will have the elevated permissions required to deploy the application to the servers.

You need to select a deployment tool for use by the deployment administrators.

Which tool should you use?

A. Publish Web Site Tool
B. Web Deployment Package
C. One-Click Publish
D. Deployment Package Editor

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:

QUESTION 13
You are developing an ASP.NET MVC application. The application has a page that searches for and displays an image stored in a database. Members of the EntityClient namespace are used to access an ADO.NET Entity Framework data model Images and associated metadata are stored in a database table.

You need to run a query that returns only the image while minimizing the amount of data that is transmitted.

Which method of the EntityCommand type should you use?

A. ExecuteScalar
B. ExecuteDbDataReader
C. ExecuteReader
D. ExecuteNonQuery

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
The SqlCommand.ExecuteScalar method executes the query, and returns the first column of the first row in the result set returned by the query. Additional columns or rows are ignored.

References: https://msdn.microsoft.com/en-us/library/system.data.entityclient.entitycommand(v=vs.110).aspx

QUESTION 14
DRAG DROP
You have an Azure SQL Database that contains two tables named Country and City.

You need to insert a country into the Country table and a city into the City table. The solution must meet the following requirements:

- If an error occurs while attempting to add the country, the city must NOT be added.
- If an error occurs while attempting to add the city, the country must NOT be added.

How should you complete the code? To answer, drag the appropriate code blocks to the correct locations in the answer area. Each code block 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 Blocks

- `Commit();`
- `Dispose();`
- `Rollback("Beginning");`
- `Rollback("Inserted");`
- `Save("Beginning");`
- `Save("Inserted');`

Answer Area

```
using (SqlConnection connection = new SqlConnection(connectionString))
{
    connection.Open();
    SqlCommand command = connection.CreateCommand();
    command.Connection = connection;
    SqlTransaction transaction = connection.BeginTransaction("Beginning");
    command.Transaction = transaction;
    try
    {
        command.CommandText = "INSERT INTO Country (CountryName) VALUES ('Country1')";
        command.ExecuteNonQuery();

        transaction.  [ Code block ]

        try
        {
            command.CommandText = "INSERT INTO City (CityName) VALUES ('City1')";
            command.ExecuteNonQuery();
        }
        catch(Exception ex)
        {
            transaction.  [ Code block ]

        }

        transaction.  [ Code block ]

    }
    catch (Exception ex)
    {
        transaction.  [ Code block ]


    }
}
```

Correct Answer:

Code Blocks

- `Commit();`
- `Dispose();`
- `Rollback("Beginning");`
- `Rollback("Inserted");`
- `Save("Beginning");`
- `Save("Inserted');`

Answer Area

```
using (SqlConnection connection = new SqlConnection(connectionString))
{
    connection.Open();
    SqlCommand command = connection.CreateCommand();
    command.Connection = connection;
    SqlTransaction transaction = connection.BeginTransaction("Beginning");
    command.Transaction = transaction;
    try
    {
        command.CommandText = "INSERT INTO Country (CountryName) VALUES ('Country1')";
        command.ExecuteNonQuery();

        transaction. Save("Inserted');

        try
        {
            command.CommandText = "INSERT INTO City (CityName) VALUES ('City1')";
            command.ExecuteNonQuery();
        }
        catch(Exception ex)
        {
            transaction. Rollback("Beginning");

        }

        transaction. Commit();

    }
    catch (Exception ex)
    {
        transaction. Rollback("Beginning");


    }
}
```


Section: [none]
Explanation
Explanation/Reference:
References: https://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqltransaction(v=vs.110).aspx

QUESTION 15
You are developing an ASP.NET MVC application that displays a report. The report includes large images that are stored in a database. Members of the EntityClient namespace are used to access the database through the ADO.NET Entity Framework data model.

You need to prevent memory exceptions while generating a report using the EntityDataReader type.

Which CommandBehavior type should you use?

A. SequentialAccess
B. SingleRow
C. SingleResult
D. FastForwardReadOnly

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
SequentialAccess provides a way for the DataReader to handle rows that contain columns with large binary values. Rather than loading the entire row, SequentialAccess enables the DataReader to load data as a stream. You can then use the GetBytes or GetChars method to specify a byte location to start the read operation, and a limited buffer size for the data being returned.

QUESTION 16
You are developing a library management application that uses the ADO.NET Entity Framework against a SQL Server database.

The application has a method that returns check outs filtered by date.

The Book class is shown below.

```
public partial class Book
{
    ...
    public Nullable<System.DateTime> CheckoutDate { get; set; }
    ...
}
```

You must filter the data on the SQL server before it is returned to the application server.
You need to return books checked out more recently than the entered date.

Which code segment should you use?

A)

```
IEnumerable<Book> books = db.Books;
books = books.Where(b => b.CheckoutDate >= date);
```

B)

```
IEnumerable<Book> books = db.Books.ToList().AsQueryable();
books = books.Where(b => b.CheckoutDate >= date);
```

C)

```
IQueryable<Book> books = db.Books.ToList().AsQueryable();
books = books.Where(b => b.CheckoutDate >= date);
```

D)

```
IQueryable<Book> books = db.Books;
books = books.Where(b => b.CheckoutDate >= date);
```


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

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
IQueryable should be used when we want to filter the data.

QUESTION 17
You are developing multiple web applications that will retrieve information for a Windows Communication Foundation (WCF) service

You need to intercept and inspect messages received by and sent from the WCF service.

Which three actions should you perform? Each correct answer presents part of the solution.

A. Create a class that inherits from the IDispatchMessageInspector interface.
B. Implement the BeforeSendReply method.
C. Implement the BeforeSendRequest method.
D. Create a class that inherits from the IClientMessageInspector interface.
E. Implement the AfterReceiveReply method.
F. Implement the AfterReceiveRequest method.

Correct Answer: ABF
Section: [none]
Explanation

Explanation/Reference:
Explanation:
A: Service message inspectors implement the IDispatchMessageInspector interface.

BF: Any service (dispatcher) message inspector must implement the two IDispatchMessageInspector methods AfterReceiveRequest and BeforeSendReply (Message, Object).

QUESTION 18
HOTSPOT
You are developing a WCF service.

The service must be interoperable with ASP.NET web service clients. In addition, it must be a time-out of three hours.

You need to configure the service to meet the requirements.

You have the following markup:

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
     <system.serviceModel>
          <services>
               <service name="MyNamespace.OrderService">
                    <endpoint address=""
                              contract="MyNamespace.IOrderservice"
                              binding="Target 1"
                              bindingConfiguration="Target 2">
                    </endpoint>
               </service>
          </services>
     <bindings>
          <Target 3>
               <binding name="Target 4">
                    Target 5="Target 6"/>
          </Target 7>
     </bindings>
     </system.serviceModel>
</configuration>
```

Which markup segments should you include in Target 1, Target 2, Target 3, Target 4, Target 5, Target 6 and Target 7 to complete the markup? (To answer, select the appropriate markup segment from each drop-down list in the answer area.)

Hot Area:

Answer Area

Target 1:

- basicHttpBinding
- closeTimeout
- timeout
- wsHttpBinding

Target 2:

- basicHttpBinding
- closeTimeout
- timeout
- wsHttpBinding

Target 3:

- basicHttpBinding
- closeTimeout
- timeout
- wsHttpBinding

Target 4:

- basicHttpBinding
- closeTimeout
- timeout
- wsHttpBinding

Target 5:

- basicHttpBinding
- closeTimeout
- timeout
- wsHttpBinding

Target 6:

- 03:00:00
- 00:03:00
- 00:00:03

Correct Answer:

Answer Area

Target 1:

- basicHttpBinding
- closeTimeout
- timeout
- **wsHttpBinding**

Target 2:

- basicHttpBinding
- closeTimeout
- **timeout**
- wsHttpBinding

Target 3:

- basicHttpBinding
- closeTimeout
- timeout
- **wsHttpBinding**

Target 4:

- basicHttpBinding
- closeTimeout
- **timeout**
- wsHttpBinding

Target 5:

- basicHttpBinding
- **closeTimeout**
- timeout
- wsHttpBinding

Target 6:

- **03:00:00**
- 00:03:00
- 00:00:03

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Target 1: wsHTTPBinding wsHttpBinding is the full-blown binding, which supports a ton of WS-* features and standards. It has lots more security features: you can use sessionful connections, you can use reliable messaging, you can use transactional control.
Incorrect: Not basicHttpBinding: basicHttpBinding is the very basic binding (SOAP 1.1). It is not much in terms of security, not much else in terms of features, but compatible to just about any SOAP client out there. It is great for interoperability, but weak on features and security.

Target 2: timeout
Bindingconfiguration (Target 2) and Binding name (Target 4) must be the same. Timeout is not use elsewhere and is an appropriate choice.

Target 3: WSHttpBinding

Target 4: timeout
Bindingconfiguration (Target 2) and Binding name (Target 4) must be the same. Timeout is not use elsewhere and is an appropriate choice.

Target 5: CloseTimeout
The following timeouts are available on WCF bindings: OpenTimeout, CloseTimeout, SendTimeout, and ReceiveTimeout.

Target 6: 03:00:00
3 hours, 0 minutes, and 0 seconds.
Target 7: WSHttpBinding

Reference: https://msdn.microsoft.com/en-us/library/hh924831(v=vs.110).aspx

QUESTION 19
You are developing an Azure web app by using Microsoft ASP.NET MVC.

From Microsoft Visual Studio, you use the Web Deploy Package publish method to create a deployment package for the web app.

You need to deploy the package.

What should you run?

A. themsbuild.execommand
B. theSet-AzureWebSitecmdlet
C. theSave-AzureServiceProjectPackagecmdlet
D. themsdeploy.execommand

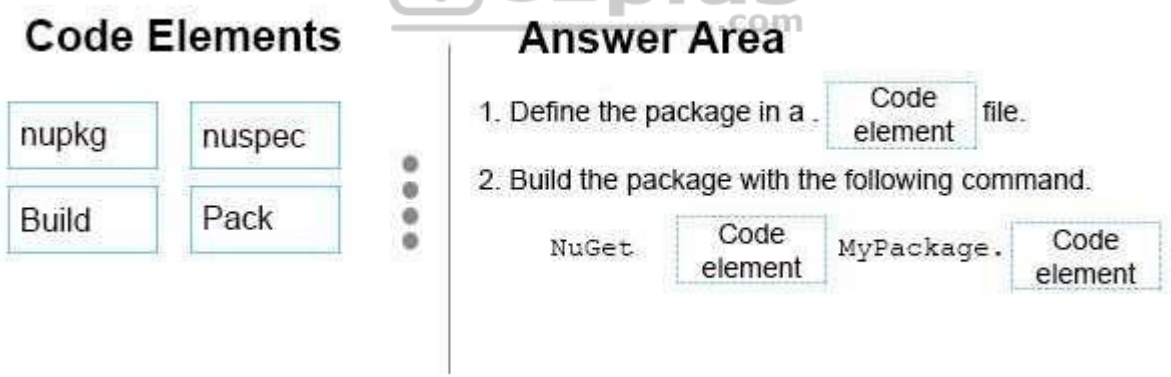
Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Deploying an ASP.NET web application.
The first step is to create a simple web application.
The second step is to create the package to deploy the web app to Azure. Msbuild can be used at this step.
The third stage is to deploy the package, created in step 2, with the help of Msdeploy.

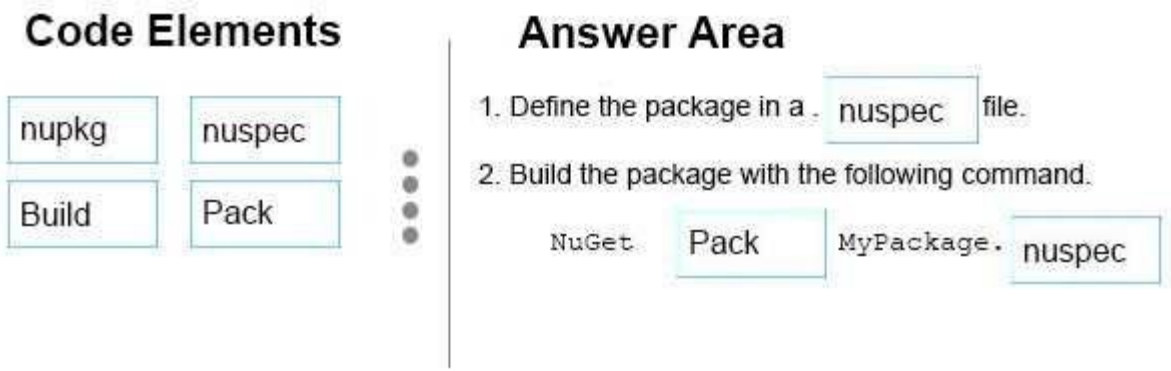
QUESTION 20
DRAG DROP
You have a UI element library.

You need to build a NuGet package to integrate the library into your projects.

What should you do? (To answer, drag the appropriate code elements to the correct location or locations in the answer area. Each code element 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: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: nuspec
A .nuspec file is an XML manifest that contains package metadata. This is used both to build the package and to provide information to consumers. The manifest is always included in a package.

Box 2: Pack
Box 3: nuspec
When creating a package, the nuget pack command will replace $-delimited tokens in the .nuspec file's <metadata> node with values that come from either a project file or the pack command's -properties switch.

References: https://docs.microsoft.com/en-us/nuget/schema/nuspec

QUESTION 21
You are developing a Microsoft Azure web application. The application will be deployed to 20 web role instances. A minimum of 18 running instances is needed to meet scaling requirements.

You need to configure the application so that upgrades are performed as quickly as possible, but do not violate scaling requirements.

How many upgrade domains should you use?

A. 1

B. 2
C. 5
D. 10

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
The .csdef is only used for Cloud Services, not for VMs. So regardless of what you set or even how you try to do it, Azure VM UDs come in groups of 5. With 18 VMs, that means you'll have 5 UDs. UD0 – to – UD4 like the following:

VMUpdate Domain
VM00
VM11
VM22
VM33
VM44
VM50
VM61
VM72
VM83
VM94
VM100
VM111
VM122
VM133
VM144
VM150
VM161
VM172

QUESTION 22
You are developing an application that reads and writes data from a SQL Server database.

You need to ensure transactional data integrity.

Which isolation level should you use?

A. Serializable
B. ReadCommitted
C. ReadUncommitted
D. Normal

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Serializable provides the highest level of data integrity.

References: https://msdn.microsoft.com/en-us/library/system.data.isolationlevel(v=vs.110)

QUESTION 23
HOTSPOT
You are creating a streamed Windows Communication Foundation (WCF) service.

You implement the following service methods.

```
[ServiceContract]
public interface IEmployee
{
    [OperationContract]
    Stream EmployeeMethod1(string string1);

    [OperationContract]
    bool EmployeeMethod2(Message msg1);

    [OperationContract]
    IXmlSerializable EmployeeMethod3(Stream stream1, string string1);

    [OperationContract]
    int EmployeeMethod4(bool bool1, Message msg1);
}
```

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

Hot Area:

Answer Area

Statement	Yes	No
The input for EmployeeMethod3 is streamed.	○	○
The output for EmployeeMethod3 is streamed.	○	○
The input for EmployeeMethod4 is streamed.	○	○
The output for EmployeeMethod4 is streamed.	○	○

Correct Answer:

Answer Area

Statement	Yes	No
The input for EmployeeMethod3 is streamed.	○	○
The output for EmployeeMethod3 is streamed.	○	○
The input for EmployeeMethod4 is streamed.	○	○
The output for EmployeeMethod4 is streamed.	○	○

Section: [none]
Explanation

Explanation/Reference:
Explanation:

To enable streaming, define the OperationContract appropriately and enable streaming at the transport level.
To stream data, the OperationContract for the service must satisfy two requirements:

- The parameter that holds the data to be streamed must be the only parameter in the method. For example, if the input message is the one to be streamed, the operation must have exactly one input parameter. Similarly, if the output message is to be streamed, the operation must have either exactly one output parameter or a return value.
- At least one of the types of the parameter and return value must be either Stream, Message, or IXmlSerializable.

References: https://docs.microsoft.com/en-us/dotnet/framework/wcf/feature-details/how-to-enable-streaming

QUESTION 24
DRAG DROP
You are developing a WCF service.

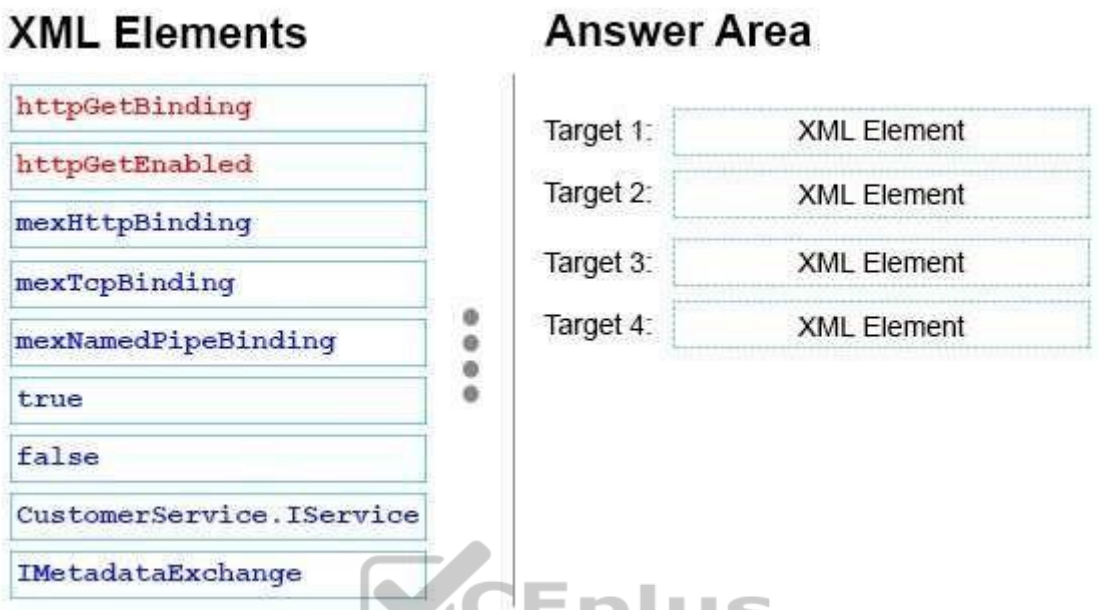
You need to configure the web.config file to ensure that metadata is exposed only via the MEX protocol.

You have the following markup:

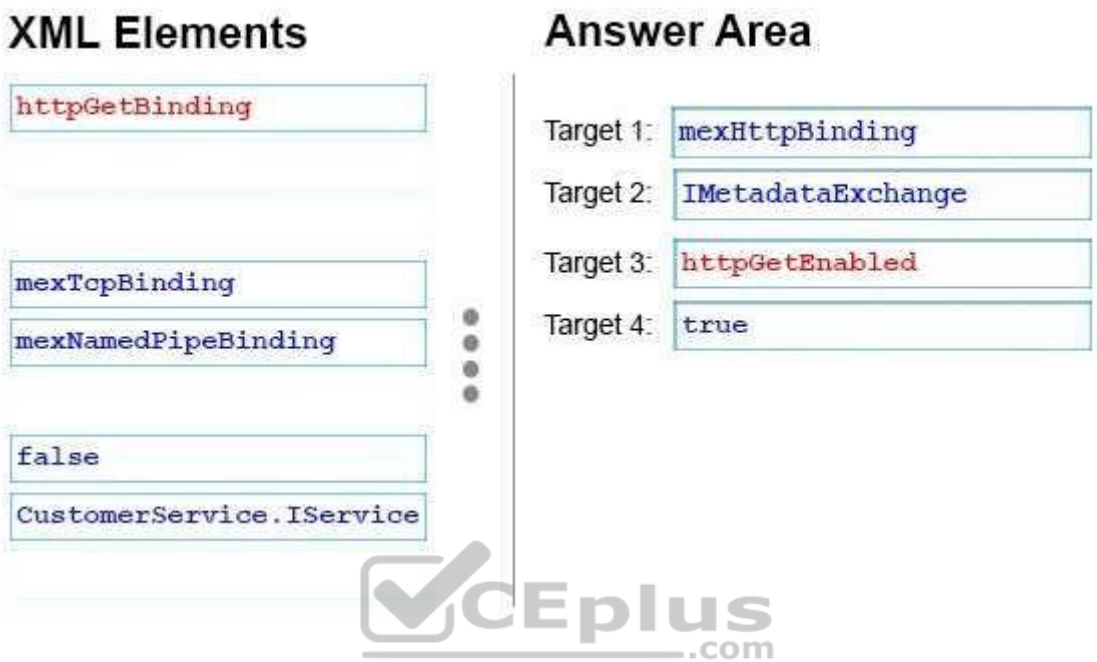
```
<services>
    <service behaviorConfiguration="behavior"
             name="CustomerService.Service">
        <endpoint binding="basicHttpBinding"
                  contract="CustomerService.IService" />
        <endpoint address="mex" binding="Target 1"
                  contract="Target 2" />
    </service>
</services>
<behaviors>
    <serviceBehaviors>
        <behavior name="behavior">
            <serviceMetadata
            Target 3="Target 4" />
        </behavior>
    </servicebehaviors>
</behaviors>
```


Which XML elements should you include in Target 1, Target 2, Target 3 and Target 4 to complete the markup? (To answer, drag the appropriate XML elements to the correct targets in the answer area/ Each XML element 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: [none]
Explanation

Explanation/Reference:
Explanation:

Target 1: mexHttpBinding

Target 2: IMetadataExchange
Example of valid endpoint definition for the MEX protocol:
<endpoint address="mex"
binding="mexHttpBinding"
contract="IMetadataExchange"/>

Target 3: httpGetEnabled

Target 4: true

Cervice behaviors are configured for the default endpoints by using anonymous <behavior> sections within <serviceBehaviors> sections. Any unnamed <behavior> elements within <serviceBehaviors> are used to configure service behaviors. For example, the following configuration file enables service metadata publishing for all services within the host.

```
<system.serviceModel>
<behaviors>
<serviceBehaviors>
<behavior>
<serviceMetadata httpGetEnabled="True"/>
</behavior>
</serviceBehaviors>
</behaviors> <!-- No <service> tag is necessary. Default endpoints are added to the service --
> <!-- The service behavior with name="" is picked up by the service -->
</system.serviceModel>
```

References: https://docs.microsoft.com/en-us/dotnet/framework/wcf/simplified-configuration

QUESTION 25

HOTSPOT

You updating an existing multitenant ASP.NET MVC application for medical clinics. The application aggressively uses output caching to improve performance by caching content for 36 hours. The application uses a query string parameter named “clinicID” that contains the clinic that the user is currently viewing.

Users report that they are occasionally seeing data for the wrong clinic. Users also report that the application seems to take a long time to return data for a specific clinic even if they have viewed it recently.

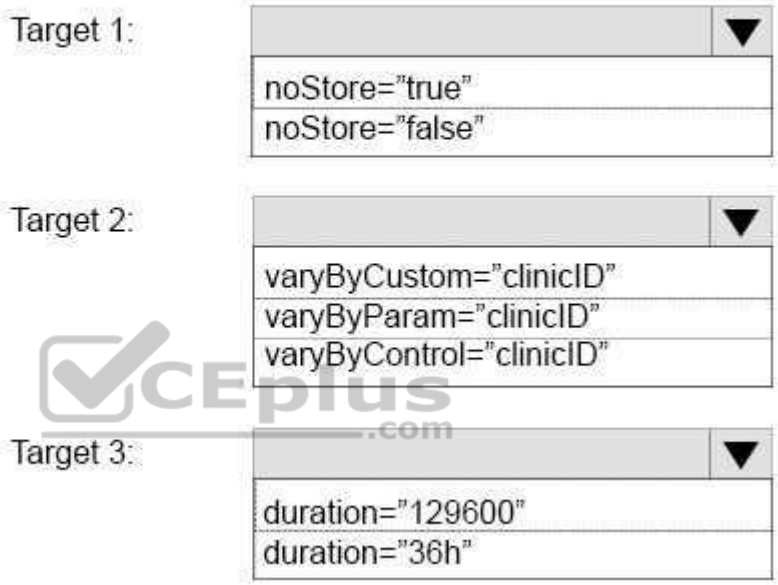
You need to configure web.config to resolve the reported problems.

You have the following markup:

```
<caching>
    <outputCacheSettings>
        <outputCacheProfiles>
            <clear />
            <add name="primaryCache"
                Target 1
                Target 2
                Target 3 > /
        </outputCacheProfiles>
    </outputCacheSettings>
</caching>
```

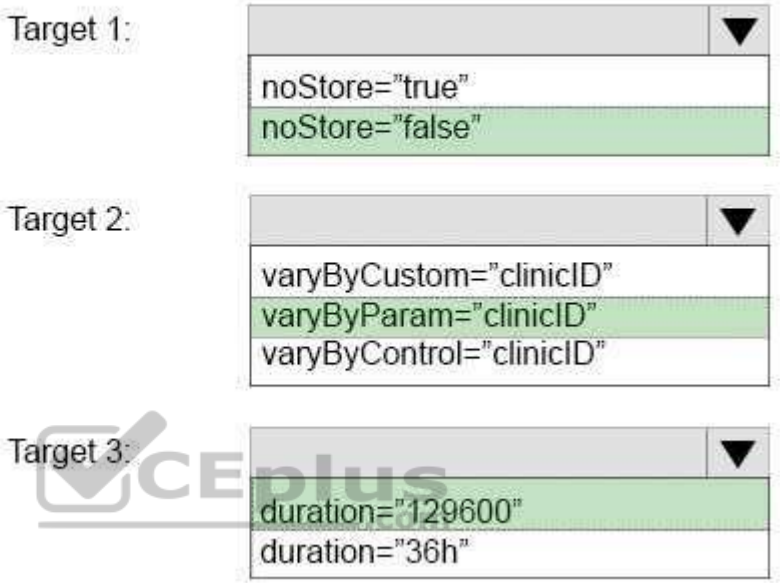
Which markup segments should you include in Target 1, Target 2 and Target 3 to complete the markup? (To answer, select the correct markup segment from each drop-down list in the answer area.) **Hot Area:**

Answer Area



Correct Answer:

Answer Area



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Target 1: noStore="false"
The page that has the OutputCacheProfile.NoStore property set to true issues a response specifying in its header to prevent secondary storage of sensitive information.

Target 2: VaryByParam ="clinicID"
The VaryByParam is a semicolon-delimited set of parameters used to vary the cached output. It allows varying the cached output by GET query string or form POST parameters. For instance, you can vary the user-control output to the cache by specifying the user-control name along with either a query string or a form POST parameter.

Incorrect: Not varyByControl="ClinicID"

The VaryByControl is a semicolon-delimited set of IDs of controls to be cached.

Target 3: duration=129600"
The Duration represents the time in seconds that the page or user control is cached. Setting this property establishes an expiration policy for HTTP responses from the page or control to which it applies and will automatically cause the caching of their output. 129600 seconds is 36 hours (60*60*36).

References: https://msdn.microsoft.com/en-us/library/system.web.configuration.outputcacheprofile(v=vs.110).aspx

QUESTION 26
You have a web application that was developed by using Microsoft ASP.NET MVC. The application is deployed to an Azure web app and uses an Azure SQL Database.

From a development environment, you use Microsoft Visual Studio to change the application code, and you modify the schema of the database.

You need to deploy the changes to Azure.

Which publishing method should you use?

A. BACPAC
B. FTP
C. Msdeploy
D. Robocopy

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
You can deploy a .bacpac file to an Azure SQL Database using an Azure Resource Manager Template. .bacpac contains the schema and data necessary to deploy your database.

Note: A BACPAC file is a ZIP file with an extension of BACPAC containing the metadata and data from a SQL Server database. A BACPAC file can be stored in Azure blob storage or in local storage in an on-premises location and later imported back into Azure SQL Database or into a SQL Server on-premises installation.

References: https://docs.microsoft.com/en-us/azure/sql-database/sql-database-export

QUESTION 27
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are developing a RESTful API that uses ASP.NET Core. You plan to host the API in Azure App Services. You provision a development environment in the application service.

Developers must be able to deploy the API to the development environment. You must not share the Azure account credentials with developers.

You need to ensure that developers can deploy the API to the development environment.

Solution: Download the Publish profile for the application service and share it with the developers. Use Microsoft Visual Studio Publishing.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
To configure deployment for a web project in Visual Studio, you create one or more publish profiles using the Publish Web wizard. A publish profile specifies the server you are deploying to, the credentials needed to log on to the server, the databases to deploy, and other deployment options. When you are ready to publish, you choose the profile you want to use and click the Publish button in the wizard or in the Web One Click Publish toolbar.

References: https://msdn.microsoft.com/en-us/library/dd465337(v=vs.110).aspx

QUESTION 28
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are developing a RESTful API that uses ASP.NET Core. You plan to host the API in Azure App Services. You provision a development environment in the application service.

Developers must be able to deploy the API to the development environment. You must not share the Azure account credentials with developers.

You need to ensure that developers can deploy the API to the development environment.

Solution: Share the Publish profile for the application service with the developers. Use Web Matrix 2 for publishing.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
You should use a Publishing Profile with Microsoft Visual Studio Publishing as WebMatrix enables developers to build websites, while Visual Studio Publishing is used to develop computer programs for Microsoft Windows, as well as web sites, web applications and web services.

References: https://msdn.microsoft.com/en-us/library/dd465337(v=vs.110).aspx

QUESTION 29
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are developing a RESTful API that uses ASP.NET Core. You plan to host the API in Azure App Services. You provision a development environment in the application service.

Developers must be able to deploy the API to the development environment. You must not share the Azure account credentials with developers.

You need to ensure that developers can deploy the API to the development environment.

Solution: Add the developers to the same Azure Active Directory (Azure AD) as the Azure subscription in which the App Service is provisioned. Use XCopy to deploy to the App Service.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
You should use a Publishing Profile with Microsoft Visual Studio Publishing.

References: https://msdn.microsoft.com/en-us/library/dd465337(v=vs.110).aspx

QUESTION 30
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a web application in a Docker container image. You set the tag for the image as **myapp**. You plan to deploy the application to Azure Container Services.

You run the following commands. All commands complete successfully.

```
az acr create --resource-group myResourceGroup --name myRegistry --sku Basic
az acr login --name myRegistry
```


You need to ensure that the image can be run on an Azure Container Service cluster.

Solution: You run the following commands:

```
docker tag myapp myregistry.azurecr.io/samples/myapp
docker push myregistry.azurecr.io/samples/myapp
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:

Explanation:
First tag the image, and the push it into your private registry.

References: https://medium.com/@pjbgf/azure-kubernetes-service-aks-pulling-private-container-images-from-azure-container-registry-acr-9c3e0a0a13f2

QUESTION 31
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a web application in a Docker container image. You set the tag for the image as **myApp**. You plan to deploy the application to Azure Container Services.

You run the following commands. All commands complete successfully.

```
az acr create --resource-group myResourceGroup --name myRegistry --sku Basic
az acr login --name myRegistry
```

You need to ensure that the image can be run on an Azure Container Service cluster.

Solution: You run the following commands:

```
docker tag myapp myregistry.azurecr.io/samples/myapp
docker pull myregistry.azurecr.io/samples/myapp
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
You need the push the image into your private registry, not pull it.

References: https://medium.com/@pjbgf/azure-kubernetes-service-aks-pulling-private-container-images-from-azure-container-registry-acr-9c3e0a0a13f2

QUESTION 32
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a web application in a Docker container image. You set the tag for the image as **myApp**. You plan to deploy the application to Azure Container Services.

You run the following commands. All commands complete successfully.

```
az acr create --resource-group myResourceGroup --name myRegistry --sku Basic
az acr login --name myRegistry
```

You need to ensure that the image can be run on an Azure Container Service cluster.

Solution: You run the following commands:

```
docker run -d -p 5000:80 myregistry.azurecr.io/samples/myapp
docker push myregistry.azurecr.io/samples/myapp
```


Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation
Explanation/Reference:
Explanation:
First tag the image, and the push it into your private registry.

References: https://medium.com/@pjbgf/azure-kubernetes-service-aks-pulling-private-container-images-from-azure-container-registry-acr-9c3e0a0a13f2

QUESTION 33
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the dotnet pack command

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Package the component with the NuGet pack command. The dotnet pack command and msbuild -t:pack may be used as alternates.

References:
https://docs.microsoft.com/en-us/nuget/tools/cli-ref-pack https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015

QUESTION 34
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the msbuild command with the publish target specified.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A

Section: [none]
Explanation

Explanation/Reference:
Explanation:
Package the component with the NuGet pack command. The dotnet pack command and msbuild -t:pack may be used as alternates.

References:
https://docs.microsoft.com/en-us/nuget/reference/msbuild-targets https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015

QUESTION 35
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the NuGet pack command

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Package the component with the NuGet pack command, for example:
nuget pack AppLogger.nuspec

This generates AppLogger.YOUR_NAME.1.0.0.nupkg.

References: https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015

QUESTION 36
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Use your Azure Cosmos DB master key and resource token.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Get FTP publishing profile and query for publish URL and credentials

References: https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp

QUESTION 37
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Download the. PublishSettings file and enter the username and password located in the file.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Example:
Get FTP publishing profile and query for publish URL and credentials creds=($(az webapp deployment list-publishing-profiles --name $webappname --resource-group myResourceGroup \
--query "[?contains(publishMethod, 'FTP')].[publishUrl,userName,userPWD]" --output tsv)) --query "[?contains(publishMethod, 'FTP')].[publishUrl,userName,userPWD]" --output tsv))

References: https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp

QUESTION 38
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Use your assigned Azure Active Directory (Azure AD) credentials.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Get FTP publishing profile and query for publish URL and credentials.

References: https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp

QUESTION 39
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Event Hubs Capture to deliver data to Azure Blob storage.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Azure Event Hubs Capture enables you to automatically deliver the streaming data in Event Hubs to an Azure Blob storage or Azure Data Lake Store account of your choice, with the added flexibility of specifying a time or size interval.

References: https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview

QUESTION 40
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Azure Event Hubs Capture to deliver data to Azure SQL Database.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Use Azure Blob storage to store the telemetry data.

References: https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview

QUESTION 41
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Azure Event Hubs Capture to deliver data to Azure File Service.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]

Explanation

Explanation/Reference:
Explanation:
Use Azure Blob storage to store the telemetry data.

References: https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview

QUESTION 42
You are developing an ASP.NET Core web application by using an Entity Framework code-first approach. The application uses a SQLite database.

You make changes to the classes in the model. You must apply the changes to the database.

You need to suggest an approach to reliably handle the Entity Framework migrations.

Which three actions should you perform? Each correct answer presents a part of the solution.

NOTE: Each correct selection is worth one point.

A. Modify the scaffolded migration script to drop the modified tables.
B. Run the following command: **dotnet ef database update**
C. Modify the scaffolded migration script to create new tables with the migration changes.
D. Modify the scaffolded migration script to drop the existing database and create the new database.
E. Run the following command: **dotnet ef migrations add**

Correct Answer: CDE
Section: [none]
Explanation

Explanation/Reference:
Explanation:
E: Run dotnet ef migrations add InitialCreate to scaffold a migration and create the initial set of tables for the model.
C: You can workaround some of the SQLite limitations by manually writing code in your migrations to perform a table rebuild. A table rebuild involves renaming the existing table, creating a new table, copying data to the new table, and dropping the old table.

D: SQLite does not support all migrations (schema changes) due to limitations in SQLite. For new development, consider dropping the database and creating a new one rather than using migrations when your model changes.

References:

https://docs.microsoft.com/en-us/ef/core/get-started/netcore/new-db-sqlite https://docs.microsoft.com/en-us/ef/core/providers/sqlite/limitations

QUESTION 43

You are developing an order processing application that uses the Entity Framework against a SQL Server database. Lazy loading has been disabled. The application displays orders and their associated order details. Order details are filtered based on the category of the product in each order.

The **Order** class is shown below.

```
public partial class Order
{
  ...
  public int Order ID { get; set; }
  ...
  public virtual ICollection<OrderDetail> OrderDetails { get; set; }
  ...
}
```

The **OrderDetail** class is shown below.

```
public partial class OrderDetail
{
  [Key, Column(Order = 1)]
  public int OrderID { get; set; }
  [Key, Column(Order =2)]
  public int ProductID { get, set; }
  ...
  public virtual Order Order { get; set; }
  public virtual Product Product { get; set }
}
```


The **Product** class is shown below.

```
public partial class Product
{
  ...
  public int ProductID { get; set}
  public string ProductName { get; set; }
  ...
  public Nullable<int> CategoryID { get; set; }
  ...
  public virtual Category Category { get; set; }
  ...
}
```

The **Category** class is shown below.

You need to return orders with their filtered list of order details included in a single round trip to the database.

Which code segment should you use?

A.

```
var orders = db.Orders.SelectMany (o => o.OrderDetails.
 Where(od => od.Product.category.CategoryName ==categoryName)).
 Select (od => new {order = od.Order, detail = od }). ToList ().
 Select (r => r.order);
```

B.

```
var orders = db.Orders.SelectMany (o => o.OrderDetails.
 Where(od => od.Product.category.CategoryName ==categoryName)).
 Select (od => new {order = od.Order, detail = od }).
 Select (r => r.order);
```

C.

```
var orders = db.Orders.SelectMany(o => o.OrderDetails.
 Where(od => od.Product.category.CategoryName == categoryName)). ToList ();
List<int> orderIDs = orderDetails.Select (od => od.OrderID). ToList();
var orders = db.Orders.Where(o => orderIDs.Contains(o.OrderID));
```

```
var orders = db.Orders.SelectMany(o => o.OrderDetails.
 Where(od => od.Product.category.CategoryName == categoryName));
List<int> orderIDs = orderDetails.Select (od => od.OrderID). ToList();
var orders = db.Orders.Where(o => orderIDs.Contains(o.OrderID));
```

D.

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Eager loading is the process whereby a query for one type of entity also loads related entities as part of the query. Eager loading is achieved by use of the Include method. For example, the queries below will load blogs and all the posts related to each blog.

```
using (var context = new BloggingContext())
{
   // Load all blogs and related posts

   var blogs1 = context.Blogs
                    .Include(b => b.Posts)
.ToList();
```


It is also possible to eagerly load multiple levels of related entities.

References: https://msdn.microsoft.com/en-us/library/jj574232(v=vs.113).aspx

QUESTION 44
You deploy a RESTful ASP.NET Web API to manage order processing.

You are developing an Azure App Services Web App to consume the API and allow customers to order products. You use the HttpClient object to process order entries. The API throws SocketException errors when the Web App experiences a high volume of concurrent users.

You need to resolve the errors.

What should you do?

A. Implement a Using statement block when declaring the HttpClient object.
B. Increase the value of the Timeout property when declaring the HttpClient object.
C. Use the static modifier to declare the HttpClient object.

D. Create a new HttpClient instance for each API request and use asynchronous method calls.

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
If the class that wraps the external resource is shareable and thread-safe, create a shared singleton instance or a pool of reusable instances of the class.

The following example uses a static HttpClient instance, thus sharing the connection across all requests.

```
public class SingleHttpClientInstanceController : ApiController
{
    private static readonly HttpClient httpClient;

    static SingleHttpClientInstanceController()
    {
        httpClient = new HttpClient();

    }

    // This method uses the shared instance of HttpClient for every call to GetProductAsync.
    public async Task<Product> GetProductAsync(string id)
    {
        var hostName = HttpContext.Current.Request.Url.Host;
        var result = await httpClient.GetStringAsync(string.Format("http://{0}:8080/api/...", hostName));
return new Product { Name = result };
    }
}
```

References: https://docs.microsoft.com/en-us/azure/architecture/antipatterns/improper-instantiation/

QUESTION 45
You are developing an ASP.NET Core web application by using an Entity Framework code-first approach. The application uses an Azure SQL Database. The codefirst migration is configured to run as part of a continuous integration build.

You must add an Azure MySQL Database. This database must use the same schema as the existing Azure SQL Database instance.

You need to configure the migration to ensure that the existing TFS build definition remains unchanged.

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

NOTE: Each correct selection is worth one point.

A. Use the ActiveProvider property to specify the provider to which the migration is applied.
B. Create a new type that derives from DbContext and override the ActiveProvider object. Then, add or apply migrations using this type.
C. Use the Entity Framework Core Fluent API to identify database providers.
D. Create a separate Migration Assembly than the one containing the DbContext and switch the active provider during build.

Correct Answer: BC
Section: [none]
Explanation

Explanation/Reference: References: https://medium.com/@rc_dos_santos/how-configure-asp-net-core-web-api-project-with-mysql-database-b7a64a247a99

QUESTION 46
You have a web server that hosts several web applications.

From Microsoft Visual Studio, you create an assembly that is signed.

You need to make the assembly available to all of the web applications on the web server. The solution must minimize the number of copies of the assembly.

Which tool should you run?

A. **gacutil.exe**
B. **sn.exe**
C. **tlblmp.exe**
D. **regasm.exe**

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Strong Name Scenario
The following scenario outlines the process of signing an assembly with a strong name and later referencing it by that name.

Assembly A is created with a strong name using one of the following methods:
- Using a development environment that supports creating strong names, such as Visual Studio 2005.

- Creating a cryptographic key pair using the Strong Name tool (Sn.exe) and assigning that key pair to the assembly using either a command-line compiler or the Assembly Linker (Al.exe). The Windows Software Development Kit (SDK) provides both Sn.exe and Al.exe.

References: https://docs.microsoft.com/en-us/dotnet/framework/app-domains/create-and-use-strong-named-assemblies

QUESTION 47
DRAG DROP

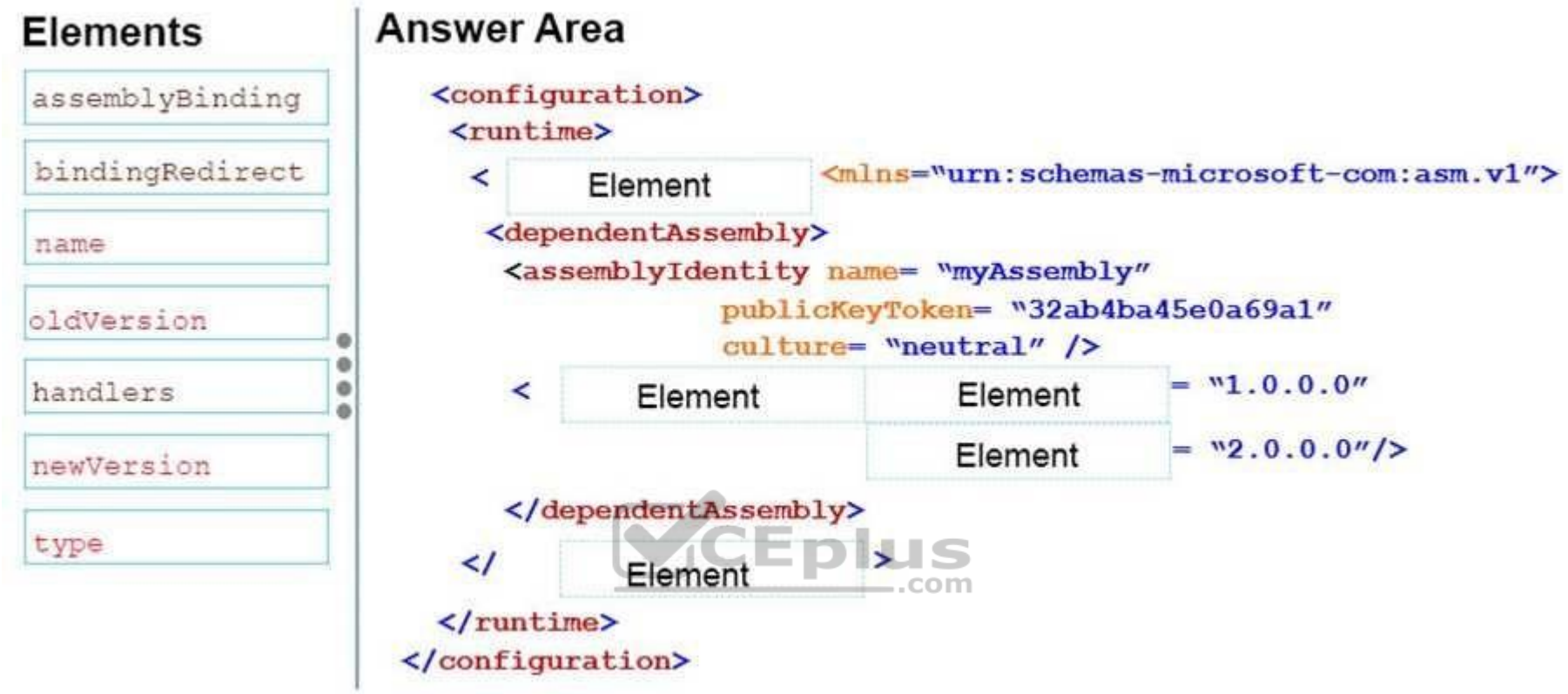
You are developing a web application that uses an assembly named MyAssembly.

You need to ensure that when MyAssembly version 1.0.0.0 is requested, version 2.0.0.0 is used.

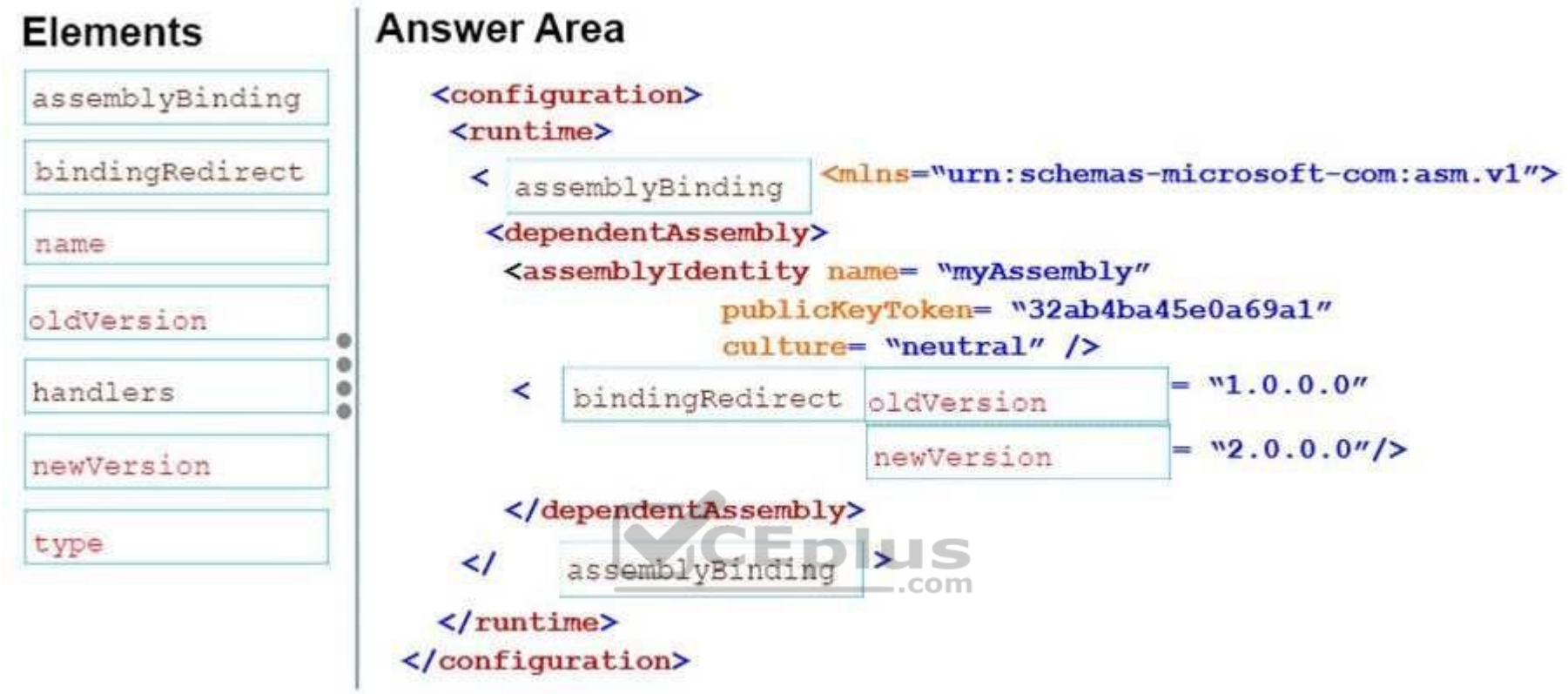
How should you complete the markup in the Web.config file? To answer, drag the appropriate elements to the correct locations. Each element may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:
Box 1: assemblyBinding

Box 2: bindingRedirect
To redirect one assembly version to another, use the <bindingRedirect> element.

Box 3: OldVersion

Box 4: NewVersion

The newVersion attribute should specify a single version. For example, <bindingRedirect oldVersion="1.1.0.0-1.2.0.0" newVersion="2.0.0.0"/> specifies that the runtime should use version 2.0.0.0 instead of the assembly versions between 1.1.0.0 and 1.2.0.0.

Box 5: assemblyBinding

The following code example demonstrates a variety of binding redirect scenarios. The example specifies a redirect for a range of versions for myAssembly, and a single binding redirect for mySecondAssembly.

```
<configuration>
  <runtime>
    <assemblyBinding xmlns="urn:schemas-microsoft-com:asm.v1">
<dependentAssembly>
       <assemblyIdentity name="mySecondAssembly"
         publicKeyToken="32ab4ba45e0a69a1"
culture="en-us" />
           <bindingRedirect oldVersion="1.0.0.0" newVersion="2.0.0.0" />
     </dependentAssembly>
</assemblyBinding>
  </runtime>
</configuration>
```


References: https://docs.microsoft.com/en-us/dotnet/framework/configure-apps/redirect-assembly-versions

QUESTION 48
You are developing a Microsoft Azure web application. The application will be deployed to 10 web role instances. A minimum of 8 running instances is needed to meet scaling requirements.

You need to configure the application so that upgrades are performed as quickly as possible, but do not violate scaling requirements.

How many upgrade domains should you use?

A. 1
B. 2
C. 5
D. 10

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:

Explanation:
The .csdef is only used for Cloud Services, not for VMs. So regardless of what you set or even how you try to do it, Azure VM UDs come in groups of 5. With 8 VMs, that means you'll have 2 UDs.

QUESTION 49
You are developing a web application by using Microsoft .NET Framework 4.5.

You are creating a web client for the application. The web client will make REST calls to several web services.

You need to ensure that the web client meets the following requirements:
▪ Uses the Task class to perform asynchronous operations ▪
Reuses recently resolved DNS lookups

Which object should you include in the solution?

A. ServiceClient
B. WebClient
C. HttpClient
D. WebRequest

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
References: https://www.c-sharpcorner.com/article/calling-web-api-using-httpclient/

QUESTION 50
You have a Web.config file that contains the following markup.

```
<?xml version="1.0"?>
<configuration>
 <appSettings>
  <add key="Key1" value="Value1" />
  <add key="Key2" value="Value2" />
  <add key="Key3" value="Value3" />
 </appSettings>
</configuration>
```

You need to use an XSLT transformation to remove the add tag for Key3.

Which markup should you use?

A. `<add key="Key3" xdt: Transform="Remove" />`

B. `<add key="Key3" xdt:Transform="Remove" xdt:Locator="Match(/configuration/appSettings/add[@key='Key3'])"/>`

C. `<add xdt:Transform="Remove" />`

D. `<add key="Key3" xdt:Transform="Remove" xdt:Locator="Match(key)" />`

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
References: https://msdn.microsoft.com/en-us/library/dd465326(v=vs.110).aspx

QUESTION 51
You have a Microsoft Visual Studio project named Project1 that is deployed as an Azure web app. The Azure web app uses an Azure SQL Database.

You plan to deploy updates to the Azure web app by using a Web Deploy Package.

The password for the Azure SQL Database was changed since you first published the Azure web app.

You need to deploy the package by using Windows PowerShell.

Which file should you modify before running the PowerShell deployment script?

A. WebApiConfig.cs from the App_Start folder
B. IdentityConfig.cs from the App_Start folder
C. App.config from the Web Application folder
D. Project1-waws-dev.json from the Configurations folder

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:

QUESTION 52
You need to choose the appropriate data access technology for the cookbook area of the web application.

Which data access technology should you choose?

A. WCF Data Services
B. LINQ to SQL
C. ADO.NET
D. Entity Framework

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/dotnet/framework/data/wcf/wcf-data-services-overview

QUESTION 53
You create a web application.

You deploy the application by using a Web Deploy Package.

You need to identify which setting will be created automatically in the SetParameters.xml file during the package generation.

Which three settings should you identify? Each correct answer presents part of the solution.

A. the connection strings in the Web.config file
B. the destination IIS web application path and name
C. the service endpoints of the Web.config file
D. the connection strings of any databases you add to the Package/Publish SQL tab on the Properties page of the project
E. the application settings of the Web.config file

Correct Answer: ABD
Section: [none]
Explanation

Explanation/Reference:
References: https://docs.microsoft.com/en-us/aspnet/web-forms/overview/deployment/web-deployment-in-the-enterprise/configuring-parameters-for-web-packagedeployment

QUESTION 54
You are building an ADO.NET Entity Framework application.

You need to validate the conceptual schema definition language (CSDL), store schema definition language (SSDL), and mapping specification language (MSL) files.

Which Entity Data Model tool can you use? (Each correct answer presents a complete solution. Choose all that apply.)

A. EDM Generator (EdmGen.exe)
B. ADO.NET Entity Data Model Designer
C. Entity Data Model Wizard
D. Update Model Wizard

Correct Answer: AB
Section: [none]
Explanation

Explanation/Reference:
http://msdn.microsoft.com/en-us/library/bb387165.aspx

QUESTION 55
You are designing an ASP.NET Web API application.

You need to select an HTTP verb to allow blog administrators to moderate a comment.

Which HTTP verb should you use?

A. GET
B. POST
C. DELETE
D. PUT

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
To edit/update/moderate an entry you use PUT.
UsePUT when you can update a resource completely through a specific resource.

References: http://restcookbook.com/HTTP%20Methods/put-vs-post/

QUESTION 56
You are developing an ASP.NET MVC web application that contains the following HTML.

<table id= “customer” ></table>

You also have an ASP.NET Web API application that contains a call for retrieving customers.

You must send and retrieve the data in the most compact format possible.

You need to update the HTML for the customers table to contain data from the Web API application.

Which script segment should you use?

A.
```
<script>
  $(function () {
    var $customers = $("#customers");
    $.ajax({
      url: "api/customers",
      dataType: "json",
      success: function (data) {
        ...
      }
    });
  });
</script>
```

B.
```
<script>
  $(function () {
    var $customers = $("#customers");
    $.xml({
      url: "api/customers",
      dataType: "ajax",
      success: function (data) {
        ...
      }
    });
  });
</script>
```

C.
```
<script>
  $(function () {
    var $customers = $("#customers");
    $.json({
      url: "api/customers",
      dataType: "ajax",
      success: function (data) {
        ...
      }
    });
  });
</script>
```

D.
```
<script>
  $(function () {
    var $customers = $("#customers");
```

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

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:

QUESTION 57
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Enter the user-level credentials that you configured when you created the Web App.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Get FTP publishing profile and query for publish URL and credentials.

References: https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp

QUESTION 58
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Event Hubs Capture to deliver data to Azure Data Lake Store.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Use Azure Blob storage to store the telemetry data.

References: https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview

QUESTION 59
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the msbuild command with the pack target specified.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Package the component with the NuGet pack command. The dotnet pack command and msbuild -t:pack may be used as alternates.

References: https://docs.microsoft.com/en-us/nuget/tools/cli-ref-pack

https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015

QUESTION 60
You add a .NET application to a Docker container and deploy the container to Azure Service Fabric. You use a corporate base image that includes Microsoft SQL Server for storing data.

You deploy the application to development and staging environments. No issues are reported. You deploy the application to your production environment. Data is not persisted in the production environment.

You need to resolve the issue.

What should you do?

A. Install Docker tools in the container.
B. In the docker-compose.override.yml file, configure the db service to start before the web application.
C. Update the connection string in the web.config file to point to the SQL Server database in the container.
D. Remove SQL Server from the base image and convert the database to Azure SQL Database. **Correct Answer:** C

Section: [none]
Explanation

Explanation/Reference:

References: https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-host-app-in-a-container

QUESTION 61
You are developing a Windows Communication Foundation (WCF) service for a company. The service will be used for bidirectional communications between the company's physical offices.

You plan to implement Azure Service Bus.

You need to configure the WCF service.

Which type of binding should you use?

A. BasicHttpBinding
B. NetTcpRelayBinding
C. NetTcpBinding
D. NetEventRelayBinding

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference: References: https://docs.microsoft.com/en-us/azure/service-bus-relay/service-bus-relay-tutorial