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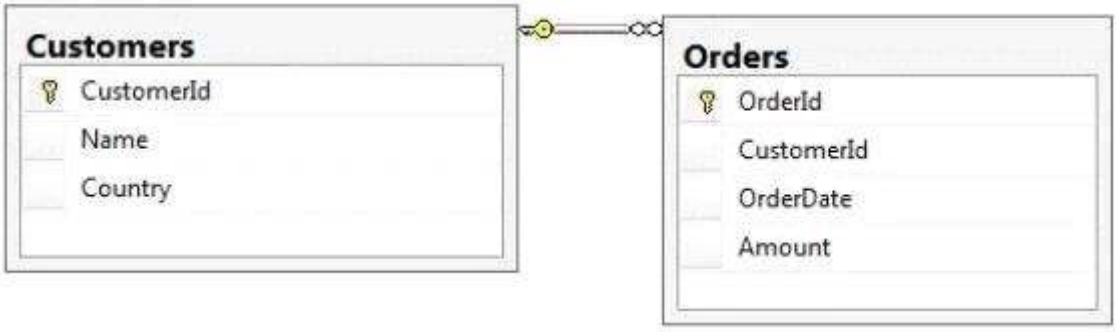
Exam Code: 70-461

Exam Name: Querying Microsoft SQL Server 2012

Exam A

QUESTION 1
You administer a Microsoft SQL Server 2012 database named ContosoDb. Tables are defined as shown in the exhibit. (Click the Exhibit button.)



You need to display rows from the Orders table for the Customers row having the CustomerId value set to 1 in the following XML format:

```
<row OrderId="1" OrderDate="2000-01-01T00:00:00" Amount="3400.00" Name="Customer
A" Country="Australia" />
<row OrderId="2" OrderDate="2001-01-01T00:00:00" Amount="4300.00" Name="Customer
A" Country="Australia" />
```

Which Transact-SQL query should you use?

A.
```
SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers.CustomerId = 1
FOR XML RAW
```

B.
```
SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers.CustomerId = 1
FOR XML RAW, ELEMENTS
```

C.
```
SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers.CustomerId = 1
FOR XML AUTO
```

D.
```
SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId - Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML AUTO, ELEMENTS
```

E.
```
SELECT Name, Country, OrderId, OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
WHERE Customers.CustomerId- 1
FOR XML AUTO
```

F.
```
SELECT Name, Country, OrderId, OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML AUTO, ELEMENTS
```

G.
```
SELECT Name AS '@Name', Country AS '@Country', OrderId, OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML PATH ('Customers')
```

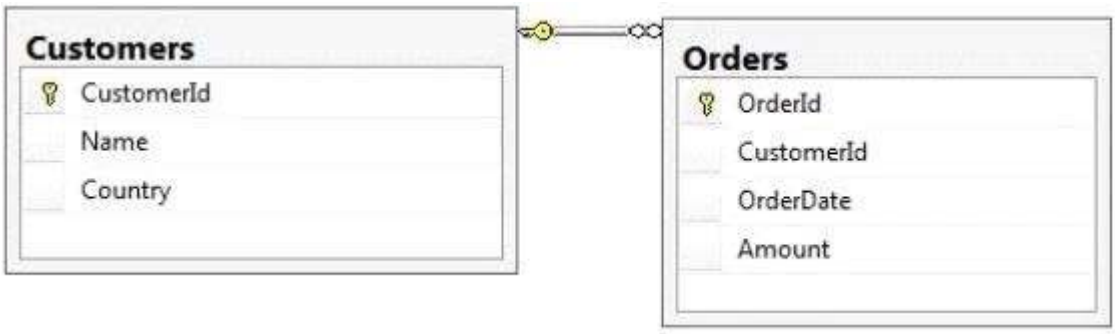
H.
```
SELECT Name AS 'Customers/Name', Country AS 'Customers/Country', OrderId,
OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
```

```
WHERE Customers.CustomerId= 1
FOR XML PATH ('Customers')
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.
Reference: http://msdn.microsoft.com/en-us/library/bb510464.aspx

QUESTION 2
You administer a Microsoft SQL Server 2012 database named ContosoDb. Tables are defined as shown in the exhibit. (Click the Exhibit button.)



You need to display rows from the Orders table for the Customers row having the CustomerIdvalue set to 1 in the following XML format.

```
<Orders OrderId="1" OrderDate="2000-01-01T00:00:00" Amount="3400.00">
  <Customers Name="Customer A" Country="Australia" />
</Orders>
<Orders OrderId="2" OrderDate="2001-01-01T00:00:00" Amount="4300.00">
  <Customers Name="Customer A" Country="Australia" />
</Orders>
```

Which Transact-SQL query should you use?

A.
```
SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers.CustomerId = 1
FOR XML RAW
```

B.
```
SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers=CustomerId = 1
FOR XML RAW, ELEMENTS
```

C.
```
SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers.CustomerId = 1
FOR XML AUTO
```

D.
```
SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML AUTO, ELEMENTS
```

E.
```
SELECT Name, Country, OrderId, OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
```

```
WHERE Customers.CustomerId= 1
FOR XML AUTO
```

F.
```
SELECT Name, Country, OrderId, OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML AUTO, ELEMENTS
```

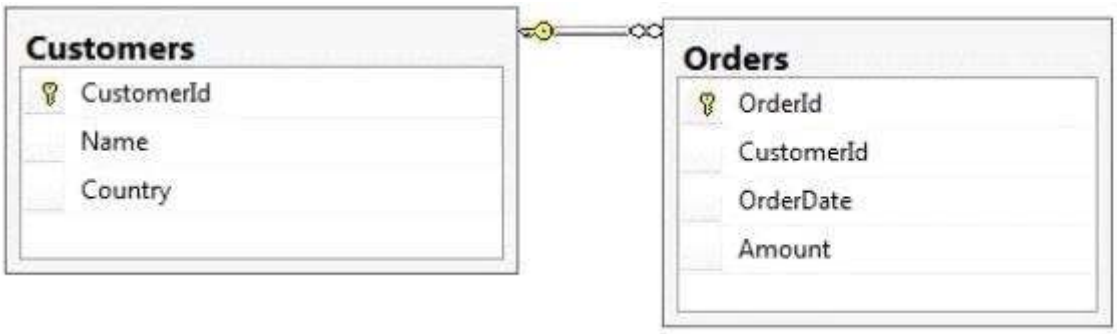
G.
```
SELECT Name AS '@Name', Country AS '@Country', OrderId, OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML PATH ('Customers')
```

H.
```
SELECT Name AS 'Customers/Name', Country AS 'Customers/Country', OrderId,
OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML PATH ('Customers')
```

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.
Reference: http://msdn.microsoft.com/en-us/library/ms188273.aspx

QUESTION 3
You administer a Microsoft SQL Server 2012 database named ContosoDb. Tables are defined as shown in the exhibit. (Click the Exhibit button.)



You need to display rows from the Orders table for the Customers row having the CustomerId value set to 1 in the following XML format.

```
<CUSTOMERS Name="Customer A" Country="Australia">
  <ORDERS OrderID="1" OrderDate="2001-01-01" Amount="3400.00" />
  <ORDERS OrderID="2" OrderDate="2002-01-01" Amount="4300.00" />
</CUSTOMERS>
```

Which Transact-SQL query should you use?

A.
```
SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers.CustomerId = 1
FOR XML RAW
```

B.
```
SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers.CustomerId = 1
FOR XML RAW, ELEMENTS
```

C. SELECT OrderId, OrderDate, Amount, Name, Country

FROM Orders INNER JOIN Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers.CustomerId = 1
FOR XML AUTO

D. SELECT OrderId, OrderDate, Amount, Name, Country
FROM Orders INNER JOIN Customers ON Orders.CustomerId - Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML AUTO, ELEMENTS

E. SELECT Name, Country, OrderId, OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML AUTO

F. SELECT Name, Country, OrderId, OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML AUTO, ELEMENTS

G. SELECT Name AS '@Name', Country AS '@Country', OrderId, OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML PATH ('Customers')

H. SELECT Name AS 'Customers/Name', Country AS 'Customers/Country', OrderId, OrderDate, Amount
FROM Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId
WHERE Customers.CustomerId= 1
FOR XML PATH ('Customers')

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

QUESTION 4
You develop a Microsoft SQL Server 2012 database that contains a table named Customers. The Customers table has the following definition:

```
CREATE TABLE [dbo].[Customers](
   [CustomerId] [bigint] NOT NULL,
   [MobileNumber] [nvarchar](25) NOT NULL,
   [HomeNumber] [nvarchar](25) NULL,
   [Name] [nvarchar](50) NOT NULL,
   [Country] [nvarchar](25) NOT NULL,
    CONSTRAINT [PK_Customers] PRIMARY KEY CLUSTERED
   (
     [CustomerId] ASC
   ) ON [PRIMARY]
) ON [PRIMARY]
```

You need to create an audit record only when either the MobileNumber or HomeNumber column is updated.
Which Transact-SQL query should you use?

A.
```
CREATE TRIGGER TrgPhoneNumberChange
ON Customers FOR UPDATE
AS
IF COLUMNS_UPDATED (HomeNumber, MobileNumber)
```
- - Create Audit Records

B.
```
CREATE TRIGGER TrgPhoneNumberChange
ON Customers FOR UPDATE
AS
IF EXISTS( SELECT HomeNumber FROM inserted) OR
EXISTS (SELECT MobileNumber FROM inserted)
- - Create Audit Records
```

C.
```
CREATE TRIGGER TrgPhoneNumberChange
ON Customers FOR UPDATE
AS
IF COLUMNS_CHANGED (HomeNumber, MobileNumber)
- - Create Audit Records
```

D.
```
CREATE TRIGGER TrgPhoneNumberChange
ON Customers FOR UPDATE
AS
IF UPDATE (HomeNumber) OR UPDATE (MobileNumber)
- - Create Audit Records
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/bb510663.aspx
Reference: http://msdn.microsoft.com/en-us/library/ms186329.aspx

QUESTION 5
You develop a Microsoft SQL Server 2012 database. You create a view that performs the following tasks:
- Joins 8 tables that contain up to 500,000 records each.
- Performs aggregations on 5 fields.

The view is frequently used in several reports. You need to improve the performance of the reports.
What should you do?

A. Convert the view into a table-valued function.
B. Convert the view into a Common Table Expression (CTE).
C. Convert the view into an indexed view.
D. Convert the view into a stored procedure and retrieve the result from the stored procedure into a temporary table.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/ms191432.aspx

QUESTION 6
You are a database developer of a Microsoft SQL Server 2012 database. The database contains a table named Customers that has the following definition:

```
CREATE TABLE Customer
(CustomerID INT NOT NULL PRIMARY KEY,
 CustomerName VARCHAR(255) NOT NULL,
 CustomerAddress VARCHAR(1000) NOT NULL)
```

You are designing a new table named Orders that has the following definition:

```
CREATE TABLE Orders
(OrderID INT NOT NULL PRIMARY KEY,
 CustomerID INT NOT NULL,
 OrderDescription VARCHAR(2000))
```

You need to ensure that the CustomerId column in the Orders table contains only values that exist in the CustomerId column of the Customer table. Which Transact-SQL statement should you use?

A.
```
ALTER TABLE Orders
ADD CONSTRAINT FX_Orders_CustomerID FOREIGN KEY (CustomerId) REFERENCES
Customer (CustomerId)
```

B.
```
ALTER TABLE Customer
ADD CONSTRAINT FK_Customer_CustomerID FOREIGN KEY {CustomerID) REFERENCES
Orders (CustomerId)
```

C.
```
ALTER TABLE Orders
ADD CONSTRAINT CK_Crders_CustomerID
CHECK (CustomerId IN (SELECT CustomerId FROM Customer))
```

D.
```
ALTER TABLE Customer
ADD OrderId INT NOT NULL;

ALTER TABLE Customer
ADD CONSTRAINT FK_Customer_OrderID FOREIGN KEY (CrderlD) REFERENCES Orders
(CrderlD);
```

E.
```
ALTER TABLE Orders
ADD CONSTRAINT PK Orders CustomerId PRIMARY KEY (CustomerID)
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/ms189049.aspx

QUESTION 7
You develop a Microsoft SQL Server 2012 database. You create a view from the Orders and OrderDetails tables by using the following definition.

```
CREATE VIEW vOrders
WITH SCHEMABINDING
AS
SELECT o.ProductID,
  o.OrderDate,
  SUM(od.UnitPrice * od.OrderQty) AS Amount
FROM OrderDetails AS od INNER JOIN
  Orders AS o ON od.OrderID = o.OrderID
WHERE od.SalesOrderID = o.SalesOrderID
GROUP BY o.OrderDate, o.ProductID
GO
```

You need to ensure that users are able to modify data by using the view. What should you do?

A. Create an AFTER trigger on the view.
B. Modify the view to use the WITH VIEW_METADATA clause.
C. Create an INSTEAD OF trigger on the view.
D. Modify the view to an indexed view.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/ms187956.aspx

QUESTION 8
You have a view that was created by using the following code:

```
CREATE VIEW Sales.OrdersByTerritory
AS
SELECT OrderID
      ,OrderDate
      ,SalesTerritoryID
      ,TotalDue
FROM Sales.Orders;
```

You need to create an inline table-valued function named Sales.fn_OrdersByTerritory, which must meet the following requirements:
- Accept the @T integer parameter.
- Use one-part names to reference columns.
- Filter the query results by SalesTerritoryID.
- Return the columns in the same order as the order used in OrdersByTerritoryView.

Which code segment should you use?
To answer, type the correct code in the answer area.

A.

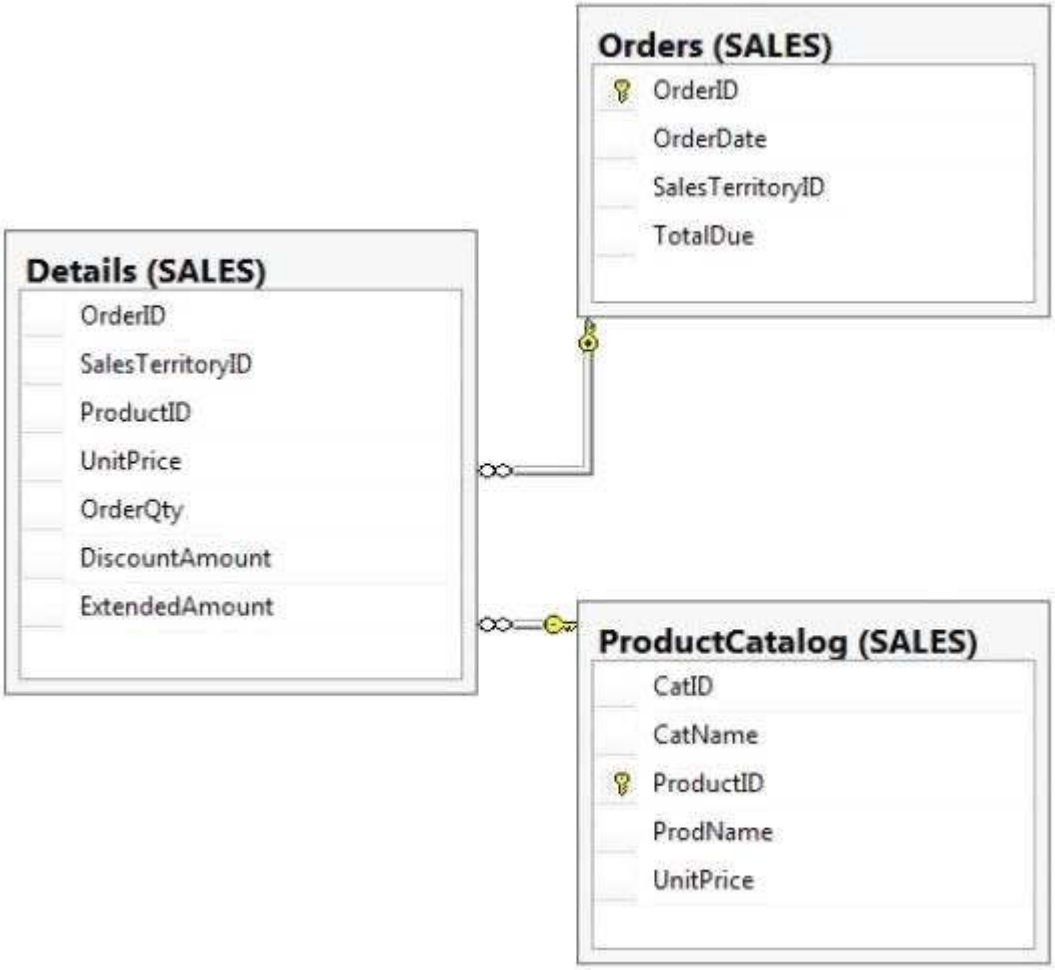
Correct Answer:

Section: (none)
Explanation

Explanation/Reference:

```
CREATE FUNCTION Sales.fn_OrdersByTerritory (@T int)
RETURNS TABLE
AS
RETURN
(
    SELECT OrderID,OrderDate,SalesTerrirotyID,TotalDue
    FROM Sales.OrdersByTerritory
    WHERE SalesTerritoryID = @T
)
```

QUESTION 9
You have a database that contains the tables shown in the exhibit. (Click the Exhibit button.)



You need to create a query that calculates the total sales of each OrderId from the Sales.Details table. The solution must meet the following requirements:

- Use one-part names to reference columns.
- Sort the order of the results from OrderId.
- NOT depend on the default schema of a user.
- Use an alias of TotalSales for the calculated ExtendedAmount.
- Display only the OrderId column and the calculated TotalSales column.

Which code segment should you use?

To answer, type the correct code in the answer area.

A.

Correct Answer:
Section: (none)
Explanation

Explanation/Reference:
```
SELECT OrderID, SUM(ExtendedAmount) AS TotalSales
FROM Sales.Details
GROUP BY OrderID
ORDER BY OrderID
```

QUESTION 10
You have an XML schema collection named Sales.InvoiceSchema. You need to declare a variable of the XML type named XML1. The solution must ensure that XML1 is validated by using Sales.InvoiceSchema.
Which code segment should you use?
To answer, type the correct code in the answer area.

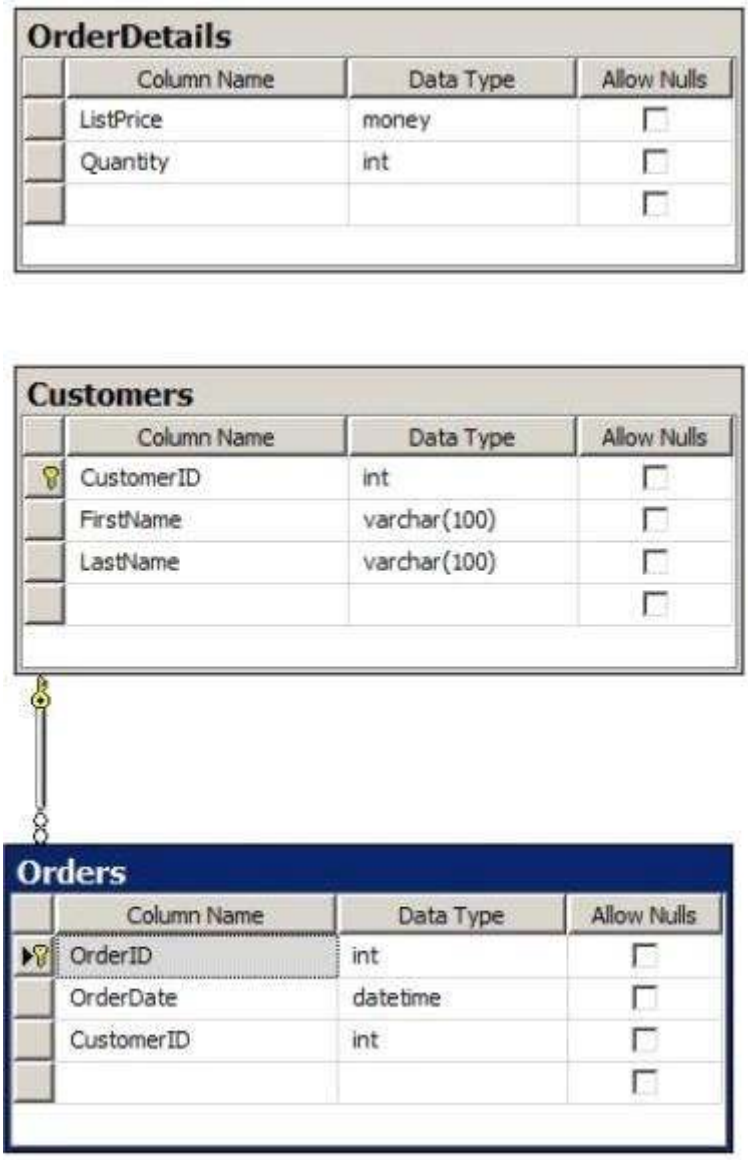
A.

Correct Answer:
Section: (none)
Explanation

Explanation/Reference:
```
DECLARE @XML1 XML(Sales.InvoiceSchema)
```

Reference: http://msdn.microsoft.com/en-us/library/ms176009.aspx

QUESTION 11
You have a database that contains the tables shown in the exhibit. (Click the Exhibit button.)



You have an application named Appl. You have a parameter named @Count that uses the int data type. App1 is configured to pass @Count to a stored procedure. You need to create a stored procedure named usp_Customers for Appl. Usp_Customers must meet the following requirements:

- NOT use object delimiters.
- Minimize sorting and counting.
- Return only the last name of each customer in alphabetical order.
- Return only the number of rows specified by the @Count parameter.
- The solution must NOT use BEGIN and END statements.

Which code segment should you use?
To answer, type the correct code in the answer area.

A.

Correct Answer:
Section: (none)
Explanation

Explanation/Reference:

```
CREATE PROCEDURE usp_Customers @Count int
AS
SELECT TOP(@Count) Customers.LastName
FROM Customers
ORDER BY Customers.LastName
```

QUESTION 12
You use Microsoft SQL Server 2012 database to develop a shopping cart application. You need to invoke a table-valued function for each row returned by a query. Which Transact-SQL operator should you use?

A. CROSS JOIN
B. UNPIVOT
C. PIVOT
D. CROSS APPLY

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/ms175156.aspx

QUESTION 13
You are developing a database that will contain price information. You need to store the prices that include a fixed precision and a scale of six digits. Which data type should you use?

A. Float
B. Money
C. Smallmoney
D. Numeric

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Numeric is the only one in the list that can give a fixed precision and scale.

Reference: http://msdn.microsoft.com/en-us/library/ms179882.aspx

QUESTION 14
You administer a Microsoft SQL Server 2012 database. The database contains a table named Employee. Part of the Employee table is shown in the exhibit. (Click the Exhibit button.)


Employee (jek)
Column Name
Condensed Type
EmployeeID
int
EmployeeNum
char(10)
LastName
nvarchar(200)
FirstName
nvarchar(200)
MiddleName
nvarchar(200)
DateHired
date
DepartmentID
int
JobTitle
varchar(200)
ReportsToID
int

Column name	Description
EmployeeID(pk)	Uniquely identifies the employee record in the table Used throughout the database by all the other tables that reference the Employee table
EmployeeNum	An alphanumeric value calculated according to company requirements Has to be unique within the Employee table Exists only within the Employee table
DepartmentID	References another table named Department that contains data for each department in the company
ReportsToID	Contains the EmployeeID of the manager to whom an employee reports
ReportsToID	Contains the EmployeeID of the manager to whom an employee reports

Confidential information about the employees is stored in a separate table named EmployeeData. One record exists within EmployeeData for each record in the Employee table. You need to assign the appropriate constraints and table properties to ensure data integrity and visibility. On which column in the Employee table should you a create a unique constraint?

A. DateHired
B. DepartmentID
C. EmployeeID
D. EmployeeNum
E. FirstName
F. JobTitle
G. LastName
H. MiddleName
I. ReportsToID

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

QUESTION 15
You use a Microsoft SQL Server 2012 database that contains a table named BlogEntry that has the following columns:

Column name	Data type
Id	bigint
EntryDateTime	datetime
Summary	nvarchar(max)

Id is the Primary Key.
You need to append the "This is in a draft stage" string to the Summary column of the recent 10 entries based on the values in EntryDateTime. Which Transact-SQL statement should you use?

A.
```
UPDATE TOP(10) BlogEntry
SET Summary.WRITE(N' This is in a draft stage', NULL, 0)
```

B.
```
UPDATE BlogEntry
SET Summary = CAST(N' This is in a draft stage' as nvarchar(max))
WHERE Id IN(SELECT TOP(10) Id FROM BlogEntry ORDER BY EntryDateTime DESC)
```

C.
```
UPDATE BlogEntry
SET Summary.WRITE(N' This is in a draft stage', NULL, 0) FROM (
SELECT TOP(10) Id FROM BlogEntry ORDER BY EntryDateTime DESC) AS s
WHERE BlogEntry.Id = s.ID
```

D.
```
UPDATE BlogEntry
SET Summary.WRITE(N' This is in a draft stage', 0, 0)
WHERE Id IN(SELECT TOP(10) Id FROM BlogEntry ORDER BY EntryDateTime DESC)
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

QUESTION 16
You use Microsoft SQL Server 2012 to develop a database application. Your application sends data to an NVARCHAR(MAX) variable named @var. You need to write a Transact-SQL statement that will find out the success of a cast to a decimal (36,9). Which code segment should you use?select

A.
```
BEGIN TRY
  SELECT convert(decimal(36,9), @var) AS Value, 'True' AS BadCast
END TRY
BEGIN CATCH
  SELECT convert(decimal(36,9), @var) AS Value, 'False' AS BadCast
END CATCH
```

B.
```
TRY(
  SELECT convert(decimal(36,9), @var)
  SELECT 'True' AS BadCast
 )
CATCH(
  SELECT 'False' AS BadCast
 )
```

C.
```
SELECT
  CASE
   WHEN convert(decimal(36,9), @var) IS NULL
   THEN 'True'
   ELSE 'False'
  END
 AS BadCast
```

D.
```
SELECT
  IIF(TRY_PARSE(@var AS decimal(36,9)) IS NULL, 'True', 'False')
AS BadCast
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/hh213126.aspx

QUESTION 17
You have a Microsoft SQL Server 2012 database that contains tables named Customers and Orders. The tables are related by a column named CustomerID. You need to create a query that meets the following requirements:

- Returns the CustomerName for all customers and the OrderDate for any orders that they have placed.
- Results must include customers who have not placed any orders.

Which Transact-SQL query should you use?

A.
```
SELECT CustomerName, OrderDate
FROM Customers
RIGHT OUTER JOIN Orders
ON Customers.CustomerID = Orders.CustomerID
```

B.
```
SELECT CustomerName, CrderDate
FROM Customers
JOIN Orders
ON Customers.CustomerID = Orders.CustomerID
```

C.
```
SELECT CustomerName, OrderDate
FROM Customers
CROSS JOIN Orders
ON Customers.CustomerID = Orders.CustomerID
```

D.
```
SELECT CustomerName, OrderDate
FROM Customers
LEFT OUTER JOIN Orders
ON Customers.CustomerID = Orders.CustomerID
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/ms177634.aspx

QUESTION 18
You create a stored procedure that will update multiple tables within a transaction. You need to ensure that if the stored procedure raises a run-time error, the entire transaction is terminated and rolled back. Which Transact-SQL statement should you include at the beginning of the stored procedure?

A. SET XACT_ABORT ON
B. SET ARITHABORT ON
C. TRY
D. BEGIN
E. SET ARITHABORT OFF
F. SET XACT_ABORT OFF

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/ms190306.aspx
Reference: http://msdn.microsoft.com/en-us/library/ms188792.aspx

QUESTION 19
Your database contains two tables named DomesticSalesOrders and InternationalSalesOrders. Both tables contain more than 100 million rows. Each table has a Primary Key column named SalesOrderId. The data in the two tables is distinct from one another. Business users want a report that includes aggregate information about the total number of global sales and total sales amounts. You need to ensure that your query executes in the minimum possible time. Which query should you use?

A.
```
SELECT COUNT(*) AS NumberOfSales, SUM(SalesAmount) AS TotalSalesAmount
FROM (
  SELECT SalesOrderId, SalesAmount
  FROM DomesticSalesOrders
  UNION ALL
  SELECT SalesOrderId, SalesAmount
  FROM InternationalSalesOrders
  ) AS p
```
B.
```
SELECT COUNT(*) AS NumberOfSales, SUM(SalesAmount) AS TotalSalesAmount
FROM (
  SELECT SalesOrderId, SalesAmount
  FROM DomesticSalesOrders
  UNION
  SELECT SalesOrderId, SalesAmount
  FROM InternationalSalesOrders
  ) AS p
```
C.
```
SELECT COUNT(*) AS NumberOfSales, SUM(SalesAmount) AS TotalSalesAmount
FROM DomesticSalesOrders
UNION
SELECT COUNT(*) AS NumberOfSales, SUM(SalesAmount) AS TotalSalesAmount
FROM InternationalSalesOrders
```
D.
```
SELECT COUNT(*) AS NumberOfSales, SUM(SalesAmount) AS TotalSalesAmount
FROM DomesticSalesOrders
UNION ALL
SELECT COUNT(*) AS NumberOfSales, SUM(SalesAmount) AS TotalSalesAmount
FROM InternationalSalesOrders
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/ms180026.aspx
Reference: http://blog.sqlauthority.com/2009/03/11/sql-server-difference-between-union-vs-union-all-optimal-performance-comparison/

QUESTION 20
You are a database developer at an independent software vendor. You create stored procedures that contain proprietary code. You need to protect the code from being viewed by your customers. Which stored procedure option should you use?

A. ENCRYPTBYKEY
B. ENCRYPTION
C. ENCRYPTBYPASSPHRASE
D. ENCRYPTBYCERT

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://technet.microsoft.com/en-us/library/bb510663.aspx
Reference: http://technet.microsoft.com/en-us/library/ms174361.aspx
Reference: http://msdn.microsoft.com/en-us/library/ms187926.aspx
Reference: http://technet.microsoft.com/en-us/library/ms190357.aspx
Reference: http://technet.microsoft.com/en-us/library/ms188061.aspx

QUESTION 21
You use a Microsoft SQL Server 2012 database. You want to create a table to store Microsoft Word documents. You need to ensure that the documents must only be accessible via Transact-SQL queries. Which Transact-SQL statement should you use?

A.
```
CREATE TABLE DocumentStore
(
  [Id] INT NOT NULL PRIMARY KEY,
  [Document] VARBINARY(MAX) NULL
)
GO
```
B.
```
CREATE TABLE DocumentStore
(
  [Id] hierarchyid,
  [Document] NVARCHAR NOT NULL
)
GO
```
C.
```
CREATE TABLE DocumentStore AS FileTable
```
D.
```
CREATE TABLE DocumentStore
(
  [Id] [uniqueidentifier] ROWGUIDCOL NOT NULL UNIQUE,
  [Document] VARBINARY(MAX) FILESTREAM NULL
)
GO
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/gg471497.aspx
Reference: http://msdn.microsoft.com/en-us/library/ff929144.aspx

Exam B

QUESTION 1
You develop a Microsoft SQL Server 2012 database that contains a heap named OrdersHistoncal.
You write the following Transact-SQL query:

```
INSERT INTO OrdersHistorical
SELECT * FROM CompletedOrders
```

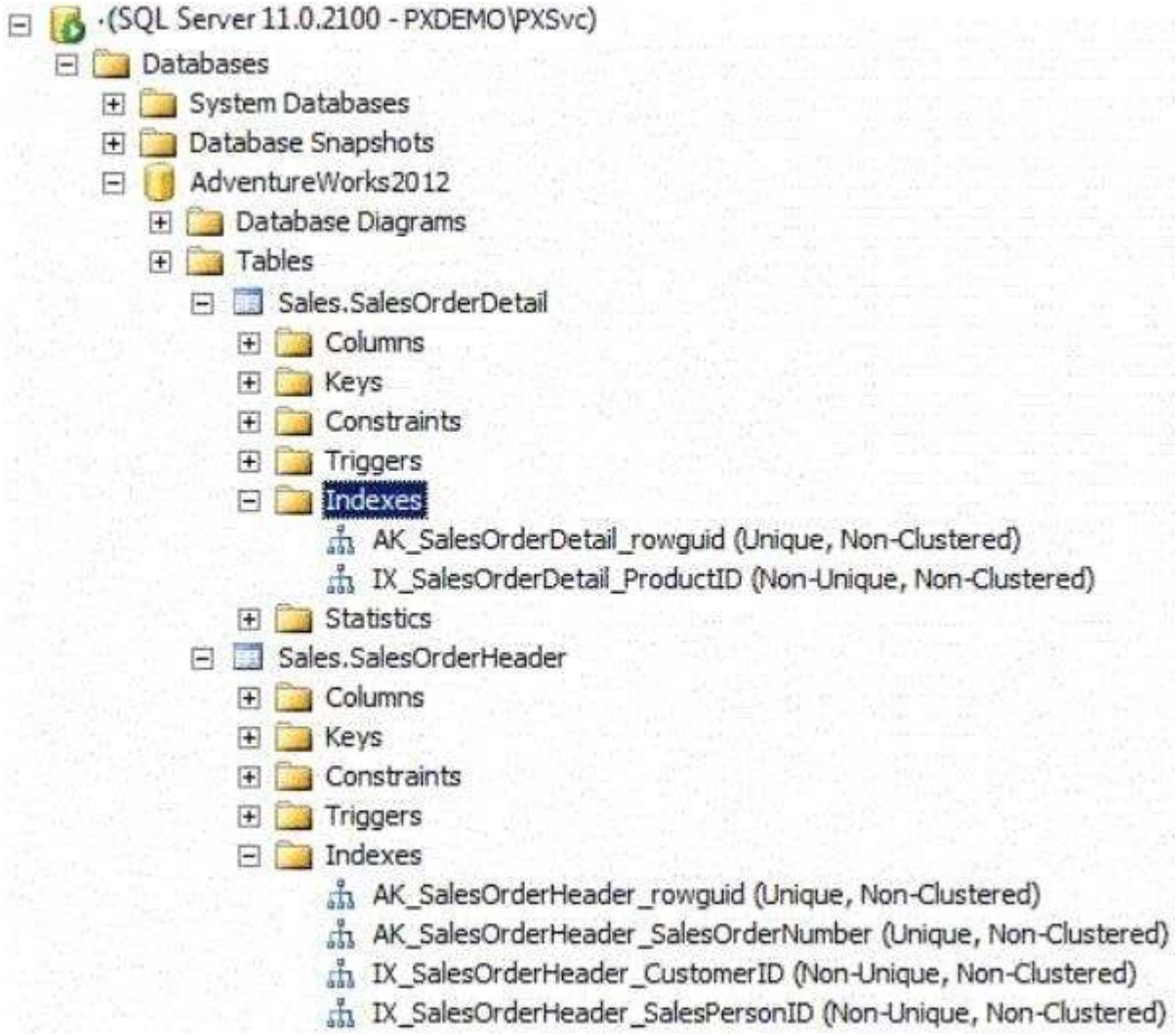
You need to optimize transaction logging and locking for the statement. Which table hint should you use?

A. `HOLDLOCK`
B. `ROWLOCK`
C. `XLOCK`
D. `UPDLOCK`
E. `TABLOCK`

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:
Reference: http://technet.microsoft.com/en-us/library/ms189857.aspx
Reference: http://msdn.microsoft.com/en-us/library/ms187373.aspx

QUESTION 2
You use a Microsoft SQL Server 2012 database that contains two tables named SalesOrderHeader and SalesOrderDetail. The indexes on the tables are as shown in the exhibit. (Click the Exhibit button.)



You write the following Transact-SQL query:

```
SELECT h.SalesOrderID, h.TotalDue, d.OrderQty
FROM Sales.SalesOrderHeader AS h
  INNER JOIN Sales.SalesOrderDetail AS d
  ON h.SalesOrderID = d.SalesOrderID
WHERE h.TotalDue > 100
AND (d.OrderQty > 5 OR d.LineTotal < 1000.00);
```

You discover that the performance of the query is slow. Analysis of the query plan shows table scans where the estimated rows do not match the actual rows for SalesOrderHeader by using an unexpected index on SalesOrderDetail. You need to improve the performance of the query. What should you do?

A. Use a FORCESCAN hint in the query.
B. Add a clustered index on SalesOrderId in SalesOrderHeader.
C. Use a FORCESEEK hint in the query.
D. Update statistics on SalesOrderId on both tables.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
References: http://msdn.microsoft.com/en-us/library/ms187348.aspx

QUESTION 3
Your database contains a table named Purchases. The table includes a DATETIME column named PurchaseTime that stores the date and time each purchase is made. There is a non-clustered index on the PurchaseTime column. The business team wants a report that displays the total number of purchases made on the current day. You need to write a query that will return the correct results in the most efficient manner. Which Transact-SQL query should you use?

A.
```
SELECT COUNT(*)
FROM Purchases
WHERE PurchaseTime = CONVERT(DATE, GETDATE())
```

B.
```
SELECT COUNT(*)
FROM Purchases
WHERE PurchaseTime = GETDATE()
```

C.
```
SELECT COUNT(*)
FROM Purchases
WHERE CONVERT(VARCHAR, PurchaseTime, 112) = CONVERT(VARCHAR, GETDATE(), 112)
```

D.
```
SELECT COUNT(*)
FROM Purchases
WHERE PurchaseTime >= CONVERT(DATE, GETDATE())
  AND PurchaseTime < DATEADD(DAY, 1, CONVERT(DATE, GETDATE()))
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Two answers will return the correct results (the "WHERE CONVERT..." and "WHERE ... AND ... " answers). The correct answer for Microsoft would be the answer that is most "efficient". Anybody have a clue as to which is most efficient? In the execution plan, the one that I've selected as the correct answer is the query with the shortest duration. Also, the query answer with "WHERE CONVERT..." threw warnings in the execution plan...something about affecting CardinalityEstimate and SeekPlan.

I also found this article, which leads me to believe that I have the correct answer:
http://technet.microsoft.com/en-us/library/ms181034.aspx

QUESTION 4
You develop a database for a travel application. You need to design tables and other database objects. You need to store media files in several tables. Each media file is less than 1 MB in size. The media files will require fast access and will be retrieved frequently. What should you do?

A. Use the CAST function.
B. Use the DATE data type.
C. Use the FORMAT function.
D. Use an appropriate collation.
E. Use a user-defined table type.
F. Use the VARBINARY data type.
G. Use the DATETIME data type.
H. Use the DATETIME2 data type.
I. Use the DATETIMEOFFSET data type.
J. Use the TODATETIMEOFFSET function.

Correct Answer: F
Section: (none)
Explanation

Explanation/Reference:
Reference: http://msdn.microsoft.com/en-us/library/ms188362.aspx

QUESTION 5
You are a database developer of a Microsoft SQL Server 2012 database. You are designing a table that will store Customer data from different sources. The table will include a column that contains the CustomerID from the source system and a column that contains the SourceID. A sample of this data is as shown in the following table.

SourceID	CustomerID	Customer Name
1	234	John Smith
3	7345	Jason Warren
3	4402	Susan Burk
2	866	Michael Allen

You need to ensure that the table has no duplicate CustomerID within a SourceID. You also need to ensure that the data in the table is in the order of SourceID and then CustomerID. Which Transact- SQL statement should you use?

A.
```
CREATE TABLE Customer
(SourceID int NOT NULL IDENTITY,
CustomerID int NOT NULL IDENTITY,
CustomerName varchar(255) NOT NULL);
```

B.
```
CREATE TABLE Customer
(SourceID int NOT NULL,
CustomerID int NOT NULL PRIMARY KEY CLUSTERED,
CustomerName varchar(255) NOT NULL);
```

C.
```
CREATE TABLE Customer
(SourceID int NOT NULL PRIMARY KEY CLUSTERED,
CustomerID int NOT NULL UNIQUE,
CustomerName varchar(255) NOT NULL);
```

D.
```
CREATE TABLE Customer
(SourceID int NOT NULL,
CustomerID int NOT NULL,
CustomerName varchar(255) NOT NULL,
CONSTRAINT PK_Customer PRIMARY KEY CLUSTERED
(SourceID, CustomerID));
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Verified the answer as correct.

QUESTION 6

You have three tables that contain data for vendors, customers, and agents. You create a view that is used to look up telephone numbers for these companies. The view has the following definition:

```
Create view apt.vwCompanyPhoneList
(Source, CompanyID, CompanyNumber,
 LastName, FirstName, BusinessName, Phone)
as

SELECT 'Customer' as Source
  , CustomerID
  , CustomerNumber
  , CustomerLastName
  , CustomerFirstName
  , CustomerBusinessName
  , Phone
FROM apt.Customer
UNION ALL
SELECT 'Agent' as Source
  , AgentID
  , AgentNumber
  , AgentLastName
  , AgentFirstName
  , AgentBusinessName
  , Phone
FROM apt.Agent
UNION ALL
SELECT 'Vendor' as Source
  , VendorID
  , VendorNumber
  , VendorLastName
  , VendorFirstName
  , VendorBusinessName
  , Phone
FROM apt.Vendor
GO
```

You need to ensure that users can update only the phone numbers by using this view. What should you do?

A. Alter the view. Use the EXPAND VIEWS query hint along with each SELECT statement.
B. Drop the view. Re-create the view by using the SCHEMABINDING clause, and then create an index on the view.
C. Create an AFTER UPDATE trigger on the view.
D. Create an INSTEAD OF UPDATE trigger on the view.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Reference: http://msdn.microsoft.com/en-us/library/ms187956.aspx

QUESTION 7
You develop a Microsoft SQL Server 2012 database that contains a table named Products. The Products table has the following definition:

```
CREATE TABLE [dbo].[Products](
  [ProductId] [bigint] NOT NULL,
  [RetailPrice] [nvarchar](25) NOT NULL,
  [WholeSalePrice] [nvarchar](25) NULL,
  [Name] [nvarchar](50) NOT NULL,
  [Category] [nvarchar](25) NOT NULL,
   CONSTRAINT [PK_Products] PRIMARY KEY CLUSTERED
  (
    [ProductId] ASC
  ) ON [PRIMARY]
) ON [PRIMARY]
```

You need to create an audit record only when either the RetailPrice or WholeSalePrice column is updated. Which Transact-SQL query should you use?

A.
```
CREATE TRIGGER TrgPriceChange ON Products FOR UPDATE AS
IF CCLUMNS_CHANGED(RetailPrice, WholesalePrice)
- - Create Audit Records
```

B.
```
CREATE TRIGGER TrgPriceChange ON Products FOR UPDATE AS
IF EXISTS(SELECT RetailPrice from inserted) OR
EXISTS (SELECT WholeSalePnce FROM inserted)
- - Create Audit Records
```

C.
```
CREATE TRIGGER TrgPriceChange ON Products FOR UPDATE AS
IF COLUMNS_UPDATED(RetailPrice, WholesalePrice)
- - Create Audit Records
```

D.
```
CREATE TRIGGER TrgPriceChange ON Products FOR UPDATE AS
IF UPDATE(RetailPrice) OR UPDATE(WholeSalePrice)
- - Create Audit Records
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/bb510663.aspx
Reference: http://msdn.microsoft.com/en-us/library/ms186329.aspx

QUESTION 8
Your database contains tables named Products and ProductsPriceLog. The Products table contains columns named ProductCode and Price. The ProductsPriceLog table contains columns named ProductCode, OldPrice, and NewPrice. The ProductsPriceLog table stores the previous price in the OldPrice column and the new price in the NewPrice column. You need to increase the values in the Price column of all products in the Products table by 5 percent. You also need to log the changes to the ProductsPriceLog table. Which Transact-SQL query should you use?

A.
```
UPDATE Products SET Price = Price * 1.05
OUTPUT inserted.ProductCode, deleted.Price, inserted.Price
  INTO ProductsPriceLog(ProductCode, OldPrice, NewPrice)
```

B.
```
UPDATE Products SET Price = Price * 1.05
OUTPUT inserted.ProductCode, inserted.Price, deleted.Price
  INTO ProductsPriceLog(ProductCode, OldPrice, NewPrice)
```

C.
```
UPDATE Products SET Price = Price * 1.05
OUTPUT inserted.ProductCode, deleted.Price, inserted.Price *
  INTO ProductsPriceLog(ProductCode, OldPrice, NewPrice)
```

D.
```
UPDATE Products SET Price = Price * 1.05
INSERT INTO ProductsPriceLog (ProductCode, CldPnce, NewPrice;
SELECT ProductCode, Price, Price * 1.05 FROM Products
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/ms177564.aspx

QUESTION 9
A table named Profits stores the total profit made each year within a territory. The Profits table has columns named Territory, Year, and Profit. You need to create a report that displays the profits made by each territory for each year and its previous year. Which Transact-SQL query should you use?

A.
```
SELECT Territory, Year, Profit,
  LEAD(Profit, 1, 0) OVER (PARTITION BY Territory ORDER BY Year) AS PrevProfit
FROM Profits
```

B.
```
SELECT Territory, Year, Profit,
  LAG(Profit, 1, 0) OVER (PARTITION BY Year ORDER BY Territory) AS PrevProfit
FROM Profits
```

C.
```
SELECT Territory, Year, Profit,
  LAG(Profit, 1, 0) OVER (PARTITION BY Territory ORDER BY Year) AS PrevProfit
FROM Profits
```

D.
```
SELECT Territory, Year, Profit,
  LEAD(Profit, 1, 0) OVER (PARTITION BY Year ORDER BY Territory) AS PrevProfit
FROM Profits
```

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Reference: http://msdn.microsoft.com/en-us/library/hh231256.aspx
Reference: http://msdn.microsoft.com/en-us/library/hh213125.aspx

QUESTION 10
You use Microsoft SQL Server 2012 database to develop a shopping cart application. You need to rotate the unique values of the ProductName field of a table-valued expression into multiple columns in the output. Which Transact-SQL operator should you use?

A. CROSS JOIN
B. CROSS APPLY
C. PIVOT

D. UNPIVOT

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
http://technet.microsoft.com/en-us/library/ms177634.aspx

QUESTION 11
Your application contains a stored procedure for each country. Each stored procedure accepts an employee identification number through the @EmpID parameter. You plan to build a single process for each employee that will execute the stored procedure based on the country of residence. Which approach should you use?

A. a recursive stored procedure
B. Trigger
C. An UPDATE statement that includes CASE
D. Cursor
E. The foreach SQLCLR statement

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 12
You use Microsoft SQL Server 2012 to develop a database application. You create a stored procedure named dbo.ModifyData that can modify rows. You need to ensure that when the transaction fails, dbo.ModifyData meets the following requirements:
- Does not return an error
- Closes all opened transactions

Which Transact-SQL statement should you use?

A.
```
BEGIN TRANSACTION
    BEGIN TRY
      EXEC dbo.ModifyData
      COMMIT TRANSACTION
    END TRY
    BEGIN CATCH
      IF @@ TRANCOUNT = 0
      ROLLBACK TRANSACTION;
    END CATCH
```
B.
```
BEGIN TRANSACTION
    BEGIN TRY
      EXEC dbo.ModifyData
      COMMIT TRANSACTION
    END TRY
    BEGIN CATCH
      IF @@ERROR != 0
      ROLLBACK TRANSACTION;
     THROW;
    END CATCH
```
C.
```
BEGIN TRANSACTION
    BEGIN TRY
      EXEC dbo.ModifyData
```

```
    COMMIT TRANSACTION
  END TRY
  BEGIN CATCH
    IF @@TRANCOUNT = 0
    ROLLBACK TRANSACTION;
   THROW;
  END CATCH
```

D.
```
BEGIN TRANSACTION
  BEGIN TRY
    EXEC dbo.ModifyData
    COMMIT TRANSACTION
  END TRY
  BEGIN CATCH
    IF @@ERROR != 0
    ROLLBACK TRANSACTION;
  END CATCH
```

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

QUESTION 13
You are developing a database application by using Microsoft SQL Server 2012. An application that uses a database begins to run slowly. You discover that during reads, the transaction experiences blocking from concurrent updates. You need to ensure that throughout the transaction the data maintains the original version. What should you do?

A. Add a HASH hint to the query.
B. Add a LOOP hint to the query.
C. Add a FORCESEEK hint to the query.
D. Add an INCLUDE clause to the index.
E. Add a FORCESCAN hint to the Attach query.
F. Add a columnstore index to cover the query.
G. Enable the optimize for ad hoc workloads option.
H. Cover the unique clustered index with a columnstore index.
I. Include a SET FORCEPLAN ON statement before you run the query.
J. Include a SET STATISTICS PROFILE ON statement before you run the query.
K. Include a SET STATISTICS SHOWPLAN_XML ON statement before you run the query.
L. Include a SET TRANSACTION ISOLATION LEVEL REPEATABLE READ statement before you run the query.
M. Include a SET TRANSACTION ISOLATION LEVEL SNAPSHOT statement before you run the query.
N. Include a SET TRANSACTION ISOLATION LEVEL SERIALIZABLE statement before you run the query.

Correct Answer: M
Section: (none)
Explanation

Explanation/Reference:

QUESTION 14
You are developing a database application by using Microsoft SQL Server 2012. You have a query that runs slower than expected. You need to capture execution plans that will include detailed information on missing

indexes recommended by the query optimizer. What should you do?

A. Add a HASH hint to the query.
B. Add a LOOP hint to the query.
C. Add a FORCESEEK hint to the query.
D. Add an INCLUDE clause to the index.
E. Add a FORCESCAN hint to the Attach query.
F. Add a columnstore index to cover the query.
G. Enable the optimize for ad hoc workloads option.
H. Cover the unique clustered index with a columnstore index.
I. Include a SET FORCEPLAN ON statement before you run the query.
J. Include a SET STATISTICS PROFILE ON statement before you run the query.
K. Include a SET STATISTICS SHOWPLAN_XML ON statement before you run the query.
L. Include a SET TRANSACTION ISOLATION LEVEL REPEATABLE READ statement before you run the query.
M. Include a SET TRANSACTION ISOLATION LEVEL SNAPSHOT statement before you run the query.
N. Include a SET TRANSACTION ISOLATION LEVEL SERIALIZABLE statement before you run the query.

Correct Answer: K
Section: (none)
Explanation

Explanation/Reference:

QUESTION 15
You are developing a database application by using Microsoft SQL Server 2012. An application that uses a database begins to run slowly. You discover that a large amount of memory is consumed by single-use dynamic queries. You need to reduce procedure cache usage from these statements without creating any additional indexes. What should you do?

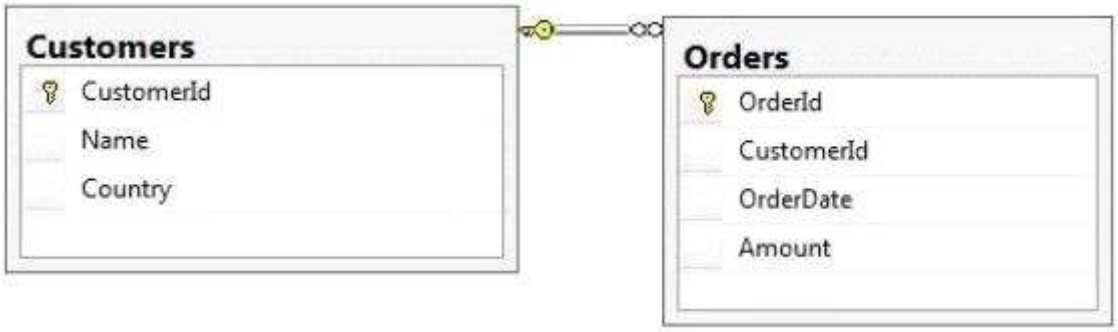
A. Add a HASH hint to the query.
B. Add a LOOP hint to the query.
C. Add a FORCESEEK hint to the query.
D. Add an INCLUDE clause to the index.
E. Add a FORCESCAN hint to the Attach query.
F. Add a columnstore index to cover the query.
G. Enable the optimize for ad hoc workloads option.
H. Cover the unique clustered index with a columnstore index.
I. Include a SET FORCEPLAN ON statement before you run the query.
J. Include a SET STATISTICS PROFILE ON statement before you run the query.
K. Include a SET STATISTICS SHOWPLAN_XML ON statement before you run the query.
L. Include a SET TRANSACTION ISOLATION LEVEL REPEATABLE READ statement before you run the query.
M. Include a SET TRANSACTION ISOLATION LEVEL SNAPSHOT statement before you run the query.
N. Include a SET TRANSACTION ISOLATION LEVEL SERIALIZABLE statement before you run the query.

Correct Answer: G
Section: (none)
Explanation

Explanation/Reference:

Reference: http://msdn.microsoft.com/en-us/library/cc645587.aspx

QUESTION 16
You administer a Microsoft SQL Server 2012 database named ContosoDb. Tables are defined as shown in the exhibit. (Click the Exhibit button.)



You need to display rows from the Orders table for the Customers row having the CustomerId value set to 1 in the following XML format.

```
<Customers>
  <Name>Customer A</Name>
  <Country>Australia</Country>
  <Orders>
    <OrderId>1</OrderId>
    <OrderDate>2000-01-01T00:00:00</OrderDate>
    <Amount>3400.00</Amount>
  </Orders>
  <Orders>
    <OrderId>2</OrderId>
    <OrderDate>2001-01-01T00:00:00</OrderDate>
    <Amount>4300.00</Amount>
  </Orders>
</Customers>
```

Which Transact-SQL query should you use?

A.
```
SELECT OrderId, OrderDate, Amount, Name, Country FROM Orders INNER JOIN
Customers ON Orders.CustomerId = Customers-CustomerId WHERE
Customers.CustomerId = 1
FOR XML RAW
```

B.
```
SELECT OrderId, OrderDate, Amount, Name, Country FROM Orders INNER JOIN
Customers ON Orders.CustomerId = Customers.CustomerId
WHERE Customers=CustomerId = 1
FOR XML RAW, ELEMENTS
```

C.
```
SELECT OrderId, OrderDate, Amount, Name, Country FROM Orders INNER JOIN
Customers ON Orders.CustomerId = Customers.CustomerId WHERE
Customers.CustomerId = 1
FOR XML AUTO
```

D.
```
SELECT OrderId, OrderDate, Amount, Name, Country FROM Orders INNER JOIN
Customers ON Orders.CustomerId - Customers.CustomerId WHERE
Customers.CustomerId= 1
FOR XML AUTO, ELEMENTS
```

E.
```
SELECT Name, Country, OrderId, OrderDate, Amount FROM Orders INNER JOIN
Customers ON Orders.CustomerId= Customers.CustomerId WHERE
Customers.CustomerId= 1
FOR XML AUTO
```

F.
```
SELECT Name, Country, Crderld, OrderDate, Amount FROM Orders INNER JOIN
Customers ON Orders.CustomerId= Customers.CustomerId WHERE
Customers.CustomerId= 1
FOR XML AUTO, ELEMENTS
```

G.
```
SELECT Name AS '@Name', Country AS '@Country', OrderId, OrderDate, Amount FROM
Orders INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId WHERE
Customers.CustomerId= 1
FOR XML PATH ('Customers')
```

H.
```
SELECT Name AS 'Customers/Name', Country AS 'Customers/Country', OrderId,
OrderDate, Amount FROM Orders
INNER JOIN Customers ON Orders.CustomerId= Customers.CustomerId WHERE
Customers.CustomerId= 1
FOR XML PATH ('Customers')
```

Correct Answer: F
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

QUESTION 17
You use Microsoft SQL Server 2012 to write code for a transaction that contains several statements. There is high contention between readers and writers on several tables used by your transaction. You need to minimize the use of the tempdb space. You also need to prevent reading queries from blocking writing queries. Which isolation level should you use?

A. SERIALIZABLE
B. SNAPSHOT
C. READ COMMITTED SNAPSHOT
D. REPEATABLE READ

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Reference: http://msdn.microsoft.com/en-us/library/ms173763.aspx

QUESTION 18
You create a table that has the StudentCode, SubjectCode, and Marks columns to record mid-year marks for students. The table has marks obtained by 50 students for various subjects. You need to ensure that the following requirements are met:
- Students must be ranked based on their average marks.
- If one or more students have the same average, the same rank must be given to these students.
- Consecutive ranks must be skipped when the same rank is assigned.

Which Transact-SQL query should you use?

A.
```
SELECT StudentCode as Code,
  RANK() OVER(ORDER BY AVG (Marks) DESC) AS Value
FROM StudentMarks
GROUP BY StudentCode
```

B.
```
SELECT Id, Name, Marks,
```

```
  DENSE_RANK() OVER(ORDER BY Marks DESC) AS Rank
FROM StudentMarks
```

C.
```
SELECT StudentCode as Code,
  DENSE_RANK() OVER(ORDER BY AVG (Marks) DESC) AS Value
FROM StudentMarks
GROUP BY StudentCode
```

D.
```
SELECT StudentCode as Code,
  NTILE(2) OVER(ORDER BY AVG (Marks) DESC) AS Value
FROM StudentMarks
GROUP BY StudentCode
```

E.
```
SELECT StudentCode AS Code,Marks AS Value FROM (
  SELECT StudentCode, Marks AS Marks,
    RANK() OVER(PARTITION BY SubjectCode ORDER BY Marks ASC) AS Rank
  FROM StudentMarks) tmp
WHERE Rank = 1
```

F.
```
SELECT StudentCode AS Code,Marks AS Value FROM (
  SELECT StudentCode, Marks AS Marks,
    RANK() OVER(PARTITION BY SubjectCode ORDER BY Marks DESC) AS Rank
  FROM StudentMarks) tmp
WHERE Rank = 1
```

G.
```
SELECT StudentCode AS Code,Marks AS Value FROM (
  SELECT StudentCode, Marks AS Marks,
    RANK() OVER(PARTITION BY StudentCode ORDER BY Marks ASC) AS Rank
  FROM StudentMarks) tmp
WHERE Rank = 1
```

H.
```
SELECT StudentCode AS Code,Marks AS Value FROM (
  SELECT StudentCode, Marks AS Marks,
    RANXO OVER(PARTITION BY StudentCode ORDER BY Marks DESC) AS Rank
  FROM StudentMarks) tmp
WHERE Rank = 1
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Reference: http://msdn.microsoft.com/en-us/library/ms189798.aspx

QUESTION 19
You create a table that has the StudentCode, SubjectCode, and Marks columns to record mid-year marks for students. The table has marks obtained by 50 students for various subjects. You need to retrieve the students who scored the highest marks for each subject along with the marks. Which Transact-SQL query should you use?

A.
```
SELECT StudentCode as Code, RANK() OVER(ORDER BY AVG(Marks) DESC) AS Value
FROM StudentMarks
GROUP BY StudentCode
```

B.
```
SELECT Id, Name, Marks, DENSE_RANK() OVER(ORDER BY Marks DESC) AS Rank
FROM StudentMarks
```

C.
```
SELECT StudentCode as Code, DENSE_RANK() OVER(ORDER BY AVG(Marks) DESC) AS
Value
FROM StudentMarks
GROUP BY StudentCode
```

D.
```
SELECT StudentCode as Code, NTILE(2) OVER(ORDER BY AVG(Marks) DESC) AS Value
FROM StudentMarks
GROUP BY StudentCode
```

E.
```
SELECT StudentCode AS Code, Marks AS Value FROM (
  SELECT StudentCode, Marks AS Marks,
    RANK() OVER(PARTITION BY SubjectCode ORDER BY Marks ASC) AS Rank
```

```
    FROM StudentMarks) tmp
  WHERE Rank = 1
```

F.
```
SELECT StudentCode AS Code, Marks AS Value FROM (
  SELECT StudentCode, Marks AS Marks,
    RANK() OVER(PARTITION BY SubjectCode ORDER BY Marks DESC) AS Rank
  FROM StudentMarks) tmp
WHERE Rank = 1
```

G.
```
SELECT StudentCode AS Code, Marks AS Value FROM (
  SELECT StudentCode, Marks AS Marks,
    RANK() OVER(PARTITION BY StudentCode ORDER BY Marks ASC) AS Rank
  FROM StudentMarks) tmp
WHERE Rank = 1
```

H.
```
SELECT StudentCode AS Code, Marks AS Value FROM (
  SELECT StudentCode, Marks AS Marks,
    RANXO OVER(PARTITION BY StudentCode ORDER BY Marks DESC) AS Rank
  FROM StudentMarks) tmp
WHERE Rank = 1
```

Correct Answer: F
Section: (none)
Explanation

Explanation/Reference:

QUESTION 20
You are a database developer for an application hosted on a Microsoft SQL Server 2012 server. The database contains two tables that have the following definitions:

```
CREATE TABLE Customer
(CustomerID int NOT NULL PRIMARY KEY,
 CustomerName varchar(50) NOT NULL)

CREATE TABLE Orders
(OrderID int NOT NULL PRIMARY KEY,
 CustomerID int NOT NULL FOREIGN KEY REFERENCES Customer (CustomerID),
 OrderAmount money NOT NULL,
 ShippingCountry varchar(50) NOT NULL)
```

Global customers place orders from several countries. You need to view the country from which each customer has placed the most orders. Which Transact-SQL query do you use?

A.
```
SELECT c.CustomerID, c.CustomerName, o.ShippingCountry
FROM Customer c
INNER JOIN
 (SELECT CustomerID, ShippingCountry,
  RANK() OVER (PARTITION BY CustomerID
   ORDER BY COUNT(OrderAmount) DESC) AS Rnk
  FROM Orders
  GROUP BY CustomerID, ShippingCountry) AS o
ON c.CustomerID = o.CustomerID
WHERE o.Rnk = 1
```

B.
```
SELECT c.CustomerID, c.CustomerName, o.ShippingCountry
FROM
 (SELECT c.CustomerID, c.CustomerName, o.ShippingCountry,
  RANK() OVER (PARTITION BY CustomerID
```

```
    ORDER BY COUNT(o.OrderAmount) ASC) AS Rnk
   FROM Customer c
   INNER JOIN Orders o
   ON c.CustomerID = o.CustomerID
   GROUP BY c.CustomerID, c.CustomerName, o.ShippingCountry) cs
WHERE Rnk = 1
```

C.
```
SELECT c.CustomerID, c.CustomerName, o.ShippingCountry
FROM Customer c
INNER JOIN
 (SELECT CustomerID, ShippingCountry,
  RANK() OVER (PARTITION BY CustomerID
   ORDER BY OrderAmount DESC) AS Rnk
  FROM Orders
  GROUP BY CustomerID, ShippingCountry) AS o
ON c.CustomerID = o.CustomerID
WHERE o.Rnk = 1
```

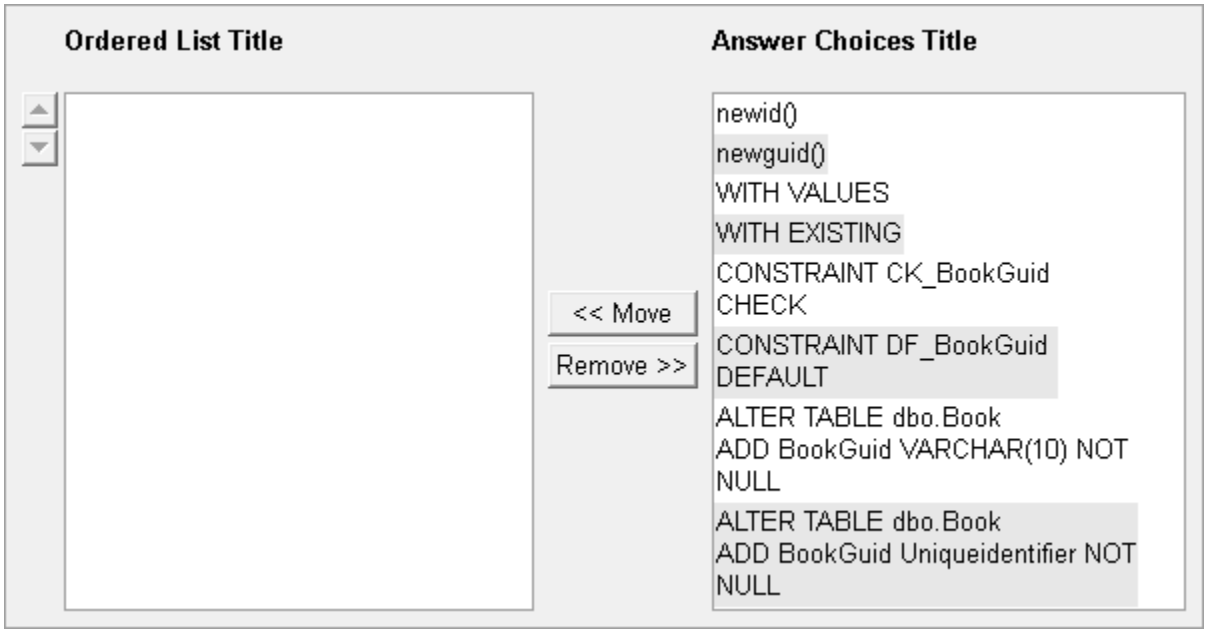
D.
```
SELECT c.CustomerID, c.CustomerName, o.ShippingCountry
FROM Customer c
INNER JOIN
 (SELECT CustomerID, ShippingCountry,
  COUNT(OrderAmount) DESC) AS OrderAmount
  FROM Orders
  GROUP BY CustomerID, ShippingCountry) AS o
ON c.CustomerID = o.CustomerID
ORDER BY OrderAmount DESC
```

Correct Answer: A
Section: (none)
Explanation

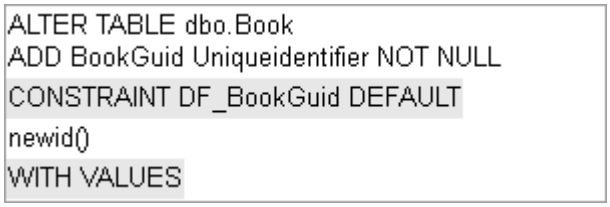
Explanation/Reference:
Verified answer as correct.

QUESTION 21
You want to add a new GUID column named BookGUID to a table named dbo.Book that already contains data. BookGUID will have a constraint to ensure that it always has a value when new rows are inserted into dbo.Book. You need to ensure that the new column is assigned a GUID for existing rows. Which four Transact-SQL statements should you use? (To answer, move the appropriate SQL statements from the list of statements to the answer area and arrange them in the correct order.)

Build List and Reorder:



Correct Answer:



Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct. Actually, in the real world, you don't have to use WITH VALUES at the end of the statement and it works just as well. But because the question specifically states which FOUR TSQL statements to use, we have to include it.

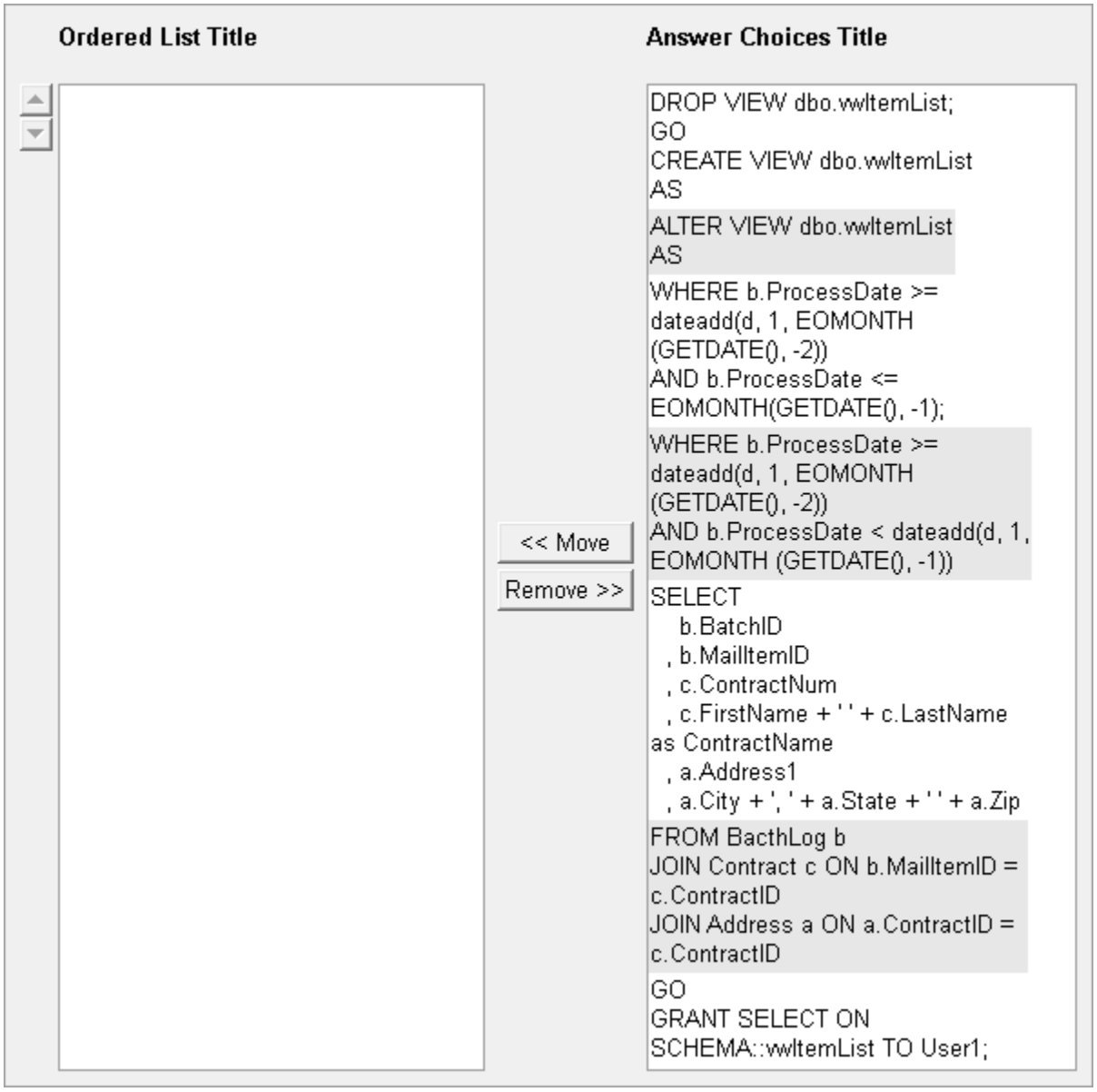
Reference: http://msdn.microsoft.com/en-us/library/ms190273.aspx

QUESTION 22
You create a view based on the following statement:

```
CREATE VIEW dbo.vwItemList
AS
SELECT
    b.BatchID
  , b.MailItemID
  , c.ContractNum
  , c.FirstName + ' ' + c.LastName as ContractName
  , a.Address1
  , a.City + ', ' + a.State + ' ' + a.Zip
FROM BatchLog b
join Contract c on b.MailItemID = c.ContractID
join Address a on a.ContractID = c.ContractID
WHERE
  b.ProcessDate >= dateadd(d, 1,EOMONTH(GETDATE(),-2));
```

You grant the Select permission to User1 for this view. You need to change the view so that it displays only the records that were processed in the month prior to the current month. You need to ensure that after the changes, the view functions correctly for User1. Which four Transact-SQL statements should you use? (To answer, move the appropriate SQL statements from the list of statements to the answer area and arrange them in the correct order.)

Build List and Reorder:



Correct Answer:

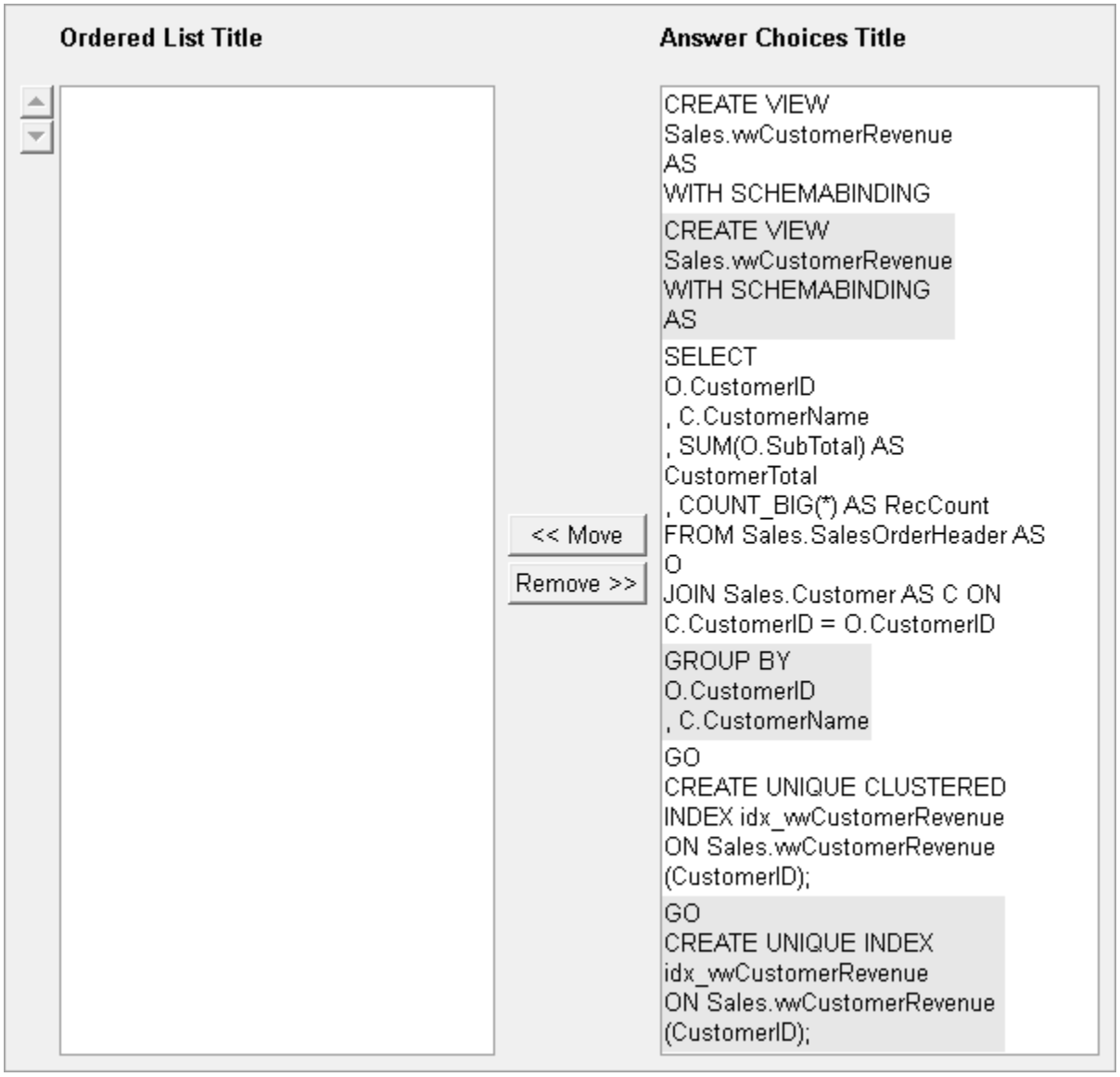
```
ALTER VIEW dbo.vwItemList
AS
SELECT
    b.BatchID
  , b.MailItemID
  , c.ContractNum
  , c.FirstName + ' ' + c.LastName as
ContractName
  , a.Address1
  , a.City + ', ' + a.State + ' ' + a.Zip
FROM BacthLog b
JOIN Contract c ON b.MailItemID =
c.ContractID
JOIN Address a ON a.ContractID =
c.ContractID
WHERE b.ProcessDate >= dateadd(d, 1,
EOMONTH (GETDATE(), -2))
AND b.ProcessDate < dateadd(d, 1,
EOMONTH (GETDATE(), -1))
```

Section: (none)
Explanation

Explanation/Reference:
Reference: http://msdn.microsoft.com/en-us/library/hh213020.aspx
Reference: http://msdn.microsoft.com/en-us/library/ms186819.aspx
Reference: http://msdn.microsoft.com/en-us/library/ms173846.aspx

QUESTION 23
You use a Microsoft SQL Server 2012 database. You need to create an indexed view within the database for a report that displays Customer Name and the total revenue for that customer. Which four T-SQL statements should you use? (To answer, move the appropriate SQL statements from the list of statements to the answer area and arrange them in the correct order.)

Build List and Reorder:



Correct Answer:

```
CREATE VIEW Sales.vwCustomerRevenue
WITH SCHEMABINDING
AS
SELECT
O.CustomerID
, C.CustomerName
, SUM(O.SubTotal) AS CustomerTotal
, COUNT_BIG(*) AS RecCount
FROM Sales.SalesOrderHeader AS O
JOIN Sales.Customer AS C ON C.CustomerID
= O.CustomerID
GROUP BY
O.CustomerID
, C.CustomerName
GO
CREATE UNIQUE CLUSTERED INDEX
idx_vwCustomerRevenue
ON Sales.vwCustomerRevenue (CustomerID);
```

Section: (none)
Explanation

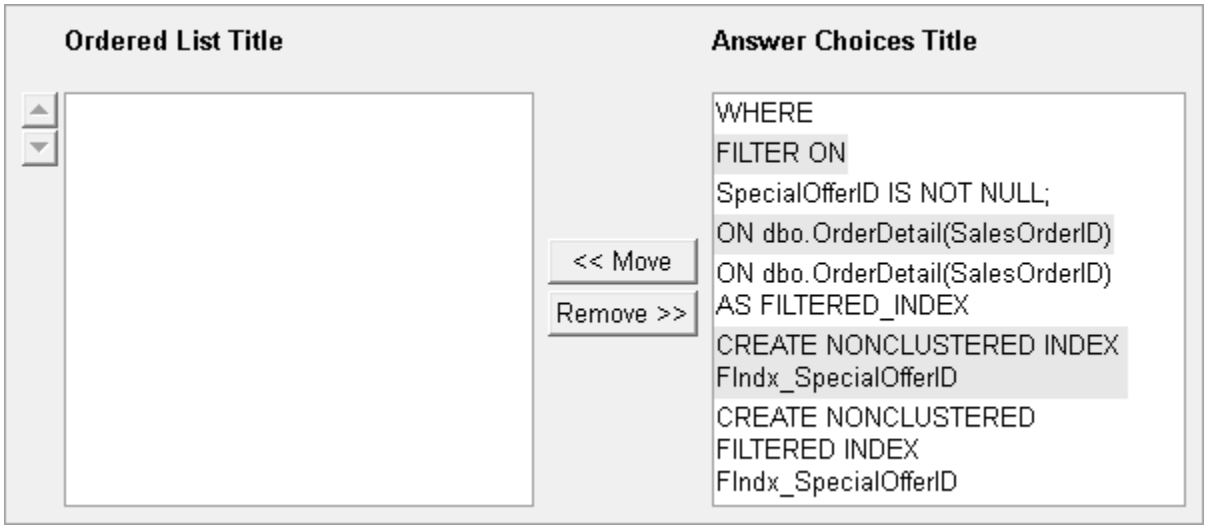
Explanation/Reference:
Reference: http://msdn.microsoft.com/en-us/library/ms191432.aspx

QUESTION 24
You administer a Microsoft SQL Server 2012 database. You use an OrderDetail table that has the following definition:

```
CREATE TABLE [dbo].[OrderDetail]
 ([SalesOrderID] [int] NOT NULL,
  [SalesOrderDetailID] [int] IDENTITY(1,1) NOT NULL,
  [CarrierTrackingNumber] [nvarchar](25) NULL,
  [OrderQty] [smallint] NOT NULL,
  [ProductID] [int] NOT NULL,
  [SpecialOfferID] [int] NULL,
  [UnitPrice] [money] NOT NULL);
```

You need to create a non-clustered index on the SalesOrderID column in the OrderDetail table to include only rows that contain a value in the SpecialOfferID column. Which four Transact-SQL statements should you use? (To answer, move the appropriate statements from the list of statements to the answer area and arrange them in the correct order.)

Build List and Reorder:



Correct Answer:

CREATE NONCLUSTERED INDEX
FIndx_SpecialOfferID
ON dbo.OrderDetail(SalesOrderID)
WHERE
SpecialOfferID IS NOT NULL;

Section: (none)
Explanation

Explanation/Reference:

QUESTION 25
You use Microsoft SQL Server 2012 to develop a database application. You need to implement a computed column that references a lookup table by using an INNER JOIN against another table.
What should you do?

A. Reference a user-defined function within the computed column.
B. Create a BEFORE trigger that maintains the state of the computed column.
C. Add a default constraint to the computed column that implements hard-coded values.
D. Add a default constraint to the computed column that implements hard-coded CASE statements.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Verified answer as correct.

Exam C

QUESTION 1
You use a contained database named ContosoDb within a domain. You need to create a user who can log on to the ContosoDb database. You also need to ensure that you can port the database to different database servers within the domain without additional user account configurations. Which type of user should you create?

A. User mapped to a certificate
B. SQL user without login
C. Domain user
D. SQL user with login

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Reference: http://msdn.microsoft.com/en-us/library/ff929071.aspx

QUESTION 2
You administer a Microsoft SQL Server 2012 database that has multiple tables in the Sales schema. Some users must be prevented from deleting records in any of the tables in the Sales schema. You need to manage users who are prevented from deleting records in the Sales schema. You need to achieve this goal by using the minimum amount of administrative effort. What should you do?

A. Create a custom database role that includes the users. Deny Delete permissions on the Sales schema for the custom database role.
B. Include the Sales schema as an owned schema for the db_denydatawriter role. Add the users to the db_denydatawriter role.
C. Deny Delete permissions on each table in the Sales schema for each user.
D. Create a custom database role that includes the users. Deny Delete permissions on each table in the Sales schema for the custom database role.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Looks good.

QUESTION 3
You generate a daily report according to the following query:

```
SELECT c.CustomerName
FROM Sales.Customer c
WHERE Sales.ufnGetLastOrderDate(c.CustomerID) <
 DATEADD(DAY, -90, GETDATE())
```

The Sales.ufnGetLastOrderDate user-defined function (UDF) is defined as follows:

```
CREATE FUNCTION Sales.ufnGetLastOrderDate(@CustomerID int)
RETURNS datetime
AS
BEGIN
  DECLARE @lastOrderDate datetime
  SELECT @lastOrderDate = MAX(OrderDate)
  FROM Sales.SalesOrder
  WHERE CustomerID = @CustomerID
  RETURN @lastOrderDate
END
```

You need to improve the performance of the query. What should you do?

A. Drop the UDF and rewrite the report query as follows:

```
WITH cte(CustomerID, LastOrderDate) AS (
  SELECT CustomerID, MAX(OrderDate) AS [LastOrderDate]
  FROM Sales.SalesOrder
  GROUP BY CustomerID
)
SELECT c.CustomerName
FROM cte
INNER JOIN Sales.Customer c
ON cte.CustomerID = c.CustomerID
WHERE cte.LastOrderDate < DATEADD(DAY, -90, GETDATE())
```

B. Drop the UDF and rewrite the report query as follows:

```
SELECT c.CustomerName
FROM Sales.Customer c
WHERE NOT EXISTS (
  SELECT s.OrderDate
  FROM Sales.SalesOrder
  WHERE s.OrderDate > DATEADD(DAY, -90, GETDATE())
   AND s.CustomerID = c.CustomerID)
```

C. Drop the UDF and rewrite the report query as follows:

```
SELECT DISTINCT c.CustomerName
FROM Sales.Customer c
INNER JOIN Sales.SalesOrder s
ON c.CustomerID = s.CustomerID
WHERE s.OrderDate < DATEADD(DAY, -90, GETDATE())
```

D. Rewrite the report query as follows:

```
SELECT c.CustomerName
FROM Sales.Customer c
WHERE NOT EXISTS (SELECT OrderDate FROM Sales.ufnGetRecentOrders(c.CustomerID,
90))
```

Rewrite the UDF as follows:

```
CREATE FUNCTION Sales.ufnGetRecentOrders(@CustomerID int, @MaxAge datetime)
RETURNS TABLE AS RETURN (
  SELECT OrderDate
  FROM Sales.SalesOrder
  WHERE s.CustomerID = @CustomerID
   AND s.OrderDate > DATEADD(DAY, -@MaxAge, GETDATE())
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

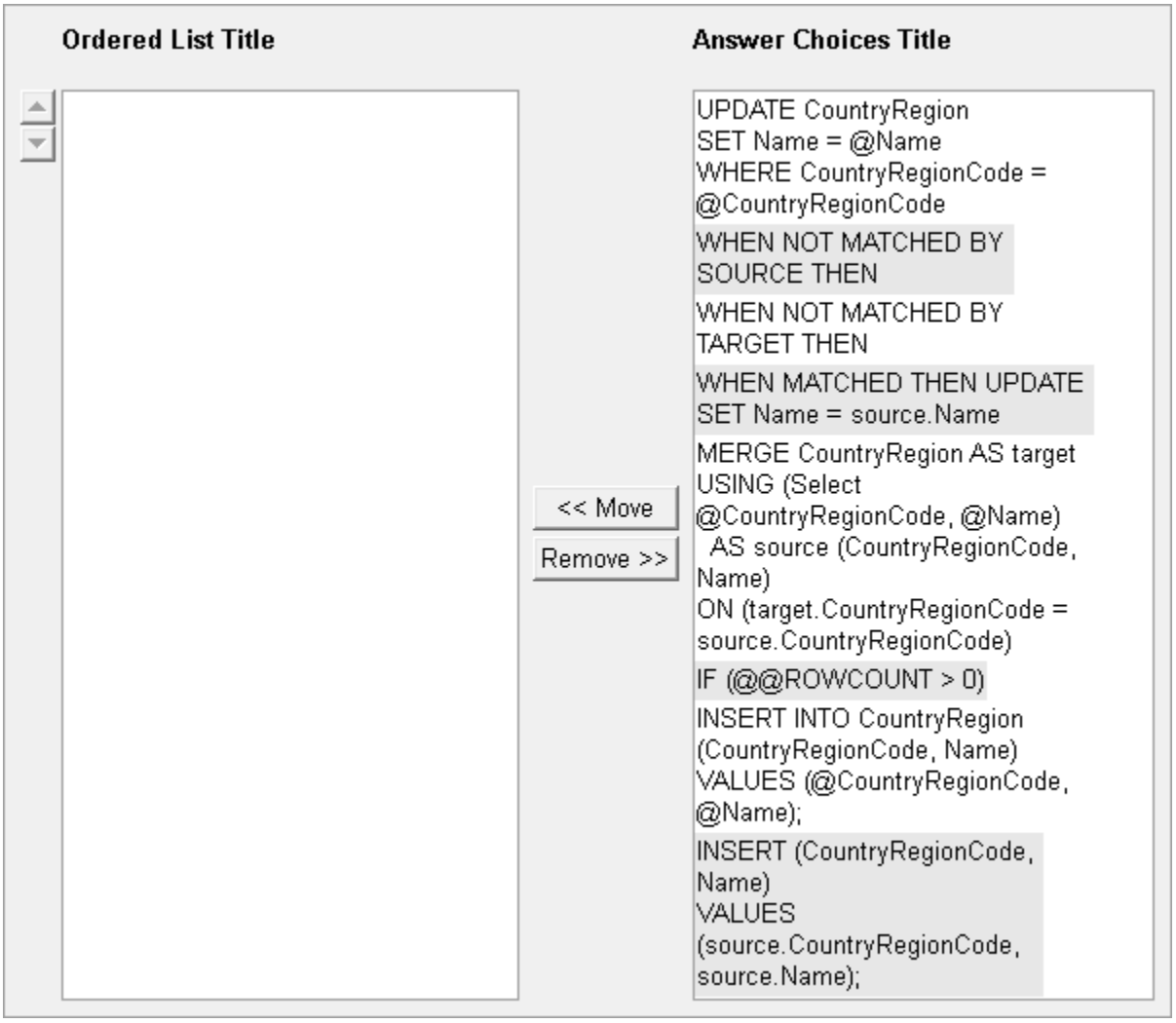
QUESTION 4
You create the following stored procedure. (Line numbers are included for reference only.)

```
01  CREATE PROCEDURE dbo.InsertCountryRegion
02    @CountryRegionCode nvarchar(3),
03    @Name nvarchar(50)
04  AS
05  BEGIN
06    SET NOCOUNT ON;
07    ...
08  END;
```

You need to ensure that the stored procedure performs the following tasks:
- If a record exists, update the record.
- If no record exists, insert a new record.

Which four Transact-SQL statements should you insert at line 07? (To answer, move the appropriate statements from the list of statements to the answer area and arrange them in the correct order.)

Build List and Reorder:



Correct Answer:

```
MERGE CountryRegion AS target
USING (Select @CountryRegionCode, @Name)
  AS source (CountryRegionCode, Name)
ON (target.CountryRegionCode =
source.CountryRegionCode)
WHEN MATCHED THEN UPDATE SET Name
= source.Name
WHEN NOT MATCHED BY TARGET THEN
INSERT (CountryRegionCode, Name)
VALUES (source.CountryRegionCode,
source.Name);
```

Section: (none)
Explanation

Explanation/Reference:
Reference: http://technet.microsoft.com/en-us/library/bb510625.aspx

QUESTION 5
You use Microsoft SQL Server 2012 to develop a database application. You create two tables by using the

following table definitions.

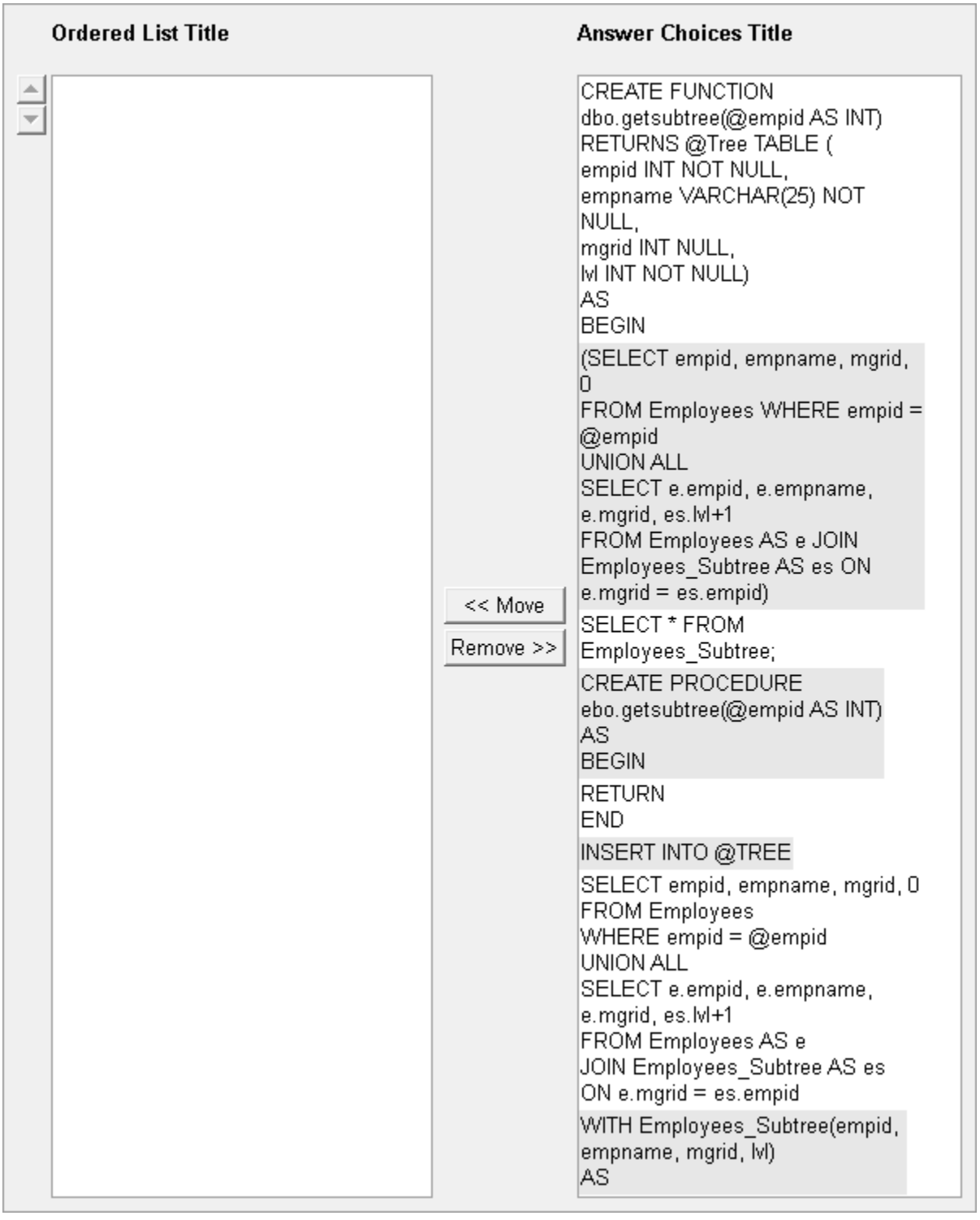
```
CREATE TABLE Employees
(
  empid int NOT NULL
   , mgrid int NULL
   , empname varchar(25) NOT NULL
   , salary money NOT NULL
   CONSTRAINT PK_Employees PRIMARY KEY(empid)
);
CREATE TABLE Departments
(
  deptid INT NOT NULL PRIMARY KEY
   , deptname VARCHAR(25) NOT NULL
   , deptmgrid INT NULL REFERENCES Employees(empid)
);
```

You need to write a Transact-SQL statement that will support the following query:

```
SELECT D.deptid, D.deptname, D.deptmgrid
 , ST.empid, ST.empname, ST.mgrid
FROM Departments AS D
 CROSS APPLY getsubtree(D.deptmgrid) AS ST;
```

Which six Transact-SQL statements should you use? (To answer, move the appropriate SQL statements from the list of statements to the answer area and arrange them in the correct order.)

Build List and Reorder:



Correct Answer:

```
CREATE FUNCTION dbo.getsubtree(@empid
AS INT)
RETURNS @Tree TABLE (
empid INT NOT NULL,
empname VARCHAR(25) NOT NULL,
mgrid INT NULL,
lvl INT NOT NULL)
AS
BEGIN
WITH Employees_Subtree(empid, empname,
mgrid, lvl)
AS
(SELECT empid, empname, mgrid, 0
FROM Employees WHERE empid = @empid
UNION ALL
SELECT e.empid, e.empname, e.mgrid,
es.lvl+1
FROM Employees AS e JOIN
Employees_Subtree AS es ON e.mgrid =
es.empid)
INSERT INTO @TREE
SELECT * FROM Employees_Subtree;
RETURN
END
```

Section: (none)
Explanation

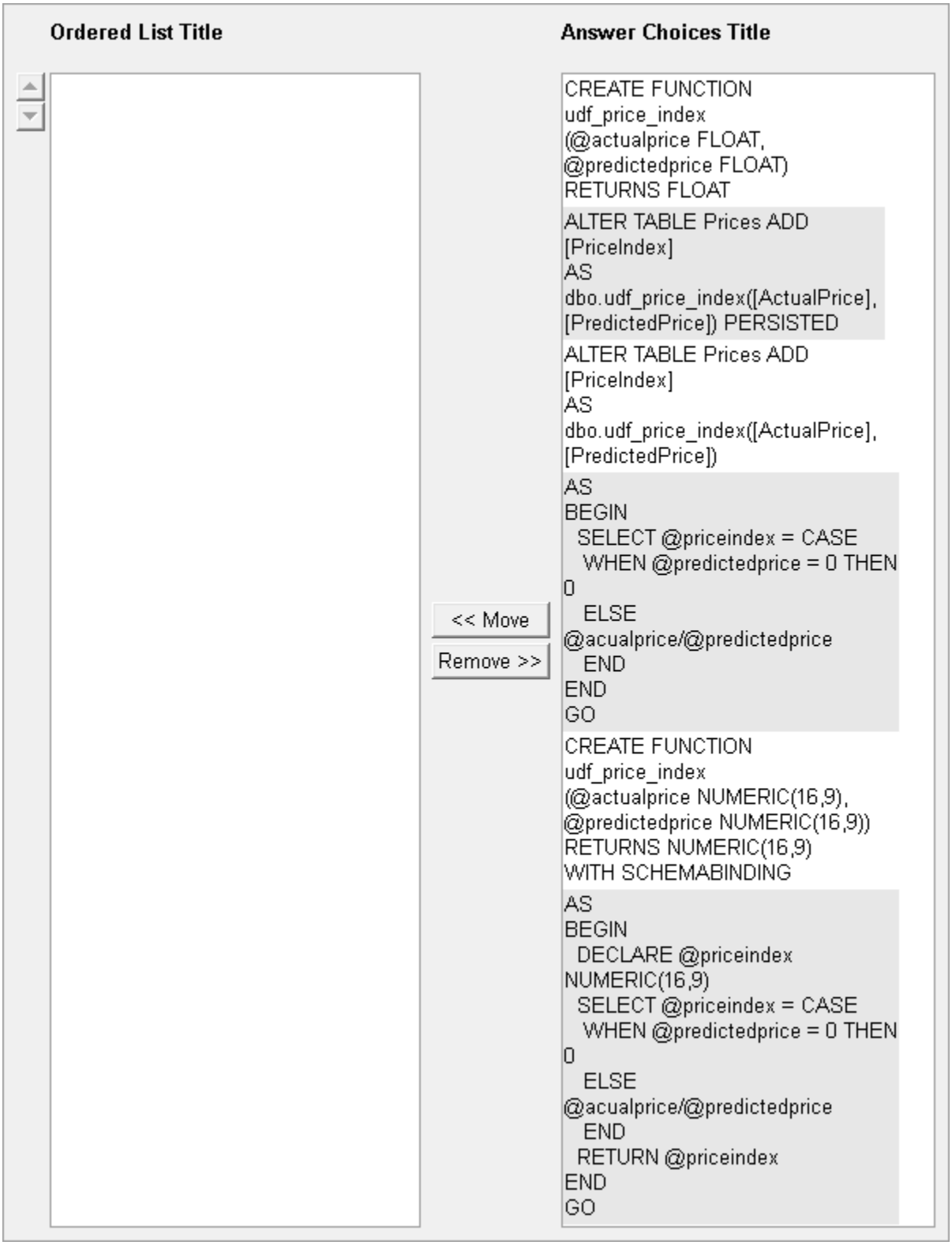
Explanation/Reference:

QUESTION 6
You use Microsoft SQL Server 2012 to develop a database application. You create a table by using the following definition:

```
CREATE TABLE Prices (
 PriceId int IDENTITY(1,1) PRIMARY KEY,
 ActualPrice NUMERIC(16,9),
 PredictedPrice NUMERIC(16,9)
)
```

You need to create a computed column based on a user-defined function named udf_price_index. You also need to ensure that the column supports an index. Which three Transact-SQL statements should you use? (To answer, move the appropriate SQL statements from the list of statements to the answer area and arrange them in the correct order.)

Build List and Reorder:



Correct Answer:

```
CREATE FUNCTION udf_price_index
(@actualprice NUMERIC(16,9),
@predictedprice NUMERIC(16,9))
RETURNS NUMERIC(16,9)
WITH SCHEMABINDING
AS
BEGIN
  DECLARE @priceindex NUMERIC(16,9)
  SELECT @priceindex = CASE
   WHEN @predictedprice = 0 THEN 0
   ELSE @acualprice/@predictedprice
   END
  RETURN @priceindex
END
GO
ALTER TABLE Prices ADD [PriceIndex]
AS dbo.udf_price_index([ActualPrice],
[PredictedPrice]) PERSISTED
```

Section: (none)
Explanation

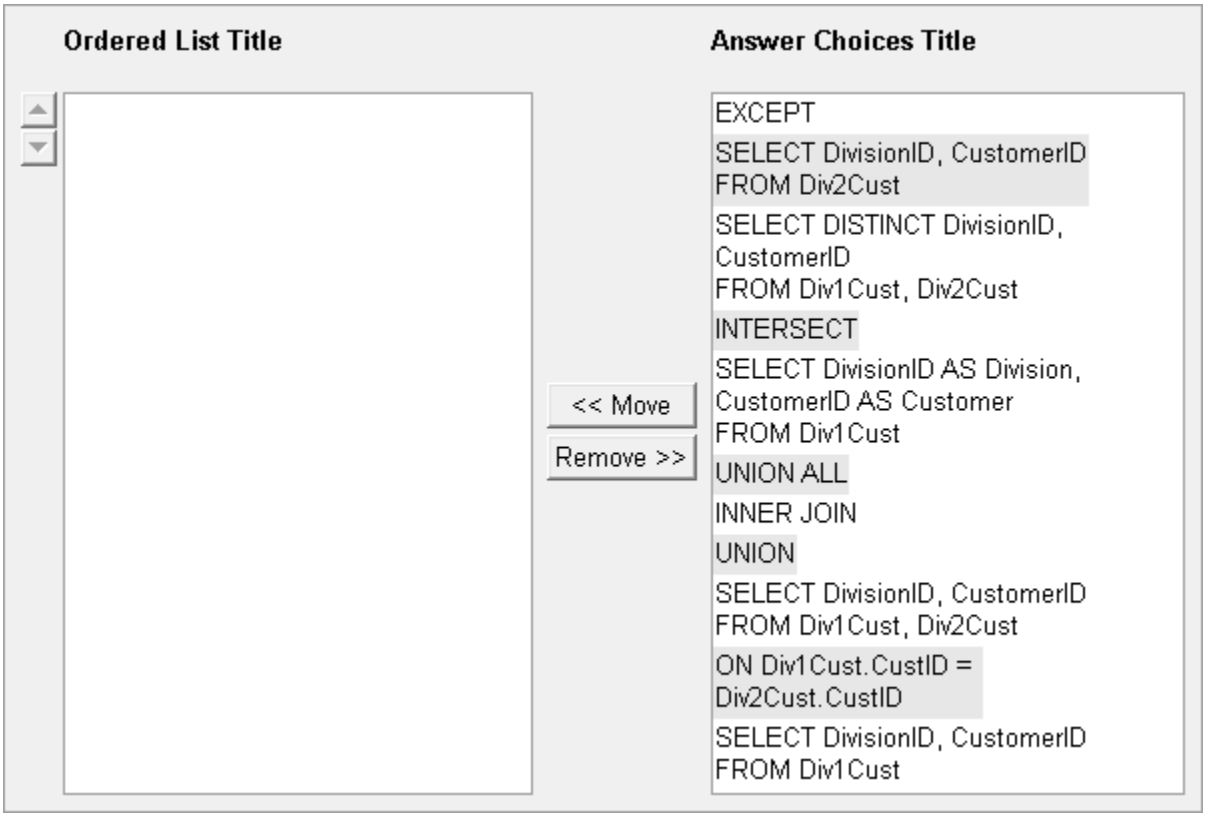
Explanation/Reference:

QUESTION 7
You use Microsoft SQL Server 2012 to develop a database that has two tables named Div1Cust and Div2Cust. Each table has columns named DivisionID and CustomerId . None of the rows in Div1Cust exist in Div2Cust.
You need to write a query that meets the following requirements:

- The rows in Div1Cust must be combined with the rows in Div2Cust.
- The result set must have columns named Division and Customer.
- Duplicates must be retained.

Which three Transact-SQL statements should you use? (To answer, move the appropriate statements from the list of statements to the answer area and arrange them in the correct order.)

Build List and Reorder:



Correct Answer:

SELECT DivisionID AS Division, CustomerID AS Customer
FROM Div1Cust
UNION ALL
SELECT DivisionID, CustomerID
FROM Div2Cust

Section: (none)
Explanation

Explanation/Reference:
Reference: http://msdn.microsoft.com/en-us/library/ms180026.aspx
Reference: http://msdn.microsoft.com/en-us/library/ms188055.aspx

Exam D

QUESTION 1
You administer a Microsoft SQL Server 2012 database that contains a table named OrderDetail. You discover that the NCI_OrderDetail_CustomerID non-clustered index is fragmented. You need to reduce fragmentation. You need to achieve this goal without taking the index offline. Which Transact-SQL batch should you use?

A. `CREATE INDEX NCI_OrderDetail_CustomerID ON OrderDetail.CustomerID WITH DROP EXISTING`
B. `ALTER INDEX NCI_OrderDetail_CustomerID ON OrderDetail.CustomerID REORGANIZE`
C. `ALTER INDEX ALL ON OrderDetail REBUILD`
D. `ALTER INDEX NCI_OrderDetail_CustomerID ON OrderDetail.CustomerID REBUILD`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Reference: http://msdn.microsoft.com/en-us/library/ms188388.aspx

QUESTION 2
You develop a Microsoft SQL Server 2012 database. You need to create a batch process that meets the following requirements:
- Returns a result set based on supplied parameters.
- Enables the returned result set to perform a join with a table.

Which object should you use?

A. Inline user-defined function
B. Stored procedure
C. Table-valued user-defined function
D. Scalar user-defined function

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference: