Question 1
What three tasks should you perform next?
You plan to create a custom aggregation function named Median.
You plan to deploy Median to a SQL Server 2014 server named Server1.
You need to ensure that Median can access a web service named WebApp1. The solution must minimize the number of changes made to the database.
You create a Microsoft .NET Framework class that contains the definition of Median.
You upload a certificate to Server1.
What three tasks should you perform next?
To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.
Select and Place:

Correct Answer:

Explanation/Reference:
Box 1: Execute the CREATE ASSEMBLY statement.
Box 2: Use the certificate to add a digital signature to the assembly.
Box 3: Execute the CREATE AGGREGATE statement.
Note:
CREATE AGGREGATE
Creates a user-defined aggregate function whose implementation is defined in a class of an assembly in the .NET Framework. For the Database Engine to bind the aggregate function to its implementation, the .NET Framework assembly that contains the implementation must first be uploaded into an instance of SQL Server by using a CREATE ASSEMBLY statement.

Question 2
How should you complete the table definition to reduce contention on the table structure?
You administer a SQL Server 2014 instance.
You have been assigned to determine the cause of frequent long-running transactions that have been tracked to the dbo.Account table, where there are many cases of blocking and deadlocks. The dbo.Account table contains more than one million rows.
Users and processes frequently search for and update data by using the AccountId column, and less frequently the AccountNumber and GovernmentId columns, all of which contain only unique values. Users frequently get lists of AccountNumber values by searching on Last Name and then First
You need to modify the structure of the dbo.Account table to alleviate the issues. How should you complete the table definition to reduce contention on the table structure? To answer, drag the appropriate code snippets to the correct locations in the CREATE TABLE statement. Each code snippet 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:**

<table>
<thead>
<tr>
<th>Code Snippets</th>
<th>CREATE TABLE Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY KEY CLUSTERED</td>
<td></td>
</tr>
<tr>
<td>UNIQUE NONCLUSTERED</td>
<td></td>
</tr>
<tr>
<td>(LastName, FirstName) INCLUDE (AccountNumber)</td>
<td></td>
</tr>
<tr>
<td>(LastName, FirstName) INCLUDE (AccountMid)</td>
<td></td>
</tr>
<tr>
<td>(FirstName, LastName)</td>
<td></td>
</tr>
<tr>
<td>/* No Change To Structure */</td>
<td></td>
</tr>
</tbody>
</table>

**Correct Answer:**

<table>
<thead>
<tr>
<th>Code Snippets</th>
<th>CREATE TABLE Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY KEY CLUSTERED</td>
<td></td>
</tr>
<tr>
<td>UNIQUE NONCLUSTERED</td>
<td></td>
</tr>
<tr>
<td>AccountId int NOT NULL</td>
<td></td>
</tr>
<tr>
<td>AccountNumber nchar(10) NOT NULL</td>
<td></td>
</tr>
<tr>
<td>GovernmentId nvarchar(11) NOT NULL</td>
<td></td>
</tr>
<tr>
<td>FirstName nvarchar(20) NOT NULL, MiddleInitial nvarchar(1) NULL, LastName nvarchar(20) NOT NULL</td>
<td></td>
</tr>
<tr>
<td>CREATE NONCLUSTERED INDEX XI ON dbo.Account</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation/Reference:**

**Note:**

Users and processes frequently search for and update data by using the AccountId column (Primary Key Clustered), and less frequently the AccountNumber (Unique Clustered) and GovernmentId (Unique Clustered) columns, all of which contain only unique values. Users frequently get lists of AccountNumber (Unique Clustered) and GovernmentId (Unique Clustered) columns, all of which contain only unique values. Users frequently get lists of AccountNumber values by searching on LastName and then FirstName (LastName, FirstName) INCLUDE (AccountNumber).

**Question 3**

Which five code segments should you use?

You create a disk-based table that contains the following script:

```sql
CREATE TABLE dbo.Products
(
    ProductId int NOT NULL,
    Description nvarchar(max) NOT NULL,
    CONSTRAINT PK_Products PRIMARY KEY CLUSTERED (ProductId)
) ON [PRIMARY]
```

You need to prevent duplicate values in the SKU field.

Which five code segments should you use?

To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.

**Select and Place:**

<table>
<thead>
<tr>
<th>Code Snippets</th>
<th>CREATE TABLE Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY KEY CLUSTERED</td>
<td></td>
</tr>
<tr>
<td>UNIQUE NONCLUSTERED</td>
<td></td>
</tr>
<tr>
<td>(LastName, FirstName) INCLUDE (AccountNumber)</td>
<td></td>
</tr>
<tr>
<td>(LastName, FirstName) INCLUDE (AccountMid)</td>
<td></td>
</tr>
<tr>
<td>(FirstName, LastName)</td>
<td></td>
</tr>
<tr>
<td>/* No Change To Structure */</td>
<td></td>
</tr>
</tbody>
</table>
Question 4
You administer a SQL Server 2014 instance.

The server is capable of 10000 I/O second (IOPS). During the time period when the second process executes, the disk IO can reach 7000 IOPS, and
CPU use can average 30% over the eight processors. The first process summarizes the day’s activity executed by a login of [SummaryReportLogin]. The second process submits transactions executed by a login of [ETLLogin].

A Resource Governor classifier function has been created to return WG_Low for connections from the [ETLLogin] and [SummaryReportLogin].

You need to set up the Resource Group and Workgroup Pools on the instance.

You have the following requirements:
- Both processes must not use more than 50 percent of the CPU at any one time.
- The number of active queries that these processes can execute simultaneously should be limited to a maximum of 10.
- The SummaryReportLogin process must always achieve the minimum IOPS required to be minimally affected during executing the ETLLogin processes.

Develop the solution by selecting and arranging the required code blocks in the correct order.

You may not need all of the code blocks.

Select and Place:
Correct Answer:
**Explanation/Reference:**

Note:

CREATE WORKLOAD RESOURCE POOL

* Resource pools. A resource pool represents the physical resources of the server. You can think of a pool as a virtual SQL Server instance inside of a SQL Server instance.

* Workload groups. A workload group serves as a container for session requests that have similar classification criteria. A workload allows for aggregate monitoring of the sessions, and defines policies for the sessions. Each workload group is in a resource pool.

* CAP_CPU_PERCENT = value
  Specifies a hard cap on the CPU bandwidth that all requests in the resource pool will receive. Limits the maximum CPU bandwidth level to be the same as the specified value. value is an integer with a default setting of 100. The allowed range for value is from 1 through 100.

* MIN_IOPS_PER_VOLUME = value
  Specifies the minimum I/O operations per second (IOPS) per disk volume to reserve for the resource pool.

* GROUP_MAX_REQUESTS = value
  Specifies the maximum number of simultaneous requests that are allowed to execute in the workload group. value must be a 0 or a positive integer.

**Question 5**

Which code segment should you execute before you remove Column1?

You have a table named Table1 that contains 1 million rows. Table1 contains a column named Column1 that stores sensitive information. Column1 uses the nvarchar(16) data type.

You have a certificate named Cert1.

You need to replace Column1 with a new encrypted column that uses two-way encryption.

Which code segment should you execute before you remove Column1?

To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.

Select and Place:
Correct Answer:

```
CREATE SYMMETRIC KEY CreditCards_Key11
WITH ALGORITHM = AES_256
ENCRYPTION BY CERTIFICATE Sales09;
GO

-- Create a column in which to store the encrypted data.
ALTER TABLE CreditCard
ADD CardNumber_Encrypted varbinary(128);
GO

-- Open the symmetric key with which to encrypt the data.
OPEN SYMMETRIC KEY CreditCards_Key11
DECRYPTION BY CERTIFICATE Sales09;
```

Explanation/Reference:
- Use AES_256 for two-way encryption.
- Use varbinary to store key.
- `CLOSE SYMMETRIC KEY` (Transact-SQL)
  Closes a symmetric key, or closes all symmetric keys open in the current session.
- Example:
  ```sql
  CREATE SYMMETRIC KEY CreditCards_Key11
  WITH ALGORITHM = AES_256
  ENCRYPTION BY CERTIFICATE Sales09;
  GO
  -- Create a column in which to store the encrypted data.
  ALTER TABLE CreditCard
  ADD CardNumber_Encrypted varbinary(128);
  GO
  -- Open the symmetric key with which to encrypt the data.
  OPEN SYMMETRIC KEY CreditCards_Key11
  DECRYPTION BY CERTIFICATE Sales09;
  ```
UPDATE Sales.CreditCard
SET CardNumber_Encrypted = EncryptByKey(Key_GUID('CreditCards_Key11') , CardNumber, 1, HashBytes('SHA1', CONVERT(varbinary , CreditCardID)));
GO

Question 6
Which dynamic management objects should you identify?
You have a SQL Server 2014 database.
You plan to create a stored procedure that will retrieve the following information:
The XML content of the query plans that is stored in memory
The number of times each query plan is used
You need to identify which dynamic management objects must be used to retrieve the required information for the stored procedure.
To answer, drag the appropriate dynamic management object to the correct requirement in the answer area.
Select and Place:

Correct Answer:

Explanation/Reference:
Note:
* sys.dm_exec_query_plan
Returns the Showplan in XML format for the batch specified by the plan handle. The plan specified by the plan handle can either be cached or currently executing.
* sys.dm_exec_cached_plans
Returns a row for each query plan that is cached by SQL Server for faster query execution. You can use this dynamic management view to find cached query plans, cached query text, the amount of memory taken by cached plans, and the reuse count of the cached plans.

Question 7
You are a SQL Server 2014 Developer.
A database that you work on contains two tables that are defined as follows:
Product is an important table that has sensitive audit requirements. You need to create a trigger that supports the following requirements:
1. Every row that is inserted or updated in Product will reflect its actual LastUpdatedDate and LastUpdatedBy values in the Product table.
2. Any row that is updated or deleted must write a new record reflecting the OLD values into the ProductAudit table.
3. Any error that occurs during the course of the trigger’s execution must prevent the changes from happening.

Develop the solution by selecting and arranging the required code blocks in the correct order.

You may not need all of the code blocks.

Select and Place:
Question 8
Which three code segments should you execute?
Your network contains a server named Server1 that runs SQL Server 2012. Server1 contains an instance named Instance1. Instance1 contains a database named ContentDatabase. ContentDatabase uses transaction log backups. The recovery model of ContentDatabase is set to FULL. You need to shrink the ContentDatabase_Log log file to 10 MB. The solution must ensure that you can continue to back up the transaction log. Which three code segments should you execute?
To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order. Select and Place:
The following example shrinks the log file in the AdventureWorks database to 1 MB. To allow the DBCC SHRINKFILE command to shrink the file, the file is first truncated by setting the database recovery model to SIMPLE.

Transact-SQL
USE AdventureWorks2012;
GO
-- Truncate the log by changing the database recovery model to SIMPLE.
ALTER DATABASE AdventureWorks2012
SET RECOVERY SIMPLE;
GO
-- Shrink the truncated log file to 1 MB.
DBCC SHRINKFILE (AdventureWorks2012_Log, 1);
GO
-- Reset the database recovery model.
ALTER DATABASE AdventureWorks2012
SET RECOVERY FULL;
GO

* If the log file does not shrink (after dbcc shrinkfile) Typically it is the log file that appears not to shrink. This is usually the result of a log file that has not been truncated. You can truncate the log by setting the database recovery model to SIMPLE, or by backing up the log and then running the DBCC SHRINKFILE operation again.

* DBCC SHRINKFILE shrinks the size of the specified data or log file for the current database, or empties a file by moving the data from the specified file to other files in the same filegroup, allowing the file to be removed from the database.

Arguments include:
target_size
Question 9
You have two existing tables, one named COUNTRY and the other named STATES.
The tables are defined as follows:

```sql
CREATE TABLE COUNTRY
(
  Country_Abbr CHAR(3) PRIMARY KEY CLUSTERED,
  Country_Description VARCHAR(30) Not Null
)

CREATE TABLE STATES
(
  State_Abbr CHAR(2) PRIMARY KEY CLUSTERED,
  State_Description VARCHAR(20) Not Null,
  Country_Abbr CHAR(3) Not Null
)
```

You need to set up a rule that every STATE.Country_Abbr must match an existing record in the COUNTRY table.
Develop the solution by selecting and arranging the required code blocks in the correct order.
You may not need all of the code blocks.
Select and Place:

Correct Answer:

```sql
REFERENCES STATES (Country_Abbr)
REFERENCES COUNTRY (Country_Abbr)
ON STATES
FOREIGN KEY (Country_Abbr)
ON COUNTRY
ADD CONSTRAINT FK_StateCountry
ON COUNTRY_Abbr
ALTER TABLE COUNTRY
ADD FOREIGN KEY FK_StateCountry
ALTER TABLE STATES
```

Explanation/Reference:

Note:
To allow naming of a FOREIGN KEY constraint, and for defining a FOREIGN KEY constraint on multiple columns, use the following SQL syntax:
MySQL / SQL Server / Oracle / MS Access:
ALTER TABLE Orders
ADD CONSTRAINT fk_PerOrders
FOREIGN KEY (P_Id)
REFERENCES Persons(P_Id)

Question 10
Which isolation level should you identify?
You plan to deploy two stored procedures name USP_1 and USP_2 that read data from a database.
Your company identifies the following requirements for each stored procedure:
USP_1 cannot allow dirty reads.
USP_2 must place range locks on the data to ensure read consistency.
You need to identify which isolation level you must set for each stored procedure. The solution must minimize the number of locks.
Which isolation level should you identify?
To answer, drag the appropriate isolation level to the correct stored procedure in the answer area. (Answer choices may be used once, more than once, or not at all.)
Select and Place:

Correct Answer:

Explanation/Reference:
* read committed
READ COMMITTED
Specifies that shared locks are held while the data is being read to avoid dirty reads, but the data can be changed before the end of the transaction, resulting in nonrepeatable reads or phantom data. This option is the SQL Server default.
* SERIALIZABLE
Places a range lock on the data set, preventing other users from updating or inserting rows into the data set until the transaction is complete. This is the most restrictive of the four isolation levels. Because concurrency is lower, use this option only when necessary. This option has the same effect as setting HOLDLOCK on all tables in all SELECT statements in a transaction.

Question 11
Which options should you recommend?
You plan to deploy SQL Server 2012. You must create two tables named Table1 and Table2 that will have the following specifications:
Table1 will contain a date column named Column1 that will contain a null value approximately 80 percent of the time.
Table2 will contain a column named Column2 that is the product of two other columns in Table2.
Both Table1 and Table2 will contain more than 1 million rows.
You need to recommend which options must be defined for the columns. The solution must minimize the storage requirements for the tables. Which options should you recommend? To answer, drag the appropriate options to the correct column in the answer area.
Select and Place:
Question 12
Which technologies should you identify?
You are designing a database for a university. The database will contain two tables named Classes and StudentGrades that have the following specifications:
Classes will store brochures in the XPS format.
The brochures must be structured in folders and must be accessible by using UNC paths.
StudentGrades must be backed up on a separate schedule than the rest of the database.
You need to identify which SQL Server technology meets the specifications of each table. Which technologies should you identify? To answer, drag the appropriate technology to the correct table in the answer area.
Select and Place:
Question 13
Which data types should you recommend for each column?
You have a SQL Azure database named Database1. You need to design the schema for a table named table1. Table1 will have less than one million rows. Table1 will contain the following information for each row:

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>An incremental numeric value used to identify the row</td>
</tr>
<tr>
<td>Name</td>
<td>A string in English</td>
</tr>
<tr>
<td>Code</td>
<td>An alphanumeric code that has five characters</td>
</tr>
<tr>
<td>ModifiedDate</td>
<td>The date of the last modification</td>
</tr>
</tbody>
</table>

The solution must minimize the amount of space used to store each row. Which data types should you recommend for each column? To answer, drag the appropriate data type to the correct column in the answer area.

Select and Place:

Correct Answer:

Data Types
- int
- bigint
- varchar
- nvarchar
- char
- smalldatetime
- date

Answer Area
- ID
- Name
- Code
- ModifiedDate
- smalldatetime

Explanation/Reference:
Explanation:

Question 14
Which five code segments should you use?
You create a table that contains the following script:
You need to prevent duplicate values in the EmployeeID field. Which five code segments should you use?

To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.

Select and Place:

Correct Answer:

Explanation/Reference:

Question 15
Which options should you identify?

You are planning two stored procedures named SProc1 and SProc2. You identify the following requirements:

SProc1 must return a table.
SProc2 must return a scalar value.

You need to identify which option must be implemented for each stored procedure to return the desired data.

Which options should you identify?

To answer, drag the appropriate option to the correct requirement in the answer area. (Answer choices may be used once, more than once, or not at all.)

Select and Place:
Question 16
Which code segment should you execute?
You have a SQL Server 2012 database named Database1. Database1 has a data file named database1_data.mdf and a transaction log file named database1_Log.ldf. Database1_Data.mdf is 1.5 GB. Database1_Log.ldf is 1.5 terabytes. A full backup of Database1 is performed every day. You need to reduce the size of the log file. The solution must ensure that you can perform transaction log backups in the future. Which code segment should you execute? To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.
Select and Place:

Correct Answer:

Correct Answer:
**Explanation/Reference:**

**Explanation:**

Shrinking a log file to a specified target size

The following example shrinks the log file in the AdventureWorks database to 1 MB. To allow the `DBCC SHRINKFILE` command to shrink the file, the file is first truncated by setting the database recovery model to SIMPLE.

**Transact-SQL**

```
USE AdventureWorks2012;
GO
-- Truncate the log by changing the database recovery model to SIMPLE.
ALTER DATABASE AdventureWorks2012
SET RECOVERY SIMPLE;
GO
-- Shrink the truncated log file to 1 MB.
DBCC SHRINKFILE (AdventureWorks2012_Log, 1);
GO
-- Reset the database recovery model.
ALTER DATABASE AdventureWorks2012
SET RECOVERY FULL;
GO
```


**Question 17**

Which encryption type and data type should you identify?

You plan to create a new table that will contain a column named Salary. Salary will contain highly sensitive data. Salary must meet the following requirements:

- Contain numeric data.
- Contain only encrypted data that remains encrypted in memory.

You need to identify which encryption type and data type must be used for Salary.

Which encryption type and data type should you identify? To answer, drag the appropriate encryption type and data type to the correct identifier in the answer area.

**Select and Place:**
Question 18
Which type of index should you create for each table?

Your network contains a SQL Server 2012 instance named SQL1. SQL1 contains a database named DB1. DB1 contains three tables. The tables are configured as shown in the following table.
You plan to create indexes for the tables.
You need to identify which type of index must be created for each table. The solution must minimize the amount of time required to return information from the tables.
Which type of index should you create for each table? To answer, drag the appropriate index type to the correct table in the answer area.

Select and Place:

Correct Answer:

Explanation/Reference:

**Question 19**
What should you use?
You have a database named database1. Each table in database1 has one index per column.
Users often report that creating items takes a long time.
You need to perform the following maintenance tasks:
Identify unused indexes.
Identify indexes that need to be defragmented.
What should you use?
To answer, drag the appropriate function to the correct management task in the answer area. (Answer choices may be used once, more than once, or not at all.)
Select and Place:

Correct Answer:
**Explanation/Reference:**

*sys.dm_db_index_usage_stats*
- Returns counts of different types of index operations and the time each type of operation was last performed.

*sys.dm_db_index_physical_stats*
- Returns size and fragmentation information for the data and indexes of the specified table or view.

**Question 20**

What should you do?

You have a database that contains three tables. The tables are configured as shown in the following table.

<table>
<thead>
<tr>
<th>Table</th>
<th>Primary key Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>SalesOrderHeader</td>
<td>PK_SalesOrderHeader_SalesOrderID</td>
</tr>
<tr>
<td>Employee</td>
<td>PK_Employee_EmployeeID</td>
</tr>
<tr>
<td>Contact</td>
<td>PK_Contact_ContactID</td>
</tr>
</tbody>
</table>

You have the following query:

```sql
SELECT sch.SalesPersonID, 
c.FirstName + ' ' + c.LastName AS FullName, 
c.EmailAddress, 
c.Title, 
sch.SubTotal, 
YEAR(sch.OrderDate) AS Year
FROM SalesOrderHeader sch 
INNER JOIN Employee e 
ON sch.SalesPersonID = e.EmployeeID 
INNER JOIN Contact c 
ON e.ContactID = c.ContactID 
WHERE sch.OrderDate > '1/1/2012'
```

The execution plan for the query is shown in the exhibit. (Click the Exhibit button.)

You need to create one index to minimize the amount of time it takes to execute the query.

What should you do?

To answer, drag the appropriate columns to the correct locations in the answer area. (Answer choices may be used once, more than once, or not at all.)

Select and Place:
Correct Answer:

<table>
<thead>
<tr>
<th>Columns</th>
<th>Indexed Columns</th>
<th>Included Columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact.EmailAddress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact.FirstName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact.LastName</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee.Title</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SalesOrderHeader.OrderDate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SalesOrderHeader.SalesPersonID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SalesOrderHeader.SubTotal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Explanation/Reference:
Note:
Covering index: A type of index that includes all the columns that are needed to process a particular query. For example, your query might retrieve the FirstName and LastName columns from a table, based on a value in the ContactID column. You can create a covering index that includes all three columns.

Question 21
Which code segment should you execute?
You have a SQL Server 2012 database named DB1. DB1 contains four filegroups named FG1, FG2, FG3, and FG4. You execute the following code:
CREATE PARTITION FUNCTION P1 AS RANGE LEFT FOR VALUES (20120701, 20120801, 20120901);
GO
CREATE PARTITION SCHEME PS1 AS PARTITION P1 TO (FG1, FG2, FG3, FG4);
GO
CREATE TABLE dbo.Sales
(
    Date_key int NOT NULL,
    Customer_key int,
    Amount money
) ON PS1 (Date_key);
GO
Two million rows are added to dbo.Sales.
You need to move the data from the first partition to a new table named SalesHistory and, starting on December 31, 2012, repartition dbo.Sales to support new sales data for three months.
Which code segment should you execute?
To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.
Select and Place:
You need to move the data from the first partition to a new table named SalesHistory. First create the new table, then move the contents of the first partition. Drop the partition scheme and then the partition function and the recreate them. First recreate the partition function. You need, starting on December 31, 2012, repartition dbo.Sales to support new sales data for three months. A partition function can be dropped only if there are no partition schemes currently using the partition function. If there are partition schemes using
the partition function, DROP PARTITION FUNCTION returns an error.

**Question 22**
What should you use?
You have a database named database1. Each table in database1 has one index per column.
Users often report that creating items takes a long time.
You need to perform the following maintenance tasks:
Identify unused indexes.
Identify indexes that need to be defragmented.
What should you use?
To answer, drag the appropriate function to the correct management task in the answer area. (Answer choices may be used once, more than once, or not at all.)
Select and Place:

**Correct Answer:**

<table>
<thead>
<tr>
<th>Functions</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>sys.dm_db_index_usage_stats</td>
<td>Identify unused indexes.</td>
</tr>
<tr>
<td>sys.dm_db_index_operational_stats</td>
<td>Identify indexes that need to be defragmented.</td>
</tr>
<tr>
<td>sys.dm_db_index_physical_stats</td>
<td></td>
</tr>
<tr>
<td>sys.dm_db_missing_index_columns</td>
<td></td>
</tr>
<tr>
<td>sys.dm_db_missing_index_details</td>
<td></td>
</tr>
<tr>
<td>sys.dm_db_missing_index_groups</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation/Reference:**

* sys.dm_db_index_usage_stats
  Returns counts of different types of index operations and the time each type of operation was last performed.
* sys.dm_db_index_physical_stats
  Returns size and fragmentation information for the data and indexes of the specified table or view.

**Question 23**
What should you create?
You execute the following code:

```sql
CREATE TABLE Customers
    (id int primary key,
    name nchar(10))
GO
```
You discover that the Customers table was created in the dbo schema.
You need to create a code segment to move the table to another schema named Schema2.
What should you create?
To answer, drag the appropriate code segments to the correct location in the answer area. (Answer choices may be used once, more than once, or not at all.)
Select and Place:
Question 24
Which isolation level should you identify?
You plan to deploy two stored procedures named SP1 and SP2 that read data from the database. Your company identifies the following requirements for each stored procedure:
SP1 must allow dirty reads.
SP2 must place range locks on the data to ensure read consistency.
You need to identify which isolation level you must set for each stored procedure. The solution must minimize the number of locks. Which isolation level should you identify?
To answer, drag the appropriate isolation level to the correct stored procedure in the answer area. (Answer choices may be used once, more than once, or not at all.)

Correct Answer:
Explanation/Reference:

Note:

* **READ UNCOMMITTED**

  Specifies that statements can read rows that have been modified by other transactions but not yet committed. Transactions running at the READ UNCOMMITTED level do not issue shared locks to prevent other transactions from modifying data read by the current transaction. READ UNCOMMITTED transactions are also not blocked by exclusive locks that would prevent the current transaction from reading rows that have been modified but not committed by other transactions. When this option is set, it is possible to read uncommitted modifications, which are called dirty reads. Values in the data can be changed and rows can appear or disappear in the data set before the end of the transaction. This option has the same effect as setting NOLOCK on all tables in all SELECT statements in a transaction. This is the least restrictive of the isolation levels.

* **SERIALIZABLE**

  Specifies the following:

  Statements cannot read data that has been modified but not yet committed by other transactions. No other transactions can modify data that has been read by the current transaction until the current transaction completes. Other transactions cannot insert new rows with key values that would fall in the range of keys read by any statements in the current transaction until the current transaction completes. Range locks are placed in the range of key values that match the search conditions of each statement executed in a transaction. This blocks other transactions from updating or inserting any rows that would qualify for any of the statements executed by the current transaction. This means that if any of the statements in a transaction are executed a second time, they will read the same set of rows. The range locks are held until the transaction completes. This is the most restrictive of the isolation levels because it locks entire ranges of keys and holds the locks until the transaction completes. Because concurrency is lower, use this option only when necessary.

  Reference: SET TRANSACTION ISOLATION LEVEL (Transact-SQL)

**Question 25**

What should you do?

You have a table named Customers that has a clustered index defined on the ID column.

You write a script to create a stored procedure.

You need to complete the script for the stored procedure. The solution must minimize the number of locks and deadlocks.

What should you do?

To answer, drag the appropriate option to the correct location in the answer area. (Answer choices may be used once, more than once, or not at all.)

Select and Place:

```
CREATE PROCEDURE Proc1 (@ParamID int)
AS
WITH (UPLOCK)
SET TRANSACTION ISOLATION LEVEL READ COMMITTED
BEGIN TRANSACTION
DECLARE @var as NCHAR(10)
Select @var = Name
FROM dbo.Customers
WHERE ID = @ParamID
...
UPDATE dbo.Customers
SET Name = @var
WHERE ID = @ParamID
COMMIT TRANSACTION;
GO
```

Correct Answer:
Optimized bulk load operations on heaps block queries that are running under the following isolation levels:
SNAPSHOT
READ UNCOMMITTED
READ COMMITTED using row versioning
* READ COMMITTED
Specifies that statements cannot read data that has been modified but not committed by other transactions. This prevents dirty reads. Data can be changed by other transactions between individual statements within the current transaction, resulting in nonrepeatable reads or phantom data. This option is the SQL Server default.
* SERIALIZABLE (more locks)
Specifies the following:
Statements cannot read data that has been modified but not yet committed by other transactions. No other transactions can modify data that has been read by the current transaction until the current transaction completes.
Other transactions cannot insert new rows with key values that would fall in the range of keys read by any statements in the current transaction until the current transaction completes.
* UPDLOCK
Specifies that update locks are to be taken and held until the transaction completes. UPDLOCK takes update locks for read operations only at the row-level or page-level. If UPDLOCK is combined with TABLOCK, or a table-level lock is taken for some other reason, an exclusive (X) lock will be taken instead.
When UPDLOCK is specified, the READCOMMITTED and READCHEMATEDLOCK isolation level hints are ignored. For example, if the isolation level of the session is set to SERIALIZABLE and a query specifies (UPDLOCK, READCOMMITTED), the READCOMMITTED hint is ignored and the transaction is run using the SERIALIZABLE isolation level.
* XLOCK
Specifies that exclusive locks are to be taken and held until the transaction completes. If specified with ROWLOCK, PAGLOCK, or TABLOCK, the exclusive locks apply to the appropriate level of granularity.
Reference: Table Hints (Transact-SQL)

Question 26
Which code segment should you execute?
You have a SQL Server 2012 database named Database1. Database1 has a data file named Database1_data.mdf and a transaction log named Database1_log.ldf. Database1_data.mdf is 1.5 GB. Database1_log.ldf is 1.5 terabytes.
A full backup of Database1 is performed every day.
You need to reduce the size of the log file. The solution must ensure that you can perform transaction log backups in the future.
Which code segment should you execute?
To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.

Selected and Place:
ALTER DATABASE database1 SET RECOVERY FULL
ALTER DATABASE database1 SET RECOVERY SIMPLE
BACKUP LOG database1 WITH TRUNCATE_ONLY
DBCC SHRINKFILE(database1_log,1)
Correct Answer:

```
ALTER DATABASE database1 SET RECOVERY SIMPLE
DBCC SHRINKFILE(database1_log,1)
ALTER DATABASE database1 SET RECOVERY FULL
```

Explanation/Reference:

**Question 27**
What should you do?
You have a SQL Server 2012 database named database1.
Users report that queries that usually take less than one second to execute, take more than 30 seconds to execute.
You need to view the server resource consumption when the queries are executed.
What should you do?
To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.
Select and Place:

- Start a SQL Server Profiler trace.
- Start a data collection by using Performance Monitor.
- Save the SQL Server Profiler trace.
- Save the Performance Monitor data.
- Import the performance data into SQL Server Profiler.

**Correct Answer:**

- Start a SQL Server Profiler trace.
- Save the SQL Server Profiler trace.
- Save the Performance Monitor data.
- Import the performance data into SQL Server Profiler.

**Explanation/Reference:**

**Box 1:** Start a SQL Server Profiler trace.
**Box 2:** Start a data collection by using Performance Monitor.
**Box 3:** Save the SQL Profiler trace.
**Box 4:** Save the Performance Monitor data.
**Box 5:** Import the performance data into SQL Server Profiler.

**Note:**
* (step 1, step 2) Both the Profiler trace and the Performance Monitor logs should be started and stopped at about the same time.
* (step 3, step 4) Once you have completed capturing the data for both tools, you are ready to perform the correlation analysis.
* (step 5) How to Correlate SQL Server Profiler Data with Performance Monitor Data: Correlating Performance Monitor and Profiler data is a straightforward process that simply involves importing both sets of data into Profiler. Start Profiler and load the trace file you want to correlate.

**With SQL Server Profiler, we have the tools to identify the causes of such spikes. We can import Performance Monitor log data and compare it directly with Profiler activity. If we see a spike in CPU utilization, we can identify which statement or statements were running at the same time, and diagnose potential problems.**

**Question 28**
Which technologies should you identify?
You are designing two stored procedures named Procedure1 and Procedure2.
You identify the following requirements:
Procedure1 must take a parameter that ensures that multiple rows of data can pass into the stored procedure.
Procedure2 must use business logic that resides in a Microsoft .NET Framework assembly.
You need to identify the appropriate technology for each stored procedure.
Which technologies should you identify?
To answer, drag the appropriate technology to the correct stored procedure in the answer area. (Answer choices may be used once, more than once, or not at all.)
Question 29
Which options should you identify?
You are planning two stored procedures named SProc1 and SProc2. You identify the following requirements:
SProc1 must return a table.
SProc2 must return a status code.
You need to identify which options must be implemented to meet each stored procedure requirement.
Which options should you identify?
To answer, drag the appropriate option to the correct requirement in the answer area. (Answer choices may be used once, more than once, or not at all.)
Select and Place:
Correct Answer:

Question 30
What three tasks should you perform next?
You plan to create a custom aggregation function named Function1.
You plan to deploy Function1 to SQL Server 2012.
You need to ensure that Function1 can access a web service. The solution must minimize the number of changes made to the database.
You create a Microsoft .NET Framework class that contains the definition of Function1.
You upload a certificate to SQL Server.
What three tasks should you perform next?
To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.
Select and Place:

<table>
<thead>
<tr>
<th>Correct Answer:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use the certificate to add a digital signature to the assembly.</td>
</tr>
<tr>
<td>Execute the CREATE FUNCTION statement.</td>
</tr>
<tr>
<td>Execute the CREATE ASSEMBLY statement.</td>
</tr>
<tr>
<td>Execute the CREATE AGGREGATE statement.</td>
</tr>
<tr>
<td>Modify the TRUSTWORTHY property of the database.</td>
</tr>
</tbody>
</table>

**Explanation/Reference:**

**Box 1:** Modify the TRUSTWORTHY property of the database-
**Box 2:** Execute the CREATE ASSEMBLY statement.
**Box 3:** Execute the CREATE AGGREGATE statement.

**Note:**

* TRUSTWORTHY CREATE signature
  The TRUSTWORTHY property indicates whether the instance of SQL Server trusts the database and the contents within it.
* CREATE AGGREGATE
  Creates a user-defined aggregate function whose implementation is defined in a class of an assembly in the .NET Framework. For the Database Engine to bind the aggregate function to its implementation, the .NET Framework assembly that contains the implementation must first be uploaded into an instance of SQL Server by using a CREATE ASSEMBLY statement.
* Example:

```sql
ALTER DATABASE [DatabaseName] SET TRUSTWORTHY ON
GO
CREATE ASSEMBLY [CLR.Utilities] FROM 'C:PathToFileCLR.Utilities.dll' WITH PERMISSION_SET = UNSAFE
GO
CREATE AGGREGATE [dbo].[Concatenate] (@input nvarchar(max)) RETURNS nvarchar(max)
EXTERNAL NAME [CLR.Utilities].[CLR.Utilities.Concatenate] GO
```

**Question 31**

Which code segment should you execute before you remove Column1?

You have a table named Table1 that contains 1 million rows. Table1 contains a column named Column1 that stores sensitive information. Column1 uses the nvarchar (16) data type.
You have a certificate named Cert1.
You need to replace Column1 with a new encrypted column named Column2 that uses one-way hashing.

Which code segment should you execute before you remove Column1?

To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.
Select and Place:
To encrypt a column of data using a simple symmetric encryption In Object Explorer, connect to an instance of Database Engine.

On the Standard bar, click New Query.

Copy and paste the following example into the query window and click Execute.

USE AdventureWorks2012;

-- If there is no master key, create one now.
IF NOT EXISTS
    (SELECT * FROM sys.symmetric_keys WHERE symmetric_key_id = 101) CREATE MASTER KEY ENCRYPTION BY PASSWORD = '23987hxJKL95QYV4369#ghf0%lekjg5k3fd117r$$#1946kcj$n44ncjhdlj' GO

CREATE CERTIFICATE Sales09
WITH SUBJECT = 'Customer Credit Card Numbers';
GO

CREATE SYMMETRIC KEY CreditCards_Key11
WITH ALGORITHM = AES_256
ENCRYPTION BY CERTIFICATE Sales09;
GO

-- Create a column in which to store the encrypted data.
ALTER TABLE Sales.CreditCard
ADD CardNumber_Encrypted varbinary(128);
GO
-- Open the symmetric key with which to encrypt the data.
OPEN SYMMETRIC KEY CreditCards_Key11
DECRYPTION BY CERTIFICATE Sales09;
-- Encrypt the value in column CardNumber using the
-- symmetric key CreditCards_Key11.
-- Save the result in column CardNumber_Encrypted.
UPDATE Sales.CreditCard
SET CardNumber_Encrypted = EncryptByKey(Key_GUID('CreditCards_Key11') , CardNumber, 1, HashBytes('SHA1', CONVERT( varbinary, CreditCardID)));
GO
Reference: SQL Server 2012, Encrypt a Column of Data
Ref: http://www.mssqltips.com/sqlservertip/2431/sql-server-column-level-encryption-example-using-symmetric-keys/

Question 32
Which code segment should you execute?
You run the following code segment:

CREATE TABLE dbo.Customers
(
   Id int CONSTRAINT Check_ID PRIMARY KEY,
   CustomerName varchar(50),
   Details xml
)
GO
CREATE PRIMARY XML INDEX PXCustomers
   ON dbo.Customers (Details);
GO

After you add 10,000 rows to Customers, you discover that the index is fragmented.
You need to defragment the index in the least amount of time.
Which code segment should you execute?
To answer, drag the appropriate value to the correct location in the code segment in the answer area. (Answer choices may be used once, more than
once, or not at all.)

Select and Place:

Correct Answer:

Explanation/Reference:
Note:
Locking the table during the process and not recomputing statistics would be the fastest.
* Online = OFF
Table locks are applied for the duration of the index operation. An offline index operation that creates, rebuilds, or drops a clustered, spatial, or XML
index, or rebuilds or drops a nonclustered index, acquires a Schema modification (Sch-M) lock on the table. This prevents all user access to the
underlying table for the duration of the operation. An offline index operation that creates a nonclustered index acquires a Shared (S) lock on the table.
This prevents updates to the underlying table but allows read operations, such as SELECT statements.
* STATISTICS_NORECOMPUTE = ON
Out-of-date statistics are not automatically recomputed.
Reference: ALTER INDEX (Transact-SQL)

Question 33
What should you do?
You have a table named Table1. Table1 has 1 million rows.
Table1 has a columnstore index for a column named Column1.
You need to import data to Table1. The solution must minimize the amount of time it takes to import the data.
What should you do?
To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.
Select and Place:

| Box 1: Create a table named Table2 by using the same schema as Table1. |
| Box 2: Partition Table1 |
| Box 3: Import the data to Table2. |
| Box 4: Create a columnstore index on Table2 for Column1. |
| Box 5: Switch Table2 to Table1 |

Correct Answer:

| Create a table named Table2 by using the same schema as Table1. |
| Partition Table1 |
| Import the data to Table2. |
| Create a columnstore index on Table2 for Column1. |
| Switch Table2 to Table1. |

Explanation/Reference:

Box 1: Create a table named Table2 by using the same schema as Table1. Note: Table2 is the staging table.

Box 2: Partition Table1

Box 3: Import the data to Table2.

Box 4: Create a columnstore index on Table2 for Column1.

Box 5: Switch Table2 to Table1

Note:

* An xVelocity memory optimized columnstore index, groups and stores data for each column and then joins all the columns to complete the whole index. Columnstore indexes can transform the data warehousing experience for users by enabling faster performance for common data warehousing queries such as filtering, aggregating, grouping, and star-join queries.

* Tables that have a columnstore index cannot be updated.

There are three ways to work around this problem.

A) To update a table with a columnstore index, drop the columnstore index, perform any required INSERT, DELETE, UPDATE, or MERGE operations, and then rebuild the columnstore index. By (applies to this scenario) Partition the table and switch partitions. For a bulk insert, insert data into a staging table, build a columnstore index on the staging table, and then switch the staging table into an empty partition. For other updates, switch a partition out of the main table into a staging table, rebuild or drop the columnstore index on the staging table, perform the update operations, rebuild or re-create the columnstore index on the staging table, and then switch the staging table back into the main table.

C) Place static data into a main table with a columnstore index, and put new data and recent data likely to change, into a separate table with the same schema that does not have a columnstore index.

Reference: Best Practices: Updating Data in a Columnstore Index

Question 34

What should you do?

You use SQL Server 2014. The physical server is a dedicated database server that has 120GB of RAM available. There is approximately 50GB of storage space available on a slow local disk. You create a new stored procedure. You decide you need to temporarily hold approximately 300,000 rows from two tables, from which you will compute two complex business scores.

The stored procedure will use temporary storage defined as follows:

```sql
CREATE TABLE #TempTable (
    AccountID INT NOT NULL,
    Year INT NOT NULL,
    SalesTotal decimal(15,2) NOT NULL,
    SalesScore INT NOT NULL,
    FutureSalesExpectationScore INT NOT NULL
)
```

The code will make several passes through the data, applying complex calculations before writing the data to a permanent disk-based table in the same database, from which it reads the data.

For this stored procedure, you need to deal with temporary data in the most efficient way to minimize physical disk pressure. What should you do? More than one answer choice may achieve the goal. Select the BEST answer.
A. Option A
B. Option B
C. Option C
D. Option D

Correct Answer: A
Explanation/Reference:
* You must specify a value for the BUCKET_COUNT parameter when you create the memory-optimized table. In most cases the bucket count should be between 1 and 2 times the number of distinct values in the index key. If the index key contains a lot of duplicate values, on average there are more than 10 rows for each index key value, use a nonclustered index instead. You may not always be able to predict how many values a particular index key may have or will have. Performance should be acceptable if the BUCKET_COUNT value is within 5 times of the actual number of key values.

Question 35
What should you recommend creating?
Your network contains a server that has SQL Server 2014 installed.
You create a table by using the following script:

```
CREATE TABLE #AccountScoring

( AccountNumber char(20) NOT NULL,
  YearToDateSalesTotal decimal(15,2) NULL,
  SalesScore int NULL,
  FutureSalesExpectationScore int NULL
)
```

You need to recommend a solution to ensure that each combination of ProductName and ProductManufacturer is not duplicated.
What should you recommend creating?
A. A UNIQUE constraint
B. A filtered index
C. A columnstore index
D. A CHECK constraint

Correct Answer: A
Explanation/Reference:

Question 36
What should you do?
You have a Microsoft SQL Azure database.
You have the following stored procedure:

```
CREATE TYPE dbo.AccountScoringModel as TABLE

( AccountNumber char(10) COLATE Latin1_General_100_BIN2 NOT NULL,
  YearToDateSalesTotal decimal(15,2) NULL,
  SalesScore int NULL,
  FutureSalesExpectationScore int NULL,
  INDEX accountNumber_hash (AccountNumber) WITH (BUCKET_COUNT = 25000)
) WITH (MEMORY_OPTIMIZED = ON)
GO
DECLARE @AccountScoring as dbo.AccountScoringModel
```

A. Option A
B. Option B
C. Option C
D. Option D
You discover that the stored procedure periodically fails to update Person.Contact. You need to ensure that Person.Contact is always updated when UpdateContact executes. The solution must minimize the amount of time required for the stored procedure to execute and the number of locks held.

What should you do?
A. Add the following line of code to line 12:
   WITH (UPDLOCK)
B. Add the following line of code to line 05:
   SET TRANSACTION ISOLATION LEVEL SERIALIZABLE
C. Add the following line of code to line 08:
   WITH (UPDLOCK)
D. Add the following line of code to line 05:
   SET TRANSACTION ISOLATION LEVEL SNAPSHOT

Correct Answer: C

Explanation/Reference:
* Overall, you should use UPDLOCK when you read a value that you plan to update later in the same transaction to prevent the value from changing.
* UPDLOCK
  Specifies that update locks are to be taken and held until the transaction completes. UPDLOCK takes update locks for read operations only at the row-level or page-level. If UPDLOCK is combined with TABLOCK, or a table-level lock is taken for some other reason, an exclusive (X) lock will be taken instead.
  When UPDLOCK is specified, the READCOMMITTED and READCOMMITTEDLOCK isolation level hints are ignored. For example, if the isolation level of the session is set to SERIALIZABLE and a query specifies (UPDLOCK, READCOMMITTED), the READCOMMITTED hint is ignored and the transaction is run using the SERIALIZABLE isolation level.

Question 37
Which two statements can you make about the performance characteristics of this query?
You administer an instance of SQL Server 2014.
You are tasked with tuning a common set of queries. You have the results of several test executions, along with query plans. The schema and the data for all database object(s) used remain unchanged between executions. The QueryTime column is defined as a computed column that uses the GETDATE() system function. The query plans and results are shown below:

```
SELECT * FROM [dbo].[Account] WHERE [AccountNumber]='A10000001'
```

<table>
<thead>
<tr>
<th>AccountID</th>
<th>AccountNumber</th>
<th>Name</th>
<th>QueryTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>0F638176-7257-4480-9DDE-126C45</td>
<td>A10000001</td>
<td>Don Hall</td>
<td>2014-01-20 18:01:50.923</td>
</tr>
<tr>
<td>CEFPP1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

```
SELECT * FROM [dbo].[Account] WHERE AccountNumber IN( 'A10000001', 'QB8700323', 'R00000012')
```

http://www.aoowe.com
You need to make an initial diagnosis of the situation, based solely on this input. Which two statements can you make about the performance characteristics of this query? Each correct answer presents a complete solution. Choose two.

A. The queries would perform better if the index named AccountNumber included the Name and QueryTime column.
B. The queries would perform worse if the index named AccountNumber included the NameColumn.
C. The queries would perform better if the index named AccountNumber included the Name column.
D. The object Account is a table, with an index having a leading column of AccountNumber and a Clustered Index named PKAccount.
E. The object Account is an indexed view, with an index having a leading column of AccountNumber and a Clustered Index named PKAccount.
F. The object Account is a view, joining the Account.AccountNumber and Account.PKAccount objects together.

Correct Answer: BD
Explanation/Reference:

Question 38
Which statement or statements should you execute? The database contains a disk-based table named ContentTable that has 1 million rows and a column named Fax. Fax allows null values. You need to update Fax to meet the following requirements:

Prevent null values from being used.
Always use an empty string instead of a null value.
Which statement or statements should you execute? (Each correct answer presents part of the solution. Choose all that apply.)

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

Correct Answer: ABE
Explanation/Reference:

E: First change the NULLs to ''
A: Then set the default to the column to ''
B: Finally add the NOT NULL constraint to the column.

Question 39
What should you create?
You have a Microsoft SQL Azure database named DBAzurel. DBAzurel contains a table named Orders that stores sales data. Each order has a sales total that can only be discovered by querying multiple tables. You need to ensure that the value of the sales total is returned by executing a query on Orders. What should you create?

A. A calculated column that uses a scalar function
B. A trigger that uses a table-valued function
C. A calculated column that uses a table-valued function
D. A trigger that uses a ranking function

Correct Answer: C

Explanation/Reference:
A table-valued parameter is scoped to the stored procedure, function, or dynamic Transact-SQL text, exactly like other parameters. Similarly, a variable of table type has scope like any other local variable that is created by using a DECLARE statement. You can declare table-valued variables within dynamic Transact-SQL statements and pass these variables as table-valued parameters to stored procedures and functions. Table-valued parameters offer more flexibility and in some cases better performance than temporary tables or other ways to pass a list of parameters.

Incorrect:
Not A: A scalar function would only be able to use other columns from the same table.

---

**Question 40**
What should you create?

You have a database that is accessed by 300 concurrent users. You need to log all of the queries that become deadlocked. The solution must meet the following requirements:

Provide a representation of the deadlock in XML format.

Minimize the impact on the server.

What should you create?
A. A SQL Server Profiler trace
B. A script that enables trace flags
C. A SQL Server Agent job that retrieves information from the sys.dm_tran_active_transactions dynamic management views
D. A SQL Server Agent job that retrieves information from the sys.dm_tran_session_transactions dynamic management views

Correct Answer: A

Explanation/Reference:
Analyze Deadlocks with SQL Server Profiler

Use SQL Server Profiler to identify the cause of a deadlock. A deadlock occurs when there is a cyclic dependency between two or more threads, or processes, for some set of resources within SQL Server. Using SQL Server Profiler, you can create a trace that records, replays, and displays deadlock events for analysis.

To trace deadlock events, add the Deadlock graph event class to a trace. This event class populates the TextData data column in the trace with XML data about the process and objects that are involved in the deadlock. SQL Server Profiler can extract the XML document to a deadlock XML (.xdl) file which you can view later in SQL Server Management Studio.

---

**Question 41**
What should you do?

You have the following query on a disk-based table:

```sql
SELECT ContactID, EmailAddress, LastName
FROM Person.Contact
WHERE LastName = 'NJohnson'
```

You discover that the query takes a long time to complete.

The execution plan is shown in the Execution Plan exhibit. (Click the Exhibit button.)

![Execution Plan](http://www.aoowe.com)

The index usage is shown in the Index Usage exhibit. (Click the Exhibit button.)
You need to reduce the amount of time it takes to complete the query. You must achieve this goal as quickly as possible.

What should you do?
A. Reorganize the index.
B. Update statistics.
C. Create an index on LastName.
D. Rebuild the index.

Correct Answer: C
Explanation/Reference:

Question 42

What should you do?

You use SQL Server 2014 to maintain the data used by applications at your company.

You need to run two separate SQL statements.

You must guarantee that the following three things happen:
1. Either BOTH statements succeed or BOTH statements fail as a batch.
2. If an error occurs on the first statement, SQL should not attempt to run the second statement.
3. Error information should be returned to the client.

What should you do?

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

Correct Answer: A
Explanation/Reference:

* SET XACT_ABORT

When SET XACT_ABORT is ON, if a Transact-SQL statement raises a run-time error, the entire transaction is terminated and rolled back.

When SET XACT_ABORT is OFF, in some cases only the Transact-SQL statement that raised the error is rolled back and the transaction continues processing.
**Question 43**

What should you do?

You have a SQL Server 2012 environment that contains two servers. The servers are configured as shown in the following table.

<table>
<thead>
<tr>
<th>Server name</th>
<th>Database</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server1</td>
<td>DB1</td>
<td>Principal</td>
</tr>
<tr>
<td>Server2</td>
<td>DB1</td>
<td>Mirror</td>
</tr>
</tbody>
</table>

After the failover is complete, a user receives the following error message when connecting to DB1 on Server2:

"Msg 916, Level 14, State 1, Line 1
The server principal "Account1" is not able to access the database "DB1" under the current security context."

You verify that there is a server login for Account1 on Server2.

You need to ensure that Account1 can connect to DB1.

What should you do?

More than one answer choice may achieve the goal. Select the BEST answer.

A. Update the SID for Account1 on DB1.
B. Add Account1 to the db_datareader role.
C. Create a new database user on DB1.
D. Implement Windows authentication.

Correct Answer: B

Explanation/Reference:

**Question 44**

Which code segment should you use?

You have a SQL Server 2012 database that contains a table named Users. The Users table contains usernames and passwords.

You need to ensure that all new records have a password.

Which code segment should you use?

More than one answer choice may achieve the goal. Select the BEST answer.

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

Correct Answer: D

Explanation/Reference:

**Question 45**

Which code segment should you use to create the table?

You are creating a stored procedure named usp1. Usp1 will create a table that will be used during the execution of usp1. Only usp1 will be allowed to access the table.

You need to write the code required to create the table for usp1. The solution must minimize the need to recompile the stored procedure.

Which code segment should you use to create the table?

A. CREATE TABLE oneTable
B. CREATE TABLE #oneTable
C. CREATE TABLE #oneTable TABLE
D. DECLARE oneTable TABLE

Correct Answer: B
**Question 46**
Which T-SQL command should you recommend?
You plan to modify a stored procedure to use temporary data. The stored procedure must meet the following requirements:
Favor physical memory when physical memory is available.
Be able to roll back changes to the temporary data.
You need to recommend which object to add to the stored procedure.
Which T-SQL command should you recommend?
A. CREATE TABLE ##Table…
B. CREATE TABLE Table…
C. CREATE VIEW Table…
D. CREATE PARTITION SCHEME Table…
E. DECLARE TABLE @ Table…

Correct Answer: A

**Explanation/Reference:**
Temporary Tables
You can create local and global temporary tables. Local temporary tables are visible only in the current session, and global temporary tables are visible to all sessions. Temporary tables cannot be partitioned.
Prefix local temporary table names with single number sign (#table_name), and prefix global temporary table names with a double number sign (##table_name)

**Question 47**
What should you do?
You have a Microsoft SQL Azure database that contains a table named Employees.
You create a non-clustered index named EmployeeName on the name column.
You write the following query to retrieve all of the employees that have a name that starts with the letters JOH:
You discover that the query performs a table scan.
You need to ensure that the query uses EmployeeName.
What should you do?
A. Recreate EmployeeName as a unique index
B. Recreate EmployeeName as a clustered index
C. Replace LEFT(name,3) = 'JOH' by using name like 'JOH%'
D. Replace LEFT(name,3) = 'JOH' by using substring(name, 1, 3) = 'JOH'

Correct Answer: C

**Explanation/Reference:**

**Question 48**
What should you create?
You have a table named Table1 that stores customer data. Each customer has a credit limit that can only be discovered by querying multiple tables. You need to ensure that the value of the credit limit is returned by executing a query on Table1. What should you create?
A. A trigger that uses a ranking function
B. A trigger that uses a table-valued function
C. A calculated column that uses a table-valued function
D. A calculated column that uses a scalar function

Correct Answer: C

**Explanation/Reference:**

**Question 49**
What should you do?
Your network contains a server named SQL1 that has SQL Server 2012 installed. SQL1 contains a database name DB1 and a table named Customers. You add an additional server named SQL2 that runs SQL Server 2012. You need to create a distributed partitioned view. The solution must minimize the amount of network traffic. What should you do? (Each correct answer presents part of the solution. Choose all that apply.)
A. Add SQL2 as a Distributor.
B. Add the Customers table to SQL2.
C. Add SQL2 as a linked server.
D. Create the view on SQL1.
E. Remove the Customers table from SQL1.
F. Create the view on SQL2.
**Question 50**
What should you do?
You have a SQL Server 2012 database named Database1.
You execute the following code:
```sql
CREATE TABLE Sales
(
  ID int IDENTITY(1,1) NOT NULL PRIMARY KEY,
  OrderDate char(10) NOT NULL,
  Amount decimal
);
GO

CREATE INDEX IX_Sales_OrderDate
  ON Sales(OrderDate)
  INCLUDE (ID, Amount);
GO

CREATE PROC usp_Proc1(
  $date1 datetime,
  $date2 datetime
) AS
SELECT ID, OrderDate, Amount
FROM Sales
WHERE CAST(OrderDate AS datetime) BETWEEN $date1 AND $date2
ORDER BY ID;
GO
```
You insert 3 million rows into Sales.
You need to reduce the amount of time it takes to execute Proc1.
What should you do?

A. Change the query inside Proc1 to:
   ```sql
   SELECT ID, OrderDate, Amount
   FROM Sales
   WHERE OrderDate BETWEEN CAST('char(10)', $date1, 112)
   AND CAST('char(10)', $date2, 112)
   ORDER BY ID;
   ```

B. Change the definition of Proc1 to:
   ```sql
   CREATE PROC usp_Proc1(
     $date1 int, $date2 int
   )
   ```

C. Change the query inside Proc1 to:
   ```sql
   SELECT ID, OrderDate, Amount
   FROM Sales
   WHERE CAST(OrderDate AS datetime) BETWEEN $date1
   AND CAST(OrderDate AS datetime) > $date2
   ORDER BY ID;
   ```

D. Change the definition of Proc1 to:
   ```sql
   CREATE PROC usp_Proc1(
   $date1 date, $date2 date
   )
   ```

Correct Answer: A
Explanation/Reference:

**Question 51**
Which type of object should you use?
You need to encapsulate a T-SQL script into a reusable user-defined object.
The object must meet the following requirements:
- Permit insertions into a table variable.
- Support structured exception handling.
- Prevent changes to the definition of referenced objects.

Correct Answer: BCDF
Explanation/Reference:
Support the use of the APPLY operator on the output of the object.
Which type of object should you use?
A. An inline table-valued function
B. A stored procedure
C. A scalar user-defined function
D. A multi-statement table-valued function

Correct Answer: C

Explanation/Reference:

**Question 52**
Which system stored procedures should you use?
You plan to migrate an instance of SQL Server 2008 to a new installation of SQL Server 2012. You need to migrate alerts and e-mail notifications.
Which system stored procedures should you use? (Each correct answer presents part of the solution. Choose all that apply.)
A. sp_syspolicy_create_job
B. sp_add_operator
C. sp_audit_write
D. sp_add_alert

Correct Answer: BC

Explanation/Reference:

B: sp_add_operator
Creates an operator (notification recipient) for use with alerts and jobs.
C: sp_audit_write
Adds a user-defined audit event to the USER_DEFINED_AUDIT_GROUP. If USER_DEFINED_AUDIT_GROUP is not enabled, sp_audit_write is ignored.

**Question 53**
What should you add to the query?
You have a Microsoft SQL Azure database that contains a table named Customers. You have a table-valued function named TopCustomers that returns a list of all the customers that have purchased items during the last 12 months. The ID of the customer is passed as an argument to the TopCustomers function. You need to create a query that returns a list of all the Customer names and the purchase dates. The solution must return only customers that have purchased an item during the last 12 months. What should you add to the query?
A. OUTER JOIN
B. CROSS JOIN
C. CROSS APPLY
D. OUTER APPLY

Correct Answer: C

Explanation/Reference:

**Question 54**
Which code segment should you execute?
You have a SQL Server 2012 database named Database1. Database1 contains a table named OrderDetails. For a given sales order, you need to retrieve the OrderID, Quantity, and LineTotal columns for all of the items in the OrderDetails table. The solution must ensure that the results can be joined to other tables. Which code segment should you execute?
Question 55
Which code segment should you run?
You create a view by using the following code:

```
CREATE VIEW dbo.View1
WITH VIEW_METADATA
AS
SELECT t1.col1, t1.col2, t2.*
FROM dbo.Table1 AS t1 JOIN dbo.Table2 AS t2 ON t1.col1=t2.col2;
```

Several months after you create the view, users report that the view has started to return unexpected results.
You discover that the design of Table2 was modified since you created the view.
You need to ensure that the view returns the correct results.
Which code segment should you run?

A. EXEC sp_refreshsqlmodule @name = 'dbo.Table2';
B. DROP dbo.View1;
GO
CREATE dbo.View1 WITH SCHEMABINDING, VIEW_METADATA
AS
SELECT t1.col1, t1.col2, t2.*
FROM dbo.Table1 AS t1 JOIN dbo.Table2 AS t2 ON t1.col1=t2.col2;
C. ALTER dbo.View1 WITH SCHEMABINDING, VIEW_METADATA
AS
SELECT t1.col1, t1.col2, t2.*
FROM dbo.Table1 AS t1 JOIN dbo.Table2 AS t2 ON t1.col1=t2.col2;
D. EXEC sp_refreshview @viewname = 'dbo.View1';

Correct Answer: D
Question 56
What should you do?
Your company has a main office in London and a branch office in New York.
Your network contains a server named Server5 that has SQL Server 2012 installed. Server5 contains a database name ContentDB and a table named ContentTable.
You add an additional server named Server9 that runs SQL Server 2012.
You need to create a distributed partitioned view. The solution must minimize the amount of network traffic.
What should you do? (Each correct answer presents part of the solution. Choose all that apply.)
A. Create the view on Server5.
B. Add Server9 as a linked server.
C. Create the view on Server9.
D. Add the Customers table to Server9.
E. Add Server9 as a Distributor.
F. Remove the Customers table from Server5.
Correct Answer: ABCD
Explanation/Reference:

Question 57
Which code segment should you execute?
You have a SQL Server 2012 database named DB1. You have a backup device named Device1.
You discover that the log file for the database is full.
You need to ensure that DB1 can complete transactions. The solution must not affect the chain of log sequence numbers (LSNs).
Which code segment should you execute?
A. BACKUP LOG DB1 TO Device1 WITH COPY_ONLY
B. BACKUP LOG DB1 TO Device1 WITH NORECOVERY
C. BACKUP LOG DB1 TO Device1 WITH TRUNCATE_ONLY
D. BACKUP LOG DB1 TO Device1
Correct Answer: D
Explanation/Reference:

Question 58
What should you recommend creating?
You have a Microsoft SQL Azure database named DBAzure1.
You create a table in DBAzure1 by using the following script:
CREATE TABLE dbo.Customers
(
    CustomerId int NOT NULL,
    CustomerName nvarchar(50) NULL,
    CustomerContact nvarchar(50) NULL,
    CustomerDetails nvarchar(200) NULL,
    CONSTRAINT PK_Customers PRIMARY KEY CLUSTERED (CustomerId)
) ON [PRIMARY]
GO
You need to recommend a solution to ensure that each combination of CustomerContact and CustomerDetails is not duplicated.
What should you recommend creating?
A. A CHECK constraint
B. A filtered index
C. A columnstore index
D. A UNIQUE constraint
Correct Answer: D
Explanation/Reference:

Question 59
Which option should you include?
You plan to create a new table that has the following requirements:
Uses a GUID data type as the primary key.
Uses a clustered index as the primary key.
Minimizes fragmentation.
You need to recommend which option to include in the CREATE statement. Which option should you include?
More than one answer choice may achieve the goal. Select the BEST answer.
A. NEWID
B. @@IDENTITY
Question 60
Which type of index defragmentation solution should you include in the recommendation?
You have a SQL Server 2012 instance named SQLInstance1. Instance1 contains a database named Database1. You need to recommend an index defragmentation solution for an index named ContentIndex. ContentIndex must meet the following requirements:
Remain online during the defragmentation.
Update distribution statistics.
Perform defragmentation as quickly as possible.
Which type of index defragmentation solution should you include in the recommendation? More than one answer choice may achieve the goal. Select the BEST answer.
A. DBCC DBREINDEX
B. REORGANIZE
C. REBUILD
D. DBCC INDEXDEFRAG
Correct Answer: B
Explanation/Reference:
http://sqlblog.com/blogs/paul_white/archive/2012/05/02/parallel-row-goals-gone-rogue.aspx

Question 61
Which keyword should you identify?
You have a SQL Azure database.
You need to identify which keyword must be used to create a view that will be indexed. Which keyword should you identify?
A. SCHEMABINDING
B. VIEW_METADATA
C. DISTINCT
D. DEFAULT
Correct Answer: A
Explanation/Reference:
Explanation:

Question 62
Which tool should you use?
You have a server that has SQL Server 2012 installed. You need to identify which parallel execution plans are running in serial. Which tool should you use?
A. Performance Monitor
B. Database Engine Tuning Advisor
C. Data Profile Viewer
D. Extended Events
Correct Answer: D
Explanation/Reference:
Explanation:
http://sqlblog.com/blogs/paul_white/archive/2012/05/02/parallel-row-goals-gone-rogue.aspx

Question 63
Which transaction isolation level should you use in sp1?
You use SQL Server 2012 to store data used by an e-commerce application. You develop a stored procedure named sp1. Sp1 is used to read the price of all the products sold on the e-commerce site. You need to ensure that sp1 can read data even while another transaction is modifying the price of a product. Sp1 must only read committed data. Which transaction isolation level should you use in sp1?
A. Serializable
B. Snapshot
C. Repeatable read
D. Read committed
Correct Answer: B
Explanation/Reference:

**Question 64**
Which advanced server option should you modify?
You have a SQL Server 2012 instance that hosts a single-user database. The database does not contain user-created stored procedures or user-created functions. You need to minimize the amount of memory used for query plan caching. Which advanced server option should you modify?
A. Scan for Startup Procs
B. Enable Contained Databases
C. Optimize for Ad hoc Workloads
D. Allow Triggers to Fire Others

Correct Answer: C
Explanation/Reference:

**Question 65**
What should you do?
You execute the following code.
```sql
CREATE TABLE HumanResources.Employees
(  EmployeeID int IDENTITY(1,1) PRIMARY KEY,
   ContactID int NOT NULL
   FOREIGN KEY REFERENCES Person.Contact(ContactID),
   JobTitle varchar(100)
);
GO
CREATE INDEX IX_Employees
ON HumanResources.Employees(JobTitle);
GO
```
After populating the Employees table with 10,000 rows, you execute the following query:
```sql
SELECT EmployeeID, JobTitle
FROM HumanResources.Employee
WHERE SUBSTRING(JobTitle,1,1) = 'c'
```
You need to reduce the amount of time it takes to execute the query. What should you do?
A. Partition the table and use the JobTitle column for the partition scheme.
B. Change SUBSTRING(JobTitle,1,1) = 'c' to JobTitle LIKE 'c%
C. Change SUBSTRING(JobTitle,1,1) = 'c' to LEFT(JobTitle,1) = 'c'.
D. Replace IX_Employees with a clustered index.

Correct Answer: B
Explanation/Reference:

**Question 66**
Which code segment should you use?
You have a SQL Server 2012 instance. You plan to create an application that uses spatial data. You need to create an object that will support the representation of the surface area of all the oceans. Which code segment should you use?
Question 67
What should you create?
You have a SQL Server 2012 database named DB1 that is accessed by 650 concurrent users.
You need to log all of the queries to DB1 that become deadlocked. The solution must meet the following requirements:
Provide a representation of the deadlock in XML format.
Minimize the impact on the server.
What should you create?
A. A SQL Server Profiler trace
B. A SQL Server Agent job that retrieves information from the sys.dm_tran_session_transactions dynamic management views
C. A SQL Server Agent job that retrieves information from the sys.dm_tran_active_transactions dynamic management views
D. A script that enables trace flags
Correct Answer: A
Explanation/Reference:

Question 68
Which code segment should you use to replace line 03?
You have a database named Database1.
You execute the following code:
CREATE TABLE dbo.table1
(
  ID int IDENTITY(1,1) NOT NULL PRIMARY KEY,
  FirstName varchar(50) NOT NULL,
  LastName varchar(50) NOT NULL,
  EmailAddress varchar(100) NULL,
  Notes nvarchar(MAX) NULL,
  LastContactDate datetime NULL
)
You have the following query. (Line numbers are included for reference only.)
01 SELECT FirstName + ' ' + LastName AS Name
02 FROM dbo.table1
03 WHERE Notes LIKE '%call%' AND
04 LastContactDate >= '1/1/2010'
Users report that the query takes a long time to complete.
You create a full-text index for the Notes column.
You need to recommend changes to the query to reduce the amount of time it takes for the query to complete.
Which code segment should you use to replace line 03?
A. WHERE FREETEXT(notes, '%call%') AND
B. INNER JOIN FREETEXTTABLE(dbo.table1, notes, 'call')
AS t2 ON dbo.table1.ID = t2.key WHERE
C. WHERE CONTAINS(notes, 'call') AND
D. WHERE CONTAINS(notes, '%'call%') AND
Correct Answer: A
Explanation/Reference:
Question 69
What should you do?
You have a database named DB1.
You plan to configure change data capture on the existing tables in DB1.
The database file settings for the DB1 are shown in the exhibit. (Click the Exhibit button.)

You need to minimize disk contention caused by change data capture. What should you do?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Increase the autogrowth value of the database file.
B. Set the database recovery model to simple.
C. Increase the autogrowth value of the log file.
D. Configure change data capture to use to a secondary filegroup.

Correct Answer: D
Explanation/Reference:

Question 70
What should you do?
You have database objects that were created by using the following script:

```
CREATE TABLE dbo.Customer
(
    CustomerID int IDENTITY(1,1),
    FirstName nvarchar(50) NOT NULL,
    LastName nvarchar(50) NOT NULL,
    CreationDate datetime NOT NULL,
    CONSTRAINT PK_Customer
        PRIMARY KEY (CustomerID)
)
GO
CREATE NONCLUSTERED INDEX IX_Customers_CreationDate
ON dbo.Customer (CreationDate)
INCLUDE (LastName, FirstName)
WHERE CreationDate > '1/1/2008';
GO
CREATE PROCEDURE dbo.usp_GetCustomersByDate
    @CreationDate datetime
AS
    SELECT LastName,
           FirstName,
           CreationDate
    FROM dbo.Customer
    WHERE CreationDate > @CreationDate;
GO
```

The dbo.Customer table has 1 million rows. You discover that usp_GetCustomersByDate takes a long time to complete. The query plan used by the stored procedure is shown in the exhibit. (Click the Exhibit button.)
Select Distinct myData From dbo.Customer Where CustomerCreateDate >= @StartDate;

You need to ensure that usp_GetCustomersByDate completes as quickly as possible. What should you do?
A. Modify the stored procedure to include the OPTIMIZE FOR UNKNOWN query hint.
B. Execute the sp_recompile 'dbo.GetCustomersByDate' statement.
C. Execute the ALTER INDEX IX_Customers_CreationDate WITH REBUILD statement.
D. Modify the stored procedure to include the OPTIMIZE FOR('1/1/2008') query hint.

Correct Answer: A
Explanation/Reference:

Question 71
What should you set from the index options?
You have an index for a table in a SQL Azure database. The database is used for Online Transaction Processing (OLTP).
You discover that many page splits occur when records are inserted or updated in the table.
You need to minimize the number of page splits.
What should you set from the index options?
A. FILLFACTOR = 0
B. STATISTICS_NORECOMPUTE = OFF
C. STATISTICS_NORECOMPUTE = ON
D. FILLFACTOR = 80

Correct Answer: D
Explanation/Reference:
Explanation:

Question 72
What should you do?
You have a SQL Server 2012 database named Database1.
You execute the following code:
CREATE TABLE Sales
(
    ID int IDENTITY(1,1) NOT NULL PRIMARY KEY,
    OrderDate char(10) NOT NULL,
    Amount decimal
);
GO
CREATE INDEX IX_Sales_OrderDate
ON Sales(OrderDate)
INCLUDE (ID, Amount);
GO
CREATE PROC usp_Proc1
(@date1 datetime, @date2 datetime)
AS
SELECT ID, OrderDate, Amount
FROM Sales
WHERE CAST(OrderDate AS date) BETWEEN @date1 AND @date2
ORDER BY ID
GO
You insert 3 million rows into Sales.
You need to reduce the amount of time it takes to execute Proc1.
What should you do?
**Question 73**
What should you use?
You are creating a table named Orders.
You need to ensure that every time a new row is added to the Orders table, a table that is used for auditing is updated.
What should you use?
More than one answer choice may achieve the goal. Select the BEST answer.
A. A Data Definition Language (DDL) trigger
B. A DEFAULT constraint
C. A CHECK constraint
D. A FOREIGN KEY constraint
E. A data manipulation language (DML) trigger

Correct Answer: E
Explanation/Reference:

**Question 74**
What should you do?
You have a text file that contains an XML Schema Definition (XSD).
You have a table named Schem1.Table1.
You have a stored procedure named Schem1.Proc1 that accepts an XML parameter named Param1.
You need to store validated XML data in Schem1.Table1. The solution must ensure that only valid XML data is accepted by Param1.
What should you do? (Each correct answer presents part of the solution. Choose all that apply.)
A. Define an XML column in Table1 by using an XML schema collection.
B. Create an XML schema collection in the database from the text file.
C. Declare Param1 var1 as type XML and associate the variable to the XML schema collection.
D. use the modify method to insert the XML schema into each row of the XML column in Table1.

Correct Answer: ABD
Explanation/Reference:
Question 75
Which code segment should you execute?
You have a SQL Azure database.
You execute the following script:
```
CREATE TABLE dbo.Table1
(
    Column1 int PRIMARY KEY,
    Column2 varchar(50) SPARSE NULL
);
```
You add 1 million rows to Table1. Approximately 85 percent of all the rows have a null value for Column2.
You plan to deploy an application that will search Column2.
You need to create an index on Table1 to support the planned deployment. The solution must minimize the storage requirements.
Which code segment should you execute?
A. CREATE INDEX IX_Table1 ON Table1 (Column2) WITH FILLFACTOR-0
B. CREATE INDEX IX_Table1 OK Table1 (Column1) INCLUDE (Column2)
C. CREATE INDEX IX_Table1 ON Table1 (Column2) WHERE Column2 IS NULL
D. CREATE INDEX IX_Table1 ON Table1 (Column2) WHERE Column2 IS NOT NULL

Correct Answer: D
Explanation/Reference:

Question 76
Which type of table should you identify?
You plan to modify a procedure that contains hundreds of lines of code.
The modification must support the following guidelines:
Use only tables that are not persistent in the database.
Minimize the amount of time required to execute and recompile procedures.
You need to identify which type of table must be used to support the planned modification.
Which type of table should you identify?
A. A system table
B. A partitioned table
C. A table variable
D. A temporary table

Correct Answer: C
Explanation/Reference:

Question 77
Which code segment should you execute?
You have a SQL Azure database.
You execute the following code:
```
CREATE SCHEMA Sales;
GO
```
```
CREATE TABLE Sales.Customers
(
    CustomerID int IDENTITY(1,1) PRIMARY KEY,
    FaxNumber char(10) SPARSE NULL,
    CustomerName varchar(100) NOT NULL,
    EmailAddress varchar(100) NOT NULL
);
```
```
CREATE PROCEDURE Sales.CustomersByFaxNumber
@FaxNumber char(10)
AS
    SELECT CustomerID,
           CustomerName
    FROM Sales.Customers
    WHERE FaxNumber = @FaxNumber
```
The Sales.Customers table will contain 100,000 rows. You expect the FaxNumber column to contain a null value for 70 percent of the rows.
You need to create an index to support Sales.CustomersByFaxNumber. The solution must minimize the disk storage requirements.
Which code segment should you execute?
A. CREATE INDEX IX_Customers ON Customers (FaxNumber) WHERE FaxNumber IS NOT NULL
B. CREATE INDEX IX_Customers ON Customers (FaxNumber) WITH FILLFACTOR-0
C. CREATE INDEX IX_Customers ON Customers (CustomerName) INCLUDE (FaxNumber)
D. CREATE INDEX IX_Customers ON Customers (FaxNumber)
E. CREATE INDEX IX_Customers ON Customers (FaxNumber)
   WHERE FaxNumber IS NULL

Correct Answer: A
Explanation/Reference:

Question 78
Which data type should you recommend?
You plan to create a new column in a table. The column must meet the following requirements:
Be able to store images that are larger than 1 MB each.
Be able to access the images from Microsoft .NET Framework applications.
You need to recommend which data type must be used in the column.
Which data type should you recommend?
More than one answer choice may achieve the goal. Select the BEST answer.
A. nvarchar
B. varbinary
C. image
D. FileStream

Correct Answer: D
Explanation/Reference:

Question 79
What should you set from the index options?
You have an index for a table in a SQL Azure database. The database is used for Online Transaction Processing (OLTP).
You discover that the index consumes more physical disk space than necessary.
You need to minimize the amount of disk space that the index consumes.
What should you set from the index options?
A. STATISTICS_NORECOMPUTE = OFF
B. FILLFACTOR = 80
C. FILLFACTOR = 0
D. STATISTICS_NORECOMPUTE = ON

Correct Answer: C
Explanation/Reference:

Question 80
What should you implement?
You run the following code:
You need to ensure that the root node of the XML data stored in the Details column is <Order_Details>.
What should you implement?
More than one answer choice may achieve the goal. Select the BEST answer.
A. A user-defined data type
B. An XML index
C. A Data Definition Language (DDL) trigger
D. A data manipulation language (DML) trigger
E. An XML schema collection

Correct Answer: E
Explanation/Reference:

Question 81
What should you use?
You are creating a table named Orders.
You need to ensure that every time a new row is added to the Orders table, a user-defined function is called to validate the row before the row is added to the table.
What should you use?
More than one answer choice may achieve the goal. Select the BEST answer.
A. A data manipulation language (DML) trigger
B. A DEFAULT constraint
C. A Data Definition Language (DDL) trigger
D. A CHECK constraint
E. A FOREIGN KEY constraint

Correct Answer: D
Explanation/Reference:

Question 82
How many rows should you identify?
You plan to execute the following code:

```
01 CREATE TABLE dbo.Table1
02 {
03 data_value varchar(20)
04 }
05 GO
06 BEGIN TRANSACTION;
07 INSERT INTO Table1 VALUES('entry1');
08 BEGIN TRANSACTION;
09 INSERT INTO Table1 VALUES('entry2');
10 COMMIT TRANSACTION;
11 INSERT INTO Table1 VALUES('entry3');
12 ROLLBACK TRANSACTION;
13 GO
```

You need to identify how many rows will be in dbo.Table1 after you execute the code.
How many rows should you identify?
A. 0
B. 1
C. 2
D. 3

Correct Answer: A
Explanation/Reference:

Question 83
Which type of objects should you identify?
You plan to design an application that temporarily stores data in a SQL Azure database.
You need to identify which types of database objects can be used to store data for the application. The solution must ensure that the application can make changes to the schema of a temporary object during a session.
Which type of objects should you identify?
A. Common table expressions (CTEs)
B. Temporary stored procedures
C. Temporary tables
D. Table variables

Correct Answer: C
Explanation/Reference:

Question 84
Which code segment should you execute?
You execute the following code:
```
CREATE TABLE UsersInfo
{
  ID int NOT NULL IDENTITY(1, 1),
  CONSTRAINT PK_UsersInfo PRIMARY KEY CLUSTERED,
  UserName varchar(100) NOT NULL,
  Manager varchar(100) NULL,
  HireDate date NOT NULL,
  PerformanceReviewScore int NULL
};
```
You have a stored procedure that includes the following SELECT statement:
You need to create a covering index on UserInfo.
Which code segment should you execute?

A. Option A
   ```sql
   CREATE NONCLUSTERED INDEX [IX_Covering_Index] ON UserInfo
   (Manager) ASC;
   ```

B. Option B
   ```sql
   CREATE NONCLUSTERED INDEX [IX_Covering_Index] ON UserInfo
   (UserName) ASC,
   (PerformanceReviewScore) ASC;
   ```

C. Option C
   ```sql
   CREATE NONCLUSTERED INDEX [IX_Covering_Index] ON UserInfo
   (Manager) ASC,
   (PerformanceReviewScore) ASC,
   (UserName) ASC;
   ```

D. Option D
   ```sql
   CREATE NONCLUSTERED INDEX [IX_Covering_Index] ON UserInfo
   (UserName) ASC,
   (Manager) ASC;
   ```

Correct Answer: C
Explanation/Reference:

**Question 85**
Which dynamic management view should you use?
You need to identify which long running transactions use an index.
Which dynamic management view should you use?
A. sys.dm_exec_query_optimizer_info
B. sys.dm_exec_connections
C. sys.dm_exec_query_stats
D. sys.dm_exec_sessions

Correct Answer: A
Explanation/Reference:

**Question 86**
What should you do?
You create a table named Customers by using the following code segment:
```sql
CREATE TABLE dbo.Customers
(    id int primary key,
    name char(10)
)
```
You create a non-clustered index named IX_Name on the name column.
You write the following query to retrieve all of the customers that have a name that starts with the letters SMI:
```sql
SELECT * FROM dbo.Customers
WHERE 'smi' = LEFT(name,3)
```
You discover that the query performs a table scan.
You need to ensure that the query uses the index.
What should you do?
A. Replace LEFT(name,3) = 'smi' by using name like 'smi%'
B. Replace LEFT(name,3) = 'smi' by using substring(name,1,3) = 'smi'
C. Recreate IX_Name as a unique index
D. Recreate IX_Name as a clustered index

Correct Answer: A
Explanation/Reference:

**Question 87**
What should you add to the query?
You have a database that contains a table named Department. Department contains the names and locations of each department.
You have a table-valued function named ProjectList() that returns a list of all the projects assigned to a department. The name of the department is
passed as an argument to the ProjectList() function.
You need to create a query that returns a list of all the department names and the project names. The solution must return only departments that are
associated to projects.
What should you add to the query?
A. OUTER APPLY
B. OUTER JOIN
C. CROSS JOIN
D. CROSS APPLY

Correct Answer: D
Explanation/Reference:

Question 88
Which view should you identify?
You have a database that uses the following management views:
Sys.dm_os_volume_stats
Sys.dm_db_partition_stats
Sys.dm_db_file_space_usage
Sys.fulltext_indexes
You plan to migrate the database to Microsoft SQL Azure.
You need to identify which view can be used in SQL Azure.
Which view should you identify?
A. sys.fulltext_indexes
B. sys.dm_db_file_space_usage
C. sys.dm_os_volume_stats
D. sys.dm_db_partition_stats

Correct Answer: D
Explanation/Reference:

Question 89
What should you do?
You have a SQL Server 2012 database named Database1.
Database1 has a table named Customers. Customers contains more than 1 million rows. The database has a stored procedure that was created by using
the following script:
CREATE PROCEDURE up_customers
@CustomerTypeList nvarchar(400)
AS
SELECT CustomerID, Firstname, LastName
FROM dbo.customers
WHERE CustomerTypeID IN ("@CustomerTypeList")
You need to ensure that up_customers returns rows when the following statement is executed:
EXECUTE up_customers'1,2,3,4,5'
What should you do?
A. Update @CustomerTypelist to use the int data type.
B. Convert @CustomerTypeList to a table variable.
C. Convert @CustomerTypeList to an XML variable.
D. Update @CustomerTypeList to use the XML data type.

Correct Answer: B
Explanation/Reference:

Question 90
What should you include in the recommendation?
You plan to create a database that has multiple tables. The tables will contain product information. Each product has a stock-keeping unit (SKU).
You need to recommend a solution to ensure that each SKU starts with the letters "ADV" and is followed by 10 digits.
The solution must minimize the amount of development effort required.
What should you include in the recommendation?
A. A FOREIGN KEY constraint
B. A trigger
C. A user-defined data type
D. A CHECK constraint

Correct Answer: C
Explanation/Reference:

Question 91
What should you change Proc1 to do?
You have a database named Database1. Database1 has two stored procedures named Proc1 and Proc2 and a table named Table1. Table1 has millions
of rows.
Proc1 updates data in Table1. Proc2 reads data from Table1.
You discover that when Proc1 is executed to update more than 4,000 rows, Proc2 is blocked. The block affects all rows, including those that are not being updated by Proc1. You need to ensure that when Proc1 is executing, Proc2 can access the data in Table1 that Proc1 is not updating.

What should you change Proc1 to do?

More than one answer choice may achieve the goal. Select the BEST answer.

A. Update less than 4,000 rows simultaneously.
B. Use the PAGLOCK table hint.
C. Wait for Proc2 to complete.
D. Use the ROWLOCK table hint.

Correct Answer: A

Question 92
What should you add next to the beginning of each stored procedure?

You need to implement a solution that meets the data recovery requirements.

You update each stored procedure to accept a parameter named @transactionID.

What should you add next to the beginning of each stored procedure?

A. SAVE TRANSACTION WITH MARK @transactionID
B. ROLLBACK DISTRIBUTED TRANSACTION @transactionID
C. BEGIN TRANSACTION WITH MARK @transactionID
D. COMMIT TRANSACTION @transactionID

Correct Answer: C

Question 93
Which query should you use?

You have a database that contains a user-defined function named Schema1.Udf1 and two tables named Schema1.Table1 and Schema1.Table2.

Schema1.Table1 has 1 million rows. The schema for Schema1.Table1 is configured as shown in the following table.

<table>
<thead>
<tr>
<th>Column</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CountryID</td>
<td>int</td>
</tr>
<tr>
<td>CustomerName</td>
<td>varchar(50)</td>
</tr>
</tbody>
</table>

Schema1.Udf1 was defined by using the following code:

```
CREATE FUNCTION Schema1.Udf1(@CountryID int) 
RETURNS TABLE 
AS 
RETURN 
SELECT Country 
FROM Schema1.Table2 
WHERE CountryID = @CountryID
```

You need to write a query that will contain the following columns:

- Country
- CountryID
- CustomerName

The solution must meet the following requirements:

- Rows must be returned only if the function returns data.
- The amount of time it takes the query to execute must be minimized.

Which query should you use?


Correct Answer: B
Question 94
Which code segment should you add at line 06?
You have a database hosted on SQL Azure.
You are developing a script to create a view that will be used to update the data in a table.
The following is the relevant portion of the script. (Line numbers are included for reference only.)

```sql
01 CREATE VIEW View1
02 AS
03 SELECT ...
04 WHERE Column1 = 'City1'
05 ...
06
```
You need to ensure that the view can update the data in the table, except for the data in Column1.
Which code segment should you add at line 06?

A. WITH CHECK OPTION
B. WITH VIEW_METADATA
C. WITH ENCRYPTION
D. WITH SCHEMABINDING

Correct Answer: A
Explanation/Reference:
The question concerning the view that has a clause "WHERE Column1 = 'City1'" is wrong. That's not what the CHECK option is made for. Actually you will be able to update ONLY the rows satisfied by that WHERE clause, that is, only the rows with the Column1 being 'City1'. None of the answers are valid from that question. You need a trigger to achieve that.

Question 95
What should you do?
You have a Microsoft SQL Azure database.
You have the following stored procedure:

```sql
01 CREATE PROC up_employees
02  @ID int,
03  @Name nvarchar(50)
04 AS
05 06 SELECT Name AS OriginalName
07 FROM HR.Employees
08
09 WHERE ID = @ID;
10 11 UPDATE HR.Employees
12 SET Name = @Name
13 14 WHERE ID = @ID;
```
You discover that the stored procedure periodically fails to update HR.Employees.
You need to ensure that HR.Employees is always updated when up_employees executes.
The solution must minimize the amount of time required for the stored procedure to execute and the number of locks held.
What should you do?

A. Add the following line of code to line 05:
   SET TRANSACTION ISOLATION LEVEL SNAPSHOT
B. Add the following line of code to line 13:
   WITH (UPDLOCK)
C. Add the following line of code to line 05:
   SET TRANSACTION ISOLATION LEVEL SERIALIZABLE
D. Add the following line of code to line 08:
   WITH (UPDLOCK)

Correct Answer: D
Explanation/Reference:

Question 96
What should you modify?
You execute the following code:
The execution plan for the query is shown in the exhibit. (Click the Exhibit button.)

You need to prevent the key lookup.
What should you modify?
More than one answer choice may achieve the goal. Select the BEST answer.

A. DROP INDEX AK_Department_DepartmentName
   ON Department;
   GO
   CREATE INDEX AK_Department_DepartmentName
   ON Department (DepartmentName, GroupName);
   GO

B. the SELECT statement to use the WITH(INDEX PK_Department_DepartmentID)) query hint

C. DROP INDEX AK_Department_DepartmentName
   ON Department;
   GO
   CREATE INDEX AK_Department_DepartmentName
   ON Department (DepartmentName)
   INCLUDE (GroupName);
   GO

D. the SELECT statement to use the WITH(INDEX AK_Department_DepartmentName)) query hint

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

Correct Answer: C
Explanation/Reference:

Question 97
Which advanced server option should you modify?
You have a database for a mission-critical web application. The database is stored on a SQL Server 2012 instance and is the only database on the instance.
The application generates all T-SQL statements dynamically and does not use stored procedures. You need to maximize the amount of memory available for data caching.
Which advanced server option should you modify?
A. Optimize for Ad hoc Workloads
B. Enable Contained Databases
C. Allow Triggers to Fire Others
D. Scan for Startup Procs
Question 98
What should you do?
You have an application that uses a view to access data from multiple tables. You need to ensure that you can insert rows into the underlying tables by using the view. What should you do?
A. Create an INSTEAD OF trigger on the view.
B. Define the view by using the SCHEMABINDING option.
C. Define the view by using the CHECK option.
D. Materialize the view.

Correct Answer: C
Explanation/Reference:

Question 99
What should you implement?
You have a database named database1. Database developers report that there are many deadlocks. You need to implement a solution to monitor the deadlocks. The solution must meet the following requirements:
Support real-time monitoring.
Be enabled and disabled easily.
Support querying of the monitored data.
What should you implement?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Log errors by using trace flag 1222
B. Log errors by using trace flag 1204
C. A SQL Server Profiler template
D. An Extended Events session

Correct Answer: D
Explanation/Reference:

Question 100
What should you do?
You have a table named Rooms that contains three columns. You execute the following query:
```
SELECT [Id], [RoomName], [Position]
FROM [dbo].[Rooms]
WHERE [RoomName] = 'Room'
```
You discover the execution plan shown in the exhibit. (Click the Exhibit button.)

You need to recommend a solution to reduce the amount of time it takes to execute the query. What should you do?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Include the RoomName column and the Position column in the Room_IX index.
B. Create a nonclustered index for RoomName, Id, and Position.
C. Create a clustered index for Id.
D. Use the WITH (INDEX(Room_IX),NOLOCK) query hint.

Correct Answer: B
Explanation/Reference:
Question 101
What should you do?
You execute the following code:
```sql
CREATE TABLE dbo.Customers
(
    id int PRIMARY KEY,
    CustomerName char(10)
)
```
You create a nonclustered index named IX_CustomerName on the CustomerName column.
You execute the following query:
```sql
SELECT * FROM dbo.Customers
WHERE LEFT(CustomerName,1) = 'a'
```
You need to reduce the amount of time it takes to execute the query.
What should you do?
A. Partition the table and use the CustomerName column for the partition scheme.
B. Replace IX_CustomerName with a clustered index.
C. Replace LEFT(CustomerName ,1) = 'a' with CustomerName LIKE 'a%'.
D. Replace LEFT(CustomerName ,1) = 'a' with SUBSTRING(CustomerName ,1,1) - 'a'.
Correct Answer: C
Explanation/Reference:

Question 102
What should you do?
Your company has a SQL Azure subscription.
You implement a database named Database1. Database1 has two tables named Table1 and Table2.
You create a stored procedure named sp1. Sp1 reads data from Table1 and inserts data into Table2.
A user named User1 informs you that he is unable to run sp1.
You need to ensure that User1 can run sp1. The solution must minimize the number of permissions assigned to User1.
What should you do?
A. Change sp1 to run as the saUser.
B. Grant User1 the EXECUTE permission on sp1.
C. Add User1 to the db_datawriter role.
D. Grant User1 the INSERT permission on Table2.
Correct Answer: B
Explanation/Reference:

Question 103
Which code segment should you use?
You are creating a table to support an application that will cache data outside of SQL Server.
The application will detect whether cached values were changed before it updates the values.
You need to create the table, and then verify that you can insert a row into the table.
Which code segment should you use?
Question 104
Which code segment should you add at line 03?
You use SQL Server 2012 to maintain the data used by the applications at your company.
You plan to create a table named Table1 by using the following statement. (Line numbers are included for reference only.)
```
01 CREATE TABLE dbo.Table1
02    ID int IDENTITY(1,1) NOT NULL,
03    Name nvarchar(100) COLLATE Latin1_General_CI_AI NOT NULL,
04    Version rowversion
05 CONSTRAINT PK_Table1 PRIMARY KEY CLUSTERED(ID ASC)
06 )
```
You need to ensure that Table1 contains a column named UserName. The UserName column will:
- Store string values in any language.
- Accept a maximum of 200 characters.
- Be case-insensitive and accent-insensitive.

Which code segment should you add at line 03?
A. UserName nvarchar(200) COLLATE Latin1_General_CS_AS NOT NULL,
B. UserName varchar(200) COLLATE Latin1_General_CI_AI NOT NULL,
C. UserName varchar(200) COLLATE Latin1_General_CS_AS NOT NULL,
D. UserName nvarchar(200) COLLATE Latin1_General_CI_AI NOT NULL,

Correct Answer: D
Explanation/Reference:

Question 105
Which code segment should you use?
You execute the following code:
```
http://www.aoowe.com
```

Correct Answer: D
Explanation/Reference:
CREATE TABLE dbo.Projects
( Id INT,
details XML);
GO

INSERT INTO Projects (Id,details)
VALUES
(1,
N'\n<Project Name="Project1">
<Task>
TASK Name="T1">IsFinished=true</IsFinished></Task>
<Task Name="T2">IsFinished=true</IsFinished></Task>
</Tasks>
</Project>
'),
(2,
N'\n<Project Name="Project2">
<Task>
<Task Name="T_1">IsFinished=false</IsFinished></Task>
</Tasks>
</Project>
');

You need to select the task that has an IsFinished value of true from the Project that has an Id value of 1. Which code segment should you use?

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

Correct Answer: B

Question 106
Which three steps should you perform in sequence? You need to design the UserActivity table. Which three steps should you perform in sequence? To answer, move the appropriate three actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

<table>
<thead>
<tr>
<th>Actions</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a nonclustered hash index.</td>
<td></td>
</tr>
<tr>
<td>Create a clustered columnstore index.</td>
<td></td>
</tr>
<tr>
<td>Create a partitioning scheme for use by the table.</td>
<td></td>
</tr>
<tr>
<td>Use an ALTER INDEX REBUILD on a specific partition.</td>
<td></td>
</tr>
<tr>
<td>Use an ALTER INDEX REORGANIZE on a specific partition.</td>
<td></td>
</tr>
</tbody>
</table>

Correct Answer:
Creating a partitioned table or index typically happens in four parts:

1. Create a filegroup or filegroups and corresponding files that will hold the partitions specified by the partition scheme.
2. Create a partition function that maps the rows of a table or index into partitions based on the values of a specified column.
3. Create a partition scheme that maps the partitions of a partitioned table or index to the new filegroups.
4. Create or modify a table or index and specify the partition scheme as the storage location.

Reorganizing an index uses minimal system resources.

From scenario:

// The index maintenance strategy for the UserActivity table must provide the optimal structure for both maintainability and query performance.
// The CoffeeAnalytics database will combine imports of the POSTransaction and MobileLocation tables to create a UserActivity table for reports on the trends in activity. Queries against the UserActivity table will include aggregated calculations on all columns that are not used in filters or groupings.
// When the daily maintenance finishes, micropayments that are one week old must be available for queries to UserActivity table but will be queried most frequently within their first week and will require support for in-memory queries for data within first week. The maintenance of the UserActivity table must allow frequent maintenance on the data and recent activities with minimal impact on the use of disk space and the resources available to queries. The processes that add data to the UserActivity table must be able to update data from any time period, even while maintenance is running.
Columnstore indexes work well for mostly read-only queries that perform analysis on large data sets. Often, these are queries for data warehousing workloads. Columnstore indexes give high performance gains for queries that use full table scans, and are not well-suited for queries that seek into the data, searching for a particular value.

Question 107
You need to create the usp.AssignUser stored procedure.

You need to create the usp.AssignUser stored procedure.
Develop the solution by selecting and arranging the required code blocks in the correct order.
You may not need all of the code blocks.
Select and Place:
Correct Answer:

```
IF @StatusID IS NULL
    RAISERROR (N'\nThe transaction does not exist.',16,1)
WITH
    NATIVE_COMPILATION, SCHEMABINDING,
    EXECUTE AS OWNER
CREATE PROCEDURE dbo.usp_AssignUser
    @UserId int, @POSTransactionId int
WITH (TRANSACTION ISOLATION LEVEL = READ COMMITTED, LANGUAGE = N'us_english')
UPDATE dbo.POSTransaction
SET UserId = @UserId
    WHERE POSTransactionId = @POSTransactionId
END
AS
BEGIN
    DECLARE @StatusID int
    SELECT @StatusID = StatusId
    FROM dbo.POSTransaction
    WHERE POSTransactionId = @POSTransactionId
    IF @StatusID IS NULL
        THROW 51000, N'\nThe transaction does not exist.', 1
    WITH (TRANSACTION ISOLATION LEVEL = REPEATABLE READ, LANGUAGE = N'us_english')
```
Explanation/Reference:

* From scenario: The mobile application will need to meet the following requirements:
  - Communicate with web services that assign a new user to a micropayment by using a stored procedure named usp_AssignUser.
  - Example: create procedure dbo.OrderInsert (@OrdNo integer, @CustCode nvarchar(5)) with native_compilation, schemabinding, execute as owner
    as begin atomic with
      (transaction isolation level = snapshot, language = N'English')
      declare @OrdDate datetime = getdate();
      insert into dbo.Ord (OrdNo, CustCode, OrdDate) values (@OrdNo, @CustCode, @OrdDate);
    end
  - Natively compiled stored procedures are Transact-SQL stored procedures compiled to native code that access memory-optimized tables. Natively
    compiled stored procedures allow for efficient execution of the queries and business logic in the stored procedure.

* READ COMMITTED versus REPEATABLE READ
  - Read committed is an isolation level that guarantees that any data read was committed at the moment it is read. It simply restricts the reader from
    seeing any intermediate, uncommitted, 'dirty' read. It makes no promise whatsoever that if the transaction re-issues the read, will find the same data,
    data is free to change after it was read.
  - Repeatable read is a higher isolation level, that in addition to the guarantees of the read committed level, it also guarantees that any data read cannot
    change, if the transaction reads the same data again, it will find the previously read data in place, unchanged, and available to read.

* Both RAISERROR and THROW statements are used to raise an error in SQL Server. The journey of RAISERROR started from SQL Server 7.0, where
  as the journey of THROW statement has just began with SQL Server 2012. Obviously, Microsoft suggesting us to start using THROW statement instead
  of RAISERROR. THROW statement seems to be simple and easy to use than RAISERROR.

* Explicit transactions. The user starts the transaction through an explicit BEGIN TRAN or BEGIN ATOMIC. The transaction is completed following
  the corresponding COMMIT and ROLLBACK or END (in the case of an atomic block).

Question 108
You need to implement a new version of usp_AddMobileLocation.
You need to implement a new version of usp_AddMobileLocation. Develop the solution by selecting and arranging the required code blocks in the
 correct order. You may not need all of the code blocks.
Select and Place:
Correct Answer:
Note:
* From scenario:
The mobile application will need to meet the following requirements:
  · Update the location of the user by using a stored procedure named usp_AddMobileLocation.
* DELAYED_DURABILITY
SQL Server transaction commits can be either fully durable, the SQL Server default, or delayed durable (also known as lazy commit).
  Fully durable transaction commits are synchronous and report a commit as successful and return control to the client only after the log records for the transaction are written to disk. Delayed durable transaction commits are asynchronous and report a commit as successful before the log records for the transaction are written to disk. Writing the transaction log entries to disk is required for a transaction to be durable. Delayed durable transactions become durable when the transaction log entries are flushed to disk.

Question 109
You need to redesign the system to meet the scalability requirements of the application.
You need to redesign the system to meet the scalability requirements of the application.
Develop the solution by selecting and arranging the required code blocks in the correct order.
You may not need all of the code blocks.
Select and Place:
Explanation/Reference:

Note:

* MEMORY_OPTIMIZED_DATA
First create a memory-optimized data filegroup and add a container to the filegroup.
Then create a memory-optimized table.
* You must specify a value for the BUCKET_COUNT parameter when you create the memory-optimized table. In most cases the bucket count should be between 1 and 2 times the number of distinct values in the index key.
* Example:

```
-- create a durable (data will be persisted) memory-optimized table -- two of the columns are indexed
CREATE TABLE dbo.POSTransaction (
    UserId int NOT NULL
    INDEX ix_UserId NONCLUSTERED HASH WITH (BUCKET_COUNT=1000000),
    POSTransactionId int NOT NULL PRIMARY KEY CLUSTERED
    INDEX ix_POSTransactionDateId
    HASH WITH (BUCKET_COUNT=1000000),
    POSTransactionId int NOT NULL PRIMARY KEY CLUSTERED
    HASH WITH (BUCKET_COUNT=1000000),
    POSTransactionId int NOT NULL,
    StatusId int NOT NULL,
    CreatedDate DATETIME2 NOT NULL,
    Price money
) WITH (MEMORY_OPTIMIZED=ON, DURABILITY=SCHEMA_ONLY)
ON [CoffeeTransactions_index]
```

Question 110
Which task should you use with each maintenance step?
You need to optimize the index and table structures for POSTransaction.
Which task should you use with each maintenance step? To answer, drag the appropriate tasks to the correct maintenance steps. Each task 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:
### Question 111

Which transaction isolation level should you use in sp1?

You use SQL Azure to store data used by an e-commerce application. You develop a stored procedure named sp1. Sp1 is used to read and change the price of all the products sold on the e-commerce site. You need to ensure that other transactions are blocked from updating product data while sp1 is executing.

Which transaction isolation level should you use in sp1?

A. Repeatable read  
B. Read committed  
C. Serializable  
D. Snapshot

**Correct Answer:** C

**Explanation/Reference:**

### Question 112

Which code segment should you execute?

---

**Tasks**
- an identity for UserActivityID starting at the next value
- a sequence for UserActivityID starting at the next value
- on-disk tables using the partitioning scheme
- in-memory tables using the partitioning scheme
- UserActivity and UserActivity_Archive
- UserActivity, UserActivity_Staging, and UserActivity_Archive
- Alter the partition function and UserActivity_Staging constrains
- Alter the partition function and UserActivity_Archive constrains

**Maintenance Steps**
- Convert UserActivity to use
- Copy UserActivity metadata to create UserActivity_Archive
- After copying UserActivity metadata to create UserActivity_Staging, create a view on top of UserActivity_Archive
- After switching a new partition from UserActivity_Staging into UserActivity_Archive

---

**Correct Answer:**

---

**Explanation/Reference:**
You review a query that runs slowly. The query accesses data in a table named Schema1.Table1.

The following is the relevant portion of the execution plan for the query:

```
You need to create the missing index.
Which code segment should you execute?
A. CREATE NONCLUSTERED INDEX IX1 on Schema1.Table1 (Column1) INCLUDE (Column4) WHERE Column2 <> Column3
B. CREATE NONCLUSTERED INDEX IX1 on Schema1.Table1 (Column1)
C. CREATE NONCLUSTERED INDEX IX1 on Schema1.Table1 (Column1, Column2, Column3) INCLUDE (Column4)
D. CREATE NONCLUSTERED INDEX IX1 on schema1.Table1 (Column1) INCLUDE (Column4)
Correct Answer: C
Explanation/Reference:
```

**Question 113**
What should you do?
You need to modify the stored procedure usp_LookupConcurrentUsers.
What should you do?
A. Use the summary table as an in-memory optimized table with a non-hash clustered index.
B. Use the summary table as an in-memory optimized table with a non-hash nonclustered index.
C. Use a type variable instead of the summary table.
D. Add a clustered index to the summary table.
Correct Answer: A
Explanation/Reference:

**Question 114**
What should you do?
You need to optimize the index structure that is used by the tables that support the fraud detection services.
What should you do?
A. Add a hashed nonclustered index to CreateDate.
B. Add a not hash nonclustered index to CreateDate.
C. Add a not hash clustered index on POSTransactionId and CreateDate.
D. Add a hashed clustered index on POSTransactionId and CreateDate.
Correct Answer: A
Explanation/Reference:
The fraud detection service will need to meet the following requirement (among others):
* Detect micropayments that are flagged with a StatusId value that is greater than 3 and that occurred within the last minute.

**Question 115**
What should you do?
You need to modify the stored procedure usp_LookupConcurrentUsers.
What should you do?
A. Add a clustered index to the summary table.
B. Add a nonclustered index to the summary table.
C. Add a clustered columnstore index to the summary table.
D. Use a table variable instead of the summary table.
Correct Answer: A
Explanation/Reference:
Scenario: Query the current open micropayments for users who own multiple micropayments by using a stored procedure named usp_LookupConcurrentUsers

**Question 116**
Which two actions should you perform?
You need to modify the usp_DetectSuspiciousActivity stored procedure. Which two actions should you perform? Each correct answer presents part of the solution. Choose two.

---

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

Correct Answer: DE
Explanation/Reference:
Note:
* Move micropayments to dbo.POSEException table by using a stored procedure named ups_DetectSuspiciousActivity.

Question 117
What should you do?
You need to implement security for the restore and audit process. What should you do?
A. Grant the COFFECORPAuditors group ALTER ANY CONNECTION and SELECT ALL USER SECURABLES permissions. Grant the COFFECORP StoreAgent group ALTER ANY CONNECTION and IMPERSONATE ANY LOGIN permissions.
B. Grant the COFFECORPAuditors group CONNECT ANY DATABASE and IMPERSONATE ANY LOGIN permissions. Grant the COFFECORP StoreAgent group CONNECT ANY DATABASE and SELECT ALL USER SECURABLES permissions.
C. Grant the COFFECORPAuditors group ALTER ANY CONNECTION and IMPERSONATE ANY LOGIN permissions. Grant the COFFECORP StoreAgent group ALTER ANY CONNECTION and SELECT ALL USER SECURABLES permissions.
D. Grant the COFFECORPAuditors group CONNECT ANY DATABASE and SELECT ALL USER SECURABLES permissions. Grant the COFFECORP StoreAgent group CONNECT ANY DATABASE and IMPERSONATE ANY LOGIN permissions.

Correct Answer: A
Explanation/Reference:

Question 118
What should you do?
You need to monitor the health of your tables and indexes in order to implement the required index maintenance strategy. What should you do?
A. Query system DMVs to monitor avg_chain_length and max_chain_length. Create alerts to notify you when these values converge.
B. Create a SQL Agent alert when the File Table: Avg time per file I/O request value is increasing.
C. Query system DMVs to monitor total_bucket_count. Create alerts to notify you when this value increases.
D. Query system DMVs to monitor total_bucket_count. Create alerts to notify you when this value decreases.
Correct Answer: A
Explanation/Reference:
From scenario:
* You need to anticipate when POSTranaction table will need index maintenance.
* The index maintenance strategy for the UserActivity table must provide the optimal structure for both maintainability and query performance.

**Question 119**
What should you do?
You need to ensure that a new execution plan is used by usp_GetOrdersByProduct each time the stored procedure runs.
What should you do?
A. Execute sp_help usp_GetOrdersByProduct
B. Add WITH (FORCESEEK) to line 69 in usp.GetOrdersByProduct.
C. Add WITH RECOMPILE to line 64 in usp.GetOrdersByProduct.
D. Execute sp_recompile usp.GetOrdersByProduct'.

Correct Answer: B
Explanation/Reference:

**Question 120**
What should you add to usp.GetOrdersAndItems?
You need to modify usp.GetOrdersAndItems to ensure that an order is NOT retrieved by usp_GetOrdersAndItems while the order is being updated.
What should you add to usp.GetOrdersAndItems?
A. Add WITH (NOLOCK) to the end of line 47.
B. Add SET TRANSACTION ISOLATION LEVEL READ COMMITTED to line 44.
C. Add SET TRANSACTION ISOLATION LEVEL READ UNCOMMITTED to line 44.
D. Add WITH (READPAST) to the end of line 47.

Correct Answer: B
Explanation/Reference:

**Question 121**
Which statements should you execute?
You need to implement a solution that solves the performance issues of usp_GetOrdersAndItems.
Which statements should you execute?
A. CREATE INDEX IX_Orders_Active ON Orders(ShipDate, DeliveryDate, Amount)
B. CREATE INDEX IX_Orders_Active ON Orders(DeliveryDate) INCLUDE(Amount) WHERE ShipDate IS NULL
C. CREATE INDEX IX_Orders_Active ON Orders(DeliveryDate, Amount) WHERE ShipDate IS NULL
D. CREATE INDEX IX_Orders_Active ON Orders(ShipDate, DeliveryDate) INCLUDE( Amount)

Correct Answer: B
Explanation/Reference:

**Question 122**
What should you do?
You need to implement a solution that addresses the index monitoring requirements.
What should you do?
A. Schedule a SQL Server Agent job that saves data from the dynamic management views to a table in the database.
B. Create a SQL Server Audit that saves data to a log file, and then create a SQL Server Audit Specification that gathers data from the DATABASE_OPERATION group.
C. Create a performance monitor Data Collector Set (DCS) that monitors the SQL Server counters.
D. Schedule a SQL Server Profiler trace, and then save the trace data to a table in the database.

Correct Answer: A
Explanation/Reference:

**Question 123**
Which statement should you execute?
You need to implement a solution that addresses the page split issues.
Which statement should you execute?
A. ALTER INDEX IX_Orders_ShipDate ON Orders REBUILD WITH (PAD_INDEX=OFF, DROP_EXISTING = ON);
B. ALTER INDEX IX_Orders_ShipDate ON Orders REBUILD WITH (FILLFACTOR=50, DROP_EXISTING = ON);
C. ALTER INDEX IX_Orders_ShipDate ON Orders REBUILD WITH (FILLFACTOR = 0, DROP_EXISTING = ON);
D. ALTER INDEX IX_Orders_ShipDate ON Orders REBUILD WITH (PAD_INDEX=ON, DROP_EXISTING = ON);

Correct Answer: B
Explanation/Reference:
Question 124
Which parameters should you add to usp_AddXMLOrder on line 04 and line 05?
You need to ensure that usp_AddXMLOrder can be used to validate the XML input from the retailers.
Which parameters should you add to usp_AddXMLOrder on line 04 and line 05? (Each correct answer presents part of the solution. Choose all that apply.)
A. @schema varbinary(100).
B. @items varchar(max).
C. @schema systname.
D. @items varbinary(max).
E. @items xml.
F. @schema xml.
Correct Answer: CE
Explanation/Reference:

Question 125
Which code segment should you develop?
You plan to create a stored procedure that inserts data from an XML file to the OrderDetails table. The following is the signature of the stored procedure:
CREATE PROCEDURE usp_InsertItems
 @item XML (ValidateOrder)
The following is the XSD file used to create the ValidateOrder schema collection:
<xsd:schema
 xmlns:xsd="http://www.w3.org/2001/XMLSchema">
 <xsd:element name="Root">
  <xsd:complexType mixed="true">
   <xsd:sequence>
    <xsd:element name="Product">
     <xsd:complexType mixed="true">
      <xsd:sequence>
       <xsd:element name="UnitPrice" type="xsd:decimal"
minOccurs="1" maxOccurs="unbounded"></xsd:complexType>
    <xsd:element name="ProductID" type="xsd:integer" minOccurs="1" maxOccurs="1"></xsd:sequence>
    </xsd:complexType>
   </xsd:sequence>
   </xsd:element>
  </xsd:complexType>
 </xsd:element>
</xsd:schema>
You develop a code segment that retrieves the number of items and loops through each item. Each time the loop runs, a variable named @itemNumber is incremented.
You need to develop a code segment that retrieves the product ID of each item number in the loop.
Which code segment should you develop?
A. SET @productID = @items.value'/Root/Product/productID', int)
B. SET @productID = @items.value'/Root/Product[@itemNumber+][email protected]', int)
C. SET @productID = @items.value'(Root/Product[@itemNumber+]/productID', int)
D. SET @productID = @items.value'[email protected]', int)
Correct Answer: B
Explanation/Reference:

Question 126
What should you do?
You need to ensure that a new execution plan is used by usp_GetOrdersByProduct each time the stored procedure runs.
What should you do?
A. Execute sp_help 'usp_GetOrdersByProduct'.
B. Execute sp_recompile 'usp_GetOrdersByProduct'.
C. Add WITH RECOMPILE to line 03 in usp_GetOrdersByProduct.
D. Add WITH (FORCESEEK) to line 07 in usp_GetOrdersByProduct.
Correct Answer: C
Explanation/Reference:

Question 127
Which statement should you execute?
You need to modify the Orders table to store the XML data used by the retailers.
Which statement should you execute?
A. ALTER Orders
ADD originalOrder XML (ValidateOrder);
B. ALTER Orders
ADD originalOrder XML;
C. ALTER Orders
ADD originalOrder varchar(max);
D. ALTER Orders
ADD originalOrder varbinary(max);

Correct Answer: D
Explanation/Reference:

Question 128
What should you do?
You discover that the usp_GetOrdersAndItems stored procedure takes a long time to complete while usp_AddOrder or usp_AddXMLOrder run.
You need to ensure that usp_GetOrdersAndItems completes as quickly as possible.
What should you do? (Each correct answer presents part of the solution. Choose all that apply.)
A. Set the isolation level of the usp_GetOrdersAndItems stored procedure to SERIALIZABLE.
B. Execute the ALTER DATABASE Sales SET ALLOW_SNAPSHOT_ISOLATION ON statement.
C. Set the isolation level of the usp_AddOrder stored procedure to SERIALIZABLE.
D. Set the isolation level of the usp_GetOrdersAndItems stored procedure to SNAPSHOT.
E. Set the isolation level of the usp_AddOrder stored procedure to SNAPSHOT.
F. Execute the ALTER DATABASE Sales SET ALLOW_SNAPSHOT_ISOLATION OFF statement.

Correct Answer: BD
Explanation/Reference:

Question 129
What should you add to line 08 in usp_ImportOrderDetails?
You need to implement a solution that addresses the bulk insert requirements.
What should you add to line 08 in usp_ImportOrderDetails?
A. LASTROW=0.
B. BATCHSIZE=0.
C. BATCHSIZE=1000.
D. LASTROW = 1000.

Correct Answer: C
Explanation/Reference:

Question 130
Which statement should you execute?
You need to implement a solution that addresses the performance issues of the usp_GetOrdersByProduct stored procedure.
Which statement should you execute?
A. CREATE INDEX IX_OrderDetails_ByProduct
   ON OrderDetails (ProductID)
   INCLUDE (OrderID, LineItem, UnitPrice, Total, Discount)
B. CREATE INDEX IX_OrderDetails_ByProduct
   ON OrderDetails (ProductID)
   INCLUDE (LineItem, Quantity, UnitPrice, Total, Discount)
C. CREATE INDEX IX_OrderDetails_ByProduct
   ON OrderDetails (ProductID)
   INCLUDE (LineItem, Quantity, UnitPrice, Discount)
D. CREATE INDEX IX_OrderDetails_ByProduct
   ON OrderDetails (ProductID)
   INCLUDE (LineItem, Quantity, UnitPrice, Discount)

Correct Answer: C
Explanation/Reference:
Question 131
What should you add next to the beginning of each stored procedure?
You need to implement a solution that meets the data recovery requirements.
You update each stored procedure to accept a parameter named @transactionID.
What should you add next to the beginning of each stored procedure?
A. SAVE TRANSACTION WITH MARK @transactionID
B. ROLLBACK DISTRIBUTED TRANSACTION @transactionID
C. BEGIN TRANSACTION WITH MARK @transactionID
D. COMMIT TRANSACTION @transactionID

Correct Answer: C
Explanation/Reference:

Question 132
What should you implement?
You need to implement a solution that meets the site requirements.
What should you implement?
A. A non-indexed view on Server1
B. A non-indexed view on Server2
C. A distributed view on Server1
D. A distributed view on Server2

Correct Answer: C
Explanation/Reference:

Question 133
What should you add to usp_GetOrdersAndItems?
You need to modify usp_GetOrdersAndItems to ensure that an order is NOT retrieved by usp_GetOrdersAndItems while the order is being updated.
What should you add to usp_GetOrdersAndItems?
A. Add SET TRANSACTION ISOLATION LEVEL SERIALIZABLE to line 03.
B. Add SET TRANSACTION ISOLATION LEVEL SNAPSHOT to line 03.
C. Add (UPDLOCK) to the end of line 06.
D. Add (READPAST) to the end of line 06.

Correct Answer: D
Explanation/Reference:

Question 134
What should you modify in usp_ExportOpenings?
You need to implement a change to usp_ExportOpenings that meets the integration requirements.
What should you modify in usp_ExportOpenings? (Each correct answer presents part of the solution. Choose all that apply?)
A. To the end of line 04, add [Opening].
B. To the end of line 05, add [Opening! title].
C. To line 10, add FOR XML RAW.
D. To line 10, add FOR XML EXPLICIT.
E. To line 10, add FOR XML AUTO.
F. To the end of line 04, add [Opening!ELEMENT].
G. To the end of line 06, add [Opening!salary!ELEMENT].
H. To the end of line 05, add [Opening!title!ELEMENT].
I. To the end of line 06, add [Opening!salary].

Correct Answer: ABEI
Explanation/Reference:

The AUTO mode generates nesting in the resulting XML by using heuristics based on the way the SELECT statement is specified. You have minimal control over the shape of the XML generated. The nested FOR XML queries can be written to generate XML hierarchy beyond the XML shape that is generated by AUTO mode heuristics.

Question 135
What should you include in the recommendation?
You need to recommend a solution that meets the concurrency problems.
What should you include in the recommendation?
A. Modify the stored procedures to use the SERIALIZABLE isolation level.
B. Modify the order in which usp_AcceptCandidate accesses the Applications table and the Candidates table.
C. Modify the order in which usp_UpdateCandidate accesses the Applications table and the Candidates table.
D. Modify the stored procedures to use the REPEATABLE READ isolation level.

Correct Answer: C
Explanation/Reference:
Question 136
Which statement should you execute on DB1?
You need to resolve the performance issues of the usp_ExportOpenings stored procedure. The solution must minimize the amount of hard disk space used.
Which statement should you execute on DB1?
A. EXEC sp_dboption 'DB1', 'auto create statistics', 'TRUE';
B. CREATE INDEX IX_Exp_Openings ON Openings(PostDate, FilledDate) INCLUDE (Description, Title, Salary);
C. CREATE INDEX IX_Exp_Openings ON Openings(PostDate) INCLUDE (Description, Title, Salary) WHERE FilledDate IS NULL;
D. EXEC sp_recompile 'usp_ExportOpenings';
Correct Answer: C
Explanation/Reference:

Question 137
Which line of code should you modify?
You need to implement a solution that meets the locking requirements.
Which line of code should you modify?
A. Change line 07 in usp_UpdateOpening to:
UPDATE Openings WITH (UPDLOCK)
B. Change line 09 in usp_GetOpenings to:
FROM Openings o (ROWLOCK)
C. Change line 07 in usp_UpdateOpening to:
UPDATE Openings WITH (READPAST)
D. Change line 09 in usp_GetOpenings to:
FROM Openings o (NOLOCK)
Correct Answer: D
Explanation/Reference:

Question 138
What should you include in the script?
You need to create a script that automates the export of the XML data. The script must meet the integration requirements.
What should you include in the script?
A. The CREATE SERVER ROLE command and the sp_reassign_proxy, sp_add_job, sp_add_jobstep, and sp_grant_login_to_proxy system stored procedures.
B. The CREATE CREDENTIAL command and the sp_add_proxy, sp_add_job, sp_add_jobstep, and sp_grant_proxy_to_subsystem system stored procedures.
C. The CREATE CREDENTIAL command and the sp_reassign_proxy, sp_add_job, sp_add_jobstep, and sp_grant_login_to_proxy system stored procedures.
D. The CREATE SERVER ROLE command and the sp_add_proxy, sp_add_job, sp_add_jobstep, and sp_grant_proxy_to_subsystem system stored procedures.
Correct Answer: B
Explanation/Reference:

Question 139
Which statement should you execute?
You need to implement a solution that meets the security requirements.
Which statement should you execute?
A. REVOKE EXEC ON usp_UpdateOpening FROM Candidates;
B. DENY EXEC ON usp_UpdateOpening TO Candidates;
C. ALTER PROCEDURE usp_UpdateOpening
@openingID int,
@title varchar(100),
@description varchar(8000)
WITH EXECUTE AS Administrator
AS
...
D. ALTER PROCEDURE usp_UpdateOpening
@openingID int,
@title varchar(100),
@salary decimal(18,0),
@description varchar(8000)
WITH EXECUTE AS Company
AS
...
A. Option A
Question 140
Which statement should you execute on DB1?
You need to implement a solution that resolves the salary query issue.
Which statement should you execute on DB1?

A. UPDATE Openings SET Salary=0 WHERE Salary IS NULL;
   GO
   ALTER TABLE Openings
   WITH NOCHECK
   MODIFY COLUMN Salary NOT NULL;
   GO
   ALTER TABLE Openings
   WITH NOCHECK
   ADD CONSTRAINT DF_SALARY
   DEFAULT 0 FOR Salary;
   GO

B. ALTER TABLE Openings
   WITH NOCHECK
   ADD CONSTRAINT DF_SALARY
   DEFAULT 0 FOR Salary;
   GO
   ALTER TABLE Openings
   WITH NOCHECK
   MODIFY COLUMN Salary NULL;
   GO
   UPDATE Openings SET Salary=0 WHERE Salary IS NULL;
   GO

C. UPDATE Openings SET Salary=0 WHERE Salary IS NULL;
   GO
   ALTER TABLE Openings
   WITH NOCHECK
   ADD CONSTRAINT CT_SALARY
   CHECK (Salary > 0);
   GO
   ALTER TABLE Openings
   WITH NOCHECK
   MODIFY COLUMN Salary NOT NULL;
   GO

D. ALTER TABLE Openings
   WITH NOCHECK
   ADD CONSTRAINT CT_SALARY
   CHECK (Salary > 0);
   GO
   ALTER TABLE Openings
   WITH NOCHECK

Correct Answer: A
Explanation/Reference:

Question 141
Which code segment should you use to implement the Conversions assembly?
You need to implement a solution that addresses the upload requirements.
Which code segment should you use to implement the Conversions assembly?
Question 142
Which type of object should you include in the solution?
You need to design a solution that meets the refactoring requirements.
Which type of object should you include in the solution?
A. An indexed view
B. An aggregate function
C. A distributed view
D. A table-valued function
Correct Answer: D
Explanation/Reference:

Question 143
Which SQL Server feature should you use?
You need to identify the cause of the page split issues.
Which SQL Server feature should you use?
A. DBCC REINDEX
B. SQL Server Profiler
C. Extended Events
D. DBCC TRACEOFF
Correct Answer: C
Explanation/Reference:

Question 144
What should you do?
You need to implement a solution that meets the job application requirements.
What should you do?
A. Create a one-to-one relationship between the Openings table and the Applications table.
B. Create a one-to-one relationship between the Candidates table and the Applications table.
C. Add a UNIQUE constraint to the Applications table on the ApplicationID column and CandidateID column.
D. Add a UNIQUE constraint to the Applications table on the OpeningID column and the CandidateID column.
Correct Answer: D
Explanation/Reference:

Question 145
Which code segment should you execute on the other server?
You are testing disaster recovery procedures.
When you attempt to restore ProductsDB to another server, you receive the following error message: "Msg 33111, Level 16, State 3, Line 5 Cannot find server certificate with thumbprint ‘0x9D876A3468B911EBA4CFCBF4724019B’ Msg 3013, Level 16, State 1, Line 5 RESTORE DATABASE is terminating abnormally."
You need to ensure that you can restore ProductsDB to another server.
Which code segment should you execute on the other server?
Question 146
Which code segments should you execute?
You need to prepare the database to use the .NET Framework ProcessProducts component.
Which code segments should you execute? (Each correct answer presents part of the solution. Choose all that apply.)

A. CREATE PROCEDURE Production.ProcessProduct(
    $ProductID int, $ProductType varchar(11)
) AS EXTERNAL NAME ProductionAssembly.ProcessProducts.Process;

B. EXEC sp_recompile $objname = 'Production.ProcessProduct';

C. RECONFIGURE;

D. Exec SP_CONFIGURE 'clr enabled', '1';

E. CREATE ASSEMBLY ProductionAssembly FROM 'C:\Produc\ProcessProducts.DLL';

F. CREATE ASSEMBLY ProductionAssembly FROM 'C:\Produc\ProcessProducts.cs';

G. CREATE TYPE Production.ProcessProduct
   EXTERNAL NAME ProductionAssembly.ProcessProducts.Process;

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

Correct Answer: ACDE
Explanation/Reference:
Explanation:

Question 147
Which line of code should you modify in CategoryFromType.sql?
While testing the CategoryFromType function, you discover that the function is returning ‘Other’. You need to update CategoryFromType to return the category name.
Which line of code should you modify in CategoryFromType.sql?

A. 04
B. 05
C. 12
D. 14
Question 148
Which data type should you use for ProductType?

A. varchar(11)
B. nvarchar(11)
C. char(11)
D. bigint

Correct Answer: C

Explanation/Reference:

Question 149
Which code segment should you use?
You are planning the ManufacturingSteps table.
You need to define the ProductID column in the CREATE TABLE statement.
Which code segment should you use?

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

Correct Answer: B

Explanation/Reference:

Question 150
Which WHILE statement should you use at line 18?
You execute IndexManagement.sql and you receive the following error message: "Msg 512, Level 16, State 1, Line 12
Subquery returned more than 1 value. This is not permitted when the subquery follows =, !=, <, <=, >, >= or when the subquery is used as an expression."
You need to ensure that IndexManagement.sql executes properly.
Which WHILE statement should you use at line 18?
A. WHILE SUM(@RowNumber) < (SELECT @counter FROM @indextable)
B. WHILE @counter < (SELECT SUM(RowNumber) FROM @indextable)
C. WHILE COUNT(@RowNumber) < (SELECT @counter FROM @indextable)
D. WHILE @counter < (SELECT COUNT(RowNumber) FROM @indextable)

Correct Answer: D

Explanation/Reference:

Question 151
Which code segment should you use to define the ProductDetails column?

A. ProductDetails xml (DOCUMENT Production.ProductDetailsSchema) NULL
B. ProductDetails xml NULL
C. ProductDetails xml (CONTENT Production.ProductDetailsSchema) NULL
D. ProductDetails varchar(MAX) NULL

Correct Answer: D

Explanation/Reference:
Question 152
Which code segment should you execute?
You need to modify Production.ProductDetails_Insert to comply with the application requirements. Which code segment should you execute?

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

Correct Answer: C
Explanation/Reference:

Question 153
Which code segment should you use to complete the function?
You need to create a function that will use a SELECT statement in ProductsByProductType.sql. Which code segment should you use to complete the function?

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

Correct Answer: B
Explanation/Reference:

Question 154
Which code segment should you use?
An administrator provides a digital certificate named ServerCert. You need to implement Transparent Data Encryption (TDE) on ProductsDB. Which code segment should you use?
A. USE PRODUCTSDB;
B. CREATE DATABASE ENCRYPTION KEY WITH ALGORITHM = TRIPLE_DES_3KEY ENCRYPTION BY SERVER CERTIFICATE DBCERT;
ALTER DATABASE PRODUCTSDB SET ENCRYPTION ON;

CREATE DATABASE ENCRYPTION KEY WITH ALGORITHM = AES_256 ENCRYPTION BY SERVER CERTIFICATE PRODUCTSCERT;

ALTER DATABASE PRODUCTSDB SET ENCRYPTION ON;

B. USE PRODUCTSDB;

CREATE DATABASE ENCRYPTION KEY WITH ALGORITHM = TRIPLE_DES_3KEY ENCRYPTION BY SERVER CERTIFICATE PRODUCTSCERT;

ALTER DATABASE PRODUCTSDB SET ENCRYPTION ON;

C. USE PRODUCTSDB;

CREATE DATABASE ENCRYPTION KEY WITH ALGORITHM = AES_256 ENCRYPTION BY SERVER CERTIFICATE DBCERT;

ALTER DATABASE PRODUCTSDB SET ENCRYPTION ON;

D. USE PRODUCTSDB;

Correct Answer: C

Explanation/Reference:

Question 155
Which code segment or segments should you add at line 27 of Tables.sql? You need to provide referential integrity between the Offices table and Employees table. Which code segment or segments should you add at line 27 of Tables.sql? (Each correct answer presents part of the solution. Choose all that apply.)

A. ALTER TABLE dbo.Officers ADD CONSTRAINT PK_Offices_EmployeeID PRIMARY KEY (EmployeeID);
B. ALTER TABLE dbo.Employees ADD CONSTRAINT FK_Employees_Offices FOREIGN KEY (OfficeID) REFERENCES dbo.Offices (OfficeID);
C. ALTER TABLE dbo.Employees ADD CONSTRAINT FK_Employees_EmployeeID PRIMARY KEY (EmployeeID);
D. ALTER TABLE dbo.Officers ADD CONSTRAINT FK_Offices_Employees FOREIGN KEY (EmployeeID) REFERENCES dbo.Employees (EmployeeID);

Correct Answer: CD

Explanation/Reference:

Question 156
What should you add to usp_SelectEmployeesByName? You need to modify usp_SelectEmployeesByName to support server-side paging. The solution must minimize the amount of development effort required.

What should you add to usp_SelectEmployeesByName?
A. A table variable
B. The ROWNUMBER keyword
C. An OFFSET-FETCH clause
D. A recursive common table expression

Correct Answer: C

Explanation/Reference:
Question 157
Which code segment should you use?
You need to add a new column named Confirmed to the Employees table. The solution must meet the following requirements:
Have a default value of TRUE.
Minimize the amount of disk space used.
Which code segment should you use?

A. `ALTER TABLE Employees ADD Confirmed CHAR(1) DEFAULT '1';`
B. `ALTER TABLE Employees ADD Confirmed CHAR(1) DEFAULT '0';`
C. `ALTER TABLE Employees ADD Confirmed BIT DEFAULT 0;`
D. `ALTER TABLE Employees ADD Confirmed BIT DEFAULT 1;`

Correct Answer: D
Explanation/Reference:

Question 158
Which code segment should you use?
You need to create the object used by the parameter of usp_UpdateEmployeeName. Which code segment should you use?

A. `CREATE XML SCHEMA COLLECTION EmployeesInfo`
B. `CREATE TYPE EmployeesInfo AS Table`
C. `CREATE SCHEMA EmployeesInfo`
D. `CREATE TABLE EmployeesInfo`

Correct Answer: B
Explanation/Reference:

Example Usage of Table-Valued Parameters (Database Engine) http://msdn.microsoft.com/en-us/library/bb510489.aspx (Benefits of using Table-Valued Parameters)
/* Create a table type. */
CREATE TYPE LocationTableType AS TABLE
( LocationName VARCHAR(50),
  CostRate INT );
GO
/* Create a procedure to receive data for the table-valued parameter. */
CREATE PROCEDURE dbo.usp_InsertProductionLocation
@TVP LocationTableType READONLY
AS
SET NOCOUNT ON
INSERT INTO AdventureWorks2012.Production.Location (Name,
  CostRate,
  Availability,
  ModifiedDate)
SELECT *, 0, GETDATE()
FROM @TVP;
GO
Also:

Question 159
What should you include in the recommendation?
You need to recommend a solution to ensure that SQL1 supports the auditing requirements of usp_UpdateEmployeeName. What should you include in the recommendation?
A. Change data capture
B. Change tracking
C. Transactional replication
D. The Distributed Transaction Coordinator (DTC)

Correct Answer: D
Explanation/Reference:

Question 160
What should you add at line 31 of StoredProcedures.sql?
You execute usp_SelectEmployeesByName multiple times, passing strings of varying lengths to @LastName. You discover that usp_SelectEmployeesByName uses inefficient execution plans.
You need to update usp_SelectEmployeesByName to ensure that the most efficient execution plan is used.
What should you add at line 31 of StoredProcedures.sql?
A. OPTION (ROBUST PLAN)
B. OPTION (OPTIMIZE FOR UNKNOWN)
C. OPTION (KEEP PLAN)
D. OPTION (KEEPFIXED PLAN)

Correct Answer: B
Explanation/Reference:
Explanation:

Question 161
What should you do in Procedures.sql?
You need to ensure that if any of the statements in usp_UpdateSpeakerName return an error message, all of the changes executed by usp_UpdateSpeakerName are not committed to the database.
What should you do in Procedures.sql? (Each correct answer presents part of the solution. Choose all that apply.)

A. Add the following at line 17:
   ROLLBACK TRANSACTION
B. Add the following at line 05:
   BEGIN TRANSACTION SpeakerUpdate
C. Add the following at line 05:
   SAVE TRANSACTION SpeakerUpdate
D. Add the following at line 17:
   ROLLBACK TRANSACTION SpeakerUpdate
E. Add the following at line 07:
   BEGIN TRANSACTION

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

Correct Answer: BD
Explanation/Reference:
QUESTION NO:11
You are evaluating the index design.
You need to recommend a change to Indexes.sql that will minimize the amount of time it takes for usp_AttendeesReport to execute. The solution must minimize the amount of database fragmentation.
Which line of code should you use to replace line 12 of Indexes.sql?
A. (LastName);
B. (FirstName) INCLUDE (LastName);
C. (LastName, FirstName);
D. (LastName) INCLUDE (FirstName);

Question 162
Which statement should you use?
You need to create the object used by the parameter of usp_InsertSessions.
Which statement should you use?
A. CREATE SCHEMA SessionDataTable
B. CREATE TYPE SessionDataTable AS Table
C. CREATE TABLE SessionDataTable
D. CREATE XML SCHEMA COLLECTION SessionDataTable
**Question 163**

What should you update?

You discover that usp.SelectSpeakersByName executes slowly if usp_UpdateSpeakerName executes simultaneously.

You need to minimize the execution time of usp.SelectSpeakersByName. The solution must not affect the performance of the other stored procedures.

What should you update?

A. Usp_UpdateSpeakerName to use the NOLOCK query hint
B. Usp_UpdateSpeakerName to use snapshot isolation
C. Usp_SelectSpeakersByName to use the NOLOCK query hint
D. Usp_SelectSpeakersByName to use snapshot isolation

Correct Answer: C

Explanation/Reference:

NOLOCK

Is equivalent to READUNCOMMITTED.

READUNCOMMITTED

Specifies that dirty reads are allowed.

**Question 164**

What should you do?

While testing usp.GetFutureSessions, you discover that IX_Sessions is accessed by a scan rather than a seek.

You need to minimize the amount of time it takes to execute usp_GetFutureSessions.

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

- **A.** Change line 02 of indexes.sql to:

  ```sql
  (DeliveryTime, SessionID)
  ```

- **B.** At line 04 of indexes.sql, add:

  ```sql
  WHERE GETDATE() < DeliveryTime;
  ```

- **C.** Change line 02 of indexes.sql to:

  ```sql
  (SpeakerID, RoomID, DeliveryTime)
  ```

- **D.** Change line 74 of Procedures.sql to:

  ```sql
  WHERE GETDATE() > DeliveryTime;
  ```

- **E.** Change line 74 of Procedures.sql to:

  ```sql
  WHERE GETDATE() < DeliveryTime;
  ```

- **F.** At line 04 of indexes.sql, add:

  ```sql
  WHERE GETDATE() > DeliveryTime;
  ```

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

Correct Answer: BE

Explanation/Reference:

Future delivery dates.

**Question 165**

What should you configure in Procedures.sql?

Developers report that usp_UpdateSessionRoom periodically returns error 3960.

You need to prevent the error from occurring. The solution must ensure that the stored procedure returns the original values to all of the updated rows.

What should you configure in Procedures.sql?

A. Replace line 46 with the following code:

  ```sql
  SET TRANSACTION ISOLATION LEVEL SERIALIZABLE
  ```

B. Replace line 46 with the following code:

  ```sql
  SET TRANSACTION ISOLATION LEVEL REPEATABLE READ
  ```

C. Move the SELECT statement at line 49 to line 57.
D. Move the SET statement at line 46 to line 53.

Correct Answer: A

Explanation/Reference:
Question 166
Which statement should you use?
You need to create the object used by the parameter of usp_InsertSessions.
Which statement should you use?
A. CREATE XML SCHEMA COLLECTION SessionDataTable
B. CREATE TYPE SessionDataTable AS Table
C. CREATE SCHEMA SessionDataTable
D. CREATE TABLE SessionDataTable

Correct Answer: B
Explanation/Reference:

Question 167
What should you add to usp_SelectSpeakersByName?
You need to modify usp_SelectSpeakersByName to support server-side paging. The solution must minimize the amount of development effort required.
What should you add to usp_SelectSpeakersByName to support server-side paging? The solution must minimize the amount of development effort required.
A. A table variable
B. An OFFSET-FETCH clause
C. The ROWNUMBER keyword
D. A recursive common table expression

Correct Answer: B
Explanation/Reference:

Question 168
Which code block should you use?
You need to add a new column named Confirmed to the Attendees table. The solution must meet the following requirements:
Have a default value of false.
Minimize the amount of disk space used.
Which code block should you use?
A. ALTER TABLE Attendees
ADD Confirmed bit DEFAULT 0;
B. ALTER TABLE Attendees
ADD Confirmed char(1) DEFAULT '1';
C. ALTER TABLE Attendees
ADD Confirmed bit DEFAULT 1;
D. ALTER TABLE Attendees
ADD Confirmed char(1) DEFAULT '1';

Correct Answer: A
Explanation/Reference:

Question 169
What should you add at line 14 of Tables.sql?
You are evaluating the table design.
You need to recommend a change to Tables.sql that reduces the amount of time it takes for usp_AttendeesReport to execute.
What should you add at line 14 of Tables.sql?
A. FullName nvarchar(100) NOT NULL CONSTRAINT DF_FuIlName DEFAULT (dbo.CreateFullName (FirstName, LastName)),
B. FullName AS (FirstName +` '+ LastName),
C. FullName nvarchar(100) NOT NULL DEFAULT (dbo.CreateFullName (FirstName, LastName)).
D. FullName AS (FirstName +` '+ LastName) PERSISTED,

Correct Answer: D
Explanation/Reference:

Question 170
Which code segment should you use to create the stored procedure?
You need to build a stored procedure that amortizes the invoice amount. Which code segment should you use to create the stored procedure? To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.
Select and Place:

Correct Answer:

Explanation/Reference:
Explanation:

Question 171
Which code segment should you add at line 47 of Tables.sql?
You need to provide referential integrity between the Sessions table and Speakers table. Which code segment should you add at line 47 of Tables.sql?

A. ALTER TABLE dbo.Sessions ADD CONSTRAINT FK_Sessions_Speakers FOREIGN KEY (SessionID) REFERENCES dbo.Speakers (SpeakerID);

B. ALTER TABLE dbo.Sessions ADD CONSTRAINT FK_Sessions_Speakers FOREIGN KEY (SpeakerID) REFERENCES dbo.Speakers (SpeakerID);

C. ALTER TABLE dbo.Speakers ADD CONSTRAINT FK_Speakers_Sessions FOREIGN KEY (SpeakerID) REFERENCES dbo.Sessions (SessionID);

D. ALTER TABLE dbo.Speakers ADD CONSTRAINT FK_Speakers_Sessions FOREIGN KEY (SessionID) REFERENCES dbo.Sessions (SessionID);

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Question 172
What should you add at line 30 of Procedures.sql?
You execute usp_TestSpeakers.
You discover that usp_SelectSpeakersByName uses inefficient execution plans.
You need to update usp_SelectSpeakersByName to ensure that the most efficient execution plan is used.
What should you add at line 30 of Procedures.sql?
A. OPTION (FORCESCAN)
B. OPTION (FORCESEEK)
C. OPTION (OPTIMIZE FOR UNKNOWN)
D. OPTION (OPTIMIZE FOR (@LastName= 'Anderson'))

Correct Answer: C
Explanation/Reference:

Question 173
What should you include in the recommendation?
You need to recommend a solution to ensure that SQL1 supports the auditing requirements of usp_UpdateSpeakerName.
What should you include in the recommendation?
A. The Distributed Transaction Coordinator (DTC)
B. Transactional replication
C. Change data capture
D. Change tracking

Correct Answer: A
Explanation/Reference:

Question 174
Which WHILE statement should you use at line 18?
You execute IndexManagement.sql and you receive the following error message:
"Msg 512, Level 16, State 1, Line 12
Subquery returned more than 1 value. This is not permitted when the subquery follows =,!=, <, <=, >, >= or when the subquery is used as an expression."
You need to ensure that IndexManagement.sql executes properly.
Which WHILE statement should you use at line 18?
A. WHILE SUM(@RowNumber) < (SELECT @counter FROM @indextable)
B. WHILE @counter < (SELECT COUNT(RowNumber) FROM @indextable)
C. WHILE COUNT(@RowNumber) < (SELECT @counter FROM @indextable)
D. WHILE @counter < (SELECT SUM(RowNumber) FROM @indextable)

Correct Answer: B
Explanation/Reference:

Question 175
Which code segment should the stored procedure contain?
You need to convert the functionality of Legacy.sql to use a stored procedure.
Which code segment should the stored procedure contain?
Question 176
Which code segment should you use to complete the function?
You need to create a function that filters invoices by CustomerID. The SELECT statement for the function is contained in InvoicesByCustomer.sql. Which code segment should you use to complete the function?

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

Correct Answer: D
Explanation/Reference:
Explanation:

Question 177
Which code segment should you execute?
You need to modify InsertInvoice to comply with the application requirements. Which code segment should you execute?

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

Correct Answer: A
Explanation/Reference:
Question 178
How should you modify the INSERT statement?
You attempt to process an invoice by using usp_InsertInvoice.sql and you receive the following error message: "Msg 515, Level 16, State 2, Procedure usp_InsertInvoice, Line 10 Cannot insert the value NULL into column 'InvoiceDate', table 'DB1.Accounting.Invoices'; column does not allow nulls. INSERT fails."
You need to modify usp_InsertInvoice.sql to resolve the error.
How should you modify the INSERT statement?
A. InvoiceDate varchar(100) 'InvoiceDate',
B. InvoiceDate varchar(100) 'Customer/InvoiceDate',
C. InvoiceDate date '@InvoiceDate',
D. InvoiceDate date '[email protected]',
Correct Answer: C
Explanation/Reference:

Question 179
Which line of code should you modify in CountryFromID.sql?
You need to modify the function in CountryFromID.sql to ensure that the country name is returned instead of the country ID. Which line of code should you modify in CountryFromID.sql?
A. 04
B. 05
C. 06
D. 19
Correct Answer: D
Explanation/Reference:
Explanation:

Question 180
Which code segment should you execute?
You are testing disaster recovery procedures. You attempt to restore DB1 to a different server and you receive the following error message:
"Msg 33111.
Level 16, State 3, Line 1
Cannot find server certificate with thumbprint
0xA694FB8A88C9154F5E2567C30A2A69EB8FB4C44A9
Msg 3013, Level 16, State 1, Line 1
RESTORE DATABASE is terminating abnormally."
You need to ensure that you can restore DB1 to a different server. Which code segment should you execute?
Question 181
How should you define the InvoiceID column in the CREATE TABLE statement? You need to create the InvoiceStatus table in DB1.

A. InvoiceID bigint
   DEFAULT (NEXT VALUE FOR Accounting.InvoiceID_Seq) NOT NULL,

B. InvoiceID bigint DEFAULT ((NEXT VALUE FOR Accounting.InvoiceID_Seq OVER (ORDER BY InvoiceStatusID)) NOT NULL FOREIGN KEY REFERENCES Accounting.Invoices(InvoiceID),

C. InvoiceID bigint FOREIGN KEY REFERENCES Accounting.Invoices(InvoiceID) NOT NULL,

D. InvoiceID bigint DEFAULT ((NEXT VALUE FOR Accounting.InvoiceID_Seq OVER (ORDER BY InvoiceStatusID)) NOT NULL,

Correct Answer: C
Explanation/Reference:

Question 182
Which data type should you use for CustomerID?

A. varchar(11)
B. bigint
C. nvarchar(11)
D. char(11)

Correct Answer: D
Explanation/Reference:

Invoices.xml

All customer IDs are 11 digits. The first three digits of a customer ID represent the customer’s country. The remaining eight digits are the customer’s account number. int: -2^31 (-2,147,483,648) to 2^31-1 (2,147,483,647) (just 10 digits max) bigint: -2^63 (-9,223,372,036,854,775,808) to 2^63-1 (9,223,372,036,854,775,807) http://msdn.microsoft.com/en-us/library/ms176089.aspx
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