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:
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 Name.
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...
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 values by searching on Last Name and then First Name (LastName, FirstName) INCLUDE (AccountNumber).

Question 3
Which five code segments should you use?
You create a disk-based table,
CREATE TABLE dbo.Account
(    AccountId int NOT NULL,
    AccountNumber varchar(10) NOT NULL,
    GovernmentId nvarchar(11) NOT NULL,
    FirstName nvarchar(20) NOT NULL,
    MiddleInitial nvarchar(1) NOT NULL,
    LastName nvarchar(20) NOT NULL,
)    )
CREATE NONCLUSTERED INDEX XI ON dbo.Account
"No Change To Structure"/

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.
Correct Answer:

```sql
ALTER TABLE <tablename> ADD CONSTRAINT <constraintname> UNIQUE
  ( <columnname> )
```

Explanation/Reference:

Note: The SQL command is:

```sql
ALTER TABLE <tablename> ADD CONSTRAINT <constraintname> UNIQUE
  ( <columnname> )
```

**Question 4**

You administer a SQL Server 2014 instance.

You administer a SQL Server 2014 instance.

The server is capable of 10000 IO/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 never 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:
**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:

Explanation/Reference:

Note:
- 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:

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;

CREATE SYMMETRIC KEY Key11 WITH ALGORITHM = AES_256
ENCRYPTION BY CERTIFICATE Cert1;

CLOSE SYMMETRIC KEY;

CREATE CREDENTIAL Credit1 WITH IDENTITY = 'User1',
SECRET = 'Password';

ALTER TABLE Table1
ADD Column2 varbinary(256);

OPEN SYMMETRIC KEY Key11
DECRYPTION BY CERTIFICATE Cert1;

UPDATE table1 SET Column2 = EncryptByKey(Key_GUID ('Key1'),Column1);

CREATE SYMMETRIC KEY Key11 WITH ALGORITHM = AES_256
ENCRYPTION BY CERTIFICATE Cert1;
-- 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

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. Which dynamic management objects should you identify?
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.
You are a SQL Server 2014 Developer. A database that you work on contains two tables that are defined as follows:
CREATE TABLE Product (  
ProductID int IDENTITY(1,1) PRIMARY KEY,  
ProductName varchar(30) NOT NULL,  
LastUpdatedDate smalldatetime,  
LastUpdatedBy varchar(128)  
)  

CREATE TABLE ProductAudit (  
ProductAuditID int IDENTITY(1,1) PRIMARY KEY,  
OldProductID int NOT NULL,  
OldProductName varchar(30) NOT NULL,  
OldLastUpdatedDate smalldatetime,  
OldLastUpdatedBy varchar(128)  
)

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:

```
CREATE TRANSFER (  
DECLARE @oldProductID INT, @oldProductName VARCHAR(30)  
SELECT @oldProductID = ProductID,  
@oldProductName = ProductName  
FROM deleted  

INSERT ProductAudit  
VALUES (OldProductID, OldProductName, OldLastUpdatedDate, OldLastUpdatedBy)  

UPDATE Product  
SET LastUpdatedBy = SUPER_NAME(),  
LastUpdatedDate = GETDATE()  
FROM Product AS p  
INNER JOIN inserted AS i ON p.ProductID = i.ProductID  

END  

COMMIT TRANSACTION  
```

Correct Answer:
Note:
* Executing a ROLLBACK TRANSACTION or COMMIT TRANSACTION Transact-SQL statement inside a stored procedure or trigger is possible, but doing so may cause errors.

Question 8
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.

Correct Answer:
### Question 9
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:

<table>
<thead>
<tr>
<th>Data Types</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>int</td>
<td>ID</td>
</tr>
<tr>
<td>bigint</td>
<td>Name</td>
</tr>
<tr>
<td>varchar</td>
<td>Code</td>
</tr>
<tr>
<td>nvarchar</td>
<td>ModifiedDate</td>
</tr>
<tr>
<td>char</td>
<td></td>
</tr>
<tr>
<td>smalldatetime</td>
<td></td>
</tr>
<tr>
<td>date</td>
<td></td>
</tr>
</tbody>
</table>

Correct Answer:
Question 10

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.

Correct Answer:
**Explanation/Reference:**

* 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 SHRINKFILE command to shrink the file, the file is first truncated by setting the database recovery model to SIMPLE.

**Transact-SQL**

```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`
  
  Is the size for the file in megabytes, expressed as an integer.

**Question 11**

You have two existing tables, one named COUNTRY and the other named STATES.

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:

```
CREATE TABLE COUNTRY
(
    Country_Abbr CHAR(2) PRIMARY KEY CLUSTERED,
    Country_Description VARCHAR(30) Not Null
);
CREATE TABLE STATES
(
    State_Abbr CHAR(2) PRIMARY KEY CLUSTERED,
    State_Description VARCHAR(30) Not Null,
    Country_Abbr CHAR(2) Not Null
);
```
Correct Answer:

Question 12
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:
**Question 13**

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.

**Correct Answer:**

- Sparse
- Computed
- Persisted computed
Question 14
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:

Correct Answer:

Explanation/Reference:
* a table (a set of rows) can be returned through a SELECT statement
* a scalar can be returned through an output parameter.
* incorrect: TVP is used for input not output.

Question 15
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:

```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
```

**Explanation/Reference:**
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.

```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 16**
Which encryption type and data type should you identity?
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:

<table>
<thead>
<tr>
<th>Encryption Types</th>
<th>Data Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparent data encryption (TDE)</td>
<td>decimal</td>
</tr>
<tr>
<td>Encrypting File System (EFS)</td>
<td>varchar</td>
</tr>
<tr>
<td>Cell-level encryption</td>
<td>varbinary</td>
</tr>
<tr>
<td>BitLocker Drive Encryption (BitLocker)</td>
<td>money</td>
</tr>
</tbody>
</table>

Correct Answer:

<table>
<thead>
<tr>
<th>Encryption Types</th>
<th>Data Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparent data encryption (TDE)</td>
<td>Cell-level encryption</td>
</tr>
<tr>
<td>Encrypting File System (EFS)</td>
<td>varbinary</td>
</tr>
<tr>
<td>BitLocker Drive Encryption (BitLocker)</td>
<td></td>
</tr>
</tbody>
</table>

Explanation/Reference:

**Question 17**
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:**

<table>
<thead>
<tr>
<th>Index Types</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columnstore Index</td>
<td>Table1</td>
</tr>
<tr>
<td>Nonclustered Index</td>
<td>Table2</td>
</tr>
<tr>
<td>Nonclustered Index</td>
<td>Table3</td>
</tr>
</tbody>
</table>

**Explanation/Reference:**

**Question 18**
Which five code segments should you use?
You create a table that contains the following script:

```sql
CREATE TABLE dbo.Customers
(
    id int IDENTITY(1,1) NOT NULL,
    FirstName nvarchar(50) NOT NULL,
    LastName nvarchar(50) NOT NULL,
    EmployeeID int NULL,
    CONSTRAINT PK_Customers PRIMARY KEY CLUSTERED (id)
) ON [PRIMARY]
GO
```

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:
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:
Note:
* 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:
```
SELECT sch.SalesPersonID, 
      c.FirstName + ' ' + c.LastName AS FullName, 
      e.Title, 
      sch.TaxTotal, 
      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:

Question 21
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.)
Select and Place:
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 22

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 (int)
AS RANGE LEFT FOR VALUES (20120301, 20120630, 20120930);
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);
```

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.

*Box 1 - Box 2:
You need to move the data from the first partition to a new table named SalesHistory.

Note:

* Box 1 - Box 2:
* 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.

* [Box 3 Box 4] Drop the partition scheme and then the partition function and the recreate them (box 5-box6). 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 23**  
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.)

**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 24**  
What should you create?  
You execute the following code:

```sql
CREATE TABLE Customers  
  (id int primary key,  
   name nvarchar(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 25
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. Select and Place.

Correct Answer:
Question 26
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
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:
Explanation/Reference:
Note:
* 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 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.
* 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 27
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.)
Select and Place:
Question 28
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:

Question 29
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:
**Correct Answer:**

- Use the certificate to add a digital signature to the assembly.
- Execute the `CREATE FUNCTION` statement.
- Execute the `CREATE ASSEMBLY` statement.
- Execute the `CREATE AGGREGATE` statement.
- Modify the TRUSTWORTHY property of the database.

**Explanation/Reference:**

* 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:

```
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 30**

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:**

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

**Correct Answer:**

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

From the main menu of Profiler, select File | Import Performance Data.

* 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 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:

Correct Answer:
Explanation/Reference:
Note:
* There are a few different hashing algorithms available in SQL Server 2005: MD2, MD4, MD5, SHA, SHA1, with each having pros and cons.
* In cryptography, SHA-1 is a cryptographic hash function designed by the United States National Security Agency and published by the United States NIST as a US Federal Information Processing Standard. SHA stands for "secure hash algorithm". The four SHA algorithms are structured differently and are distinguished as SHA-0, SHA-1, SHA-2, and SHA-3. SHA-1 is very similar to SHA-0, but it corrects an error in the original SHA hash specification that led to significant weaknesses. The SHA-1 algorithm was not adopted by many applications. SHA-2 on the other hand significantly differs from the SHA-1 hash function.
* SHA-1 is the most widely used of the existing SHA hash functions, and is employed in several widely used applications and protocols.

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%lekjg5k3d17583944key5d44cjhdyl'
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

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

<table>
<thead>
<tr>
<th>Values</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ALTER INDEX ALL ON Customers</td>
</tr>
<tr>
<td></td>
<td>REBUILD WITH</td>
</tr>
<tr>
<td></td>
<td>(ONLINE = Value,</td>
</tr>
<tr>
<td></td>
<td>STATISTICS_NORECOMPUTE = Value);</td>
</tr>
</tbody>
</table>

Correct Answer:

<table>
<thead>
<tr>
<th>Values</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ALTER INDEX ALL ON Customers</td>
</tr>
<tr>
<td></td>
<td>REBUILD WITH</td>
</tr>
<tr>
<td></td>
<td>(ONLINE = OFF,</td>
</tr>
<tr>
<td></td>
<td>STATISTICS_NORECOMPUTE = ON);</td>
</tr>
</tbody>
</table>

Explanation/Reference:

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:

Switch Table2 to Table1.

Create a table named Table2 by using the same schema as Table1.

Partition Table1.

Import the data to Table2.

Import the data to Table1.

Create a columnstore index on Table2 for Column1.

Create the columnstore index on Table1.

Correct Answer:
Explanation/Reference:
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.
B) (applies in 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, disable 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:
AccountNumber char(10) NOT NULL
YearToDateSalesTotal decimal(15,2) NULL
SalesScore int NULL
FutureSalesExpectationScore int 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
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:

```sql
CREATE TABLE dbo.Products
(
    ProductID int NOT NULL,
    ProductName nvarchar(50) NULL,
    ProductDescription nvarchar(200) NULL,
    CONSTRAINT PK_Products PRIMARY KEY CLUSTERED (ProductID)
) ON [PRIMARY]
```

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:

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

```sql
01 CREATE PROCEDURE UpdateContact
02 @ContactID int,
03 @LastName nvarchar(50)
04 AS
05 SELECT LastName AS OriginalLastName
06 FROM Person.Contact
07 WHERE ContactID = @ContactID;
08 UPDATE Person.Contact
09 SET LastName = @LastName;
10 WHERE ContactID = @ContactID;
```

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 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 38
What should you create?
You have a Microsoft SQL Azure database named DBAzure1. DBAzure1 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 39
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:
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 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:

```
SELECT ContactID,
    EmailAddress,
    LastName
FROM Person.Contact
WHERE LastName = 'N'Johnson'
```

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.)

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>DB2</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.

More than one answer choice may achieve the goal. Select the BEST answer.
Question 45
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 46
What should you do?
You have a Microsoft SQL Azure database that contains a table named Employees.
CREATE TABLE HR.Employees
{...}
You create a non-clustered index named EmployeeName on the name column.
SELECT * FROM HR.Employees
WHERE 'JOH' = LEFT(name, 3)
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 47
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 48
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
D. DECLARE oneTable TABLE

Correct Answer: B
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.

Correct Answer: BCDF
Explanation/Reference:

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 PRIMARY KEY, NOT NULL,
    OrderDate date NOT NULL,
    Amount decimal
);
GO
CREATE INDEX IX_Sales_OrderDate
    ON Sales(OrderDate);
GO
CREATE PROC usp_Proc1
    @date1 date, @date2 date
AS
    SELECT ID, OrderDate, Amount
    FROM Sales
    WHERE OrderDate 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.
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.
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:
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
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 55
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?

A. CREATE FUNCTION dbo.GetOrderDetails(@OrderID int)
   AS
   RETURN
   (SELECT OrderID, Quantity, LineTotal
    FROM Sales.OrderDetails
    WHERE OrderID = @OrderID);
B. CREATE PROC dbo.GetOrderDetails (@OrderID int)
   AS
   SELECT OrderID, Quantity, LineTotal
   FROM Sales.OrderDetails
   WHERE OrderID = @OrderID;
C. CREATE FUNCTION dbo.GetOrderDetails (@OrderID int)
   RETURNS @GetOrderDetails TABLE
   (OrderID int NOT NULL,
    Quantity int NOT NULL,
    LineTotal decimal NULL
   )
   AS
   BEGIN
   SELECT @GetOrderDetails.
   SELECT OrderID, Quantity, LineTotal
   FROM Sales.OrderDetails
   ORDER BY @OrderID;
   RETURN;
   END;
D. CREATE VIEW dbo.GetOrderDetails
   AS
   SELECT OrderID, Quantity, LineTotal
   FROM Sales.OrderDetails;

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

Correct Answer: A
Question 56
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. Option A
B. Option B
C. Option C
D. Option D
Correct Answer: D
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:
Explanation:

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]
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
C. NEWSEQUENTIALID
D. IDENTITY

Correct Answer: C
Explanation/Reference:

**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:

**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:
**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.
After populating the Employees table with 10,000 rows, you execute the following query:
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,l,l) = '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**
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 67**
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(200) 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 68**
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?

A. DECLARE @g GEOGRAPHY =
   GEOGRAPHY::STGeomFromText('FULLGLOBE', 4326);

B. DECLARE @g GEOGRAPHY =
   GEOGRAPHY::STGeomFromText('POLYGON((0 0, 10 0, 0 10, 0 0))', 4326);

C. DECLARE @g GEOGRAPHY =
   GEOGRAPHY::STGeomFromText('])/CIRCULARSTRING(0 50, 50 0, 0 50),
   CIRCULARSTRING(0 50, 50 0, 0 50),
   CIRCULARSTRING(-90 50, 0 0, -90 -50),
   CIRCULARSTRING(-90 -50, 0 -50, 0 -50), 4326);

D. DECLARE @g GEOGRAPHY =
   GEOGRAPHY::STGeomFromText('CIRCULARSTRING(0 50, 90 50, 180 50)', 4326);

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:

```sql
CREATE TABLE dbo.Customers
(
    CustomerID int IDENTITY(1,1),
    FirstName nvarchar(50) NOT NULL,
    LastName nvarchar(50) NOT NULL,
    CreationDate datetime NOT NULL,
    CONSTRAINT PK_Customers PRIMARY KEY (CustomerID)
);
GO
CREATE NONCLUSTERED INDEX IX_Customers_CreationDate
ON dbo.Customer (CreationDate)
INCLUDE ([FirstName, 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.Customers 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.)
You need to ensure that the 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:
```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?
Question 73
What should you do?
You have a text file that contains an XML Schema Definition (XSD).
You have a table named Schema1/Table1.
You have a stored procedure named Schema1.Proc1 that accepts an XML parameter named Param1.
You need to store validated XML data in Schema1/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 74
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
);
GO

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)
   WHERE FaxNumber IS NULL

Correct Answer: A
Explanation/Reference:

Question 75
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 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 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 ON 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 78
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?

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 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:
CREATE TABLE dic.Orders
    Id int CONSTRAINT PK_Order_Id PRIMARY KEY,
    Amount decimal,
    Details xml
;
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:
Explantion:
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
Which code segment should you execute?
You execute the following code:
CREATE TABLE UserInfo
(
  ID int NOT NULL IDENTITY (1, 1)
CONSTRAINT PK_UserInfo 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:
SELECT UserName, PerformanceReviewScore
FROM UserInfo
WHERE Manager = 'Ben Smith';
You need to create a covering index on UserInfo.
Which code segment should you execute?

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

Correct Answer: C
Explanation/Reference:

Question 83
How many rows should you identify?
You plan to execute the following code:

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:

```sql
01 CREATE TABLE dbo.Table1
02 (  
03    datavalue 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 84
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 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:
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:
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,l,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 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 (CONVERT(nvarchar(400),@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 88
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 89
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 90
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?
Question 91
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 92
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
Explanation/Reference:

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:

```sql
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?
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.)
01 CREATE VIEW View1
02 AS
03 SELECT
04 ...
05 WHERE Column1 = 'City1'
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:
Explanation:
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:
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 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:
Explanation:

Question 97
What should you modify?
You execute the following code:

```
CREATE TABLE Department(  
    DepartmentID smallint IDENTITY(1,1) NOT NULL,  
    DepartmentName varchar(100) NOT NULL,  
    GroupName varchar(100) NOT NULL,  
    CONSTRAINT FK_Department_DepartmentID  
    PRIMARY KEY CLUSTERED (DepartmentID ASC)
);  
GO

CREATE UNIQUE NONCLUSTERED INDEX  
AK_Department_DepartmentName ON  
Department  
(DepartmentName ASC);  
GO
```

You run the following query:

```
SELECT DepartmentID ,DepartmentName ,GroupName  
FROM Department  
WHERE DepartmentName = '1234';
```

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

Question 98
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

Correct Answer: A

Question 99
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

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] = 'Room1'
```
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:
Explaination:

**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 verify that User1 has the SELECT permission on Table1 and Table2. 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:
Explaination:

**Question 103**
Which code segment should you execute?
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 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  Email varchar(100) NULL,
04  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:
CREATE TABLE dbo.Projects
  (Id int,
details XML);
GO

INSERT INTO Projects (Id,details)
VALUES
(1,
  N'<Project Name="Project1">
  <Task>
   <Task Name="T1" IsFinished="true"></Task>
  </Task>

  <Task>
   <Task Name="T2" IsFinished="true"></Task>
  </Task>

  <Project>
   (2,
   N'<Project Name="Project2">
   <Task>
    <Task Name="T_1" IsFinished="false"></Task>
   </Task>

   <Task>
    </Task>
   </Project>');</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?
Question 106
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?

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

Correct Answer: C
Explanation/Reference:
Question 107
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 108
Which isolation levels should you recommend?
You plan to deploy SQL Server 2012. You are designing two stored procedures named USP_1 and USP_2 that have the following requirements: Prevent data read by USP_1 from being modified by other active processes. Prevent USP_2 from performing dirty reads. You need to recommend the isolation level for each stored procedure. The solution must maximize concurrency. Which isolation levels should you recommend? To answer, drag the appropriate isolation level to the correct stored procedure in the answer area. Select and Place:

Correct Answer:

Explanation/Reference:
Note:
* REPEATABLE READ
This isolation level includes the guarantees given by SNAPSHOT isolation level. In addition, REPEATABLE READ guarantees that for any row that is read by the transaction, at the time the transaction commits the row has not been changed by any other transaction. Every read operation in the transaction is repeatable up to the end of the transaction.
* Committed Read is SQL Server’s default isolation level. It ensures that an operation will never read data another application has changed but not yet committed.

Transaction Isolation Levels

Question 109
You use SQL Server 2014. You use SQL Server 2014. You need to create a single object that inserts a provided value into Table1, and then returns a count of the records in Table1. 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 110
You are the senior database administrator at Contoso, Ltd. You manage a SQL Server 2014
Instance, with multiple databases used for reporting.
You have recently hired a junior database administrator. You want this person to be able to view the database structures on the server, but you do not
want him or her to be able to make changes or see the data in the tables.
The new hire's login credentials are as follows:
Login name: JFree
Password: Jx672$qse
You want the new hire to be required to change his password on his next login.
The code that is produced should execute no matter the initial database context in which it is started.
You need to write the code required to give the new hire only the desired access, using the smallest number of steps. 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 111**

How many servers should you identify?

You plan to install two SQL Server 2014 environments named Environment1 and Environment. Your company identifies the following availability requirements for each environment:

- Environment1 must have mirroring with automatic failover implemented.
- Environment2 must have AlwaysOn with automatic failover implemented.

You need to identify the minimum number of SQL Server 2014 servers that must be deployed to each environment to ensure that all data remains available if a physical server fails.

How many servers should you identify?

To answer, drag the appropriate number to the correct environment in the answer area.

Select and Place:
**Correct Answer:**

<table>
<thead>
<tr>
<th>Number of Servers</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Environment1</td>
</tr>
<tr>
<td>3</td>
<td>Environment2</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation/Reference:**

- **Database Mirroring (SQL Server)**
- **Failover and Failover Modes (AlwaysOn Availability Groups)**

**Question 112**

Which technologies should you identify?

You are designing a database for a university.

The database will contain two tables named Classes and Enrollment 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.
- **Enrollment** will store information about students and their classes. Performance must be enhanced for queries of the current enrollments.

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:

**Correct Answer:**

<table>
<thead>
<tr>
<th>Technologies</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>FileStream</td>
<td>Classes</td>
</tr>
<tr>
<td>FileTable</td>
<td>Enrollment</td>
</tr>
<tr>
<td>Partitioned tables</td>
<td>Technology</td>
</tr>
<tr>
<td>Partitioned views</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation/Reference:**

- **Note:**
  - The **FileTable feature brings support for the Windows file namespace and compatibility with Windows applications to the file data stored in SQL Server. FileTable lets an application integrate its storage and data management components, and provides integrated SQL Server services - including full-text search and semantic search - over unstructured data and metadata.
  - In other words, you can store files and documents in special tables in SQL Server called FileTables, but access them from Windows applications as if they were stored in the file system, without making any changes to your client applications.

- **FileTables (SQL Server)**
- **Partitioned Tables and Indexes**
Question 113
Management has decided to archive all AUDITDATA records from 2010 and prior. Management wants the records to be removed from the database entirely and provided to the backup team as a zipped text file. The data must no longer reside in the database. There is very little tolerance for performance degradation in your environment.
You need to remove all 2010 and prior data from the AuditData table by using the least amount of system resources possible.
Develop the solution by selecting and arranging the required SQL actions in the correct order.
You may not need all of the actions.
Select and Place:

Correct Answer:

SQL Actions
- Drop Table
- Select Into
- Switch Partition
- Move Partition
- Merge Range
- BCP
- Split Range
- Create Table
- Delete Partition
- Drop Partition

Answer Area

Correct Answer:

Explanation/Reference:
Note:
* Create a new partitioned table with the partition function you want, and then insert the data from the old table into the new table by using an INSERT INTO...SELECT FROM statement.
* SPLIT RANGE (boundary_value)
  Adds one partition to the partition function. boundary_value determines the range of the new partition, and must differ from the existing boundary ranges of the partition function. Based on boundary_value, the Database Engine splits one of the existing ranges into two. Of these two, the one where the new boundary_value resides is considered the new partition.
* BCP can be used to produce the zipped text file.
* Example:
  Splitting a partition of a partitioned table or index into two partitions
The following example creates a partition function to partition a table or index into four partitions.
ALTER PARTITION FUNCTION has one of the partitions into two to create a total of five partitions.
CREATE PARTITION FUNCTION myRangePF1 (int)
AS RANGE LEFT FOR VALUES (1, 100, 1000);
GO
--Split the partition between boundary_values 100 and 1000
--to create two partitions between boundary_values 100 and 500
--and between boundary_values 500 and 1000.
ALTER PARTITION FUNCTION myRangePF1 ()
SPLIT RANGE (500);
Question 114
What should you include in the recommendation?
You have a SQL Server 2014 environment that contains 20 servers.
The corporate security policy states that all SQL Server 2014 instances must meet specific security standards.
You need to recommend a management strategy for the SQL Server 2014 servers.
What should you include in the recommendation?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Multi server jobs
B. Policy-Based Management
C. Common criteria compliance
D. Maintenance plans
Correct Answer: B
Explanation/Reference:
Policy-Based Management is a system for managing one or more instances of SQL Server. When SQL Server policy administrators use Policy-Based Management, they use SQL Server Management Studio to create policies to manage entities on the server, such as the instance of SQL Server, databases, or other SQL Server objects.
Policy-Based Management How-to Topics
Topic 13, Mix Questions Set 2

Question 115
What should you include in your design?
You are planning to deploy a database to Windows Azure SQL Database.
You need to design a stored procedure to update rows. The stored procedure must meet the following requirements:
- If the update fails, an error must be raised to the application and the update must be discarded.
- The stored procedure must be designed to maximize concurrency.
What should you include in your design?
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:
Note:
* Read Committed is SQL Server’s default isolation level.
* @@@ROWCOUNT returns the number of rows affected by the last statement.
* Using TRY...CATCH in a transaction

The following example shows how a TRY...CATCH block works inside a transaction. The statement inside the TRY block generates a constraint violation error.

```
BEGIN TRANSACTION;
BEGIN TRY
-- Generate a constraint violation error.
DELETE FROM Production.Product
WHERE ProductID = 980;
END TRY
BEGIN CATCH
SELECT
ERROR_NUMBER() AS ErrorNumber,
ERROR_SEVERITY() AS ErrorSeverity,
ERROR_STATE() AS ErrorState,
ERROR_PROCEDURE() AS ErrorProcedure,
ERROR_LINE() AS ErrorLine,
ERROR_MESSAGE() AS ErrorMessage;
IF @@TRANCOUNT > 0
ROLLBACK TRANSACTION;
END CATCH;
IF @@TRANCOUNT > 0
COMMIT TRANSACTION;
GO
```


Question 116
Which options should you recommend?
You plan to deploy a database to SQL Azure.
You must create two tables named Table 1 and Table 2 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 which is the product of two other columns in Table2.
- Both Table1 and Table2 will contain over one million rows.

You need to recommend which options must be defined for the columns. The solution must minimize the time it takes to retrieve data from the tables.
Which options should you recommend?
To answer, drag the appropriate options to the correct column in the answer area.
Select and Place:

Correct Answer:

Explanation/Reference:
Explanation:
* Sparse columns are ordinary columns that have an optimized storage for null values. Sparse columns reduce the space requirements for null values at the cost of more overhead to retrieve nonnull values. Consider using sparse columns when the space saved is at least 20 percent to 40 percent.
* A Persisted column would be faster to retrieve.
* A computed column is computed from an expression that can use other columns in the same table. The expression can be a noncomputed column name, constant, function, and any combination of these connected by one or more operators. Unless otherwise specified, computed columns are virtual columns that are not physically stored in the table. Their values are recalculated every time they are referenced in a query. The Database Engine uses the PERSISTED keyword in the CREATE TABLE and ALTER TABLE statements to physically store computed columns in the table. Their values are updated when any columns that are part of their calculation change.
Use Sparse Columns
Specify Computed Columns in a Table
Question 117
Which order should the four actions be performed?
You need to recommend the actions that are required to partition a table.
In which order should the four actions be performed?
To answer, move the actions from the list of actions to the answer area and arrange them in the correct order.
Select and Place:

Correct Answer:

Explanation/Reference:
Explanation:
create a partitioned table using the AdventureWorks2012 database:
CREATE PARTITION FUNCTION TransactionRangePF1 (DATETIME) AS RANGE RIGHT FOR VALUES
( '20071001', '20071101', '20071201', '20080101',
  '20080201', '20080301', '20080401', '20080501',
  '20080601', '20080701', '20080801' );
GO
CREATE PARTITION SCHEME TransactionsPS1 AS PARTITION TransactionRangePF1 TO
( [PRIMARY], [PRIMARY], [PRIMARY], [PRIMARY], [PRIMARY],
  [PRIMARY], [PRIMARY], [PRIMARY], [PRIMARY], [PRIMARY],
  [PRIMARY], [PRIMARY] );
GO
CREATE TABLE dbo.TransactionHistory
( TransactionID INT NOT NULL, — not bothering with IDENTITY here
  ProductID INT NOT NULL,
  ReferenceOrderID INT NOT NULL,
  ReferenceOrderLineID INT NOT NULL DEFAULT (0),
  TransactionDate DATETIME NOT NULL DEFAULT (GETDATE()),
  TransactionType NCHAR(1) NOT NULL,
  Quantity INT NOT NULL,
  ActualCost MONEY NOT NULL,
  ModifiedDate DATETIME NOT NULL DEFAULT (GETDATE()),
  CONSTRAINT CK_TransactionType
    CHECK (UPPER(TransactionType) IN (N'W', N'S', N'P'))
) ON TransactionsPS1 (TransactionDate);
GO
Create Partitioned Tables and Indexes

Question 118
Which upgrade steps should you recommend?
You have two servers named SQL1 and SQL2 that have SQL Server 2012 installed. SQL1 contains a database that is mirrored asynchronously to SQL2. The database contents are updated once a month.
You need to upgrade the database to SQL Server 2014. The solution must minimize downtime.
Which upgrade steps should you recommend?
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:

Fail over.
Fail back.
Upgrade SQL1.
Upgrade SQL2.
Establish a mirror.
Break the mirror.

Explanation/Reference:
Note:
* To perform the rolling upgrade
  step 1: For each mirroring session whose mirror server instance has just been upgraded, wait for the session to synchronize. Then, connect to the principal server instance, and manually fail over the session.
  Step 2: Upgrade each server instance that is now the mirror server in all mirroring sessions in which it is a partner.
  Step 3: Resume the mirroring session.
* When upgrading server instances to SQL Server 2014, you can reduce downtime for each mirrored database to only a single manual failover by performing a sequential upgrade, known as a rolling upgrade. A rolling upgrade is a multi-stage process that in its simplest form involves upgrading the server instance that is currently acting as the mirror server in a mirroring session, then manually failing over the mirrored database, upgrading the former principal server, and resuming mirroring
Reference: Minimize Downtime for Mirrored Databases When Upgrading Server Instances

Question 119
Which type of index storage should you recommend?
You have a server named SQL1 that has SQL Server 2014 installed. SQL1 hosts a database named Database1. Database1 contains a table named Table1. Table1 is partitioned across five filegroups based on the TransactionType field.
The schema of Table1 is configured as shown in the following table.

<table>
<thead>
<tr>
<th>Column</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>BigInt</td>
</tr>
<tr>
<td>Account</td>
<td>BigInt</td>
</tr>
<tr>
<td>Amount</td>
<td>Decimal</td>
</tr>
<tr>
<td>TransactionType</td>
<td>Int</td>
</tr>
<tr>
<td>TransactionDate</td>
<td>Date</td>
</tr>
</tbody>
</table>

Table1 contains the indexes shown in the following table.

<table>
<thead>
<tr>
<th>Index</th>
<th>Type</th>
<th>Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>PK_Table1</td>
<td>Clustered</td>
<td>PK_Table1, ID, TransactionType</td>
</tr>
<tr>
<td>IX_Accout</td>
<td>Nonclustered</td>
<td>Account</td>
</tr>
<tr>
<td>IX_Type</td>
<td>Nonclustered</td>
<td>TransactionType</td>
</tr>
<tr>
<td>IX_Date</td>
<td>Nonclustered</td>
<td>TransactionDate</td>
</tr>
<tr>
<td>IX_Amount</td>
<td>Nonclustered</td>
<td>Amount</td>
</tr>
</tbody>
</table>

You need to recommend an index strategy to maximize performance for the queries that consume the indexes available to Table1.
Which type of index storage should you recommend?
To answer, drag the appropriate index storage type to the correct index in the answer area.
Select and Place:
Index Storage Type

* Designing a partitioned index independently (unaligned) of the base table can be useful in the following cases:
  / The base table has not been partitioned.
  / The index key is unique and it does not contain the partitioning column of the table.
  / You want the base table to participate in collocated joins with more tables using different join columns.

Partitioned Tables and Indexes

**Question 120**

Which features should you identify?

You plan to deploy three highly available SQL Server environments that will use SQL Server 2014. You identify the following specifications for each environment as shown following table.

<table>
<thead>
<tr>
<th>Environment</th>
<th>Number of nodes</th>
<th>SQL Server edition</th>
<th>Automatic failover required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV1</td>
<td>2</td>
<td>Standard</td>
<td>Yes</td>
</tr>
<tr>
<td>ENV2</td>
<td>3</td>
<td>Enterprise</td>
<td>Yes</td>
</tr>
<tr>
<td>ENV3</td>
<td>4</td>
<td>Enterprise</td>
<td>Yes</td>
</tr>
</tbody>
</table>

You need to recommend which high-availability feature is required for each environment. Which features should you identify?

To answer, drag the appropriate feature to the correct requirement in the answer area.

**Correct Answer:**

- AlwaysOn availability groups
- database mirroring
- log shipping
- peer-to-peer replication

**Explanation/Reference:**

* Always on availability groups
The AlwaysOn Availability Groups feature is a high-availability and disaster-recovery solution that provides an enterprise-level alternative to database mirroring. Introduced in SQL Server 2012, AlwaysOn Availability Groups maximizes the availability of a set of user databases for an enterprise. Deploying AlwaysOn Availability Groups requires a Windows Server Failover Clustering (WSFC) cluster.

**Features Supported by the Editions of SQL Server 2014**

**Question 121**
Which features should you identify?
You plan to deploy a database by using SQL Server 2014.
Your company identifies the following requirements for the database:
The name of all stored procedures must start with “usp_” always.
All distribution statistics must be updated daily.
You need to identify which feature must be used to meet each database requirement.

Which features should you identify?

To answer, drag the appropriate feature to the correct database requirement in the answer area.

Select and Place:

<table>
<thead>
<tr>
<th>Features</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>change data capture</td>
<td>The name of all stored procedures must start with “usp_” always.</td>
</tr>
<tr>
<td>the CHECK constraint</td>
<td>All distribution statistics must be updated daily.</td>
</tr>
<tr>
<td>Extended Event</td>
<td></td>
</tr>
<tr>
<td>a maintenance plan</td>
<td></td>
</tr>
<tr>
<td>Policy-Based Management</td>
<td></td>
</tr>
</tbody>
</table>

Correct Answer:

<table>
<thead>
<tr>
<th>Features</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>change data capture</td>
<td>The name of all stored procedures must start with “usp_” always.</td>
</tr>
<tr>
<td>the CHECK constraint</td>
<td>All distribution statistics must be updated daily.</td>
</tr>
<tr>
<td>Extended Event</td>
<td></td>
</tr>
<tr>
<td>a maintenance plan</td>
<td></td>
</tr>
<tr>
<td>Policy-Based Management</td>
<td></td>
</tr>
</tbody>
</table>

Explanation/Reference:
* Policy-Based Management
  Each Stored Procedure that are created and that will be created has to have prefix “USP_”.
* Maintenance plans create a workflow of the tasks required to make sure that your database is optimized, regularly backed up, and free of inconsistencies.
  How to: Create and Configure a Policy-Based Management Policy
  Maintenance Plans

Question 122
Which features should you identify?
You plan to deploy SQL Server 2014.
You identify the following security requirements for the deployment:
Users must be prevented from intercepting and reading the T-SQL statements sent from the clients to the database engine.
All database files and log files must be encrypted if the files are moved to another disk on another server.
You need to identify which feature meets each security requirement. The solution must minimize processor overhead.

Which features should you identify?

To answer, drag the appropriate feature to the correct requirement in the answer area.

Select and Place:
Correct Answer:

- Secure Sockets Layer (SSL) encryption enables transmitting encrypted data across the network between an instance of SQL Server and a client application.
- Transparent data encryption (TDE) performs real-time I/O encryption and decryption of the data and log files.

Authentication in Reporting Services

Transparent Data Encryption (TDE)

**Question 123**

Which technologies should you recommend?

You are designing an authentication strategy for a new server that has SQL Server 2014 installed.

The strategy must meet the following business requirements:

- The account used to generate reports must be allowed to make a connection during certain hours only.
- Failed authentication requests must be logged.

You need to recommend a technology that meets each business requirement. The solution must minimize the amount of events that are logged.

Which technologies should you recommend?

To answer, drag the appropriate solution to the correct business requirement in the answer area.

Select and Place:
Logon triggers fire stored procedures in response to a LOGON event. This event is raised when a user session is established with an instance of SQL Server. Logon triggers fire after the authentication phase of logging in finishes, but before the user session is actually established.

You can use logon triggers to audit and control server sessions, such as by tracking login activity, restricting logins to SQL Server, or limiting the number of sessions for a specific login.

Login auditing can be configured to write to the error log on the following events:
- Failed logins
- Successful logins
- Both failed and successful logins

Incorrect:
- C2 audit mode can be configured through SQL Server Management Studio or with the c2 audit mode option in sp_configure. Selecting this option will configure the server to record both failed and successful attempts to access statements and objects.

Logon Triggers
Configure Login Auditing (SQL Server Management Studio)

Question 124
What should you include in the recommendation?
You need to recommend a backup process for data warehouse database.
The solution must meet the following requirements:
- Ensure that if a hardware failure occurs, you can bring the database online without losing more than 24 hours of transactions.
- Minimize the amount of administrative effort required to restore any lost data.
- Minimize the space used by transaction logs.

What should you include in the recommendation?
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:
Question 125
Which features should you identify?
You plan to deploy SQL Server 2014.
Your company identifies the following monitoring requirements for the database;
An e-mail message must be sent if the SQL Server Authentication mode changes.
An e-mail message must be sent if CPU utilization exceeds 90 percent.
You need to identify which feature meets each monitoring requirement.
Which features should you identify?
To answer, drag the appropriate feature to the correct monitoring requirement in the answer area.
Select and Place:

Correct Answer:
Explanation/Reference:

* Policy-Based Management is helpful in resolving the issues presented in the following scenario:
A company policy prohibits enabling Database Mail or SQL Mail. A policy is created to check the server state of those two features. An administrator compares the server state to the policy. If the server state is out of compliance, the administrator chooses the Configure mode and the policy brings the server state into compliance.

* Events are generated by SQL Server and entered into the Microsoft Windows application log. SQL Server Agent reads the application log and compares events written there to alerts that you have defined. When SQL Server Agent finds a match, it fires an alert, which is an automated response to an event. In addition to monitoring SQL Server events, SQL Server Agent can also monitor performance conditions and Windows Management Instrumentation (WMI) events.

To define an alert, you specify:
The name of the alert.
The event or performance condition that triggers the alert.
The action that SQL Server Agent takes in response to the event or performance condition.

Configure Alerts to Notify Policy Administrators of Policy Failures

SQL Server Agent

Question 126
Which features should you identify?
You plan to deploy SQL Server 2014.
Your company identifies the following monitoring requirements:
Tempdb must be monitored for insufficient free space.
Deadlocks must be analyzed by using Deadlock graphs.
You need to identify which feature meets each monitoring requirement.
Which features should you identify?
To answer, drag the appropriate feature to the correct monitoring requirement in the answer area.
Select and Place:
You can use the sys.dm_db_file_space_usage dynamic management view to monitor the disk space used by the user objects, internal objects, and version stores in the tempdb files.

Additionally, to monitor the page allocation or deallocation activity in tempdb at the session or task level, you can use the sys.dm_db_session_space_usage and sys.dm_db_task_space_usage dynamic management views. These views can be used to identify large queries, temporary tables, or table variables that are using a large amount of tempdb disk space.

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.

SQL Server Profiler and SQL Server Management Studio use a deadlock wait-for graph to describe a deadlock. The deadlock wait-for graph contains process nodes, resource nodes, and edges representing the relationships between the processes and the resources.

Reference: Troubleshooting Insufficient Disk Space in tempdb
Reference: Analyze Deadlocks with SQL Server Profiler

Question 127
What should you include in the recommendation?
You have a SQL Server 2014 environment that contains 20 servers.
The corporate security policy states that all SQL Server 2014 instances must meet specific security standards.
You need to recommend a management strategy for the SQL Server 2014 servers.
What should you include in the recommendation?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Multi server jobs
B. Policy-Based Management
C. Common criteria compliance
D. Maintenance plans

Correct Answer: B
Explanation/Reference:
Policy-Based Management is a system for managing one or more instances of SQL Server. When SQL Server policy administrators use Policy-Based Management, they use SQL Server Management Studio to create policies to manage entities on the server, such as the instance of SQL Server, databases, or other SQL Server objects.
Policy-Based Management How-to Topics

Question 128
Which columns should you designate as SPARSE?
You use SQL Server 2014. You create a table within a database by using the following DDL:

```sql
CREATE TABLE OrderDate
(OrderID INT IDENTITY(1,1) PRIMARY KEY CLUSTERED,
OrderDate SMALLDATETIME NOT NULL DEFAULT getdate(),
CustomerID INT,
IsTaxable BIT,
Subtotal money DEFAULT (0),
TaxAmount AS CASE IsTaxable WHEN 1 THEN SubTotal * .0875 ELSE NULL END,
Freight SMALLmoney,
OrderDueDate DATE,
OrderReturnedDate DATE,
OrderReturnedEval VARCHAR(MAX))
```

The following table illustrates a representative sample of data:
The system is expected to handle 50 million orders a month over the next five years. You have been instructed by your Team Lead to follow best practices for storage and performance in the utilization of SPARSE columns. Which columns should you designate as SPARSE? To answer, mark each column as SPARSE or NOT SPARSE in the answer area.

**Hot Area:**

**Answer Area**

<table>
<thead>
<tr>
<th>Column Names</th>
<th>Sparse</th>
<th>Not Sparse</th>
</tr>
</thead>
<tbody>
<tr>
<td>OrderID</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>OrderDate</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>CustomerID</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>IsTaxable</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>SubTotal</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>TaxAmount</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Freight</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Correct Answer:

**Answer Area**

<table>
<thead>
<tr>
<th>Column Names</th>
<th>Sparse</th>
<th>Not Sparse</th>
</tr>
</thead>
<tbody>
<tr>
<td>OrderID</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>OrderDate</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>CustomerID</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>IsTaxable</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>SubTotal</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>TaxAmount</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Freight</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Explanation/Reference:

Sparse columns are ordinary columns that have an optimized storage for null values. Sparse columns reduce the space requirements for null values at the cost of more overhead to retrieve nonnull values. Consider using sparse columns when the space saved is at least 20 percent to 40 percent.

Use Sparse Columns

**Question 129**

Which isolation levels should you recommend?
You plan to deploy a database to SQL Azure.
You are designing two stored procedures named USP_1 and USP_2 that have the following requirements:
- Prevent data read by USP_1 from being modified by other active processes.
- Allow USP_2 to perform dirty reads.
You need to recommend the isolation level for the stored procedures.
The solution must maximize concurrency.
Which isolation levels should you recommend?
To answer, drag the appropriate isolation level to the correct stored procedure in the answer area.
Question 130
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:

<table>
<thead>
<tr>
<th>Data Types</th>
<th>Answer Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>int</td>
</tr>
<tr>
<td>Name</td>
<td>varchar</td>
</tr>
<tr>
<td>Code</td>
<td>char</td>
</tr>
<tr>
<td>ModifiedDate</td>
<td>date</td>
</tr>
<tr>
<td>smalldatetime</td>
<td></td>
</tr>
</tbody>
</table>

Explanation/Reference:

Data Types (Transact-SQL)

---

**Question 131**

What should you do?

You are the administrator for a SQL Server 2014 instance that stores the data for an online transaction processing sales system. The company takes full backups every week, differential backups on the days with no full backups, and hourly transaction backups. These backups are stored on a backup server in the company’s data center.

Every week, the company places the full backup on a tape and sends it to a third-party backup storage system. The company is worried that a disaster might occur that could destroy their computer center and cause them to lose orders. You need to determine the best method for providing the smallest amount of data loss and downtime without leasing or purchasing additional physical locations.

What should you do? More than one answer choice may achieve the goal. Select the BEST answer.

A. Set up SQL Server Always On with a SQL Azure database as a replica.
B. Set up SQL Server Always On by using a SQL Server on a Windows Azure Virtual Machine.
C. Put the differential backup on tape and send it to the third-party backup storage system.
D. Use the Microsoft SQL Server Backup to Microsoft Windows Azure Tool to direct all backups to a different geographical location.

Correct Answer: D

Explanation/Reference:

SQL Server 2012 was the first version to provide the ability to back up databases to the Cloud, and SQL Server 2014 improves on the process. Microsoft SQL Server Backup to Windows Azure Tool enables backup to Windows Azure Blob Storage and encrypts and compresses SQL Server backups stored locally or in the cloud.

Smart, Secure, Cost-Effective: SQL Server Back Up to Windows Azure - SQL Server Team Blog - Site Home - TechNet Blogs

---

**Question 132**

Which server should you recommend?

You have a SQL Server 2014 environment that includes four servers. The servers are configured as shown in the following table.

<table>
<thead>
<tr>
<th>Server name</th>
<th>SQL Server 2014 edition</th>
<th>SQL Server version</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server1</td>
<td>Enterprise</td>
<td>SQL Server 2014</td>
<td>A production Online Transaction Processing (OLTP) server</td>
</tr>
<tr>
<td>Server2</td>
<td>Web</td>
<td>SQL Server 2014</td>
<td>A test server</td>
</tr>
<tr>
<td>Server3</td>
<td>Standard</td>
<td>SQL Server 2012</td>
<td>A production report server</td>
</tr>
<tr>
<td>Server4</td>
<td>Express</td>
<td>SQL Server 2008 R2</td>
<td>A witness server</td>
</tr>
</tbody>
</table>

You plan to configure Policy-Based Management to enforce the following rules:

On Server1, enable SQL Server password policies and enable the default trace.

On Server3, ensure that the names of user-defined stored procedures begin with the prefix "usp_" and ensure that all databases use a case-sensitive collation.

You need to recommend which server you must configure as a Central Management Server.

Which server should you recommend? (Each correct answer presents a complete solution. Choose all that apply.)

A. Server1
B. Server2
C. Server3
D. Server4

Correct Answer: AC

Explanation/Reference:

Need Standard or Enterprise edition of SQL Server.
Question 133
What should you recommend?
You deploy a database by using SQL Server 2014. The database contains a table named Table1. You need to recommend a solution to track all of the deletions executed on Table1. The solution must minimize the amount of custom code required. What should you recommend?
A. Change data capture
B. Statistics
C. A trigger
D. Master Data Services

Correct Answer: A
Explanation/Reference:
Change data capture is designed to capture insert, update, and delete activity applied to SQL Server tables, and to make the details of the changes available in an easily consumed relational format. The change tables used by change data capture contain columns that mirror the column structure of a tracked source table, along with the metadata needed to understand the changes that have occurred.

About Change Data Capture (SQL Server)

Question 134
What should you do?
You are designing a SQL Server database for an order fulfillment system. You create a table named Sales.Orders by using the following script:

```
CREATE TABLE Sales.Orders
(
    OrderID int IDENTITY(1,1) NOT NULL PRIMARY KEY,
    OrderDate date NOT NULL,
    CustomerID int NOT NULL
)
```

Each order is tracked by using one of the following statuses:
Fulfilled
Shipped
Ordered
Received
You need to design the database to ensure that you can retrieve the status of an order on a given date. The solution must ensure that new statuses can be added in the future. What should you do?

More than one answer choice may achieve the goal. Select the BEST answer.
A. Implement change data capture on the Sales.Orders table.
B. To the Sales.Orders table, add a column named Status that will store the order status. Update the Status column as the order status changes.
C. Create a new table named Sales.OrderStatus that contains three columns named OrderID, StatusDate, and Status. Insert new rows into the table as the order status changes.
D. To the Sales.Orders table, add three columns named FulfilledDate, ShippedDate, and ReceivedDate. Update the value of each column from null to the appropriate date as the order status changes.

Correct Answer: B
Explanation/Reference:

Question 135
What should you include in the recommendation?
You have a server named Server1 that has 2 processors. You plan to deploy multiple instances of SQL Server 2014 to Server1. Each instance will have multiple databases. You need to recommend a method to allocate processor time to each database. What should you include in the recommendation?

More than one answer choice may achieve the goal. Select the BEST answer.
A. Resource Governor
B. Max Degree of Parallelism
C. Windows System Resource Manager (WSRM)
D. Processor affinity

Correct Answer: A
Explanation/Reference:
SQL Server Resource Governor is a feature than you can use to manage SQL Server workload and system resource consumption. Resource Governor enables you to specify limits on the amount of CPU, physical IO, and memory that incoming application requests can use.

Incorrect:
D: PROCESS AFFINITY
Enables hardware threads to be associated with CPUs.

Question 136
What should you include in the recommendation?
You have a SQL Server 2014 database named DB1. You plan to import a large number of records from a SQL Azure database to DB1. You need to recommend a solution to minimize the amount of space used in the transaction log during the import operation. What should you include in the recommendation?
A. The bulk-logged recovery model
B. The full recovery model
C. A new partitioned table
D. A new log file
E. A new file group

Correct Answer: A

Explanation/Reference:
Compared to the full recovery model, which fully logs all transactions, the bulk-logged recovery model minimally logs bulk operations, although fully logging other transactions. The bulk-logged recovery model protects against media failure and, for bulk operations, provides the best performance and least log space usage.

Note:
The bulk-logged recovery model is a special-purpose recovery model that should be used only intermittently to improve the performance of certain large-scale bulk operations, such as bulk imports of large amounts of data.

Recovery Models (SQL Server)

Question 137
What should you recommend?
You have a server that has SQL Server 2014 installed. The server contains 100 user databases.
You need to recommend a backup solution for the user databases.
The solution must meet the following requirements:
Perform a transaction log backup every hour.
Perform a full backup of each database every week.
Perform a differential backup of each database every day.
Ensure that new user databases are added automatically to the backup solution.
What should you recommend?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Policy-Based Management
B. A Data Definition Language (DDL) trigger
C. SQL Server Agent jobs
D. A maintenance plan

Correct Answer: D
Explanation/Reference:
Maintenance plans create a workflow of the tasks required to make sure that your database is optimized, regularly backed up, and free of inconsistencies.
Maintenance plans can be created to perform the following task (among others):
Back up the database and transaction log files. Database and log backups can be retained for a specified period. This lets you create a history of backups to be used if you have to restore the database to a time earlier than the last database backup. You can also perform differential backups.

Maintenance Plans

Question 138
Which method should you recommend?
You have a database hosted on SQL Server 2012 R2. The database contains 5 million rows.
You need to recommend a repeatable method to migrate the database to SQL Azure.
Which method should you recommend? More than one answer choice may achieve the goal.
Select the BEST answer.
A. Create a SQL Server Integration Services (SSIS) package, and then run the package.
B. Back up the database, and then restore the database.
C. Extract a data-tier application, and then import the application.
D. Generate scripts to create all of the all database objects and all of the data, and then execute the scripts by using SQL Azure.

Correct Answer: A
Explanation/Reference:
SQL Server Integration Services
Most flexibility
Data Transfer Efficiency: Good
 SSIS can be used to perform a broad range of data migration tasks. SSIS provides support for complex workflow and data transformation between the source and destination. It is a good choice to transfer of data for databases that require many changes to work on Microsoft Azure SQL Database. You can use SSIS data transfer packages with another mechanism for transferring the database schema, such as a Data-tier Application package. SSIS for Azure and Hybrid Data Movement
Incorrect:
A. D. Generate Scripts Wizard
Has explicit option for Azure SQL Database scripts generation
Data Transfer Efficiency: Poor
Good for smaller database

// Using the Generate Scripts wizard to migrate a SQL Server database to Azure SQL Database should be limited to:
Teams who have experience with the wizard.
Migrating simple databases that need few schema changes to run on Azure SQL Database. The scripts generated from the source database can be modified before being used to create the new version of the database on Azure SQL Database, but using a database project in the SQL Server Data Tools has richer support for making schema changes.
Migrating small databases that do not have much data. The wizard generates scripts that use insert statements instead of bulk copies to transfer the data. The insert statements can be throttled when the tables contain too much data, and are not as fast as bulk copies.

Question 139
What should you recommend?
You are designing a database named DB1.
Changes will be deployed to DB1 every Wednesday night.
You need to recommend a strategy to deploy the changes to DB1. The strategy must meet the following requirements:
The strategy must not disrupt backup operations.
DB1 must be online while the changes are deployed.
You must be able to undo quickly any changes made to objects.
What should you recommend?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Perform a copy-only database backup before the changes are deployed. If the deployment fails, restore the database to another server and recover the original objects from the restored database.
B. Create a database snapshot. If the deployment fails, recover the objects from the database snapshot.
C. Create a database snapshot. If the deployment fails, revert the database to the database snapshot.
D. Perform a full database backup before the changes are deployed. If the deployment fails, restore the database to another server and recover the original objects from the restored database.
Correct Answer: C
Explanation/Reference:
Database Snapshots (SQL Server)

Question 140
What should you include in the recommendation?
You are designing a monitoring application for a new SQL Server 2014 instance.
You need to recommend a solution to generate a report that displays the 10 most frequent wait types that occur for the instance.
What should you include in the recommendation?
More than one answer choice may achieve the goal. Select the BEST answer.
A. The SQL Server error log
B. The sys.dm_os_wait_stats dynamic management view
C. The DBCC SQLPERF(WAITSTATS) command
D. SQL Server Profiler
Correct Answer: B
Explanation/Reference:
sys.dm_os_wait_stats
Returns information about all the waits encountered by threads that executed. You can use this aggregated view to diagnose performance issues with SQL Server and also with specific queries and batches.
Columns include: waiting_tasks_count
Number of waits on this wait type. This counter is incremented at the start of each wait.
sys.dm_db_wait_stats (Windows Azure SQL Database)

Question 141
What should you include in the design?
You have four databases that are accessed by using an Online Transaction Processing (OLTP) application. The databases are stored on a server named SQL1 that has SQL Server 2014 installed.
You plan to deploy an additional server that has SQL Server 2014 installed.
You need to design a high-availability solution for the databases that meets the following requirements:
If SQL1 fails, the databases must be available.
Users must be able to run reports against a secondary copy of the databases.
What should you include in the design?
More than one answer choice may achieve the goal. Select the BEST answer.
A. AlwaysOn availability groups
B. Database mirroring
C. Log shipping
D. Failover Clustering
Correct Answer: A
Explanation/Reference:
The AlwaysOn Availability Groups feature is a high-availability and disaster-recovery solution that provides an enterprise-level alternative to database mirroring.
Introduced in SQL Server 2012, AlwaysOn Availability Groups maximizes the availability of a set of user databases for an enterprise. An availability group supports a failover environment for a discrete set of user databases, known as availability databases, that fail over together. Failover and Failover Models (AlwaysOn Availability Groups)

Question 142
What queries are being executed
You administer a SQL Server 2014 instance.
Users report that the SQL Server has seemed slow today. A large database was being restored for much of the day, which could be causing issues.
You want to write a query of the system views that will report the following:
Number of users that have a connection to the server
Whether a user’s connection is active
Whether any connections are blocked
What queries are being executed
Whether the database restore is still executing and, if it is, what percentage of the restore is complete.
Which system objects should you use in your query to best achieve this task?
A. sys.dm_exec_requests, sys.dm_exec_sessions, sys.objects
B. sys.dm_exec_sessions, sys.dm_exec_query_stats, sys.dm_exec_query_text, sys.objects
C. sys.sysprocesses, sys.dm_exec_query_text, sys.objects
D. sys.dm_exec_requests, sys.dm_exec_sessions, sys.dm_exec_query_text

Correct Answer: D
Explanation/Reference:
* sys.dm_exec_requests
  Returns information about each request that is executing within SQL Server.
* sys.dm_exec_sessions
  Returns one row per authenticated session on SQL Server. sys.dm_exec_sessions is a server- scope view that shows information about all active user connections and internal tasks. This information includes client version, client program name, client login time, login user, current session setting, and more.
* sys.dm_exec_query_text
  Returns the text of the SQL batch that is identified by the specified sql_handle. sys.dm_exec_requests (Transact-SQL) sys.dm_exec_sessions (Transact-SQL)
  Incorrect:
* sys.dm_exec_query_stats
  Returns aggregate performance statistics for cached query plans in SQL Server. The view contains one row per query statement within the cached plan, and the lifetime of the rows are tied to the plan itself.
* sys.objects
  Contains a row for each user-defined, schema-scoped object that is created within a database.

Question 143
What should you do?
You are troubleshooting an application that runs a query. The application frequently causes deadlocks.
You need to identify the isolation level used by the query when a deadlock occurs.
What should you do?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Query the sys.dm_exec_requests dynamic management view.
B. Create a trace in SQL Server Profiler that contains the Deadlock graph event.
C. Query the sys.dm_exec_sessions dynamic management view.
D. Enable trace flag 1222, and then view the SQL Server error log.
Correct Answer: C
Explanation/Reference:
* sys.dm_exec_sessions
  Returns one row per authenticated session on SQL Server. sys.dm_exec_sessions is a server- scope view that shows information about all active user connections and internal tasks.
  Include the column: transaction_isolation_level smallint
  Transaction isolation level of the session.
  0 = Unspecified
  1 = ReadUncommitted
  2 = ReadCommitted
  3 = Repeatable
  4 = Serializable
  5 = Snapshot
  Is not nullable.
  sys.dm_exec_sessions (Transact-SQL)

Question 144
What should you recommend?
You have a query that is used by a reporting dashboard.
Users report that the query sometimes takes a long time to run. You need to recommend a solution to identify what is causing the issue.
What should you recommend?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Set the blocked process threshold, and then run SQL Server Profiler.
B. Set the blocked process threshold, and then create an alert.
C. Enable trace flag 1204, and then create an alert.
D. Create a job that queries the sys.dm_os_waiting_tasks dynamic management view.
Correct Answer: B
Explanation/Reference:
Step 1: Turn on the blocked process report. This will look for any blocking taking 20 seconds or longer.
   --Make sure you don’t have any pending changes
   SELECT *
   FROM sys.configurations
   --GO
   exec sp_configure 'show advanced options', 1;
   GO
   RECONFIGURE
   GO
   exec sp_configure 'blocked process threshold (s)', 20;
   GO
   RECONFIGURE
   --GO
Step 2: Set up a trace to capture the blocked process report. Run it as a server side trace. blocked process threshold Server Configuration Option

**Question 145**
What should you use?
You have two SQL Server 2014 instances named SQLDev and SQLProd.
You plan to create a new database on SQLProd that will use SQL Server Authentication.
You need to ensure that when the new database is copied from SQLProd to SQLDev, users can connect to the database on SQLDev even if they do not have a login on the SQLDev instance.
What should you use?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Triggers
B. Contained database
C. SQL Server Analysis Services (SSAS) scripts
D. Extended Events
E. SQL Server Integration Services (SSIS) scripts

Correct Answer: B
Explanation/Reference:
A fully contained database includes all the settings and metadata required to define the database and has no configuration dependencies on the instance of the SQL Server Database Engine where the database is installed.

**Question 146**
What should you recommend?
You plan to create a database.
The database will be used by a Microsoft .NET application for a special event that will last for two days.
During the event, data must be highly available.
After the event, the database will be deleted.
You need to recommend a solution to implement the database while minimizing costs. The solution must not affect any existing applications.
What should you recommend?
More than one answer choice may achieve the goal. Select the BEST answer.
A. SQL Server 2014 Enterprise
B. SQL Server 2014 Standard
C. SQL Azure
D. SQL Server 2014 Express with Advanced Services

Correct Answer: B
Explanation/Reference:
Programmability (AMO, ADOMD.Net, OLEDB, XML/A, ASSL) supported by Standard and Enteprise editions only.
Reference: Features Supported by the Editions of SQL Server 2014

**Question 147**
What should you include in the design?
You are building a stored procedure for a Windows Azure SQL Database. The procedure will add multiple rows to a table.
You need to design the stored procedure to meet the following requirements:
If any of the new rows violates a table constraint, then no further additions must be attempted and all changes made by the stored procedure must be discarded.
If any errors occur, a row must be added to an audit table, and the original error must be returned to the caller of the stored procedure.
What should you include in the design?
A. An explicit transaction that has XACT_ABORT disabled
B. An implicit transaction that has error handling enabled
C. An explicit transaction that has error handling enabled
D. An implicit transaction that has XACT.ABORT enabled

Correct Answer: C
Explanation/Reference:

**Question 148**
What should you recommend?
You are creating a database that will store usernames and credit card numbers for an application.
You need to recommend a solution to store and reuse the credit card numbers in the database.
What should you recommend? More than one answer choice may achieve the goal. Select the BEST answer.
A. Data encryption
B. Transparent Data Encryption (TDE)
C. Encrypting File System (EPS)
D. Data hashing

Correct Answer: B
Explanation/Reference:
If we are going to encrypt credit card number for storage, then we should have Data Encryption Key (DEK) for encrypting the credit card number.
Question 149
What should you recommend?
You are creating a database that will store usernames and passwords for an application.
You need to recommend a solution to store the passwords in the database.
What should you recommend?
More than one answer choice may achieve the goal. Select the BEST answer.
A. One-way encryption
B. Encrypting File System (EFS)
C. Transparent Data Encryption (TDE)
D. Reversible encryption

Correct Answer: C
Explanation/Reference:
* Transparent Data Encryption (TDE) is a special case of encryption using a symmetric key. TDE encrypts an entire database using that symmetric key called the database encryption key. The database encryption key is protected by other keys or certificates which are protected either by the database master key or by an asymmetric key stored in an EKM module.
* SQL Server provides the following mechanisms for encryption:
  - Transact-SQL functions
  - Asymmetric keys
  - Symmetric keys
  - Certificates
  - Transparent Data Encryption
  - Transparent Data Encryption (TDE)

Question 150
What should you include in the recommendation?
You have a server named Server1 that has 16 processors.
You plan to deploy multiple instances of SQL Server 2014 to Server1.
You need to recommend a method to allocate processors to each instance.
What should you include in the recommendation?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Processor affinity
B. Windows System Resource Manager (WSRM)
C. Max Degree of Parallelism
D. Resource Governor

Correct Answer: A
Explanation/Reference:
CPU affinity management through Windows System Resource Manager is not recommended for SQL Server multi-instance management. Instead, use the processor affinity settings in SQL Server.

Server Properties (Processors Page)

Question 151
What should you include in the recommendation?
You have two databases named DB1 and DB2 that are located on the same server.
You plan to create a stored procedure named SProc1 in DB1.
SProc1 will query a table named Table2 in DB2.
You need to recommend a solution to ensure that SProc1 can access Table2 without granting users direct access to Table2.
What should you include in the recommendation?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Contained databases
B. Application roles
C. Cross-database ownership chaining
D. Digital certificates

Correct Answer: B
Explanation/Reference:
An application role is a database principal that enables an application to run with its own, user-like permissions. You can use application roles to enable access to specific data to only those users who connect through a particular application. Unlike database roles, application roles contain no members and are inactive by default.

Application Roles

Question 152
What should you do?
You are troubleshooting an application that runs a query. The application frequently causes deadlocks.
You need to identify which transaction causes the deadlock.
What should you do?
More than one answer choice may achieve the goal. Select the BEST answer.
A. Query the sys.dm_exec_sessions dynamic management view.
B. Query the sys.dm_exec_requests dynamic management view.
C. Create a trace in SQL Server Profiler that contains the Deadlock graph event
D. Create an extended events session to capture deadlock information.

Correct Answer: D
Explanation/Reference:
Troubleshooting deadlocks
You have been receiving reports from users indicating that certain applications are returning deadlock errors. To maximize the effectiveness of troubleshooting these problems, you decide to focus on the deadlocks that are hit most frequently. You create an Extended Events session that:
/ Configures deadlock event tracking for the session.
/ Specifies a target that aggregates based on an identifier for the deadlock.
You run the Extended Events session, and after additional deadlocks are reported you are able to obtain aggregated deadlock information, along with the complete XML deadlock graph for each source. Using this information you are able to pin point the most common deadlocks and start working on a solution.
Create an Extended Events Session
View Event Session Data

Question 153
What should you do?
You are the new database administrator for a SQL Server 2014 instance.
You conduct an assessment on the instance and determine that the auto create statistics setting on the database named DB1 has been turned off. You see no evidence that any maintenance has been occurring.
You want to set up monitoring to see if query performance is being affected.
You need to set up a monitoring process that will capture any cases where statistics could have been useful if they existed.
What should you do?
A. Create a SQL Server Agent job to execute DBCC SHOWSTATISTICS on each of the primary key columns in the database.
B. Use the missing_column_statistics extended event.
C. Query the sys.statistics system view to see all cases where the statistics were last needed.
D. Write a query using the sys.dm_db_missing_index_group_stats DMV Joining to sys.indexes, filtering on is_hypothetical.
Correct Answer: B
Explanation/Reference:
The Missing Column Statistics event class indicates that column statistics that could have been useful for the optimizer are not available. By monitoring the Missing Column Statistics event class you can determine if there are statistics missing for a column used by a query. This can cause the optimizer to choose a less efficient query plan than expected.
Missing Column Statistics Event Class

Question 154
Which method should you use?
You manage a SQL Server 2014 instance that contains a database named DB1.
Users report that some queries to DB1 take longer than expected. Although most queries run in less than one second, some queries take up to 20 seconds to run.
You need to view all of the performance statistics for each database file.
Which method should you use?
A. Query the sys.dm_os_tasks dynamic management view.
B. Query the sys.dm_os_performance_counters dynamic management view.
C. Query the sys.dm_db_missing_index_group_stats DMV Joining to sys.indexes, filtering on is_hypothetical.
D. Examine the Data File I/O pane in Activity Monitor.
Correct Answer: C
Explanation/Reference:
sys.dm_io_virtual_file_stats
Returns I/O statistics for data and log files.
sys.dm_io_virtual_file_stats (Transact-SQL)

Question 155
What should you recommend?
You have two SQL Server instances named SQLDev and SQLProd that have access to various storage media.
You plan to synchronize SQLDev and SQLProd.
You need to recommend a solution that meets the following requirements:
The database schemas must be synchronized from SQLDev to SQLProd.
The database on SQLDev must be deployed to SQLProd by using a package.
The package must support being deployed to Windows Azure SQL Database.
What should you recommend?
More than one answer choice may achieve the goal. Select the BEST answer.
A. A database snapshot
B. SQL Server Integration Services (SSIS)
C. Change data capture
D. A data-tier application
Correct Answer: B
Explanation/Reference:
* SSIS supports connections to SQL Database by using the ADO.NET provider. OLEDB is not supported at this time. You can build the SSIS package connecting to SQL Database and create the data flow tasks the same way as you would against a typical on-premise SQL Server. SSIS for Azure and Hybrid Data Movement
**Question 156**

What should you recommend?

Your network contains an Active Directory domain that has two groups named Group1 and Group2. The domain contains two SQL Server instances named SQLDev and SQLProd. Each SQL Server instance has access to various storage media. The SQL Server instances have a database that contains a table named Table1. Table1 contains a column named Column1. The value for Column1 can be either Value1 or Value2.

You need to recommend a solution to ensure that users in Group1 can retrieve only rows from Column1 that contain the value of Value1.

What should you recommend?

A. A dynamic management view  
B. Filegroups  
C. Snapshot isolation  
D. User-defined views

Correct Answer: D

Explanation/Reference:

A view is a virtual table whose contents are defined by a query. Like a table, a view consists of a set of named columns and rows of data. Unless indexed, a view does not exist as a stored set of data values in a database. The rows and columns of data come from tables referenced in the query defining the view and are produced dynamically when the view is referenced.

A view acts as a filter on the underlying tables referenced in the view.


Incorrect:

Not A: Dynamic management views and functions return server state information that can be used to monitor the health of a server instance, diagnose problems, and tune performance.


**Question 157**

Which code should you use?

You use SQL Server 2014 to maintain the data used by applications at your company. You want to execute two statements. You need to guarantee that either both statements succeed, or both statements fail together as a batch.

Which code should you use?

A. Option A  
B. Option B  
C. Option C  
D. Option D  
E. Option E
Correct Answer: D
Explanation/Reference:
Structure should be:
BEGIN TRY
BEGIN TRANSACTION
...
COMMIT TRANSACTION
END TRY
BEGIN CATCH
ROLLBACK TRANSACTION
END CATCH.
TRY...CATCH (Transact-SQL)

Question 158
What should you recommend?
You deploy a SQL Server instance named SQLProd that uses SQL Server 2014.
You need to recommend a solution to monitor the transactions that are running currently against SQLProd. The solution must minimize the amount of custom code required.
What should you recommend?
A. Statistics
B. A dynamic management view
C. A trigger
D. User-defined views

Correct Answer: B
Explanation/Reference:
Dynamic management views and functions return server state information that can be used to monitor the health of a server instance, diagnose problems, and tune performance.
Dynamic Management Views and Functions (Transact-SQL)

Question 159
Which SQL elements should you include in the recommendation?
You have a SQL Server 2014 instance named SQL1.
SQL1 creates error events in the Windows Application event log.
You need to recommend a solution that will run an application when SQL1 logs a specific error in the Application log.
Which SQL elements should you include in the recommendation? (Each correct answer presents part of the solution. Choose all that apply.)
A. A policy
B. A maintenance plan
C. An alert
D. A job
E. A trigger

Correct Answer: DE
Explanation/Reference:
Use a trigger that starts a job which executes the application.

Question 160
What should you do?
You have a database named DB1.
You plan to create a stored procedure that will insert rows into three different tables. Each insert must use the same identifying value for each table, but the value must increase from one invocation of the stored procedure to the next.
Occasionally, the identifying value must be reset to its initial value.
You need to design a mechanism to hold the identifying values for the stored procedure to use.
What should you do? More than one answer choice may achieve the goal. Select the BEST answer.
A. Create a sequence object that holds the next value in the sequence. Retrieve the next value by using the stored procedure. Reset the value by using an ALTER SEQUENCE statement as needed.
B. Create a sequence object that holds the next value in the sequence. Retrieve the next value by using the stored procedure. Increment the sequence object to the next value by using an ALTER SEQUENCE statement. Reset the value as needed by using a different ALTER SEQUENCE statement.
C. Create a fourth table that holds the next value in the sequence. At the end each transaction, update the value by using the stored procedure. Reset the value as needed by using an UPDATE statement.
D. Create an identity column in each of the three tables. Use the same seed and the same increment for each table. Insert new rows into the tables by using the stored procedure. Use the DBCC CHECKIDENT command to reset the columns as needed.

Correct Answer: A
Explanation/Reference:
* an application can obtain the next sequence number without inserting the row by calling the NEXT VALUE FOR function.
* ALTER SEQUENCE
Includes argument:
RESTART [ WITH <constant> ]
The next value that will be returned by the sequence object. If provided, the RESTART WITH value must be an integer that is less than or equal to the maximum and greater than or equal to the minimum value of the sequence object. If the WITH value is omitted, the sequence numbering restarts based
on the original CREATE SEQUENCE options.

* CREATE SEQUENCE

Creates a sequence object and specifies its properties. A sequence is a user-defined schema bound object that generates a sequence of numeric values according to the specification with which the sequence was created. The sequence of numeric values is generated in an ascending or descending order at a defined interval and can be configured to restart (cycle) when exhausted.

Sequence Numbers

Question 161
What should you recommend?
You have a SQL Server instance on a server named Server1.
You need to recommend a solution to perform the following tasks every week:
Rebuild the indexes by using a new fill factor.
Run a custom T-SQL command.
Back up the databases.
What should you recommend?
More than one answer choice may achieve the goal. Select the BEST answer.
A. A trigger
B. An alert
C. A maintenance plan
D. Windows PowerShell
E. A system policy

Correct Answer: C
Explanation/Reference:
* Maintenance plans create a workflow of the tasks required to make sure that your database is optimized, regularly backed up, and free of inconsistencies.

Maintenance Plans

Question 162
What should you recommend?
You need to recommend a solution for the error handling of USP_4. The solution must handle errors for nested stored procedures in the code for USP_4.
What should you recommend?
A. Use the @@ERROR variable in the nested stored procedures.
B. Use the @@ERROR variable in USP_4.
C. Use the RAISERROR command in the nested stored procedures.
D. Use the RAISERROR command in USP_4.

Correct Answer: C
Explanation/Reference:
* A stored procedure named USP_4 calls stored procedures in the Sales, Customers, and Inventory databases. The nested stored procedures read tables from the Sales, Customers, and Inventory databases. USP_4 uses an EXECUTE AS clause.


Question 163
What should you recommend replacing Table1?
You need to recommend a solution to minimize the amount of time it takes to execute USP_1.
What should you recommend replacing Table1?
A. A view
B. A temporary table
C. A table variable
D. A function

Correct Answer: A
Explanation/Reference:
* A stored procedure named USP_1 generates millions of rows of data for multiple reports. USP_1 combines data from five different tables from the Sales and Customers databases in a table named Table1.

CREATE TABLE (SQL Server)

Question 164
You need to design the database to ensure that you can retrieve the following information:
You are designing a Windows Azure SQL Database for an order fulfillment system. You create a table named Sales.Orders with the following script.

CREATE TABLE Sales.Orders
(
    OrderID int IDENTITY(1,1) NOT NULL PRIMARY KEY,
    OrderDate datetimeoffset NOT NULL,
    CustomerID int NOT NULL
);

Each order is tracked by using one of the following statuses:
Fulfilled
Shipped
Ordered
You need to design the database to ensure that you can retrieve the following information:
The current status of an order
The previous status of an order.
The date when the status changed.
The solution must minimize storage.

More than one answer choice may achieve the goal. Select the BEST answer.
A. To the Sales.Orders table, add three columns named Status, PreviousStatus and ChangeDate. Update rows as the order status changes.
B. Create a new table named Sales.OrderStatus that contains three columns named OrderID, StatusDate, and Status. Insert new rows into the table as the order status changes.
C. Implement change data capture on the Sales.Orders table.
D. To the Sales.Orders table, add three columns named FulfilledDate, ShippedDate, and ReceivedDate. Update the value of each column from null to the appropriate date as the order status changes.

Correct Answer: B

Explanation/Reference:

Question 165
What should you recommend?
You create a stored procedure that retrieves all of the rows from a table named Table1.
You need to recommend a solution to ensure that all of the statements in the stored procedure can be executed if another transaction is modifying rows in Table1 simultaneously.
What should you recommend?
A. Snapshot isolation
B. A database snapshot
C. Filegroups
D. Indexes

Correct Answer: A
Explanation/Reference:

Once snapshot isolation is enabled, updated row versions for each transaction are maintained in tempdb. A unique transaction sequence number identifies each transaction, and these unique numbers are recorded for each row version. The transaction works with the most recent row versions having a sequence number before the sequence number of the transaction. Newer row versions recorded after the transaction has begun are ignored by the transaction.

Transaction Isolation Levels

Question 166
Which change should you recommend?
You need to recommend a change to USP_3 to ensure that the procedure completes only if all of the UPDATE statements complete.
Which change should you recommend?
A. Set the XACT_ABORT option to off
B. Set the XACT_ABORT option to on.
C. Set the IMPLICIT_TRANSACTIONS option to off.
D. Set the IMPLICIT_TRANSACTIONS option to on.

Correct Answer: B
Explanation/Reference:

* Scenario: A stored procedure named USP_3 is used to update prices. USP_3 is composed of several UPDATE statements called in sequence from within a transaction. Currently, if one of the UPDATE statements fails, the stored procedure continues to execute.
* When SET XACT_ABORT is ON, if a Transact-SQL statement raises a run-time error, the entire transaction is terminated and rolled back.

Question 167
Which change should you recommend?
You need to recommend a change to USP_3 to ensure that the procedure continues to execute even if one of the UPDATE statements fails.
Which change should you recommend?
A. Set the XACT_ABORT option to off.
B. Set the XACT_ABORT option to on.
C. Set the IMPLICIT_TRANSACTIONS option to off.
D. Set the IMPLICIT_TRANSACTIONS option to on.

Correct Answer: A
Explanation/Reference:

* Scenario: A stored procedure named USP_3 is used to update prices. USP_3 is composed of several UPDATE statements called in sequence from within a transaction. Currently, if one of the UPDATE statements fails, the stored procedure continues to execute.
* 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 168
What should you include in the recommendation?
You need to recommend a solution to minimize the amount of time it takes to execute USP_5.
What should you include in the recommendation?
A. Enable cross-database chaining.
B. Use a server role to group all logins.
C. Use the EXECUTE AS clause in USP_5.
D. Copy USP_5 to each database.

Correct Answer: A
Explanation/Reference:
* scenario: A stored procedure named USP_5 changes data in multiple databases. Security checks are performed each time USP_5 accesses a database.
* Cross-database ownership chaining occurs when a procedure in one database depends on objects in another database. A cross-database ownership chain works in the same way as ownership chaining within a single database, except that an unbroken ownership chain requires that all the object owners are mapped to the same login account. If the source object in the source database and the target objects in the target databases are owned by the same login account, SQL Server does not check permissions on the target objects.

Question 169
What should you recommend?
You need to recommend a solution for the planned changes to the customer classifications.
What should you recommend? (Each correct answer presents part of the solution. Choose all that apply.)
A. Add a row to the Customers table each time a classification changes.
B. Add columns for each classification to the Customers table.
C. Add a table to track any changes made to the classification of each customer.
D. Add a column to the Classifications table to track the status of each classification.
E. Implement change data capture.

Correct Answer: CD
Explanation/Reference:
* scenario: You plan to change the way customers are classified. The new classifications will have four levels based on the number of orders. Classifications may be removed or added in the future.
Incorrect:
not E: Change data capture provides information about DML changes on a table and a database. By using change data capture, you eliminate expensive techniques such as user triggers, timestamp columns, and join queries.

Question 170
What should you include in the recommendation?
You need to recommend a solution to ensure that USP_4 adheres to the security requirements.
What should you include in the recommendation?
A. Enable SQL Server Audit.
B. Enable trace flags.
C. Configure data manipulation language (DML) triggers.
D. Enable C2 audit tracing.

Correct Answer: A
Explanation/Reference:
* Scenario: A stored procedure named USP_4 calls stored procedures in the Sales, Customers, and Inventory databases. The nested stored procedures read tables from the Sales, Customers, and Inventory databases. USP_4 uses an EXECUTE AS clause.
* Beginning in SQL Server 2008 Enterprise, you can set up automatic auditing by using SQL Server Audit.
SQL Server Audit (Database Engine)

Question 171
What should you include in the recommendation?
You need to recommend a solution to meet the security requirements of the junior database administrators.
What should you include in the recommendation?
A. A server role
B. A database role
C. A credential
D. A shared login

Correct Answer: C
Explanation/Reference:
* Scenario: A group of junior database administrators must be able to view the server state of the SQL Server instance that hosts the Sales database. The junior database administrators will not have any other administrative rights.
* Credentials provide a way to allow SQL Server Authentication users to have an identity outside of SQL Server. Credentials can also be used when a SQL Server Authentication user needs access to a domain resource, such as a file location to store a backup.
Create a Credential

Question 172
What should you include in the recommendation?
You need to recommend a disaster recovery strategy for the Inventory database.
What should you include in the recommendation?
A. Log shipping
B. SQL Server Failover Clustering
C. AlwaysOn availability groups
D. Peer-to-peer replication

Correct Answer: A
Explanation/Reference:
* Scenario:
  / You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Point Objective (RPO) of one hour.
  / A Datum Corporation has offices in Miami and Montreal.
  * SQL Server Log shipping allows you to automatically send transaction log backups from a primary database on a primary server instance to one or more secondary databases on separate secondary server instances. The transaction log backups are applied to each of the secondary databases individually.

About Log Shipping (SQL Server)

Question 173
What should you recommend replacing Table 1?
You need to recommend a solution to minimize the amount of time it takes to execute USP_1.
With what should you recommend replacing Table 1?
A. An indexed view
B. A function
C. A table variable
D. A temporary table

Correct Answer: D
Explanation/Reference:
Scenario: A stored procedure named USP_1 generates millions of rows of data for multiple reports. USP_1 combines data from five different tables from the Sales and Customers databases in a table named Table1.
About Table1 is created, the reporting process reads data from a table in the Products database and searches for information in Table1 based on input from the Products table. After the process is complete, Table1 is deleted.

CREATE TABLE (SQL Server)

Question 174
What should you include in the recommendation?
You need to recommend a disaster recovery solution for the Dev database.
What should you include in the recommendation?
A. The simple recovery model and full backups
B. The bulk-logged recovery model and full backups
C. The full recovery model, full backups, and differential backups
D. The full recovery model, full backups, and transaction log backups

Correct Answer: A
Explanation/Reference:
* Scenario: You must be able to recover data from the Dev database if data is lost accidentally. You have a Recovery Point Objective (RPO) of one day.
  * The simple recovery model provides the simplest form of backup and restore. This recovery model supports both database backups and file backups, but does not support log backups. Transaction log data is backed up only with the associated user data. The absence of log backups simplifies managing backup and restore. However, a database can be restored only to the end of the most recent backup.
  Incorrect:
  Not B: The bulk-logged recovery model is a special-purpose recovery model that should be used only intermittently to improve the performance of certain large-scale bulk operations, such as bulk imports of large amounts of data.

Recovery Models (SQL Server)

Question 175
What should you recommend?
You need to recommend a solution for the error handling of USP_3. The solution must minimize the amount of custom code required.
What should you recommend?
A. Use the @@ERROR variable in the nested stored procedures.
B. Use a TRY..CATCH block in the called stored procedures.
C. Use the @@ERROR variable in the called stored procedures.
D. Use the RAISERROR command in the nested stored procedures.

Correct Answer: B
Explanation/Reference:
* Scenario: A stored procedure named USP_3 is used to update prices. USP_3 is composed of several UPDATE statements called in sequence from within a transaction. Currently, if one of the UPDATE statements fails, the stored procedure continues to execute.

TRY...CATCH (Transact-SQL)

Question 176
What should you recommend?
You need to recommend a solution to minimize the amount of time it takes to execute USP_2.
What should you recommend?
A. A database snapshot  
B. A table variable  
C. A temporary table  
D. Snapshot isolation

Correct Answer: C  
Explanation/Reference: Scenario: A stored procedure named USP_2 is used to generate a product list. USP_2 takes several minutes to run due to locks on the tables the procedure accesses.

CREATE TABLE (SQL Server)

Question 177  
You need to create the CustomerAccess table to support the reporting and performance requirements. 
Select and Place:

Correct Answer:
Explanation/Reference:

Note:
* Scenario: During your investigation, you discover that the sales force reports are causing significant contention.
* Step 1: add filegroup
* Step 2: add file
* Step 3: create table on filegroup

CREATE TABLE [CustomerAccess] ( )

ALTER DATABASE [ProdDB] ADD FILE
(NAME = N'ProdDB_CustomerAccess', FILEN
AME = N'F:\Data \ProdDB_CustomerAccess.mdf') TO FILEGRO
UP [CustomerAccessFG]

CREATE TABLE [CustomerAccess]
ON [CustomerAccessFG] ( )

CustomerAccessID INT IDENTITY(1, 1)
CONSTRAINT [PK_CustomerAccessID] PRIMARY KEY
NOT NULL
LogoffDate DATETIME NOT NULL
LogonDate DATETIME NOT NULL

Question 178
Which code fragment should you use in each location in the command to complete one of the commands you will need to include in the job?
You need to create a job to automate some database maintenance tasks.
Which code fragment should you use in each location in the command to complete one of the commands you will need to include in the job? To answer, drag the appropriate lines of code to the correct locations in the command. Each line of code 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:
### UPDATE STATISTICS WITH FULLSCAN NORECOMPUTE

Update statistics by using `FULLSCAN` and `NORECOMPUTE`.

The following example updates the `Products` statistics in the `Product` table, forces a full scan of all rows in the `Product` table, and turns off automatic statistics for the `Products` statistics.

```sql
USE AdventureWorks2012;
GO
UPDATE STATISTICS Production.Product(Products)
WITH FULLSCAN, NORECOMPUTE;
GO
```

#### Question 179

Which function should you assign to each server?
You need to distribute functionality across the three servers.

Which function should you assign to each server? To answer, drag the appropriate functions to the correct servers. Each function 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 180
The business requires a satellite office to have a local copy of the data to report against.
The business requires a satellite office to have a local copy of the data to report against.
You want to implement a solution to support the requirements. You need to establish a new Availability Group between the two servers.
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:
Notes:
- Scenario: The current nightly backups have been failing due to insufficient space on the available drives and manual drive cleanup often needing to happen to get past the errors. Additional space will not be made available for backups on the HQ or satellite servers.
EXEC master.dbo.sp_addlinkedserver @server = N'SATELLITE_SERVER', @srvproduct=N'SQ L Server'

CREATE ENDPOINT [hadr_endpoint]
  STATE = STARTED AS TCP (LISTENER_PORT = 5022)
  FOR DATA_MIRRORING (ROLE = ALL)

ALTER AVAILABILITY GROUP [ProdDB_AG] JOIN;

CREATE AVAILABILITY GROUP [ProdDB_AG]
  FOR DATABASE [ProdDB] REPLICA ON
  N'MQ_Server' WITH
  (ENDPOINT_URL = N'TCP://
    MQ_Server.OURomain.com:5022',
   FAILOVER_MODE = MANUAL,
   AVAILABILITY_MODE = ASYNCHRONOUS_COMMIT,
   SECONDARY_ROLE(ALLOW_CONNECTIONS = READ_ONLY)),
  N'Satellite_Server' WITH
  (ENDPOINT_URL = N'TCP://
    Satellite_Server.OURomain.com:5022',
   FAILOVER_MODE = MANUAL,
   AVAILABILITY_MODE = ASYNCHRONOUS_COMMIT,
   SECONDARY_ROLE(ALLOW_CONNECTIONS = READ_ONLY));

CREATE ENDPOINT sql_endpoint
  STATE = STARTED
  AS HTTP( PATH = '/alwayson',
            AUTHENTICATION = ( INTEGRATED ),
            PORTS = ( CLEAR ),
            SITE = 'SERVER');
Note:

* The following table lists the basic tasks involved in creating and configuring an availability group and indicates which Transact-SQL statements to use for these tasks. The AlwaysOn Availability Groups tasks must be performed in the sequence in which they are presented in the table.

(step 2) Create database mirroring endpoint (once per SQL Server instance)

```
CREATE ENDPOINT endpointName … FOR DATABASE_MIRRORING
```

(step 3) Create availability group

```
CREATE AVAILABILITY GROUP
```

(step 4) Join secondary replica to availability group

```
ALTER AVAILABILITY GROUP group_name JOIN
```

(step 5-6)

Prepare the secondary database

```
BACKUP and RESTORE.
```

Create backups on the server instance that hosts the primary replica. Restore backups on each server instance that hosts a secondary replica, using RESTORE WITH NORECOVERY.

(step 7)

Start data synchronization by joining each secondary database to availability group

```
ALTER DATABASE database_name SET HADR AVAILABILITY GROUP = group_name
```

Reference: Create an Availability Group (Transact-SQL)

**Question 181**

Which two database options should you change to meet the requirements?

You need to change the ProdDB database.

Which two database options should you change to meet the requirements? Each correct answer presents part of the solution. Choose two.

A. CONTAINS FILESTREAM
B. Change recovery model to FULL
C. CONTAINMENT = PARTIAL
D. Change recovery model to BULK_LOGGED
E. COLLATE IN MEMORY
F. CONTAINS MEMORY OPTIMIZED DATA

**Correct Answer: EF**

**Explanation/Reference:**

* Scenario: To help with performance, the database needs to be modified so that it can support in-memory data, specifically for the Product table, which the CIO has indicated should be a memory-optimized table.

Collations and Code Pages
Question 182
Which two actions should you perform?

You need to configure security on the Product table for customer support representatives.
Which two actions should you perform? Each correct answer presents part of the solution. Choose two.
A. Create a view called CustProduct that includes columns ProductID, ProductName, ProductDescription, QuantityOnHand, ProductPrice, ProductCost, and ProductSupplierID.
B. GRANT ALL on CustProduct TO OurDomainCustomerSupport
C. Create a user-defined data type called CustProduct that includes columns ProductID, ProductName, ProductDescription, and ProductPrice.
D. Create a view called CustProduct that includes columns ProductID, ProductName, ProductDescription, QuantityOnHand, and ProductPrice.
E. GRANT SELECT on CustProduct TO OurDomainCustomerSupport.
F. GRANT SELECT on CustProduct TO public.

Correct Answer: AE
Explanation/Reference:
Give access to CustomerSupport through a view. The view must include all these columns (refer to scenario).
GRANT Object Permissions (Transact-SQL)

Question 183
Which command should you use only during the monthly maintenance window?

You are designing your maintenance plan.
Which command should you use only during the monthly maintenance window?
A. DBCC INDEXDEFRAG (ProdDB, SalesOrderDetail, SODIndex)
B. ALTER INDEX SODIndex ON SalesOrderDetail REORGANIZE
C. ALTER INDEX SODIndex ON SalesOrderDetail REBUILD
D. ALTER INDEX SODIndex ON SalesOrderDetail REBUILD WITH (ONLINE * ON)

Correct Answer: D
Explanation/Reference:
* Scenario: Database Issues
The current database does not perform well. Additionally, a recent disk problem caused the system to go down, resulting in lost sales revenue. In reviewing the current system, you found that there are no automated maintenance procedures. The database is severely fragmented, and everyone has read and write access.
* After the degree of fragmentation is known, use the following table to determine the best method to correct the fragmentation.

<table>
<thead>
<tr>
<th>avg_fragmentation_in_percent value</th>
<th>method</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 5% and &lt;= 30%</td>
<td>ALTER INDEX REORGANIZE</td>
</tr>
<tr>
<td>&gt; 30%</td>
<td>ALTER INDEX REBUILD WITH (ONLINE = ON)</td>
</tr>
</tbody>
</table>

ALTER INDEX (Transact-SQL)

Question 184
Which two actions should you perform?

You need to implement a backup strategy to support the requirements.
Which two actions should you perform? Each correct answer presents part of the solution. Choose two.
A. Create a credential called MyCredential on SQL Server by using a Windows domain account and password.
B. Schedule a full backup by using the command BACKUP DATABASE ProdDB TO DISK...
C. Create a share on your Windows Azure site by using your Windows Azure storage account information, and grant permission to the SQL Server service login.
D. Schedule a full backup by using the command BACKUP DATABASE ProdDB TO URL ... WITH CREDENTIAL=N’MyCredential’
E. Create a share on the hot standby site and grant permission to the SQL Server service login.
F. Create a credential called MyCredential on SQL Server, using MyStorageAccount for the storage account name and StorageAccountKey for the access key.
G. Schedule a full backup by using the command BACKUP DATABASE ProdDB TO SHARE ...

Correct Answer: CD
Explanation/Reference:
* Scenario: The current nightly backups have been failing due to insufficient space on the available drives and manual drive cleanup often needing to happen to get past the errors. Additional space will not be made available for backups on the HQ or satellite servers.
* Need to store files in the cloud.
* Manage your backups to Windows Azure: Using the same methods used to backup to DISK and TAPE, you can now back up to Windows Azure storage by Specifying URL as the backup destination. You can use this feature to manually backup or configure your own backup strategy like you would for a local storage or other off-site options. This feature is also referred to as SQL Server Backup to URL.
SQL Server Managed Backup to Windows Azure

Question 185
Which three actions should you perform?

You need to implement changes to the system to reduce contention and improve performance of the SalesOrderDetail table.
Which three actions should you perform? Each correct answer presents part of the solution.
Choose three.
A. Use (SNAPSHOT) hints in the report queries
B. ALTER DATABASE [ProdDB] SET READ_COMMITTED_SNAPSHOT ON
C. ALTER DATABASE [ProdDB] SET READ_COMMITTED_SNAPSHOT OFF
D. SET TRANSACTION ISOLATION LEVEL SNAPSHOT
E. Use (TABLOCK) hints in the report queries
F. SET TRANSACTION ISOLATION LEVEL SERIALIZABLE
G. ALTER DATABASE [ProdDB] SET ALLOW_SNAPSHOT_ISOLATION ON
H. Use (SNAPSHOT) hints in the update statements

Correct Answer: ABF

Explanation/Reference:
* Scenario:
The SalesOrderDetail table holds the details about each sale. It is in the Sales schema owned by the SalesStaff Windows group.
This table is constantly being updated, inserted into, and read.
Regardless of which office runs a sales force report, the SalesOrderDetail table should only return valid, committed order data; any orders not yet committed should be ignored.

* READ_COMMITTED_SNAPSHOT { ON | OFF }
ON Enables Read-Committed Snapshot option at the database level. When it is enabled, DML statements start generating row versions even when no transaction uses Snapshot Isolation. Once this option is enabled, the transactions specifying the read committed isolation level use row versioning instead of locking. When a transaction runs at the read committed isolation level, all statements see a snapshot of data as it exists at the start of the statement.
OFF Turns off Read-Committed Snapshot option at the database level. Transactions specifying the READ COMMITTED isolation level use locking.

Question 186
Which code should you use?
You need to write code that will allow the sales force to retrieve data for their reports with the least amount of effort.
Which code should you use?

Correct Answer: A

Explanation/Reference:
* Scenario:
During your investigation, you discover that the sales force reports are causing significant contention.
Sales people at both the headquarters office and the satellite office must generate reports that read from the Product and SalesOrderDetail tables. No updates or inserts are ever made by sales people. These reports are run at random times and there can be no reporting downtime to refresh the data set except during the monthly maintenance window. The reports that run from the satellite office are process intensive queries with large data sets.
Regardless of which office runs a sales force report, the SalesOrderDetail table should only return valid, committed order data; any orders not yet committed should be ignored.
Question 187
What should you recommend changing?
You need to recommend changes to the ERP application to resolve the search issue. The solution must minimize the impact on other queries generated from the ERP application.
What should you recommend changing?
A. The collation of the Products table
B. The index on the ProductName column
C. The collation of the ProductName column
D. The data type of the ProductName column
Correct Answer: C
Explanation/Reference:

Question 188
What should you recommend?
You need to recommend a solution that addresses the concurrency requirement.
What should you recommend?
A. Break each stored procedure into two separate procedures, one that changes Sales.Table1 and one that changes Sales.Table2.
B. Make calls to Sales.Proc1 and Sales.Proc2 synchronously.
C. Call the stored procedures in a Distributed Transaction Coordinator (DTC) transaction.
D. Modify the stored procedures to update tables in the same order for all of the stored procedures.
Correct Answer: D
Explanation/Reference:
* Concurrency Requirements
You must reduce the likelihood of deadlocks occurring when Sales.Proc1 and Sales.Proc2 execute.

Question 189
What should you include in the recommendation?
You need to recommend a solution that addresses the backup issue. The solution must minimize the amount of development effort.
What should you include in the recommendation?
A. Indexed views
B. Filegroups
C. Table partitioning
D. Indexes
Correct Answer: B
Explanation/Reference:
* Backup Issues
Customers who have large amounts of historical purchase order data report that backup time is unacceptable.
* For very large databases (and by that, I mean, at least 500Gb, but more like 5-10Gb or more), it can become too expensive to regularly run a straight full backup. So, where needed, you can choose to backup smaller pieces of the database by choosing to back up one of the files or file groups that make up a database.
Using Filegroups and Files to Store Data

Question 190
What should you recommend?
You need to recommend a solution that addresses the security requirement.
What should you recommend?
A. Revoke user permissions on the tables. Create stored procedures that manipulate data. Grant the users the EXECUTE permission on the stored procedures.
B. Grant the users the SELECT permission on the tables. Create views that retrieve data from the tables. Grant the users the SELECT permission on the views.
C. Deny the users SELECT permission on the tables. Create views that retrieve data from the tables. Grant the users the SELECT permission on the views.
D. Deny the users the SELECT permission on the tables. Create stored procedures that manipulate data. Grant the users the EXECUTE permission on the stored procedures.
Correct Answer: C
Explanation/Reference:
* Security Requirements
You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

Question 191
What should you include in the recommendation?
You need to recommend a solution that addresses the file storage requirements.
What should you include in the recommendation?
A. FileStream
B. FileTable
C. The varbinary data type
D. The image data type

Correct Answer: B

Explanation/Reference:
* Scenario: File Storage Requirements
The ERP database stores scanned documents that are larger than 2 MB. These files must only be accessed through the ERP application. File access must have the best possible read and write performance.
* FileTables remove a significant barrier to the use of SQL Server for the storage and management of unstructured data that is currently residing as files on file servers. Enterprises can move this data from file servers into FileTables to take advantage of integrated administration and services provided by SQL Server. At the same time, they can maintain Windows application compatibility for their existing Windows applications that see this data as files in the file system.

**FileTables (SQL Server)**

**Question 192**
What should you include in the recommendation?
You need to recommend a solution that addresses the installation issues.
What should you include in the recommendation?
A. Windows logins
B. Server roles
C. Contained users
D. Database roles

Correct Answer: C

Explanation/Reference:
* Scenario: Installation Issues
The current version of the ERP application requires that several SQL Server logins be set up to function correctly. Most customers set up the ERP application in multiple locations and must create logins multiple times.
* Creating contained users enables the user to connect directly to the contained database. This is a very significant feature in high availability and disaster recovery scenarios such as in an AlwaysOn solution. If the users are contained users, in case of failover, people would be able to connect to the secondary without creating logins on the instance hosting the secondary. This provides an immediate benefit.

**Contained Databases**

**Question 193**
What should you include in the recommendation?
You need to recommend a solution that reduces the time it takes to import the supplier data.
What should you include in the recommendation?
A. Enable instant file initialization.
B. Reorganize the indexes.
C. Disable Resource Governor.
D. Enable Auto Update Statistics.

Correct Answer: C

Explanation/Reference:
* The ERP application relies on an import process to load supplier data. The import process updates thousands of rows simultaneously, requires exclusive access to the database, and runs daily.

**Resource Governor**

**Question 194**
What should you include in the recommendation?
You need to recommend a solution that meets the data recovery requirement.
What should you include in the recommendation?
A. A differential backup
B. A transaction log backup
C. Snapshot isolation
D. A database snapshot

Correct Answer: D

Explanation/Reference:
* How Database Snapshots Work

**Question 195**
What should you include in the recommendation?
You need to recommend a solution that addresses the index fragmentation and index width issue.
What should you include in the recommendation? (Each correct answer presents part of the solution. Choose all that apply.)
A. Change the data type of the lastModified column to smalldatetime.
B. Remove the lastModified column from the clustered index.
C. Change the data type of the modifiedBy column to tinyint.
D. Change the data type of the id column to bigint.
E. Remove the modifiedBy column from the clustered index.
F. Remove the id column from the clustered index.
Correct Answer: BE
Explanation/Reference:
Scenario: Index Fragmentation Issues
Customers discover that clustered indexes often are fragmented. To resolve this issue, the customers defragment the indexes more frequently. All of the tables affected by fragmentation have the following columns that are used as the clustered index key:

<table>
<thead>
<tr>
<th>Column</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>uniqueidentifier</td>
</tr>
<tr>
<td>lastModified</td>
<td>datetime</td>
</tr>
<tr>
<td>modifiedBy</td>
<td>varchar(200)</td>
</tr>
</tbody>
</table>

**Question 196**
What should you recommend?
You need to recommend a solution that resolves the missing data issue. The solution must minimize the amount of development effort.
What should you recommend?
A. Denormalize the Products table.
B. Denormalize the OrderDetails table.
C. Normalize the OrderDetails table.
D. Normalize the Products table.

Correct Answer: D
Explanation/Reference:
* Scenario:
/ Missing Data Issues
Customers report that when they make a price change in the Products table, they cannot retrieve the price that the item was sold for in previous orders.
The current database schema contains a table named OrderDetails. The OrderDetails table contains information about the items sold for each purchase order. OrderDetails stores the product ID, quantities, and discounts applied to each product in a purchase order. The product price is stored in a table named Products.

**Question 197**
Which isolation level should recommend?
You need to recommend an isolation level for usp_UpdateOrderDetails.
Which isolation level should recommend?
A. Read committed
B. Repeatable read
C. Read uncommitted
D. Serializable

Correct Answer: B
Explanation/Reference:
* Scenario: Database will also contain a stored procedure named usp_UpdateOrderDetails. The stored procedure is used to update order information.
The stored procedure queries the Orders table twice each time the procedure executes. The rows returned from the first query must be returned on the second query unchanged along with any rows added to the table between the two read operations.
* REPEATABLE READ
Specifies that statements cannot read data that has been modified but not yet committed by other transactions and that no other transactions can modify data that has been read by the current transaction until the current transaction completes.
Transaction Isolation Levels

**Question 198**
What should you recommend?
You need to recommend a solution to synchronize Database2 to App1_Db1.
What should you recommend?
A. Change data capture
B. Snapshot replication
C. Master Data Services
D. Transactional replication

Correct Answer: D
Explanation/Reference:
* Scenario: Data from Database2 will be accessed periodically by an external application named Application1. The data from Database2 will be sent to a database named App1_Db1 as soon as changes occur to the data in Database2.
* All data in Database2 is recreated each day and does not change until the next data creation process.
Transactional Replication

**Question 199**
What should you include in the recommendation?
You need to recommend a database reporting solution that meets the business requirements.
What should you include in the recommendation?
A. Data collection
B. Performance Monitor
C. A maintenance plan
D. A dynamic management view

Correct Answer: A
Explanation/Reference:
* Scenario: System administrators must be able to run real-time reports on disk usage.
* The data collector provides an historical report for each of the System Data collection sets. Each of the following reports use data that is stored in the management data warehouse:
  - Disk Usage Summary
  - Query Statistics History
  - Server Activity History
You can use these reports to obtain information for monitoring system capacity and troubleshooting system performance.

System Data Collection Set Reports

Question 200
What should you include in the recommendation?
You need to recommend a solution for the deployment of SQL Server 2014. The solution must meet the business requirements.
What should you include in the recommendation?
A. Create a new instance of SQL Server 2014 on the server that hosts the SQL Server 2008 instance.
B. Upgrade the existing SQL Server 2008 instance to SQL Server 2014.
C. Deploy two servers that have SQL Server 2014 installed and implement Failover Clustering.
D. Deploy two servers that have SQL Server 2014 installed and implement database mirroring.

Correct Answer: C
Explanation/Reference:
* Scenario: The databases must be available if the SQL Server service fails.
  - Failover Clustering Overview
  - Windows Server Failover Clustering (WSFC) with SQL Server

Question 201
What should you include in the recommendation?
You need to recommend a solution to improve the performance of usp.UpdateInventory. The solution must minimize the amount of development effort.
What should you include in the recommendation?
A. A table variable
B. A common table expression
C. A subquery
D. A cursor

Correct Answer: A
Explanation/Reference:
* Scenario: Database2 will contain a stored procedure named usp_UpdateInventory. Usp_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies.
  - A table variable can be very useful to store temporary data and return the data in the table format. table
  - Example: The following example uses a self-join to find the products that are supplied by more than one vendor. Because this query involves a join of the ProductVendor table with itself, the ProductVendor table appears in two roles. To distinguish these roles, you must give the ProductVendor table two different aliases (pv1 and pv2) in the FROM clause. These aliases are used to qualify the column names in the rest of the query. This is an example of the self-join Transact-SQL statement:
    USE AdventureWorks2008R2;
    GO
    SELECT DISTINCT pv1.ProductID, pv1.VendorID
    FROM Purchasing.ProductVendor pv1
    INNER JOIN Purchasing.ProductVendor pv2
    ON pv1.ProductID = pv2.ProductID
    AND pv1.VendorID != pv2.VendorID
    ORDER BY pv1.ProductID

Incorrect:
Not B: Using a CTE offers the advantages of improved readability and ease in maintenance of complex queries. The query can be divided into separate, simple, logical building blocks. These simple blocks can then be used to build more complex, interim CTEs until the final result set is generated.

Question 202
What should you include in the recommendation?
You need to recommend a disk monitoring solution that meets the business requirements.
What should you include in the recommendation?
A. An audit
B. A dynamic management view
C. A maintenance plan
D. A SQL Server Agent alert

Correct Answer: B
Explanation/Reference:
Question 203
What should you include in the recommendation?
You need to recommend a solution for Application1 that meets the security requirements.
What should you include in the recommendation?
A. Signed stored procedures
B. Certificate Authentication
C. Encrypted columns
D. Secure Socket Layer (SSL)

Correct Answer: A
Explanation/Reference:
* Scenario:
  /Data from Database2 will be accessed periodically by an external application named Application1
  Application developers must be denied direct access to the database tables. Applications must be denied direct access to the tables.
  Tutorial: Signing Stored Procedures with a Certificate

Question 204
What should you recommend?
You need to recommend a solution to allow application users to perform tables. The solution must meet the business requirements.
What should you recommend?
A. Create a Policy-Based Management Policy.
B. Create a user-defined database role and add users to the role.
C. Create stored procedures that use EXECUTE AS clauses.
D. Create functions that use EXECUTE AS clauses.

Correct Answer: D
Explanation/Reference:
* c Clause (Transact-SQL)
In SQL Server you can define the execution context of the following user-defined modules: functions (except inline table-valued functions), procedures, queues, and triggers.
Using EXECUTE AS in Modules

Question 205
What should you include in the recommendation?
You need to recommend a feature to support your backup solution.
What should you include in the recommendation?
A. Transparent Data Encryption (TDE)
B. Column-level encryption
C. An NTFS file permission
D. A Secure Sockets Layer (SSL)

Correct Answer: A
Explanation/Reference:
* Scenario: · You must encrypt the backup files to meet regulatory compliance requirements. The encryption strategy must minimize changes to the databases and to the applications.
  * Transparent data encryption (TDE) performs real-time I/O encryption and decryption of the data and log files. The encryption uses a database encryption key (DEK), which is stored in the database boot record for availability during recovery.
Transparent Data Encryption (TDE)

Question 206
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 207
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:
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.ShoppingCart (UserId int NOT NULL INDEX ix_UserId NONCLUSTERED HASH WITH (BUCKET_COUNT=1000000),
  ShoppingCartId int NOT NULL PRIMARY KEY NONCLUSTERED, UserId int NOT NULL INDEX ix_UserId NONCLUSTERED HASH WITH (BUCKET_COUNT=1000000),
  CreatedDate DATETIME2 NOT NULL, TotalPrice MONEY)
  WITH (MEMORY_OPTIMIZED=ON,
  DURABILITY=SCHEMA_ONLY)
  ON [CoffeeTransactions_Inmem]
  GO

Question 208

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 209
What should you recommend?
During performance testing, you discover that database INSERT operations against the Inventory table are slow. You need to recommend a solution to reduce the amount of time it takes to complete the INSERT operations.
What should you recommend?
A. Partition the nonclustered index.
B. Partition the Inventory table snapshot replication
C. Create a column store index Master Data Services
D. Drop the clustered index change data capture

Correct Answer: A
Explanation/Reference:
Scenario: Database2 will contain a table named Inventory. Inventory will contain over 100 GB of data. The Inventory table will have two indexes: a
clustered index on the primary key and a nonclustered index. The column that is used as the primary key will use the identity property.

**Question 210**
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>Create a clustered columnstore index.</td>
</tr>
<tr>
<td>Create a clustered columnstore index.</td>
<td>Create a partitioning scheme for use by the table.</td>
</tr>
<tr>
<td>Create a partitioning scheme for use by the</td>
<td>Use an ALTER INDEX REBUILD on a specific partition.</td>
</tr>
<tr>
<td>table.</td>
<td>Use an ALTER INDEX REORGANIZE on a specific partition.</td>
</tr>
</tbody>
</table>

Correct Answer:

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

**Explanation/Reference:**

* 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 in 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 day’s most 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 211**
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:
Note:
* 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:
  ```sql
  CREATE PROCEDURE dbo.OrderInsert(@OrdNo integer, @CustCode nvarchar(5))
  WITH native_compilation, schemabinding, execute as owner
  AS BEGIN
    WITH (transaction isolation level = read committed, language = N'English')
    DECLARE @OrdDate datetime = getdate();
    INSERT INTO dbo.Ord (OrdNo, CustCode, OrdDate) VALUES (@OrdNo, @CustCode, @OrdDate);
  END
  GO
  ```
  - 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, it 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.
  - 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 212**
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 213**
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 214**
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 215**
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.
Question 216
What should you do?
You need to implement security for the restore and audit process. What should you do?
A. Grant the COFECORPAuditors group ALTER ANY CONNECTION and SELECT ALL USER SECURABLES permissions. Grant the COFECORP StoreAgent group ALTER ANY CONNECTION and IMPersonate ANY LOGIN permissions.
B. Grant the COFECORPAuditors group CONNECT ANY DATABASE and IMPersonate ANY LOGIN permissions. Grant the COFECORP StoreAgent group CONNECT ANY DATABASE and SELECT ALL USER SECURABLES permissions.
C. Grant the COFECORPAuditors group ALTER ANY CONNECTION and IMPersonate ANY LOGIN permissions. Grant the COFECORP StoreAgent group ALTER ANY CONNECTION and SELECT ALL USER SECURABLES permissions.
D. Grant the COFECORPAuditors group CONNECT ANY DATABASE and SELECT ALL USER SECURABLES permissions. Grant the COFECORP StoreAgent group CONNECT ANY DATABASE and IMPersonate ANY LOGIN permissions.
Correct Answer: A
Explanation/Reference:

Question 217
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.
Question 218
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 219
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 220
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 221
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 222
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 223
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 sysname.
D. @items varbinary(max).
E. @items xml.
F. @schema xml.
Correct Answer: CE

Explanation/Reference:

Question 224
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
@items XML (ValidateOrder)
The following is the XSD file used to create the ValidateOrder schema collection:
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 225
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 226
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 227
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 (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)
A. Option A
B. Option B
C. Option C
D. Option D
Correct Answer: C
Explanation/Reference:

Question 228
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 229
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 230
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 231
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 232
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 233
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:

Question 234
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 235
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 236
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 237
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
A. Option A
B. Option B
C. Option C
A. Option A

Correct Answer: D
Explanation/Reference:

Question 238
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?

A. CREATE FUNCTION ConvertToText (@wordResume varchar(8000))
   RETURNS varbinary(max)
   AS EXTERNAL NAME SqlConversions.Conversions.ConvertToText;

B. CREATE PROCEDURE ConvertToText (@wordResume varbinary(max))
   AS EXTERNAL NAME SqlConversions.Conversions.ConvertToText;

C. CREATE PROCEDURE ConvertToText (@wordResume varchar(8000))
   AS EXTERNAL NAME SqlConversions.Conversions.ConvertToText;

D. CREATE FUNCTION ConvertToText (@wordResume varbinary(max))
   RETURNS varchar(8000)
   AS EXTERNAL NAME SqlConversions.Conversions.ConvertToText;

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

Correct Answer: D
Explanation/Reference:

Question 239
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 240
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 241
Which statement should you execute?
You need to implement a solution that meets the security requirements.
Which statement should you execute?
Question 242
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 243
Which SQL Server feature should you use?
You need to identify the cause of the page split issues.
A. DBCC REINDEX
B. SQL Server Profiler
C. Extended Events
D. DBCC TRACEOFF
Correct Answer: C
Explanation/Reference:

Question 244
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 245
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. 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:

Question 246
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

Correct Answer: B
Explanation/Reference:

Question 247
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: 0x9D876A3468B911E1BA4CFBCB4724019B
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?
A. RESTORE CERTIFICATE DBCERT:
   FROM FILE='DBCERT.CER'
   WITH PRIVATE KEY (FILE = 'c:\DBCERT.KEY',
   DECRYPTION BY PASSWORD = 'SecretPassword');
B. CREATE CERTIFICATE PRODUCTSCERT
   ENCRYPTION BY PASSWORD = 'SecretPassword'
   WITH SUBJECT = 'SecurityCertificate';
C. RESTORE CERTIFICATE DBCERT:
   FROM FILE='PRODUCTSDBCERT.CER'
   WITH PRIVATE KEY (FILE = 'c:\PRODUCTSCERT.KEY',
   DECRYPTION BY PASSWORD = 'SecretPassword');
Question 248
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:
Explanation:

Question 249
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;
GO
CREATE DATABASE ENCRYPTION KEY WITH ALGORITHM = TRIPLE_DES_3KEY ENCRYPTION BY SERVER CERTIFICATE DBCERT;
GO
ALTER DATABASE PRODUCTSDB SET ENCRYPTION ON;
GO
B. USE PRODUCTSDB;
GO
CREATE DATABASE ENCRYPTION KEY WITH ALGORITHM = TRIPLE_DES_3KEY ENCRYPTION BY SERVER CERTIFICATE PRODUCTSCERT;
GO
ALTER DATABASE PRODUCTSDB SET ENCRYPTION ON;
GO
C. USE PRODUCTSDB;
GO
CREATE DATABASE ENCRYPTION KEY WITH ALGORITHM = AES_256 ENCRYPTION BY SERVER CERTIFICATE PRODUCTSCERT;
GO
ALTER DATABASE PRODUCTSDB SET ENCRYPTION ON;
GO
D. USE PRODUCTSDB;
GO
CREATE DATABASE ENCRYPTION KEY WITH ALGORITHM = AES_256 ENCRYPTION BY SERVER CERTIFICATE DBCERT;
GO
ALTER DATABASE PRODUCTSDB SET ENCRYPTION ON;
GO
Correct Answer: C
Explanation/Reference:

**Question 250**
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 251**
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 252**
What should you add to usp_SelectEmployeesByName?
You need to modify the 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 253
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 254
Which code segment should you execute?
You need to modify Production.ProductDetails_Insert to comply with the application requirements.
A. Option A
B. Option B
C. Option C
D. Option D
Correct Answer: C
Explanation/Reference:

Question 255
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.
A. ALTER TABLE dbo.Offices ADD CONSTRAINT FK_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.Offices ADD CONSTRAINT FK_Offices_Employees FOREIGN KEY (EmployeeID) REFERENCES dbo.Employees (EmployeeID);
Correct Answer: CD
Explanation/Reference:
Question 256
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 257
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)

/* 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 258
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: B
Explanation/Reference:


Question 259
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 260
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. 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);

Answer: C

Question 261
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

Correct Answer: A
Explanation/Reference:
Question 262
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 263
What should you do?
BBatch 1
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:
   (DeliveryTime, SessionID)
B. At line 04 of Indexes.sql, add:
   WHERE GETDATE() < DeliveryTime;
C. Change line 02 of indexes.sql to:
   (SpeakerID, RoomID, DeliveryTime)
D. Change line 74 of Procedures.sql to:
   WHERE GETDATE() > DeliveryTime;
E. Change line 74 of Procedures.sql to:
   WHERE GETDATE() > DeliveryTime;
F. At line 04 of Indexes.sql, add:
   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 264
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:
Explanation:
Question 265
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?
A. A table variable
B. An OFFSET-FETCH clause
C. The ROWNUMBER keyword
D. A recursive common table expression

Correct Answer: B
Explanation/Reference:
Explanation:

Question 266
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(l) DEFAULT '1';
C. ALTER TABLE Attendees
   ADD Confirmed bit DEFAULT 1;
D. ALTER TABLE Attendees
   ADD Confirmed char(l) DEFAULT '1';

Correct Answer: A
Explanation/Reference:
Explanation:

Question 267
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 268
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:
   SET TRANSACTION ISOLATION LEVEL SERIALIZABLE
B. Replace line 46 with the following code:
   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 269
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?

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

Correct Answer: D

Explanation/Reference:

Question 270
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: A

Explanation/Reference:
http://www.aoowe.com
http://www.aoowe.com

Question 271
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:
Question 272
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);

Correct Answer: B
Explanation/Reference:
Question 273
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:
Explanation:

Question 274
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 275
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 276
Which data type should you use for CustomerID?
Which data type should you use for CustomerID?
A. varchar(11)
B. bigint
C. nvarchar(11)
D. char(11)

Correct Answer: D
Explanation/Reference:

Question 277
Which code segment should you execute?
You need to modify InsertInvoice to comply with the application requirements.
Which code segment should you execute?

http://www.aoowe.com
Question 278
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 279
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 280
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
0xA694FBEA88C93545E2967C39A2A698FB4C44A9
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 281
How should you define the InvoiceID column in the CREATE TABLE statement?
You need to create the InvoiceStatus table in DB1.
How should you define the InvoiceID column in the CREATE TABLE statement?

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,

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

Correct Answer: C
Explanation/Reference: