Number: 70-764
Passing Score: 800
Time Limit: 120 min

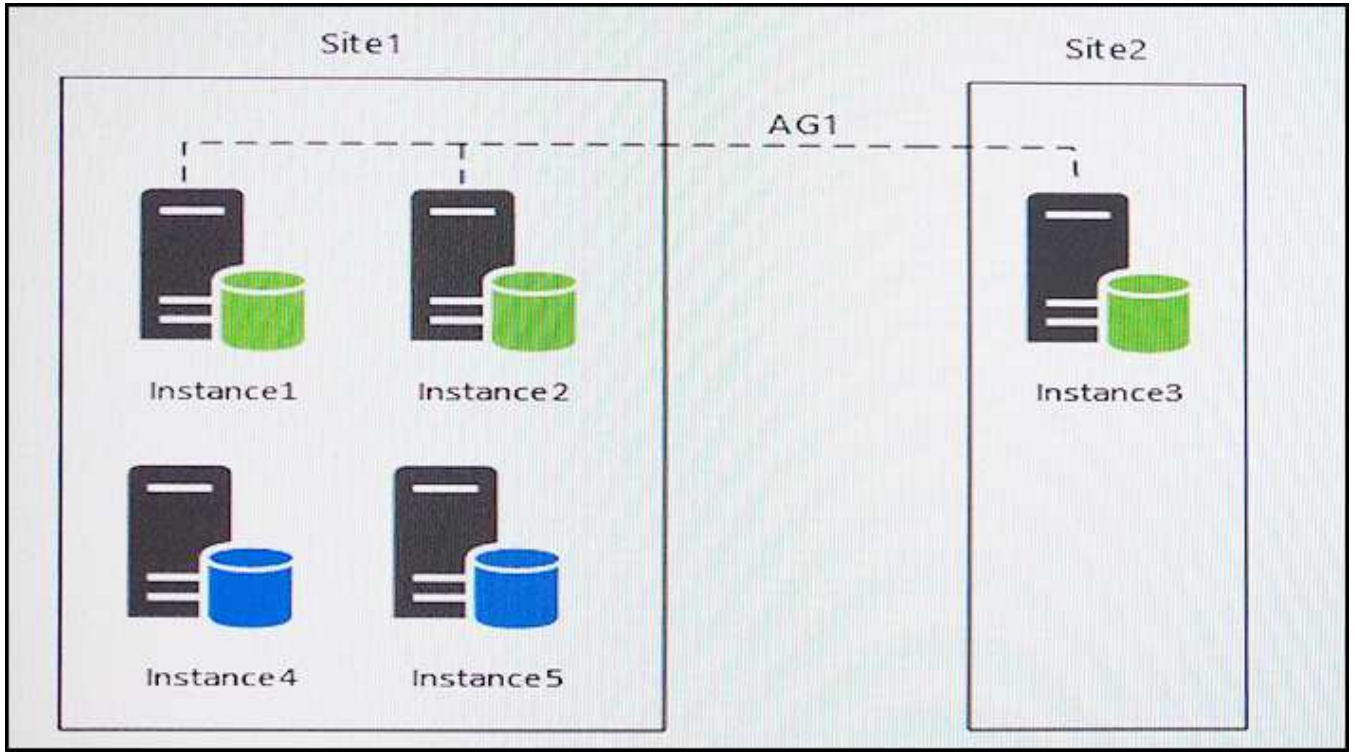
70-764

Administering a SQL Database Infrastrucure

Exam A

QUESTION 1
Note: This question is part of a series of questions that use the same scenario. For your convenience, the scenario is repeated in each question. Each question presents a different goal and answer choices, but the text of the scenario is exactly the same in each question in this series.

You have five servers that run Microsoft Windows 2012 R2. Each server hosts a Microsoft SQL Server instance. The topology for the environment is shown in the following diagram.



You have an Always On Availability group named AG1. The details for AG1 are shown in the following table.

Instance	Node type
Instance1	Primary
Instance2	Synchronous readable secondary
Instance3	Asynchronous readable secondary

Instance1 experiences heavy read-write traffic. The instance hosts a database named OperationsMain that is four terabytes (TB) in size. The database has multiple data files and filegroups. One of the filegroups is read_only and is half of the total database size.

Instance4 and Instance5 are not part of AG1. Instance4 is engaged in heavy read-write I/O.

Instance5 hosts a database named StagedExternal. A nightly BULK INSERT process loads data into an empty table that has a rowstore clustered index and two nonclustered rowstore indexes.

You must minimize the growth of the StagedExternal database log file during the BULK INSERT operations and perform point-in-time recovery after the BULK INSERT transaction. Changes made must not interrupt the log backup chain.

You plan to add a new instance named Instance6 to a datacenter that is geographically distant from Site1 and Site2. You must minimize latency between the nodes in AG1.

All databases use the full recovery model. All backups are written to the network location \\SQLBackup\. A separate process copies backups to an offsite location. You should minimize both the time required to restore the databases and the space required to store backups. The recovery point objective (RPO) for each instance is shown in the following table.

Instance	Recovery point objective
Instance 1	5 minutes
Instance 2	5 minutes
Instance 3	5 minutes
Instance 4	60 minutes
Instance 5	24 hours

Full backups of OperationsMain take longer than six hours to complete. All SQL Server backups use the keyword COMPRESSION.

You plan to deploy the following solutions to the environment. The solutions will access a database named DB1 that is part of AG1.

- Reporting system: This solution accesses data inDB1with a login that is mapped to a database user that is a member of the db_datareader role. The user has EXECUTE permissions on the database. Queries make no changes to the data. The queries must be load balanced over variable read-only replicas.
- Operations system: This solution accesses data inDB1with a login that is mapped to a database user that is a member of the db_datareader and db_datawriter roles. The user has EXECUTE permissions on the database. Queries from the operations system will perform both DDL and DML operations.

The wait statistics monitoring requirements for the instances are described in the following table.

Instance	Description
Instance1	Aggregate wait statistics since the last server restart.
Instance4	Identify the most prominent wait types for all the commands originating from a session, between session connections, or between application pool resets.
Instance5	Identify all the wait types for queries currently running on the server.

You need to reduce the amount of time it takes to backup OperationsMain.

What should you do?

A. Modify the backup script to use the keyword SKIP in the FILE_SNAPSHOT statement.
B. Modify the backup script to use the keyword SKIP in the WITH statement
C. Modify the backup script to use the keyword NO_COMPRESSION in the WITH statement.
D. Modify the full database backups script to stripe the backup across multiple backup files.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
One of the filegroup is read_only should be as it only need to be backup up once. Partial backups are useful whenever you want to exclude read-only filegroups. A partial backup resembles a full database backup, but a partial backup does not contain all the filegroups. Instead, for a read-write database, a partial backup contains the data in the primary filegroup, every read-write filegroup, and, optionally, one or more read-only files. A partial backup of a read-only database contains only the primary filegroup.

From scenario: Instance1 experiences heavy read-write traffic. The instance hosts a database named OperationsMainthat is four terabytes (TB) in size. The database has multiple data files and filegroups. One of the filegroups is read_only and is half of the total database size.

References: https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/partial-backups-sql-server

QUESTION 2
A Microsoft SQL Server database named DB1 has two filegroups named FG1 and FG2. You implement a backup strategy that creates backups for the filegroups.

DB1 experiences a failure. You must restore FG1 and then FG2.

You need to ensure that the database remains in the RECOVERING state until the restoration of FG2 completes. After the restoration of FG2 completes, the database must be online.

What should you specify when you run the recovery command?

A. the WITH NORECOVERY clause for FG1 and the WITH RECOVERY clause for FG2
B. the WITH RECOVERY clause for FG1 and the WITH RECOVERY clause for FG2
C. the WITH RECOVERY clause for both FG1 and FG2
D. the WITH NORECOVERY clause for both FG1 and FG2

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

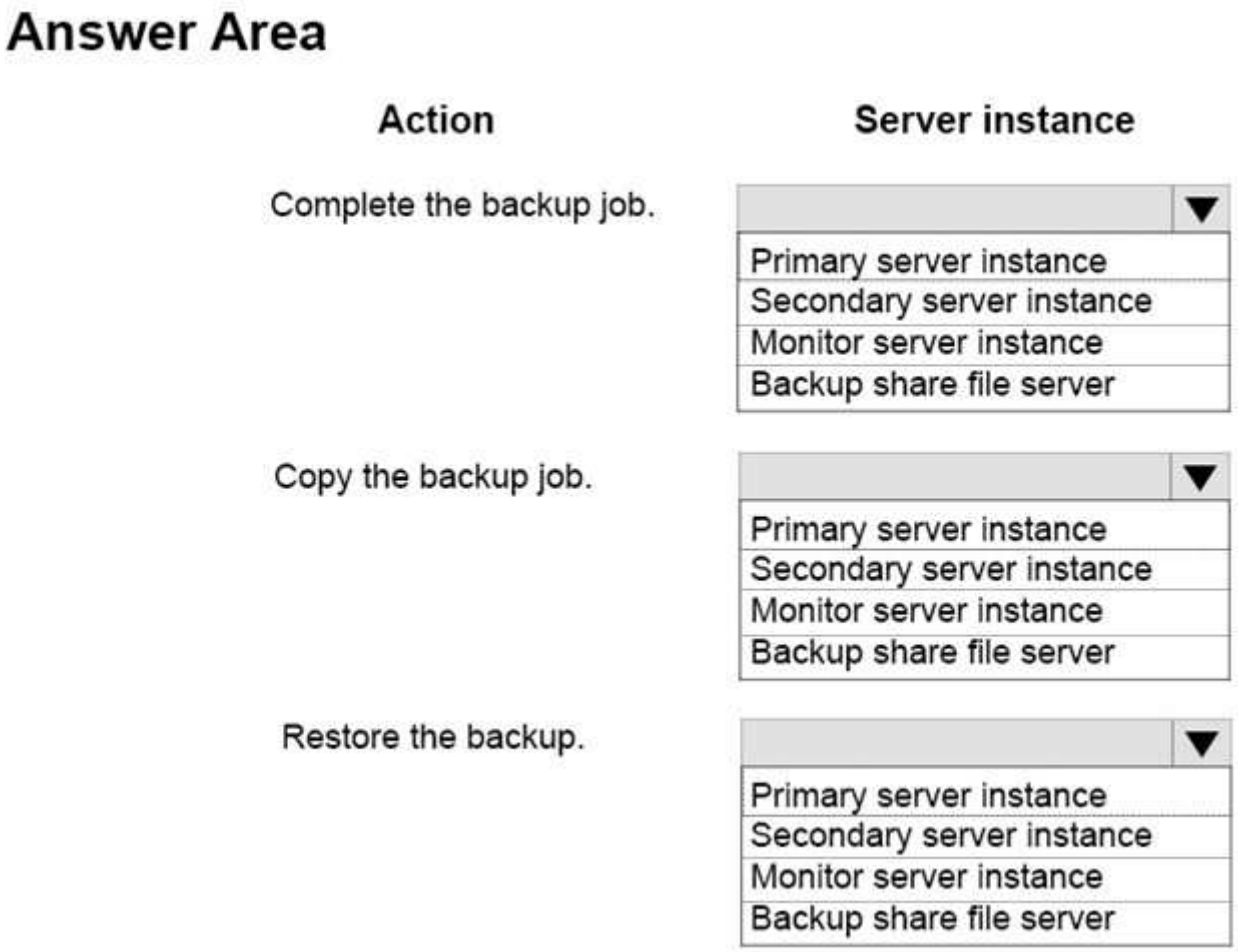
QUESTION 3
HOTSPOT

You are planning to deploy log shipping for Microsoft SQL Server and store all backups on a dedicated fileshare.

You need to configure the servers to perform each log shipping step.

Which server instance should you configure to perform each action? To answer, select the appropriate server instances in the dialog box in the answer area.

Hot Area:



Correct Answer:

Answer Area

Action	Server instance
Complete the backup job.	Primary server instance
Copy the backup job.	Secondary server instance
Restore the backup.	Secondary server instance

Server instance options: Primary server instance; Secondary server instance; Monitor server instance; Backup share file server

Section: (none)
Explanation

Explanation/Reference:
Explanation:

Note: Before you configure log shipping, you must create a share to make the transaction log backups available to the secondary server.

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. An optional third server instance, known as the monitor server, records the history and status of backup and restore operations and, optionally, raises alerts if these operations fail to occur as scheduled.

Box 1: Primary server instance.
The primary server instance runs the backup job to back up the transaction log on the primary database.
backup job: A SQL Server Agent job that performs the backup operation, logs history to the local server and the monitor server, and deletes old backup files and history information. When log shipping is enabled, the job category "Log Shipping Backup" is created on the primary server instance.

Box 2: Secondary server instance
Each of the three secondary server instances runs its own copy job to copy the primary log-backup file to its own local destination folder.
copy job: A SQL Server Agent job that copies the backup files from the primary server to a configurable destination on the secondary server and logs history on the secondary server and the monitor server. When log shipping is enabled on a database, the job category "Log Shipping Copy" is created on each secondary server in a log shipping configuration.

Box 3: Secondary server instance.
Each secondary server instance runs its own restore job to restore the log backup from the local destination folder onto the local secondary database.
restore job: A SQL Server Agent job that restores the copied backup files to the secondary databases. It logs history on the local server and the monitor server, and deletes old files and old history information. When log shipping is enabled on a database, the job category "Log Shipping Restore" is created on the secondary server instance.

References: https://docs.microsoft.com/en-us/sql/database-engine/log-shipping/about-log-shipping-sql-server

QUESTION 4
DRAG DROP

You administer a Microsoft SQL Server database named Contoso. You create a stored procedure named Sales.ReviewInvoice by running the following Transact-SQL statement:

```
CREATE PROCEDURE Sales.ReviewInvoice (@SaleID int)
AS
     DECLARE @tsql nvarchar(4000) = 'SELECT SaleID, CustomerID, TotalAmount FROM Sales.SalesIn-
voice WHERE SaleID = '
     SET @tsql = @tsql + CAST(@saleID AS varchar(20))
     EXEC sp_executesql @TSQL
```

You need to create a Windows-authenticated login named ContosoSearch and ensure that ContosoSearch can run the Sales.ReviewInvoices stored procedure.

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

Select and Place:

Transact-SQL segments

```
Use Contoso
GO
CREATE USER Contoso\SalesGroup FOR
LOGIN
Contoso\SalesGroup
```

```
ALTER ROLE db_ddladmin ADD MEMBER
Contoso\SalesGroup
GRANT VIEW SEFINITION ON Sales.-
SalesInvoice TO
Contoso\SalesGroup
```

```
use master
CREATE LOGIN Contoso\SalesGroup FROM
WINDOWS
GO
```

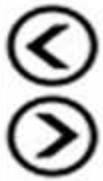
```
GRANT EXECUTE ON Sales.ReviewInvoice TO
Contoso\SalesGroup
GRANT SELECT ON Sales.SalesInvoice TO
Contoso\SalesGroup
```

```
use master
CREATE LOGIN Contoso\ContosoSearch WITH
PASSWORD=N'Pa$$w0rd'
GO
```

```
GRANT EXECUTE ON Sales.ReviewInvoice TO
Contoso\SalesGroup
GRANT VIEW DEFINITION ON Sales.SalesIn-
voice TO
Contoso\SalesGroup
```

```
GRANT EXECUTE, SELECT ON Sales.Review-
Invoice TO
Contoso\SalesGroup
```

Answer Area



Correct Answer:

Transact-SQL segments

```
ALTER ROLE db_ddladmin ADD MEMBER
Contoso\SalesGroup
GRANT VIEW SEFINITION ON Sales.-
SalesInvoice TO
Contoso\SalesGroup
```

```
use master
CREATE LOGIN Contoso\SalesGroup FROM
WINDOWS
GO
```

```
GRANT EXECUTE ON Sales.ReviewInvoice TO
Contoso\SalesGroup
GRANT SELECT ON Sales.SalesInvoice TO
Contoso\SalesGroup
```

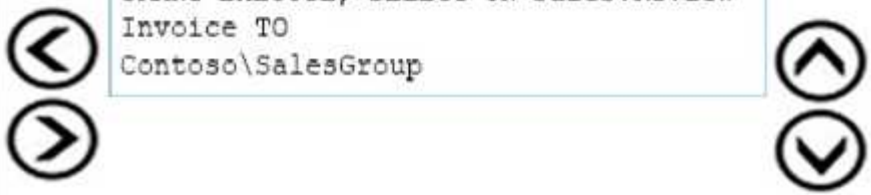
```
GRANT EXECUTE ON Sales.ReviewInvoice TO
Contoso\SalesGroup
GRANT VIEW DEFINITION ON Sales.SalesIn-
voice TO
Contoso\SalesGroup
```

Answer Area

```
use master
CREATE LOGIN Contoso\ContosoSearch WITH
PASSWORD=N'Pa$$w0rd'
GO
```

```
Use Contoso
GO
CREATE USER Contoso\SalesGroup FOR
LOGIN
Contoso\SalesGroup
```

```
GRANT EXECUTE, SELECT ON Sales.Review-
Invoice TO
Contoso\SalesGroup
```



Section: (none)
Explanation

Explanation/Reference:

QUESTION 5
You have a database that stores information for a shipping company. You create a table named Customers by running the following Transact-SQL statement. (Line numbers are included for reference only.)

```
01  CREATE TABLE dbo.Customers (
02      customerId int,
03      customerName varchar(200),
04      salesPerson varchar(20)
05  )
06  CREATE FUNCTION fn_securitypredicateSalesPerson (@salesPerson sysname)
07
08  AS
09  RETURN SELECT 1 AS [fn_securityPredicateOrder_result]
10  FROM dbo.Customers
11  WHERE @salesPerson = user_name()
```

You need to ensure that salespeople can view data only for the customers that are assigned to them.

Which Transact-SQL segment should you insert at line 07?

A. RETURNS varchar(20)WITH Schemabinding
B. RETURNS dbo.CustomersORDER BY @salesPerson
C. RETURNS tableORDER BY @salesPerson
D. RETURNS tableWITH Schemabinding

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:

The return value can either be a scalar (single) value or a table.
SELECT 1 just selects a 1 for every row, of course. What it's used for in this case is testing whether any rows exist that match the criteria: if a row exists that matches the WHERE clause, then it returns 1, otherwise it returns nothing.
Specify the WITH SCHEMABINDING clause when you are creating the function. This ensures that the objects referenced in the function definition cannot be modified unless the function is also modified.

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/create-function-transact-sql

QUESTION 6
You manage a Microsoft SQL Server environment. You plan to encrypt data when you create backups.

You need to configure the encryption options for backups.

What should you configure?

A. a certificate
B. an MD5 hash
C. a DES key
D. an AES 256-bit key

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
To encrypt during backup, you must specify an encryption algorithm, and an encryptor to secure the encryption key. The following are the supported encryption options:
Encryption Algorithm: The supported encryption algorithms are: AES 128, AES 192, AES 256, and Triple DES
Encryptor: A certificate or asymmetric Key

References: https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/backup-encryption

QUESTION 7
You have a database named DB1 that stores more than 700 gigabyte (GB) of data and serves millions of requests per hour.

Queries on DB1 are taking longer than normal to complete.

You run the following Transact-SQL statement:

SELECT * FROM sys.database_query_store_options

You determine that the Query Store is in Read-Only mode.

You need to maximize the time that the Query Store is in Read-Write mode.

Which Transact-SQL statement should you run?

A. ALTER DATABASE DB1SET QUERY_STORE (QUERY_CAPTURE_MODE = ALL)
B. ALTER DATABASE DB1SET QUERY_STORE (MAX_STORAGE_SIZE_MB = 50)
C. ALTER DATABASE DB1SET QUERY_STORE (CLEANUP_POLICY = (STALE_QUERY_THRESHOLD_DAYS = 14));
D. ALTER DATABASE DB1SET QUERY_STORE (QUERY_CAPTURE_MODE = NONE)

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Stale Query Threshold (Days): Time-based cleanup policy that controls the retention period of persisted runtime statistics and inactive queries.
By default, Query Store is configured to keep the data for 30 days which may be unnecessarily long for your scenario.
Avoid keeping historical data that you do not plan to use. This will reduce changes to read-only status. The size of Query Store data as well as the time to detect and mitigate the issue will be more predictable. Use Management Studio or the following script to configure time-based cleanup policy:

```
ALTER DATABASE [QueryStoreDB]
SET QUERY_STORE (CLEANUP_POLICY = (STALE_QUERY_THRESHOLD_DAYS = 14));
```

References: https://docs.microsoft.com/en-us/sql/relational-databases/performance/best-practice-with-the-query-store

QUESTION 8
You administer a Microsoft SQL Server 2016 failover cluster that contains two nodes named Node A and Node B.

A single instance of SQL Server is installed on the cluster.

An additional node named Node C has been added to the existing cluster.

You need to ensure that the SQL Server instance can use all nodes of the cluster.

What should you do?

A. Create a ConfigurationFile.ini file from Node B, and then run the AddNode command-line tool on Node A.

B. Use Node A to install SQL Server on Node C.
C. Run the Add Node to SQL Server Failover Cluster Wizard on Node C.
D. Use Cluster Administrator to add a new Resource Group to Node B.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
1. To add a node to an existing SQL Server failover cluster
Insert the SQL Server installation media, and from the root folder, double-click Setup.exe. To install from a network share, navigate to the root folder on the share, and then double-click Setup.exe.

2. The Installation Wizard will launch the SQL Server Installation Center. To add a node to an existing failover cluster instance, click Installation in the left-hand pane. Then, select Add node to a SQL Server failover cluster.
Etc.

References: https://docs.microsoft.com/en-us/sql/sql-server/failover-clusters/install/add-or-remove-nodes-in-a-sql-server-failover-cluster-setup

QUESTION 9
You plan to integrate an on-premises Microsoft SQL Server environment with Microsoft Azure.

You need to create the authentication object so that you can connect to Azure.

Which Windows PowerShell command or commands should you run?

A. Invoke-Sqlcmd "CREATE EXTERNAL DATA SOURCE MyAzureStorage WITH (LOCATION = 'wasbs://Azure@myaccount.blob.core.windows.net/", CREDENTIAL = Pa$$w0rd)"
B. New-SqlAzureKeyVaultColumnMasterKeySettings-KeyUrl https://myvault.vault.contoso.net:443/keys/CMK/4c05fla41b12488f9cba2ea964b6a700
C. Invoke-Sqlcmd "CREATE CREDENTIAL AzureCred WITH IDENTITY = 'AzureKey', SECRET = 'Pa$$w0rd"
D. Invoke-Sqlcmd "CREATE LOGIN AzureCred WITH CREDENTIAL = 'AzureKey', PASSWORD = 'Pa$$w0rd"

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:

Invoke-Sqlcmd runs a script containing statements supported by the SQL Server SQLCMD utility.

The following example creates a SQL Server credential for the Database Engine to use when accessing the Azure Key Vault using the SQL Server Connector for Microsoft Azure Key Vault.

```
CREATE CREDENTIAL Azure_EKM_TDE_cred
   WITH IDENTITY = 'ContosoKeyVault',
   SECRET = 'EF5C8E094D2A4A769998D93440D8115DSECRET_DBEngine'
   FOR CRYPTOGRAPHIC PROVIDER AzureKeyVault_EKM_Prov ;
```

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/create-credential-transact-sql

QUESTION 10
You are creating an application that will connect to the AgentPortal database by using a SQL login named AgentPortalUser. Stored procedures in the database will use sp_send_dbmail to send email messages.

You create a user account in the msdb database for the AgentPortalUser login.

You use the Database Mail Configuration Wizard to create a Database Mail profile. Security has not been configured for the Database Mail profile.

You need to ensure that AgentPortalUser can send email messages.

What should you do?

A. In the Database Mail Configuration Wizard, configure the Database Mail profile as a private profile for the AgentPortalUser account.
B. Disable the guest user in the msdb database.
C. Use the sysmail_help_profileaccount_sp stored procedure to add accounts to the Database Mail profile.
D. In the Database Mail Configuration Wizard, create an email account for each recipient's email address in the Database Mail profile.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
You enable and configure Database Mail using the Database Mail Configuration Wizard.
Profiles are either public or private. A private profile is accessible only to specific users or roles.

References: https://docs.microsoft.com/en-us/sql/relational-databases/database-mail/configure-database-mail

QUESTION 11
You administer all the deployments of Microsoft SQL Server 2016 in your company.

You need to ensure that data changes are sent to a non-SQL Server database server in near real time.

You also need to ensure that data on the primary server is unaffected.

Which configuration should you use?

A. SQL Server that includes an application database configured to perform transactional replication
B. Two servers configured in different data centers SQL Server Availability Group configured in AsynchronousCommit Availability Mode
C. Two servers configured in different data centers SQL Server Availability Group configured in Synchronous-Commit Availability Mode One server configured as an Active Secondary
D. SQL Server that includes an application database configured to perform snapshot replication
E. Two servers configured in the same data center SQL Server Availability Group configured in AsynchronousCommit Availability Mode One server configured as an Active Secondary
F. Two servers configured on the same subnet SQL Server Availability Group configured in Synchronous-Commit Availability Mode
G. Two servers configured in a Windows Failover Cluster in the same data center SQL Server configured as a clustered instance
H. Two servers configured in the same data center A primary server configured to perform log-shipping every 10 minutes A backup server configured as a warm standby

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
SQL Server supports the following heterogeneous scenarios for transactional and snapshot replication:
- Publishing data from SQL Server to non- SQL Server Subscribers.
- Publishing data to and from Oracle has some restrictions.

References: https://docs.microsoft.com/en-us/sql/relational-databases/replication/non-sql/heterogeneous-database-replication

QUESTION 12
You administer all the deployments of Microsoft SQL Server 2016 in your company.

A database contains a large product catalog that is updated periodically.

You need to be able to send the entire product catalog to all branch offices on a monthly basis.

Which configuration should you use?

A. Two servers configured in the same data center A primary server configured to perform log-shipping every 10 minutes A backup server configured as a warm standby
B. SQL Server that includes an application database configured to perform transactional replication
C. Two servers configured in the same data center SQL Server Availability Group configured in AsynchronousCommit Availability Mode One server configured as an Active Secondary
D. Two servers configured in a Windows Failover Cluster in the same data center SQL Server configured as a clustered instance
E. SQL Server that includes an application database configured to perform snapshot replication
F. Two servers configured in different data centers SQL Server Availability Group configured in Synchronous-Commit Availability Mode One server configured as an Active Secondary
G. Two servers configured on the same subnet SQL Server Availability Group configured in Synchronous-Commit Availability Mode
H. Two servers configured in different data centers SQL Server Availability Group configured in AsynchronousCommit Availability Mode

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Snapshot replication distributes data exactly as it appears at a specific moment in time and does not monitor for updates to the data. When synchronization occurs, the entire snapshot is generated and sent to Subscribers.

Using snapshot replication by itself is most appropriate when one or more of the following is true:
- Data changes infrequently.
- It is acceptable to have copies of data that are out of date with respect to the Publisher for a period of time.
- Replicating small volumes of data.

A large volume of changes occurs over a short period of time.

References: https://docs.microsoft.com/en-us/sql/relational-databases/replication/snapshot-replication

QUESTION 13

You administer all the deployments of Microsoft SQL Server 2016 in your company.

You need to ensure that an OLTP database that uses a storage area network (SAN) remains available if any of the servers fail.

You also need to minimize the amount of storage used by the database.

Which configuration should you use?

A. Two servers configured in different data centers SQL Server Availability Group configured in Synchronous-Commit Availability Mode One server configured as an Active Secondary
B. SQL Server that includes an application database configured to perform transactional replication
C. Two servers configured in the same data center SQL Server Availability Group configured in AsynchronousCommit Availability Mode One server configured as an Active Secondary
D. Two servers configured in different data centers SQL Server Availability Group configured in AsynchronousCommit Availability Mode
E. Two servers configured in the same data center A primary server configured to perform log-shipping every 10 minutes A backup server configured as a warm standby
F. Two servers configured on the same subnet SQL Server Availability Group configured in Synchronous-Commit Availability Mode
G. SQL Server that includes an application database configured to perform snapshot replication
H. Two servers configured in a Windows Failover Cluster in the same data center SQL Server configured as a clustered instance

Correct Answer: H
Section: (none)
Explanation

Explanation/Reference:
Explanation:
A Windows Server Failover Cluster (WSFC) is a group of independent servers that work together to increase the availability of applications and services. SQL Server takes advantage of WSFC services and capabilities to support Always On availability groups and SQL Server Failover Cluster Instances.

References: https://docs.micosoft.com/en-us/sql/sql-server/failover-clusters/windows/windows-server-failover-clustering-wsfc-with-sql-server

QUESTION 14
You administer a Microsoft SQL Server 2016 server that hosts a transactional database and a reporting database.

The transactional database is updated through a web application and is operational throughout the day.

The reporting database is only updated from the transactional database.

The recovery model and backup schedule are configured as shown in the following table:

Database	Description
Transactional database	Recovery model: • Full Backup schedule: • Full database backup: midnight, daily • Differential database backup: on the hour, every two hours starting at 02:00 hours except at 00:00 hours • Log backup: every half hour, except at the times of full and differential backups
Reporting database	Recovery model: • Simple Backup schedule: • Full database backup: 01:00 hours daily • Differential database backup: 13:00 hours daily Data updates: • Changes in data are updated from the transactional database to the reporting database at 00:30 hours and at 12:30 hours • The update takes 15 minutes

The differential backup of the reporting database fails.

Then, the reporting database fails at 14:00 hours.

You need to ensure that the reporting database is restored.

You also need to ensure that data loss is minimal.

What should you do?

A. Restore the latest full backup, and restore the latest differential backup. Then, restore the latest log backup.
B. Perform a point-in-time restore.
C. Restore the latest full backup.
D. Restore the latest full backup, and restore the latest differential backup. Then, restore each log backup taken before the time of failure from the most recent differential backup.
E. Restore the latest full backup. Then, restore the latest differential backup.
F. Restore the latest full backup. Then, restore each differential backup taken before the time of failure from the most recent full backup.
G. Perform a page restore.
H. Perform a partial restore.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The differential backup of the reporting database has failed, so it can't be used.

QUESTION 15
You administer a Microsoft SQL Server 2016 server that hosts a transactional database and a reporting database.

The transactional database is updated through a web application and is operational throughout the day.

The reporting database is only updated from the transactional database.

The recovery model and backup schedule are configured as shown in the following table:

Database	Description
Transactional database	Recovery model: • Full Backup schedule: • Full database backup: midnight, daily • Differential database backup: on the hour, every two hours starting at 02:00 hours except at 00:00 hours • Log backup: every half hour, except at the times of full and differential backups
Reporting database	Recovery model: • Simple Backup schedule: • Full database backup: 01:00 hours daily • Differential database backup: 13:00 hours daily Data updates: • Changes in data are updated from the transactional database to the reporting database at 00:30 hours and at 12:30 hours • The update takes 15 minutes

At 16:20 hours, you discover that pages 17, 137, and 205 on one of the database files are corrupted on the transactional database. You need to ensure that the transactional database is restored. You also need to ensure that data loss is minimal.

What should you do?

A. Perform a partial restore.
B. Restore the latest full backup, and restore the latest differential backup. Then, restore each log backup taken before the time of failure from the most recent

differential backup.

C. Perform a point-in-time restore.
D. Restore the latest full backup.
E. Restore the latest full backup, and restore the latest differential backup. Then, restore the latest log backup.
F. Perform a page restore.
G. Restore the latest full backup. Then, restore each differential backup taken before the time of failure from the most recent full backup.
H. Restore the latest full backup. Then, restore the latest differential backup.

Correct Answer: F
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The goal of a page restore is to restore one or more damaged pages without restoring the whole database. Typically, pages that are candidates for restore have been marked as "suspect" because of an error that is encountered when accessing the page.

Note: Requirements for Restoring Pages
A page restore is subject to the following requirements:
- The databases must be using the full or bulk-logged recovery model.

Etc.

References: https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/restore-pages-sql-server

QUESTION 16
You administer several Microsoft SQL Server 2016 database servers.

Merge replication has been configured for an application that is distributed across offices throughout a wide area network (WAN). Many of the tables involved in replication use the XML and varchar (max) data types.

Occasionally, merge replication fails due to timeout errors.

You need to reduce the occurrence of these timeout errors.

What should you do?

A. Set the Merge agent on the problem subscribers to use the slow link agent profile.
B. Create a snapshot publication, and reconfigure the problem subscribers to use the snapshot publication.
C. Change the Merge agent on the problem subscribers to run continuously.

D. Set the Remote Connection Timeout on the Publisher to 0.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
You might have different profiles for different instances of an agent. For example, a Merge Agent that connects to the Publisher and Distributor over a dialup connection could use a set of parameters that are better suited to the slower communications link by using the slow link profile.

Note: When replication is configured, a set of agent profiles is installed on the Distributor. An agent profile contains a set of parameters that are used each time an agent runs: each agent logs in to the Distributor during its startup process and queries for the parameters in its profile.

References: https://docs.microsoft.com/en-us/sql/relational-databases/replication/agents/replication-agent-profiles

QUESTION 17
You create an availability group named HaContoso that has replicas named Server01/HA, Server02/HA, and Server03/HA.

Currently, Server01l/HA is the primary replica.

You need to ensure that the following requirements are met:
- Backup operations occur on Server02/HA.
- If Server02/HA is unavailable, backup operations occur on Server03/HA.
- Backup operations do not occur on Server01/HA.

How should you configure HaContoso?

A. Set the backup preference of HaContoso to Prefer Secondary. Set the backup priority of Server02/HA to 20. Set the backup priority of Server03/HA to 10.
B. Set the backup preference of HaContoso to Secondary only. Set the backup priority of Server02/HA to 20. Set the backup priority of Server03/HA to 10.
C. Set the backup preference of HaContoso to Secondary only. Set the backup priority of Server02/HA to 10. Set the backup priority of Server03/HA to 20.
D. set the exclude replica of Server01/HA to true. Set the backup priority of Server02/HA to 10. Set the backup priority of Server03/HA to 20.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Secondary only: Specifies that backups should never be performed on the primary replica. If the primary replica is the only replica online, the backup should not occur.

Backup Priority (Lowest=1, Highest=100)
Specifies your priority for performing backups on this replica relative to the other replicas in the same availability group. The value is an integer in the range of 0..100. 1 indicates the lowest priority, and 100 indicates the highest priority. If Backup Priority = 1, the availability replica would be chosen for performing backups only if no higher priority availability replicas are currently available.

References: https://docs.microsoft.com/en-us/sql/database-engine/availability-groups/windows/configure-backup-on-availability-replicas-sql-server

QUESTION 18
You plan to migrate the db to azure.

You verify that all objects are valid for azure sql database. You need to ensure that users and logins are migrated to azure.

What should you do?

A. Use the Copy Database wizard
B. Use the Database Transfer wizard
C. Use the SQL Management Studio to deploy the db to azure
D. Back up the databasae from the local server and restore it to azure

Correct Answer: CD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 19
You administer a Microsoft SQL Server 2016 database instance.

You create a new user named UserA. You need to ensure that UserA is able to create SQL Server Agent jobs and to execute SQL Server Agent jobs.

To which role should you add UserA?

A. Securityadmin
B. RSExecRole
C. SQLAgentUserRole
D. DatabaseMailUserRole

Correct Answer: C

Section: (none)
Explanation

Explanation/Reference:

QUESTION 20
You are the administrator of a Microsoft SQL Server 2016 server. Some applications consume significant resources.

You need to manage the server workload by restricting resource-intensive applications.

You need to dynamically limit resource consumption.

What should you do?

A. Set up Service Broker to ensure that applications are not allowed to consume more than the specified amount of resources.
B. Configure Resource Pools, Workload Groups, and Classifier Function, and then enable the Resource Governor.
C. Configure Extended Events to monitor and restrict resource limits allowed by each application type.
D. Create a new Plan Guide with a Scope Type of sql and define the resource limits for each application.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 21
You administer a Microsoft SQL Server 2016 database that includes a table named dbo.Log. This table contains millions of records about user activity in an application.

Records in dbo.Log that are more than 90 days old are purged nightly. When records are purged, table locks are causing contention withinserts.

You need to be able to modify dbo.Log without requiring any changes to the applications that utilize dbo.Log.

Which type of solution should you use?

A. Extended events
B. Columnstore index
C. Partitioned tables
D. Read committed snapshot

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 22
You administer a Microsoft SQL Server 2016 database named Orders.

Users report that during peak usage periods, certain operations are taking more time than expected. Your initial analysis suggests that blocking is the cause.

You need to gather more data to be able to determine which processes are being blocked and to identify the root cause.

What should you do?

A. Start a trace using SQL Server Profiler to catch the Lock: Deadlock event.
B. Use sp_configure to set the blocked process threshold. Start a trace using SQL Server Profiler to catch the Blocked Process Report event.
C. Schedule a SQL Agent job to run every 60 seconds and insert the results of executing the sys.dm_os_wait_stats DMV into a table.
D. Use System Monitor to catch the Lock Waits/sec event.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 23
You administer a Microsoft SQL Server 2016 database.

Users report that a billing application becomes unresponsive during busy times of the day.

While investigating, you notice large number of processes taking or waiting for table locks.

You suspect that SQL Server is assigning stronger locks to queries.

You start a SQL Profiler trace.

Which event should you select?

A. Deadlock graph
B. Lock: Escalation
C. Lock: Timeout
D. Lock: Deadlock

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 24
You install Microsoft SQL Server 2016 on a new server.

After setup is complete, you attempt to start the SQL Server service.

After being in a starting state for a few moments, the service goes back to a stopped state.

You need to determine the cause of the failure. Which file should you use?

A. %programfiles%\Microsoft SQL Server\MSSQL11.MSSQLSERVER|MSSQL\Log\Errorlog
B. %programfiles%\Microsoft SQL Server\110\setup Bootstrap\Log\Summary.txt
C. %programfiles%\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA\mastlog.idf
D. %programfiles%\Microsoft SQL Server\110\Shared\ErrorDmpr[XXXX] .mdmp

Correct Answer: A
Section: (none)

Explanation

Explanation/Reference:

QUESTION 25
You administer a Windows Azure SQL Database database named Inventory that contains a stored procedure named p_AddInventory.

Users need to be able to SELECT from all tables in the database and execute the stored procedure.

You need to grant only the necessary permissions.

What should you do?

A. Grant EXECUTE permission on p_AddInventory to all users. Grant VIEW DEFINITION to all users.
B. Grant EXECUTE permission on p_AddInventory to all users. Add all users to the db_datawriter role.
C. Add all users to the db_owner role.
D. Grant EXECUTE permission on p_Add!nventory to all users. Add all users to the db_datareader role.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 26
You administer a SQL Server 2016 database instance.

You need to configure the SQL Server Database Engine service on a failover cluster.

Which user account should you use?

A. A domain user
B. The BUILTIN\SYSTEM account
C. A local user with Run as Service permissions
D. The SQLBrowser account

Correct Answer: A
Section: (none)

Explanation

Explanation/Reference:
Explanation:
Account of the person who installs the cluster: The person who installs the cluster must use an account with the following characteristics:
- The account must be a domain account. It does not have to be a domain administrator account. It can be a domain user account if it meets the other requirements in this list.

Etc.

References: https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2008-R2-and-2008/cc731002(v=ws.10)

QUESTION 27
You administer a Windows Azure SQL Database database named Human_Resources. The database contains 2 tables named Employees and SalaryDetails. You add two Windows groups as logins for the server:
- CORP\Employees - All company employees
- CORP\HRAdmins - HR administrators only
- HR Administrators are also company employees.

You need to grant users access according to the following requirements:
- CORP\Employees should have SELECT access to the Employees table.
- Only users in CORP\HRAdmins should have SELECT access to the SalaryDetails table.
- Logins are based only on Windows security groups.

What should you do?

A. Create a database role called Employees.
Add CORP\Employees to the db_datareader role.
Add all company employees except HR administrators to the Employees role.
Deny SELECT access to the SalaryDetails table to the Employees role.

B. Create a database role called HRAdmins.
Add all company employees except HR administrators to the db_datareader role, Add all HR administrators to the HRAdmins role.
Grant SELECT access to the SalaryDetails table to the HRAdmins role.
Deny SELECT access to the SalaryDetails table to the db_datareader role.

C. Create two database roles: Employees and HRAdmins.
Add all company employees to the Employees role.
Add HR administrators to the HRAdmins role.
Grant SELECT access to all tables except SalaryDetails to the Employees role.
Grant SELECT access to the SalaryDetails table to the HRAdmins role.
Deny SELECT access to the SalaryDetails table to the Employees role.

D. Create a database role called Employees.
Add all HR administrators to the db_datareader role.

Add all company employees to the Employees role.
Grant SELECT access to all tables except the SalaryDetails table to the Employees role.
Deny SELECT access to the SalaryDetails table to the Employees role.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 28
You administer two Microsoft SQL Server 2016 servers named ProdSrv1 and ProdSrv2. ProdSrv1 is configured as a Distributor.

Both servers are configured to use the Windows NT Service virtual accounts for all SQL Services.

You are configuring snapshot replication from ProdSrv1 to ProdSrv2 by using ProdSrv2 as a pull subscriber.

The distribution agent on ProdSrv2 regularly fails, displaying the following error message:

```
"Cannot access the file. Operating system error code 5 (Access is denied.)."
```

You need to configure the distribution agent by granting only the minimum required access to all accounts.

What should you do?

A. Configure the Subscriber to use the Local System account.
B. Configure the SQL Server Agent service to run under the Local System account. Configure the Subscriber to use the SQL Server Agent service account.
C. Configure the SQL Server Agent service to run under a Windows domain account. Configure the Subscriber to use the SQL Server Agent service account. Grant FULL CONTROL access for the domain account to the ReplData share on ProdSrv1.
D. Configure the Subscriber to use a Windows domain account. Grant READ access for the domain account to the ReplData share on ProdSrv1.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 29
You are a database administrator for a Microsoft SQL Server 2016 environment.

You want to deploy a new application that will scale out the workload to at least five different SQL Server instances.

You need to ensure that for each copy of the database, users are able to read and write data that will then be synchronized between all of the database instances.

Which feature should you use?

A. Database Mirroring
B. Peer-to-Peer Replication
C. Log Shipping
D. Availability Groups

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 30
You plan to install a Microsoft SQL Server 2016 instance.

The instance will support a database that has the following requirements:
- Store Excel workbooks on the file system.
- Access the workbooks through Transact-SQL.
- Include the workbooks in database backups.
- During installation, you need to ensure that the requirements will be met.

Which feature should you use?

A. Excel Services
B. FILESTREAM
C. SQL Server Integration Services (SSIS)
D. OpenXML

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 31
You administer a Microsoft SQL Server 2016 database.

You have a SQL Server Agent job instance that runs using the service account.

You have a job step within the job that requires elevated privileges.

You need to ensure that the job step can run using a different user account.

What should you use?

A. a schedule
B. an alert
C. an operator
D. a proxy

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 32
You install a Microsoft SQL Server 2016 instance.

The instance will store data extracted from two databases running on Windows Azure SQL Database.

You hire a data steward to perform interactive data cleansing and ad hoc querying and updating of the database.

You need to ensure that the data steward is given the correct client tools to perform these tasks.

Which set of tools should you install?

A. SQL Server Management Studio and Distributed Replay Client
B. Master Data Services and Data Quality Client
C. Data Quality Client and Distributed Replay Client
D. Data Quality Client and SQL Server Management Studio

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 33
You administer a Microsoft SQL Server 2016 instance.

You discover that the SQL Agent Error Log file is rapidly growing in size.

You need to ensure that the SQL Agent Error Log file does not grow rapidly when SQL Server agent jobs execute.

What should you do?

A. Execute the sp_cycle_agent_errorlog stored procedure.
B. Configure event forwarding.
C. Enable the Auto Shrink option on the master database.
D. Enable the Auto Shrink option on the msdb database.
E. Disable the Include execution trace messages feature.

Correct Answer: E
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Because the Include execution trace messages option can cause the error log to become large, only include execution trace messages in SQL Server Agent error logs when investigating a specific SQL Server Agent problem.

References: https://docs.microsoft.com/en-us/sql/ssms/agent/write-execution-trace-messages-to-sql-server-agent-log-ssms

QUESTION 34
You are a database administrator for a Microsoft SQL Server 2016 instance.

You need to ensure that data can be replicated from a production server to two reporting servers in real time.

You also need to ensure that data on the reporting server is always accessible.

Which solution should you use?

A. Availability Groups
B. Extended Events
C. Snapshot Replication
D. Policy Based Management

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 35
You administer a Microsoft SQL Server 2016 database that contains a table named AccountTransaction.

You discover that query performance on the table is poor due to fragmentation on the IDX_AccountTransaction_AccountCode non-clustered index.

You need to defragment the index.

You also need to ensure that user queries are able to use the index during the defragmenting process.

Which Transact-SQL batch should you use?

A. ALTER INDEX IDX_AccountTransaction_AccountCode ON
   AccountTransaction.
   AccountCode REORGANIZE
B. ALTER INDEX ALL ON AccountTransaction REBUILD
C. ALTER INDEX IDX_AccountTransaction_AccountCode ON
   AccountTransaction.
   AccountCode REBUILD

D. CREATE INDEX IDXAccountTransactionAccountCode ON
AccountTransaction.
AccountCode WITH DROP EXISTING

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 36
You administer a Microsoft SQL Server 2016 failover cluster.

You need to ensure that a failover occurs when the server diagnostics returns query_processing error.

Which server configuration property should you set?

A. SqlOumperDumpFlags
B. FailureConditionLevel
C. HealthCheckTimeout
D. SqlDumperDumpPath

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The SQL Server Database Engine resource DLL determines whether the detected health status is a condition for failure using the FailureConditionLevel property. The FailureConditionLevel property defines which detected health statuses cause restarts or failovers. Multiple levels of options are available, ranging from no automatic restart or failover to all possible failure conditions resulting in an automatic restart or failover.

References: https://docs.microsoft.com/en-us/sql/sql-server/failover-clusters/windows/failover-policy-for-failover-cluster-instances

QUESTION 37
You want to simulate read, write, checkpoint, backup, sort, and read-ahead activities for your organization's SQL Server 2016 deployment.

Which of the following tools would you use to accomplish this goal?

A. SQLIO
B. SQLIOSim
C. SQLIOStress
D. chkdsk

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The SQLIOSim utility has been upgraded from the SQLIOStress utility. The SQLIOSim utility more accurately simulates the I/O patterns of Microsoft SQL Server.

References: https://support.microsoft.com/en-us/help/231619/how-to-use-the-sqliosim-utility-to-simulate-sql-server-activity-on-a-d

QUESTION 38
You are planning on deploying a server that will be dedicated for ETL (Extraction, Transformation, and Loading) processes.

You want to ensure that SSIS (SQL Server Integration Services) packages will run on this dedicated ETL server and not on any other server on which they were started.

Which of the following features must you install on the ETL server in addition to SSIS to accomplish this goal?

A. Database Engine
B. SQL Server Reporting Services
C. SQL Server Analysis Services
D. Client Tools SDK

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 39
You want to reproduce the same SQL Server 2016 installation configuration across five servers.

Which of the following files will you generate by using SQL Server Setup to accomplish this goal?

A. Configuration.xml
B. Setup.ini
C. Setup.xml
D. ConfigurationFile.ini

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 40
Which feature should you enable and configure so session requests addressed to a specific instance can be allocated different processor resources based on session request properties?

A. Resource Governor
B. Windows System Resource Manager
C. Processor affinity
D. I/O affinity

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Resource Governor enables you to allocate session requests to different resources based on the characteristics of the session request properties.

References: https://docs.microsoft.com/en-us/sql/relational-databases/resource-governor/resource-governor

QUESTION 41
You administer a Microsoft SQL Server 2016 database that has Trustworthy set to On.

You create a stored procedure that returns database-level information from Dynamic Management Views. You grant User1 access to execute the stored procedure.

You need to ensure that the stored procedure returns the required information when User1 executes the stored procedure.

You need to achieve this goal by granting the minimum permissions required.

What should you do? (Each correct answer presents a complete solution. Choose all that apply.)

A. Create a SQL Server login that has VIEW SERVER STATE permissions. Create an application role and a secured password for the role.
B. Modify the stored procedure to include the EXECUTE AS OWNER statement. Grant VIEW SERVER STATE permissions to the owner of the stored procedure.
C. Create a SQL Server login that has VIEW SERVER STATE permissions. Modify the stored procedure to include the EXECUTE AS {newlogin} statement.
D. Grant the db_owner role on the database to User1.
E. Grant the sysadmin role on the database to User1.

Correct Answer: BC
Section: (none)
Explanation

Explanation/Reference:
References:
http://msdn.microsoft.com/en-us/library/ms187861.aspx
http://msdn.microsoft.com/en-us/library/ms191291.aspx

QUESTION 42
You are migrating a database named Orders to a new server that runs Microsoft SQL Server 2016.

You attempt to add the [Corpnet\User1] login to the database.

However, you receive the following error message:

```
"User already exists in current database."
```

You need to configure the [Corpnet\User1] login to be able to access the Orders database and retain the original permissions.
You need to achieve this goal by using the minimum required permissions.
Which Transact-SQL statement should you use?

A. DROP USER [User1]; CREATE USER [Corpnet\User1] FOR LOGIN [Corpnet\User1]; ALTER ROLE [db_owner] ADD MEM3ER [Corpnet\User1];
B. ALTER SERVER RCLS Isysadmin] ADD MEMBER [Corpnet\User1];
C. ALTER USER [Corpnet\User1] WITH LOGIN [Corpnet\User1];
D. ALTER ROLE [db owner] ADD MEMBBR [Corpnet\User1];

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 43
You administer a Microsoft SQL Server 2016 database.

You provide temporary securityadmin access to User1 to the database server.

You need to know if User1 adds logins to securityadmin.

Which server-level audit action group should you use?

A. SERVER_STATE_CHANGE_GROUP
B. SERVER_PRINCIPAL_IMPERSONATION_GROUP
C. SUCCESSFUL_LOGIN_GROUP
D. SERVER_ROLE_MEMBER_CHANGE_GROUP

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
SERVER_ROLE_MEMBER_CHANGE_GROUP
This event is raised whenever a login is added or removed from a fixed server role. This event is raised for the sp_addsrvrolemember and sp_dropsrvrolemember stored procedures. Equivalent to the Audit Add Login to Server Role Event Class.

References: http://technet.microsoft.com/en-us/library/cc280663.aspx

QUESTION 44
You administer a Microsoft SQL Server 2016 instance.

You need to stop a blocking process that has an SPID of 64 without stopping other processes.

What should you do?

A. Execute the following Transact-SQL statement: EXECUTE sp_KillSPID 64
B. Restart the SQL Server service.
C. Execute the following Transact-SQL statement: KILL 64
D. Execute the following Transact-SQL statement: ALTER SESSION KILL '64'

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
KILL can be used to terminate a normal connection, which internally terminates the transactions that are associated with the specified session ID.

References: http://msdn.microsoft.com/en-us/library/ms173730.aspx

QUESTION 45
You administer a Microsoft SQL Server 2016 server.

One of the databases on the server supports a highly active OLTP application.

Users report abnormally long wait times when they submit data into the application.

You need to identify which queries are taking longer than 1 second to run over an extended period of time.

What should you do?

A. use SQL Profiler to trace all queries that are processing on the server. Filter queries that have a Duration value of more than 1,000.
B. Use sp_configure to set a value for blocked process threshold. Create an extended event session.
C. Use the Job Activity monitor to review all processes that are actively running. Review the Job History to find out the duration of each step.
D. Run the sp_who command from a query window.
E. Run the DBCC TRACEON 1222 command from a query window and review the SQL Server event log.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 46
You administer a Microsoft SQL Server 2016 database.

You need to ensure that the size of the transaction log file does not exceed 2 GB.

What should you do?

A. Execute sp_configure 'max log size', 2G.
B. use the ALTER DATABASE...SET LOGFILE command along with the maxsize parameter.
C. In SQL Server Management Studio, right-click the instance and select Database Settings. Set the maximum size of the file for the transaction log.
D. in SQL Server Management Studio, right-click the database, select Properties, and then click Files. Open the Transaction log Autogrowth window and set the maximum size of the file.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 47
You administer a Microsoft SQL Server 2016 server.

The MSSQLSERVER service uses a domain account named CONTOSO\SQLService.

You plan to configure Instant File Initialization.

You need to ensure that Data File Autogrow operations use Instant File Initialization.

What should you do? Choose all that apply.

A. Restart the SQL Server Agent Service.
B. Disable snapshot isolation.
C. Restart the SQL Server Service.
D. Add the CONTOSO\SQLService account to the Perform Volume Maintenance Tasks local security policy.
E. Add the CONTOSO\SQLService account to the Server Operators fixed server role.
F. Enable snapshot isolation.

Correct Answer: CD
Section: (none)
Explanation

Explanation/Reference:
Explanation:
How To Enable Instant File Initialization
1. Open Local Security Policy and go to Local Policies –> User Rights Assignment.

2. Double click Perform Volume Maintenance Tasks and add your SQL Server database engine service account.
3. Restart the SQL Server service using SQL Server Configuration Manager and this setting should now be enabled.

References: http://msdn.microsoft.com/en-us/library/ms175935.aspx

QUESTION 48
You administer a Microsoft SQL Server 2016 database.

The database contains a Product table created by using the following definition:

```
CREATE TABLE dbo.Product
      (ProductID INT PRIMARY KEY,
      Name VARCHAR(50) NOT NULL,
      Color VARCHAR(15) NOT NULL,
      Size VARCHAR(5) NOT NULL,
      Style CHAR(2) NULL,
      Weight DECIMAL(8,2) NULL);
```

You need to ensure that the minimum amount of disk space is used to store the data in the Product table.

What should you do?

A. Convert all indexes to Column Store indexes.
B. Implement Unicode Compression.
C. Implement row-level compression.
D. Implement page-level compression.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 49
You administer a Microsoft SQL Server 2016 instance.

After a routine shutdown, the drive that contains tempdb fails.

You need to be able to start the SQL Server.

What should you do?

A. Modify tempdb location in startup parameters.
B. Start SQL Server in minimal configuration mode.
C. Start SQL Server in single-user mode.
D. Configure SQL Server to bypass Windows application logging.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 50
You administer a single server that contains a Microsoft SQL Server 2016 default instance.

You plan to install a new application that requires the deployment of a database on the server. The application login requires sysadmin permissions.

You need to ensure that the application login is unable to access other production databases.

What should you do?

A. Use the SQL Server default instance and configure an affinity mask.
B. Install a new named SQL Server instance on the server.
C. Use the SQL Server default instance and enable Contained Databases.
D. Install a new default SQL Server instance on the server.

Correct Answer: B

Section: (none)
Explanation

Explanation/Reference:
Explanation:
SQL Server supports multiple instances of SQL Server on a single server or processor, but only one instance can be the default instance. All others must be named instances. A computer can run multiple instances of SQL Server concurrently, and each instance runs independently of other instances.

References: https://msdn.microsoft.com/en-us/library/ms143531(v=SQL.105).aspx

QUESTION 51
You administer a Microsoft SQL Server 2016 Enterprise Edition server that uses 64 cores.

You discover performance issues when large amounts of data are written to tables under heavy system load.

You need to limit the number of cores that handle I/O.

What should you configure?

A. Processor affinity
B. Lightweight pooling
C. Max worker threads
D. I/O affinity

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
References: http://msdn.microsoft.com/en-us/library/ms189629.aspx

QUESTION 52
You administer a Microsoft SQL Server 2016 instance. The instance contains a database that supports a retail sales application.

The application generates hundreds of transactions per second and is online 24 hours per day and 7 days per week. You plan to define a backup strategy for the database.

You need to ensure that the following requirements are met:
- No more than 5 minutes worth of transactions are lost.
- Data can be recovered by using the minimum amount of administrative effort.

What should you do? Choose all that apply.

A. Configure the database to use the SIMPLE recovery model.
B. Create a DIFFERENTIAL database backup every 4 hours.
C. Create a LOG backup every 5 minutes.
D. Configure the database to use the FULL recovery model.
E. Create a FULL database backup every 24 hours.
F. Create a DIFFERENTIAL database backup every 24 hours.

Correct Answer: BCDE
Section: (none)
Explanation

Explanation/Reference:
Explanation:
If there are only three options, the CDE (exclude differential backup), is the best answer.

QUESTION 53
You administer a Microsoft SQL Server 2016 database that contains a table named OrderDetail. You discover that the NCI_OrderDetail_CustomerID non-clustered index is fragmented.

You need to reduce fragmentation.

You need to achieve this goal without taking the index offline.

Which Transact-SQL batch should you use?

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

Correct Answer: B
Section: (none)
Explanation

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

QUESTION 54
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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.

QUESTION 55
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. Transparent Data Encryption (TDE)
C. Encrypting File System (EFS)
D. Reversible encryption

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
1. 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.
2. SQL Server provides the following mechanisms for encryption:
- Transact-SQL functions
- Asymmetric keys
- Symmetric keys
- Certificates
- Transparent Data Encryption

QUESTION 56
DRAG DROP

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.

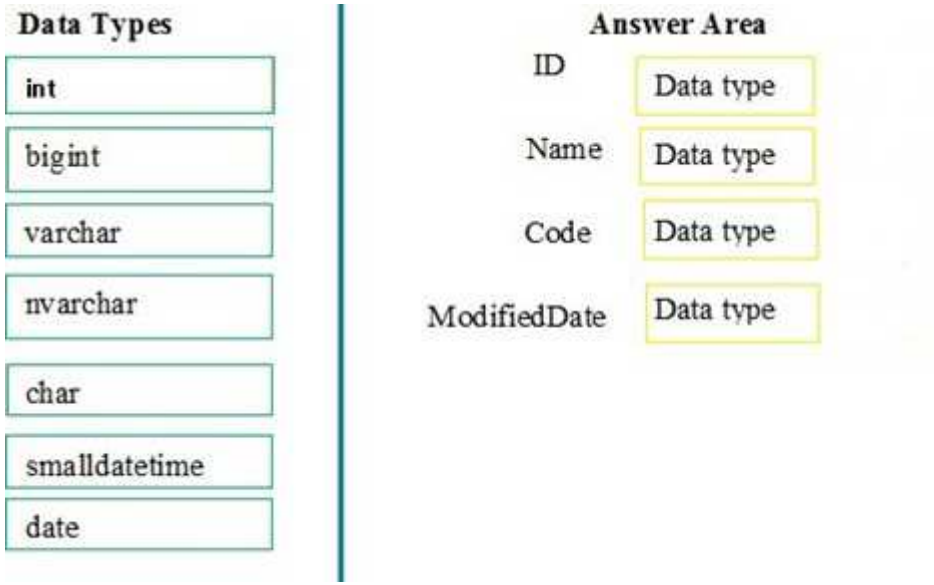
Table1 will contain the following information for each row:

Column	Description
ID	An incremental numeric value used to identify the row
Name	A string in English
Code	An alphanumeric code that has five characters
ModifiedDate	The date of the last modification

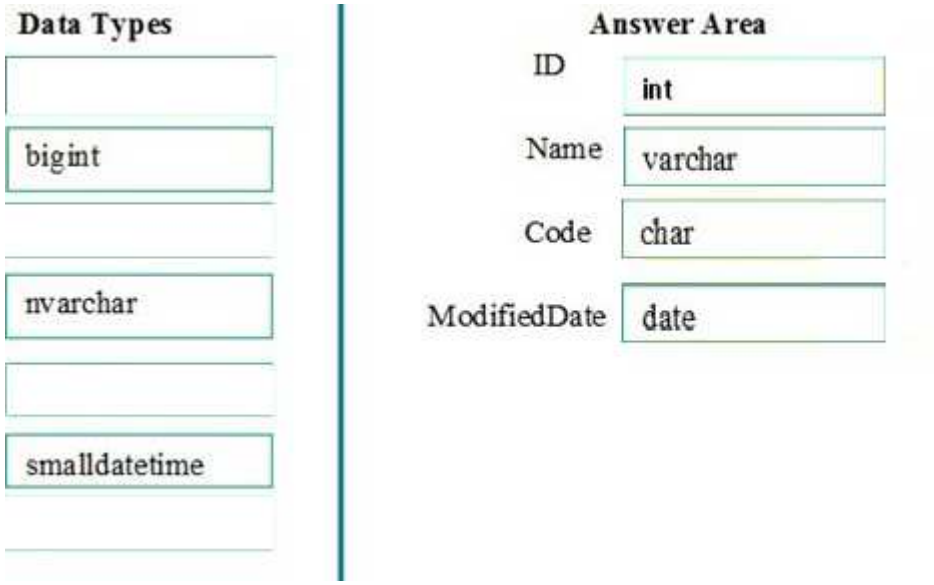
The solution must minimize the amount of space used to store each row.

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:



Section: (none)
Explanation

Explanation/Reference:
References:
http://msdn.microsoft.com/en-US/library/ms187752.aspx

QUESTION 57
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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.

QUESTION 58
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. 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.
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: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 59
Your company has offices in Seattle and Montreal.

The network contains two servers named Server1 and Server2 that have SQL Server 2012 installed. The servers are located in separate building within your campus.

The latency of the WAN link between the buildings is less than 10 ms.

You plan to implement an AlwaysOn availability group on both servers.

You need to recommend a failover type for the availability group.

What should you recommend?

A. Asynchronous automatic failover
B. Synchronous manual failover
C. Asynchronous manual failover
D. Synchronous automatic failover

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 60
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- 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.

QUESTION 61
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. Max Degree of Parallelism
B. Resource Governor
C. Windows System Resource Manager (WSRM)
D. Processor affinity

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 62
You are building a stored procedure for a SQL Azure 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 implicit transaction that has XACT_ABORT enabled
B. An explicit transaction that has XACT_ABORT disabled
C. An implicit transaction that has error handling enabled
D. An explicit transaction that has error handling enabled

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
References:
http://technet.microsoft.com/en-us/library/ms175127(v=SQL.105).aspx

QUESTION 63
You have a SQL Server 2012 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. a new log file
B. a new filegroup
C. the full recovery model
D. a new partitioned table
E. the bulk-logged recovery model

Correct Answer: E

Section: (none)
Explanation

Explanation/Reference:
Explanation:
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 64
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 SQL Azure.

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

A. A database snapshot
B. A data-tier application
C. Change data capture
D. SQL Server Integration Services (SSIS)

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
* SIS 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. http://technet.microsoft.com/en-us/library/ee210546.aspx

QUESTION 65
Your company has offices in Seattle and Montreal.

The network contains two servers named Server1 and Server2 that have SQL Server 2012 installed. Server1 is located in the Seattle office. Server2 is located in the Montreal office. The latency of the WAN link between the Montreal office and the Seattle office is more than 200 ms.

You plan to implement an AlwaysOn availability group on both servers.

You need to recommend a failover type for the availability group. What should you recommend?

A. Synchronous manual failover
B. Synchronous automatic failover
C. Asynchronous automatic failover
D. Asynchronous manual failover

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 66
Overview
You are a database administrator for a company named Litware, Inc.
Litware is a book publishing house. Litware has a main office and a branch office.
You are designing the database infrastructure to support a new web-based application that is being developed.
The web application will be accessed at www.litwareinc.com. Both internal employees and external partners will use the application.
You have an existing desktop application that uses a SQL Server 2008 database named App1_DB.
App1_DB will remain in production.

Requirements
Planned Changes
You plan to deploy a SQL Server 2014 instance that will contain two databases named Database1 and Database2.
All database files will be stored in a highly available SAN.
Database1 will contain two tables named Orders and OrderDetails.
Database1 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.
Database1 will contain several queries that access data in the Database2 tables.
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.

Database2 wilt contains a stored procedure named usp_UpdateInventory. usp_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies. All data in Database2 is recreated each day ad does not change until the next data creation process. Data from Database2 will be accessed periodically by an external application named Application1. The data from Database2 will be sent to a database named Appl_Dbl as soon as changes occur to the data in Database2. Litware plans to use offsite storage for all SQL Server 2014 backups.

Business Requirements
You have the following requirements:

- Costs for new licenses must be minimized.
- Private information that is accessed by Application must be stored in a secure format.
- Development effort must be minimized whenever possible.
- The storage requirements for databases must be minimized.
- System administrators must be able to run real-time reports on disk usage.
- The databases must be available if the SQL Server service fails.
- Database administrators must receive a detailed report that contains allocation errors and data corruption.
- Application developers must be denied direct access to the database tables. Applications must be denied direct access to the tables.

You must encrypt the backup files to meet regulatory compliance requirements.
The encryption strategy must minimize changes to the databases and to the applications.

You need to recommend a solution to allow application users to perform UPDATE operations on the database tables. The solution must meet the business requirements.
What should you recommend?

A. Create stored procedures that use EXECUTE AS clauses.
B. Create a user-defined database role and add users to the role.
C. Create functions that use EXECUTE AS clauses.
D. Create a Policy-Based Management Policy.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- EXECUTE AS 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.

QUESTION 67

Overview
You are a database administrator for a company named Litware, Inc.
Litware is a book publishing house. Litware has a main office and a branch office.
You are designing the database infrastructure to support a new web-based application that is being developed.
The web application will be accessed at www.litwareinc.com. Both internal employees and external partners will use the application.
You have an existing desktop application that uses a SQL Server 2008 database named App1_DB.
App1_DB will remain in production.

Requirements
Planned Changes
You plan to deploy a SQL Server 2014 instance that will contain two databases named Database1 and Database2.
All database files will be stored in a highly available SAN.
Database1 will contain two tables named Orders and OrderDetails.
Database1 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.
Database1 will contain several queries that access data in the Database2 tables.
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.
Database2 wilt contains a stored procedure named usp_UpdateInventory. usp_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies. All data in Database2 is recreated each day ad does not change until the next data creation process. Data from Database2 will be accessed periodically by an external application named Application1. The data from Database2 will be sent to a database named Appl_Dbl as soon as changes occur to the data in Database2. Litware plans to use offsite storage for all SQL Server 2014 backups.

Business Requirements
You have the following requirements:

- Costs for new licenses must be minimized.
- Private information that is accessed by Application must be stored in a secure format.
- Development effort must be minimized whenever possible.
- The storage requirements for databases must be minimized.
- System administrators must be able to run real-time reports on disk usage.
- The databases must be available if the SQL Server service fails.
- Database administrators must receive a detailed report that contains allocation errors and data corruption.
- Application developers must be denied direct access to the database tables. Applications must be denied direct access to the tables.

You must encrypt the backup files to meet regulatory compliance requirements.
The encryption strategy must minimize changes to the databases and to the applications.

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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
1. Scenario: System administrators must be able to run real-time reports on disk usage.
2. 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.

QUESTION 68
Overview
You are a database administrator for a company named Litware, Inc.
Litware is a book publishing house. Litware has a main office and a branch office.
You are designing the database infrastructure to support a new web-based application that is being developed.
The web application will be accessed at www.litwareinc.com. Both internal employees and external partners will use the application.
You have an existing desktop application that uses a SQL Server 2008 database named App1_DB.
App1_DB will remain in production.

Requirements
Planned Changes
You plan to deploy a SQL Server 2014 instance that will contain two databases named Database1 and Database2.
All database files will be stored in a highly available SAN.
Database1 will contain two tables named Orders and OrderDetails.
Database1 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.
Database1 will contain several queries that access data in the Database2 tables.

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.
Database2 wilt contains a stored procedure named usp_UpdateInventory. usp_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies. All data in Database2 is recreated each day ad does not change until the next data creation process. Data from Database2 will be accessed periodically by an external application named Application1. The data from Database2 will be sent to a database named Appl_Dbl as soon as changes occur to the data in Database2. Litware plans to use offsite storage for all SQL Server 2014 backups.

Business Requirements
You have the following requirements:

- Costs for new licenses must be minimized.
- Private information that is accessed by Application must be stored in a secure format.
- Development effort must be minimized whenever possible.
- The storage requirements for databases must be minimized.
- System administrators must be able to run real-time reports on disk usage.
- The databases must be available if the SQL Server service fails.
- Database administrators must receive a detailed report that contains allocation errors and data corruption.
- Application developers must be denied direct access to the database tables. Applications must be denied direct access to the tables.

You must encrypt the backup files to meet regulatory compliance requirements.
The encryption strategy must minimize changes to the databases and to the applications.

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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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.

QUESTION 69
Overview
You are a database administrator for a company named Litware, Inc.
Litware is a book publishing house. Litware has a main office and a branch office.
You are designing the database infrastructure to support a new web-based application that is being developed.
The web application will be accessed at www.litwareinc.com. Both internal employees and external partners will use the application.
You have an existing desktop application that uses a SQL Server 2008 database named App1_DB.
App1_DB will remain in production.

Requirements
Planned Changes
You plan to deploy a SQL Server 2014 instance that will contain two databases named Database1 and Database2.
All database files will be stored in a highly available SAN.
Database1 will contain two tables named Orders and OrderDetails.
Database1 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.
Database1 will contain several queries that access data in the Database2 tables.
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.
Database2 wilt contains a stored procedure named usp_UpdateInventory. usp_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies. All data in Database2 is recreated each day ad does not change until the next data creation process. Data from Database2 will be accessed periodically by an external application named Application1. The data from Database2 will be sent to a database named Appl_Dbl as soon as changes occur to the data in Database2. Litware plans to use offsite storage for all SQL Server 2014 backups.

Business Requirements
You have the following requirements:

- Costs for new licenses must be minimized.
- Private information that is accessed by Application must be stored in a secure format.
- Development effort must be minimized whenever possible.
- The storage requirements for databases must be minimized.
- System administrators must be able to run real-time reports on disk usage.
- The databases must be available if the SQL Server service fails.
- Database administrators must receive a detailed report that contains allocation errors and data corruption.
- Application developers must be denied direct access to the database tables. Applications must be denied direct access to the tables.

You must encrypt the backup files to meet regulatory compliance requirements.

The encryption strategy must minimize changes to the databases and to the applications.

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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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 70
Overview
Application Overview

Contoso, Ltd., is the developer of an enterprise resource planning (ERP) application.
Contoso is designing a new version of the ERP application. The previous version of the ERP application used SQL Server 2008 R2.
The new version will use SQL Server 2014.
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.
You receive several support calls reporting unexpected behavior in the ERP application. After analyzing the calls, you conclude that users made changes directly to the tables in the database.

Tables
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. The Products table was defined by using the SQL_Latin1_General_CP1_CI_AS collation.
A column named ProductName was created by using the varchar data type. The database contains a table named Orders.
Orders contains all of the purchase orders from the last 12 months. Purchase orders that are older than 12 months are stored in a table named OrdersOld.
The previous version of the ERP application relied on table-level security.

Stored Procedures
The current version of the database contains stored procedures that change two tables. The following shows the relevant portions of the two stored procedures:

```
CREATE PROC Sales.Proc1
AS
BEGIN TRAN
UPDATE Sales.Table1 …
UPDATE Sales.Table2 …
COMMIT TRAN
GO

CREATE PROC Sales.Proc2
AS
BEGIN TRAN
UPDATE Sales.Table2 …
UPDATE Sales.Table1 …
COMMIT TRAN
GO
```

Customer Problems

Installation Issues

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

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.

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:

Backup Issues
Customers who have large amounts of historical purchase order data report that backup time is unacceptable.

Search Issues
Users report that when they search product names, the search results exclude product names that contain accents, unless the search string includes the accent.

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.

Query Performance Issues
Customers report that query performance degrades very quickly. Additionally, the customers report that users cannot run queries when SQL Server runs maintenance tasks. Import Issues During the monthly import process, database administrators receive many supports call from users who report that they cannot access the supplier data. The database administrators want to reduce the amount of time required to import the data.

Design Requirements
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.

Data Recovery Requirements
If the import process fails, the database must be returned to its prior state immediately.

Security Requirements
You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

Concurrency Requirements
You must reduce the likelihood of deadlocks occurring when Sales.Prod and Sales.Proc2 execute.

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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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:

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

QUESTION 71
Overview
Application Overview

Contoso, Ltd., is the developer of an enterprise resource planning (ERP) application.
Contoso is designing a new version of the ERP application. The previous version of the ERP application used SQL Server 2008 R2.
The new version will use SQL Server 2014.
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.
You receive several support calls reporting unexpected behavior in the ERP application. After analyzing the calls, you conclude that users made changes directly to the tables in the database.

Tables

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. The Products table was defined by using the SQL_Latin1_General_CP1_CI_AS collation.
A column named ProductName was created by using the varchar data type. The database contains a table named Orders.
Orders contains all of the purchase orders from the last 12 months. Purchase orders that are older than 12 months are stored in a table named OrdersOld.
The previous version of the ERP application relied on table-level security.

Stored Procedures
The current version of the database contains stored procedures that change two tables. The following shows the relevant portions of the two stored procedures:

```
CREATE PROC Sales.Proc1
AS
BEGIN TRAN
UPDATE Sales.Table1 …
UPDATE Sales.Table2 …
COMMIT TRAN
GO

CREATE PROC Sales.Proc2
AS
BEGIN TRAN
UPDATE Sales.Table2 …
UPDATE Sales.Table1 …
COMMIT TRAN
GO
```

Customer Problems

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.

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:

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

Backup Issues
Customers who have large amounts of historical purchase order data report that backup time is unacceptable.

Search Issues
Users report that when they search product names, the search results exclude product names that contain accents, unless the search string includes the accent.

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.

Query Performance Issues
Customers report that query performance degrades very quickly. Additionally, the customers report that users cannot run queries when SQL Server runs maintenance tasks. Import Issues During the monthly import process, database administrators receive many supports call from users who report that they cannot access the supplier data. The database administrators want to reduce the amount of time required to import the data.

Design Requirements
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.

Data Recovery Requirements
If the import process fails, the database must be returned to its prior state immediately.

Security Requirements
You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

Concurrency Requirements
You must reduce the likelihood of deadlocks occurring when Sales.Prod and Sales.Proc2 execute.

You need to recommend a solution that addresses the concurrency requirement. What should you recommend?

A. Call the stored procedures in a Distributed Transaction Coordinator (DTC) transaction.
B. Modify the stored procedures to update tables in the same order for all of the stored procedures.
C. Make calls to Sales.Proc1 and Sales.Proc2 synchronously.

D. Break each stored procedure into two separate procedures, one that changes Sales.Table1 and one that changes Sales.Table2.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- Concurrency Requirements
You must reduce the likelihood of deadlocks occurring when Sales.Proc1 and Sales.Proc2 execute.

QUESTION 72
Overview
Application Overview

Contoso, Ltd., is the developer of an enterprise resource planning (ERP) application.
Contoso is designing a new version of the ERP application. The previous version of the ERP application used SQL Server 2008 R2.
The new version will use SQL Server 2014.
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.
You receive several support calls reporting unexpected behavior in the ERP application. After analyzing the calls, you conclude that users made changes directly to the tables in the database.

Tables
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. The Products table was defined by using the SQL_Latin1_General_CP1_CI_AS collation.
A column named ProductName was created by using the varchar data type. The database contains a table named Orders.
Orders contains all of the purchase orders from the last 12 months. Purchase orders that are older than 12 months are stored in a table named OrdersOld.
The previous version of the ERP application relied on table-level security.

Stored Procedures
The current version of the database contains stored procedures that change two tables. The following shows the relevant portions of the two stored procedures:

```
CREATE PROC Sales.Proc1
AS
BEGIN TRAN
UPDATE Sales.Table1 …
UPDATE Sales.Table2 …
COMMIT TRAN
GO

CREATE PROC Sales.Proc2
AS
BEGIN TRAN
UPDATE Sales.Table2 …
UPDATE Sales.Table1 …
COMMIT TRAN
GO
```

Customer Problems

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.

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:

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

Backup Issues
Customers who have large amounts of historical purchase order data report that backup time is unacceptable.

Search Issues

Users report that when they search product names, the search results exclude product names that contain accents, unless the search string includes the accent.

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.

Query Performance Issues
Customers report that query performance degrades very quickly. Additionally, the customers report that users cannot run queries when SQL Server runs maintenance tasks. Import Issues During the monthly import process, database administrators receive many supports call from users who report that they cannot access the supplier data. The database administrators want to reduce the amount of time required to import the data.

Design Requirements
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.

Data Recovery Requirements
If the import process fails, the database must be returned to its prior state immediately.

Security Requirements
You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

Concurrency Requirements
You must reduce the likelihood of deadlocks occurring when Sales.Prod and Sales.Proc2 execute.

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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- 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 5-10tb 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.

QUESTION 73
Overview
Application Overview

Contoso, Ltd., is the developer of an enterprise resource planning (ERP) application.
Contoso is designing a new version of the ERP application. The previous version of the ERP application used SQL Server 2008 R2.
The new version will use SQL Server 2014.
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.
You receive several support calls reporting unexpected behavior in the ERP application. After analyzing the calls, you conclude that users made changes directly to the tables in the database.

Tables
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. The Products table was defined by using the SQL_Latin1_General_CP1_CI_AS collation.
A column named ProductName was created by using the varchar data type. The database contains a table named Orders.
Orders contains all of the purchase orders from the last 12 months. Purchase orders that are older than 12 months are stored in a table named OrdersOld.
The previous version of the ERP application relied on table-level security.

Stored Procedures
The current version of the database contains stored procedures that change two tables. The following shows the relevant portions of the two stored procedures:

```
CREATE PROC Sales.Proc1
AS
BEGIN TRAN
UPDATE Sales.Table1 …
UPDATE Sales.Table2 …
COMMIT TRAN
GO

CREATE PROC Sales.Proc2
AS
BEGIN TRAN
UPDATE Sales.Table2 …
UPDATE Sales.Table1 …
COMMIT TRAN
GO
```

Customer Problems

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.

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:

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

Backup Issues
Customers who have large amounts of historical purchase order data report that backup time is unacceptable.

Search Issues
Users report that when they search product names, the search results exclude product names that contain accents, unless the search string includes the accent.

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.

Query Performance Issues
Customers report that query performance degrades very quickly. Additionally, the customers report that users cannot run queries when SQL Server runs maintenance tasks. Import Issues During the monthly import process, database administrators receive many supports call from users who report that they cannot access the supplier data. The database administrators want to reduce the amount of time required to import the data.

Design Requirements
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.

Data Recovery Requirements
If the import process fails, the database must be returned to its prior state immediately.

Security Requirements
You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

Concurrency Requirements
You must reduce the likelihood of deadlocks occurring when Sales.Prod and Sales.Proc2 execute.

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
Section: (none)
Explanation

Explanation/Reference:
References:

http://technet.microsoft.com/en-us/library/aa214408(v=sql.80).aspx

QUESTION 74
Overview
Application Overview

Contoso, Ltd., is the developer of an enterprise resource planning (ERP) application.
Contoso is designing a new version of the ERP application. The previous version of the ERP application used SQL Server 2008 R2.
The new version will use SQL Server 2014.
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.
You receive several support calls reporting unexpected behavior in the ERP application. After analyzing the calls, you conclude that users made changes directly to the tables in the database.

Tables
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. The Products table was defined by using the SQL_Latin1_General_CP1_CI_AS collation.
A column named ProductName was created by using the varchar data type. The database contains a table named Orders.
Orders contains all of the purchase orders from the last 12 months. Purchase orders that are older than 12 months are stored in a table named OrdersOld.
The previous version of the ERP application relied on table-level security.

Stored Procedures
The current version of the database contains stored procedures that change two tables. The following shows the relevant portions of the two stored procedures:

```
CREATE PROC Sales.Proc1
AS
BEGIN TRAN
UPDATE Sales.Table1 …
UPDATE Sales.Table2 …
COMMIT TRAN
GO

CREATE PROC Sales.Proc2
AS
BEGIN TRAN
UPDATE Sales.Table2 …
UPDATE Sales.Table1 …
COMMIT TRAN
GO
```

Customer Problems

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.

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:

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

Backup Issues
Customers who have large amounts of historical purchase order data report that backup time is unacceptable.

Search Issues

Users report that when they search product names, the search results exclude product names that contain accents, unless the search string includes the accent.

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.

Query Performance Issues
Customers report that query performance degrades very quickly. Additionally, the customers report that users cannot run queries when SQL Server runs maintenance tasks. Import Issues During the monthly import process, database administrators receive many supports call from users who report that they cannot access the supplier data. The database administrators want to reduce the amount of time required to import the data.

Design Requirements
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.

Data Recovery Requirements
If the import process fails, the database must be returned to its prior state immediately.

Security Requirements
You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

Concurrency Requirements
You must reduce the likelihood of deadlocks occurring when Sales.Prod and Sales.Proc2 execute.

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
Section: (none)
Explanation

Explanation/Reference:

QUESTION 75
Overview
Application Overview

Contoso, Ltd., is the developer of an enterprise resource planning (ERP) application.
Contoso is designing a new version of the ERP application. The previous version of the ERP application used SQL Server 2008 R2.
The new version will use SQL Server 2014.
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.
You receive several support calls reporting unexpected behavior in the ERP application. After analyzing the calls, you conclude that users made changes directly to the tables in the database.

Tables
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. The Products table was defined by using the SQL_Latin1_General_CP1_CI_AS collation.
A column named ProductName was created by using the varchar data type. The database contains a table named Orders.
Orders contains all of the purchase orders from the last 12 months. Purchase orders that are older than 12 months are stored in a table named OrdersOld.
The previous version of the ERP application relied on table-level security.

Stored Procedures
The current version of the database contains stored procedures that change two tables. The following shows the relevant portions of the two stored procedures:

```
CREATE PROC Sales.Proc1
AS
BEGIN TRAN
UPDATE Sales.Table1 …
UPDATE Sales.Table2 …
COMMIT TRAN
GO

CREATE PROC Sales.Proc2
AS
BEGIN TRAN
UPDATE Sales.Table2 …
UPDATE Sales.Table1 …
COMMIT TRAN
GO
```

Customer Problems

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.

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:

Column	Data type
id	uniquedentifier
lastModified	datetime
modifiedBy	Varchar(200)

Backup Issues
Customers who have large amounts of historical purchase order data report that backup time is unacceptable.

Search Issues
Users report that when they search product names, the search results exclude product names that contain accents, unless the search string includes the accent.

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.

Query Performance Issues
Customers report that query performance degrades very quickly. Additionally, the customers report that users cannot run queries when SQL Server runs maintenance tasks. Import Issues During the monthly import process, database administrators receive many supports call from users who report that they cannot access the supplier data. The database administrators want to reduce the amount of time required to import the data.

Design Requirements
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.

Data Recovery Requirements
If the import process fails, the database must be returned to its prior state immediately.

Security Requirements
You must provide users with the ability to execute functions within the ERP application, without having direct access to the underlying tables.

Concurrency Requirements
You must reduce the likelihood of deadlocks occurring when Sales.Prod and Sales.Proc2 execute.

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?

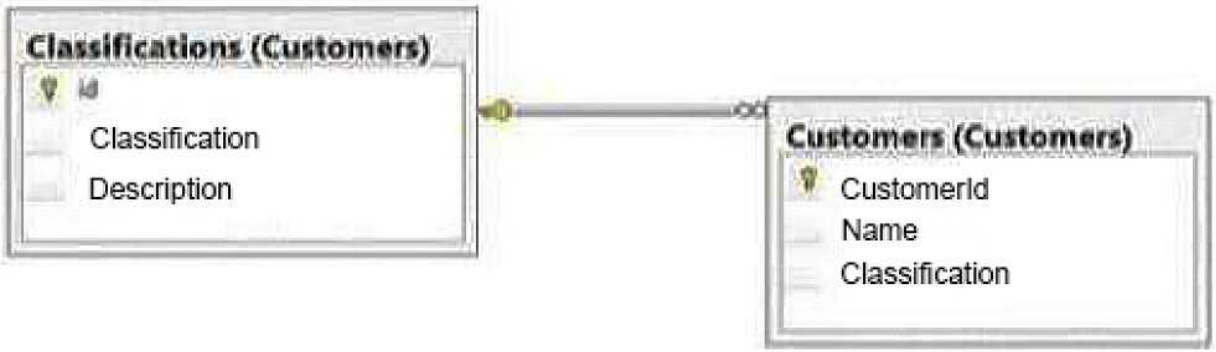
A. Denormalize the Products table.
B. Denormalize the OrderDetails table.
C. Normalize the OrderDetails table.
D. Normalize the Products table.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- 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 76
Overview
General Overview
ADatum Corporation has offices in Miami and Montreal.
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

Databases
Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev.
Servers and databases are managed by a team of database administrators. Currently, all of the database administrators have the same level of permissions on all of the servers and all of the databases.
The Customers database contains two tables named Customers and Classifications.
The following graphic shows the relevant portions of the tables:



The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
2	Gold	Yearly sales over 500,000
3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently.
The database is often used for reporting.
A full backup of the database currently takes three hours to complete.

Stored Procedures
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.
After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.
A stored procedure named USP_2 is used to generate a product list. The product list contains the names of products grouped by category.
USP_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP_1 and USP_3.
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 fails. 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.
All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP_5 calls several stored procedures in the same database. Security checks are performed each time USP_5 calls a stored procedure.
You suspect that the security checks are slowing down the performance of USP_5. All stored procedures accessed by user applications call nested stored procedures.
The nested stored procedures are never called directly.

Design Requirements
Data Recovery
You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.

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.

Classification Changes
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. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

Storage
ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups.

Error Handling
There is currently no error handling code in any stored procedure.
You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

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.

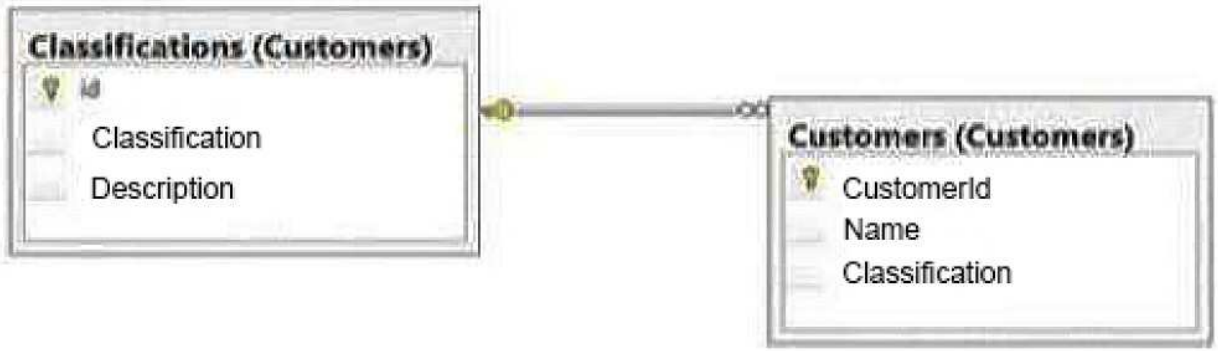
Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- Must catch and handle the error.
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.

QUESTION 77

Overview
General Overview
ADatum Corporation has offices in Miami and Montreal.
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

Databases
Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev.
Servers and databases are managed by a team of database administrators. Currently, all of the database administrators have the same level of permissions on all of the servers and all of the databases.
The Customers database contains two tables named Customers and Classifications.
The following graphic shows the relevant portions of the tables:



The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
2	Gold	Yearly sales over 500,000
3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently.
The database is often used for reporting.
A full backup of the database currently takes three hours to complete.

Stored Procedures

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.
After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.
A stored procedure named USP_2 is used to generate a product list. The product list contains the names of products grouped by category.
USP_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP_1 and USP_3.
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 fails. 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.
All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP_5 calls several stored procedures in the same database. Security checks are performed each time USP_5 calls a stored procedure.
You suspect that the security checks are slowing down the performance of USP_5. All stored procedures accessed by user applications call nested stored procedures.
The nested stored procedures are never called directly.

Design Requirements
Data Recovery
You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.

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.

Classification Changes
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. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

Storage
ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups.

Error Handling
There is currently no error handling code in any stored procedure.
You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

You need to recommend a solution that meets the data recovery requirement. What should you include in the recommendation?

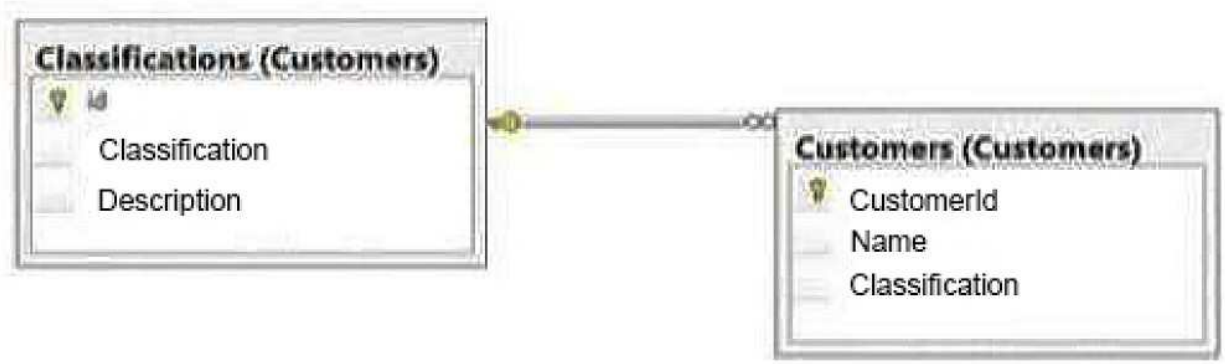
A. A database snapshot
B. A transaction log backup
C. Snapshot isolation
D. A differential backup

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
References: http://stackoverflow.com/questions/5299812/alternatives-to-snapshot-functionality-sql-serverstandard

QUESTION 78
Overview
General Overview
ADatum Corporation has offices in Miami and Montreal.
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

Databases
Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev.
Servers and databases are managed by a team of database administrators. Currently, all of the database administrators have the same level of permissions on all of the servers and all of the databases.
The Customers database contains two tables named Customers and Classifications.
The following graphic shows the relevant portions of the tables:



The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
2	Gold	Yearly sales over 500,000
3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently.
The database is often used for reporting.
A full backup of the database currently takes three hours to complete.

Stored Procedures
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.
After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.
A stored procedure named USP_2 is used to generate a product list. The product list contains the names of products grouped by category.
USP_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP_1 and USP_3.
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 fails. 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.
All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP_5 calls several stored procedures in the same database. Security checks are performed each time USP_5 calls a stored procedure.
You suspect that the security checks are slowing down the performance of USP_5. All stored procedures accessed by user applications call nested stored procedures.
The nested stored procedures are never called directly.

Design Requirements
Data Recovery
You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.

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.

Classification Changes
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. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

Storage
ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups.

Error Handling
There is currently no error handling code in any stored procedure.
You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

You need to recommend a solution to minimize the amount of time it takes to execute USP_2. What should you recommend?

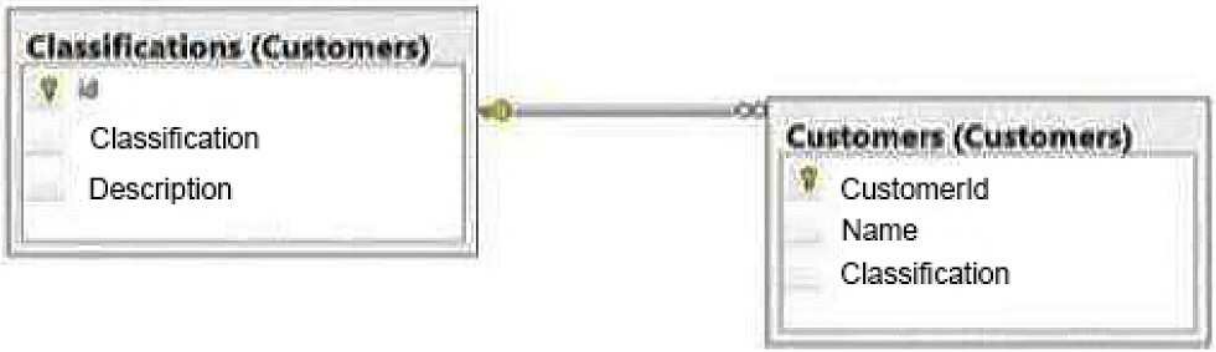
A. A database snapshot
B. A table variable
C. A temporary table
D. Snapshot isolation

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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.

QUESTION 79
Overview
General Overview
ADatum Corporation has offices in Miami and Montreal.
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

Databases
Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev.
Servers and databases are managed by a team of database administrators. Currently, all of the database administrators have the same level of permissions on all of the servers and all of the databases.
The Customers database contains two tables named Customers and Classifications.
The following graphic shows the relevant portions of the tables:



The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
2	Gold	Yearly sales over 500,000
3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently.
The database is often used for reporting.
A full backup of the database currently takes three hours to complete.

Stored Procedures
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.
After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.
A stored procedure named USP_2 is used to generate a product list. The product list contains the names of products grouped by category.
USP_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP_1 and USP_3.
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 fails. 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.
All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP_5 calls several stored procedures in the same database. Security checks are performed each time USP_5 calls a stored procedure.
You suspect that the security checks are slowing down the performance of USP_5. All stored procedures accessed by user applications call nested stored procedures.

The nested stored procedures are never called directly.

Design Requirements
Data Recovery
You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.

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.

Classification Changes
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. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

Storage
ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups.

Error Handling
There is currently no error handling code in any stored procedure.
You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

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.

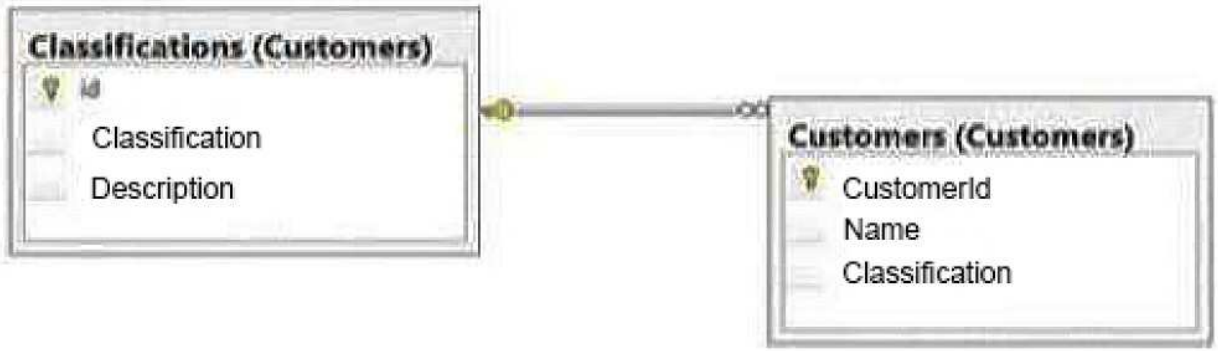
Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- 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 80

Overview
General Overview
ADatum Corporation has offices in Miami and Montreal.
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

Databases
Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev.
Servers and databases are managed by a team of database administrators. Currently, all of the database administrators have the same level of permissions on all of the servers and all of the databases.
The Customers database contains two tables named Customers and Classifications.
The following graphic shows the relevant portions of the tables:



The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
2	Gold	Yearly sales over 500,000
3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently.
The database is often used for reporting.
A full backup of the database currently takes three hours to complete.

Stored Procedures

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.
After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.
A stored procedure named USP_2 is used to generate a product list. The product list contains the names of products grouped by category.
USP_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP_1 and USP_3.
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 fails. 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.
All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP_5 calls several stored procedures in the same database. Security checks are performed each time USP_5 calls a stored procedure.
You suspect that the security checks are slowing down the performance of USP_5. All stored procedures accessed by user applications call nested stored procedures.
The nested stored procedures are never called directly.

Design Requirements
Data Recovery
You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.

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.

Classification Changes
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. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

Storage
ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups.

Error Handling
There is currently no error handling code in any stored procedure.
You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

You need to recommend a solution to minimize the amount of time it takes to execute USP_1. With what should you recommend replacing Table1?

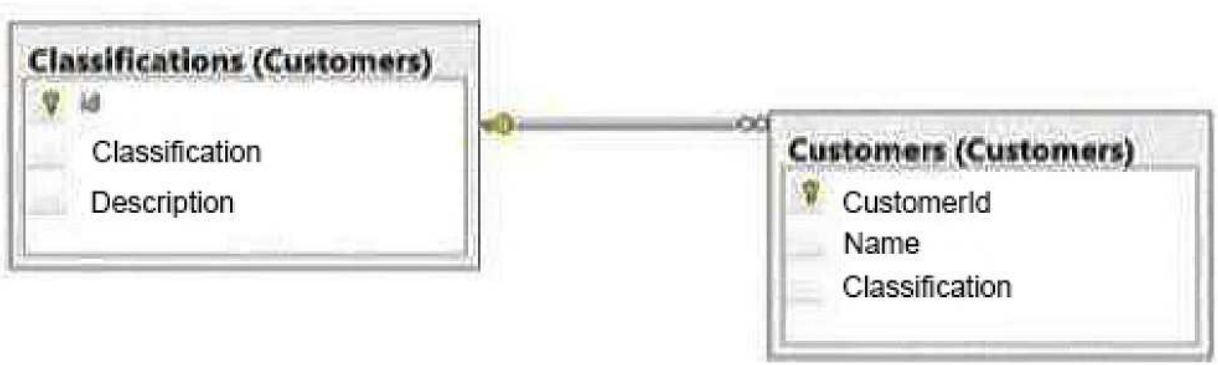
A. A view
B. A temporary table
C. A table variable
D. A function

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- 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.

QUESTION 81
Overview
General Overview
ADatum Corporation has offices in Miami and Montreal.
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

Databases
Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev.
Servers and databases are managed by a team of database administrators. Currently, all of the database administrators have the same level of permissions on all of the servers and all of the databases.
The Customers database contains two tables named Customers and Classifications.
The following graphic shows the relevant portions of the tables:



The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
2	Gold	Yearly sales over 500,000
3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently.
The database is often used for reporting.
A full backup of the database currently takes three hours to complete.

Stored Procedures
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.
After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.
A stored procedure named USP_2 is used to generate a product list. The product list contains the names of products grouped by category.
USP_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP_1 and USP_3.
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 fails. 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.
All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP_5 calls several stored procedures in the same database. Security checks are performed each time USP_5 calls a stored procedure.
You suspect that the security checks are slowing down the performance of USP_5. All stored procedures accessed by user applications call nested stored procedures.
The nested stored procedures are never called directly.

Design Requirements
Data Recovery
You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.

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.

Classification Changes
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. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

Storage
ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups.

Error Handling
There is currently no error handling code in any stored procedure.
You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

You need to recommend a solution to ensure that USP_4 adheres to the security requirements. What should you include in the recommendation?

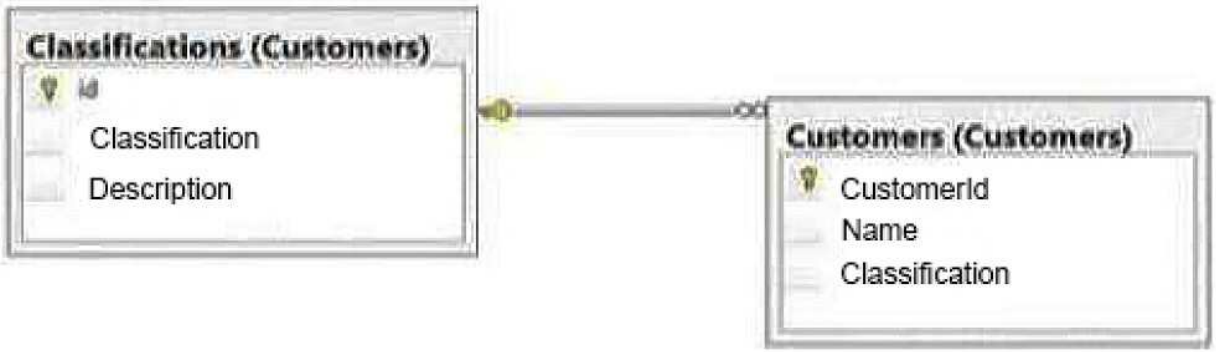
A. Enable SQL Server Audit.
B. Enable trace flags.
C. Configure data manipulation language (DML) triggers.
D. Enable C2 audit tracing.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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.

QUESTION 82
Overview
General Overview
ADatum Corporation has offices in Miami and Montreal.
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

Databases
Each office contains databases named Sales, Inventory, Customers, Products, Personnel, and Dev.
Servers and databases are managed by a team of database administrators. Currently, all of the database administrators have the same level of permissions on all of the servers and all of the databases.
The Customers database contains two tables named Customers and Classifications.
The following graphic shows the relevant portions of the tables:



The following table shows the current data in the Classifications table:

ID	Classification	Description
1	Platinum	Yearly sales over 1,000,000
2	Gold	Yearly sales over 500,000
3	Silver	Yearly sales over 100,000

The Inventory database is updated frequently.
The database is often used for reporting.
A full backup of the database currently takes three hours to complete.

Stored Procedures
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.
After Table1 is created, the reporting process reads data from Table1 sequentially several times. After the process is complete, Table1 is deleted.
A stored procedure named USP_2 is used to generate a product list. The product list contains the names of products grouped by category.
USP_2 takes several minutes to run due to locks on the tables the procedure accesses. The locks are caused by USP_1 and USP_3.
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 fails. 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.
All nested stored procedures handle errors by using structured exception handling. A stored procedure named USP_5 calls several stored procedures in the same database. Security checks are performed each time USP_5 calls a stored procedure.
You suspect that the security checks are slowing down the performance of USP_5. All stored procedures accessed by user applications call nested stored procedures.

The nested stored procedures are never called directly.

Design Requirements
Data Recovery
You must be able to recover data from the Inventory database if a storage failure occurs. You have a Recovery Time Objective (RTO) of 5 minutes.

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.

Classification Changes
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. Management requests that historical data be maintained for the previous classifications. Security A group of junior database administrators must be able to manage security for the Sales database. The junior database administrators will not have any other administrative rights. A. Datum wants to track which users run each stored procedure.

Storage
ADatum has limited storage. Whenever possible, all storage space should be minimized for all databases and all backups.

Error Handling
There is currently no error handling code in any stored procedure.
You plan to log errors in called stored procedures and nested stored procedures. Nested stored procedures are never called directly.

You need to recommend a solution to minimize the amount of time it takes to execute USP_1. With what should you recommend replacing Table1?

A. An indexed view
B. A function
C. A table variable
D. A temporary table

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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.
After 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.

QUESTION 83
General Overview
You are the Senior Database Administrator (DBA) for a manufacturing company named Fairstone Manufacturing.
Fairstone Manufacturing is based in the New York area. The company has two offices: a main office in the city and a branch office just outside the city. The company has four factories where their products are manufactured. Two factories are in the New York area and the other two factories are in Washington.

Network Connectivity
The two offices are connected by a 10 Mbps dedicated WAN link.

SQL Server Environment
The main office has four SQL Server 2012 Standard Edition servers named MainDB1, MainDB2, MainDB3 and MainDB4. The branch office has two SQL Server 2012 Standard Edition servers named BranchDB1 and BranchDB2. The main office has a Development department. All databases used by the Development department are hosted on MainDB3 and MainDB4. MainDB1 and MainDB2 host the following databases:

Products
Manufacturing
Sales
HR
Customers
DailyReportsTemp

BranchDB1 and BranchDB2 host the same databases as MainDB1 and MainDB2. The DailyReportsTemp database is a temporary database that is recreated every day and used for reporting purposes.
One of the tables in the Customer database lists all the customers. Another table linked to the customers table contains a list of classifications for the customers. The classifications are Hot, Warm and Cold based on the number of orders placed by the customers in the last year. The customers are classified according to the following criteria:
Hot - Over 100 orders placed in a year.
Warm - Between 50 and 100 orders placed in a year.
Cold - Under 50 orders placed in a year.

Stored Procedures
Three tables in the Manufacturing database are modified by a stored procedure named ManProc1.

A segment of code from ManProc1 is as follows:

```
CREATE PROCEDURE Manufacturing.ManProc1
AS
BEGIN TRANSACTION
UPDATE Manufacturing.Type …
UPDATE Manufacturing.Version …
UPDATE Manufacturing.Revision …
COMMIT TRANSACTION
GO
```

The same three tables are also modified by a stored procedure named ManProc2. A segment of code from ManProc2 is as follows:

```
CREATE PROCEDURE Manufacturing.ManProc2
AS
BEGIN TRANSACTION
UPDATE Manufacturing.Revision …
UPDATE Manufacturing.Type …
UPDATE Manufacturing.Version …
COMMIT TRANSACTION
GO
```

A product list in the Products database is updated using information from tables in the Manufacturing database by a stored procedure named ProductUpdateProc. Locks on tables in the Manufacturing database often cause ProductUpdateProc to take a long time to complete.
A list of manufacturing processes required to create each product is stored in tables in the Manufacturing database and updated by a stored procedure named ProcessUpdateProc. The ProcessUpdateProc stored procedure contains several UPDATE statements. The UPDATE statements are configured to be called in a specific order. The ProcessUpdateProc stored procedure continues to run in the event of a failure of one of the UPDATE statements.
This can cause inaccurate results in the manufacturing process list.

Sales Director Statement
The Sales Director has made the following observations about the current database design:

- The current customer classification system needs to be changed.
- Currently the customers are classified by the number of orders placed in the last year.
- This information is an unreliable guide as it does not take in to account the size of the orders.
- I would suggest a trial run of a classification system based on the revenue generated by the orders placed in the last year.
- We may add more than the current three classification types in future.
- We should have a method of recording changes to the classifications.

IT Manager Statement
The IT Manager has listed the following requirements for the SQL Server and database environment:

- We need to provide a group of users from the IT and Manufacturing departments the minimum administrative rights to view database information and server state for the Manufacturing database on MainDB1.
- The Sales database takes too long to back up due to the large amount of historical sales order data in the database. We need to reduce the backup time for this database.
- The DailyReportsTemp database takes four hours to back up. We need to be able to recover the DailyReportsTemp database in less than one hour if the database storage hardware fails.
- We need to be able to immediately return the Manufacturing database to its previous state if the ProcessUpdateProc stored procedure fails to update the process information correctly.
- I also want the ProcessUpdateProc stored procedure to stop running in the event of a failure of one of the UPDATE statements.
- IT Administrators need to be able to monitor the disk space used on the SQL Servers by running real-time reports on the disk usage.
- The Developers would like to install second instances of SQL Server on MainDB3 and MainDB4.
- They would like to assign each instance to specific processors on the SQL Servers.

You need to enable the Developers to assign SQL Server instances on MainDB3 and MainDB4 to specific processors on the servers. What should you configure?

A. Windows System Resource Manager (WSRM)
B. Resource Governor
C. A Maintenance Plan
D. Processor Affinity

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 84
You need to provide a group of users from the IT and Manufacturing departments the minimum administrative rights to view database information and server state for the Manufacturing database on MainDB1.
What should you do?

A. You should configure a Database Role.
B. You should configure a Server Role.
C. You should configure a Shared SQL Server Login.
D. You should configure a Local Security Group.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 85
You need to recommend a solution to meet the recovery requirements for the manufacturing database.

Your solution must minimize costs.

What should you recommend?

A. Database snapshots
B. Transaction log backups
C. Differential backups
D. SQL Server Failover Clustering
E. Peer-to-peer replication

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 86
You need to address the requirements for disc usage monitoring for the SQL Servers.

What should you do?

A. You should configure disc quotas.
B. You should configure a Dynamic Management View.
C. You should configure alerts sent by the SQL Server Agent.
D. You should configure a SQL Server Maintenance Plan.

Correct Answer: B
Section: (none)

Explanation

Explanation/Reference:

QUESTION 87
You need to address the Sales Director's requirements regarding the customer classification. You need to recommend a solution for changing the classifications.

What should you recommend?

A. Add each classification change to a new row in the Customers table.
B. Record each change to the classification of each customer in a new row in the Customers table.
C. Add a new row to the Customers table for each new classification.
D. Record each change to the classification of each customer in a new table in the Customers database.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 88
General Overview
You are the Senior Database Administrator (DBA) for a software development company named Leafield Solutions. The company develops software applications custom designed to meet customer requirements.

Requirements Leafield Solutions has been asked by a customer to develop a web-based Enterprise Resource Planning and Management application. The new application will eventually replace a desktop application that the customer is currently using. The current application will remain in use while the users are trained to use the new webbased application.

You need to design the SQL Server and database infrastructure for the web-based application.

Databases
You plan to implement databases named Customers, Sales, Products, Current_Inventory, and TempReporting.
The Sales database contains a table named OrderTotals and a table named SalesInfo.
A stored procedure named SPUpdateSalesInfo reads data in the OrderTotals table and modifies data in the SalesInfo table.
The stored procedure then reads data in the OrderTotals table a second time and makes further changes to the information in the SalesInfo table.
The Current_Inventory database contains a large table named Inv_Current. The Inv_Current table has a clustered index for the primary key and a nonclustered index. The primary key column uses the identity property.
The data in the Inv_Current table is over 120GB in size. The tables in the Current_Inventory database are accessed by multiple queries in the Sales database.

Another table in the Current_Inventory database contains a self-join with an unlimited number of hierarchies. This table is modified by a stored procedure named SPUpdate2.
An external application named ExternalApp1 will periodically query the Current_Inventory database to generate statistical information. The TempReporting database contains a single table named GenInfo.
A stored procedure named SPUPdateGenInfo combines data from multiple databases and generates millions of rows of data in the GenInfo table.
The GenInfo table is used for reports.
When the information in GenInfo is generated, a reporting process reads data from the Inv_Current table and queries information in the GenInfo table based on that data.
The GenInfo table is deleted after the reporting process completes. The Products database contains tables named ProductNames and ProductTypes.

Current System
The current desktop application uses data stored in a SQL Server 2005 database named DesABCopAppDB. This database will remain online and data from the Current_Inventory database will be copied to it as soon as data is changed in the Current_Inventory database.

SQL Servers
A new SQL Server 2012 instance will be deployed to host the databases for the new system. The databases will be hosted on a Storage Area Network (SAN) that provides highly available storage.

Design Requirements
Your SQL Server infrastructure and database design must meet the following requirements:

- Confidential information in the Current_ Inventory database that is accessed by ExternalApp1 must be securely stored.
- Direct access to database tables by developers or applications must be denied.
- The account used to generate reports must have restrictions on the hours when it is allowed to make a connection.
- Deadlocks must be analyzed with the use of Deadlock Graphs.
- In the event of a SQL Server failure, the databases must remain available.
- Software licensing and database storage costs must be minimized.
- Development effort must be minimized.
- The Tempdb databases must be monitored for insufficient free space.
- Failed authentication requests must be logged.
- Every time a new row is added to the ProductTypes table in the Products database, a user defined function that validates the row must be called before the row is added to the table.
- When SPUpdateSalesInfo queries data in the OrderTotals table the first time, the same rows must be returned along with any newly added rows when SPUpdateSalesInfo queries data in the OrderTotals table the second time.

The performance of the SPUpdate2 stored procedure needs to be improved.
Your solution must meet the design requirements.
What should your solution include?

A. A common table expression.
B. A derived table.

C. A Cursor.
D. A table variable.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 89
General Overview
You are the Senior Database Administrator (DBA) for a software development company named Leafield Solutions. The company develops software applications custom designed to meet customer requirements.

Requirements Leafield Solutions has been asked by a customer to develop a web-based Enterprise Resource Planning and Management application. The new application will eventually replace a desktop application that the customer is currently using. The current application will remain in use while the users are trained to use the new webbased application.

You need to design the SQL Server and database infrastructure for the web-based application.

Databases
You plan to implement databases named Customers, Sales, Products, Current_Inventory, and TempReporting.
The Sales database contains a table named OrderTotals and a table named SalesInfo.
A stored procedure named SPUpdateSalesInfo reads data in the OrderTotals table and modifies data in the SalesInfo table.
The stored procedure then reads data in the OrderTotals table a second time and makes further changes to the information in the SalesInfo table.
The Current_Inventory database contains a large table named Inv_Current. The Inv_Current table has a clustered index for the primary key and a nonclustered index. The primary key column uses the identity property.
The data in the Inv_Current table is over 120GB in size. The tables in the Current_Inventory database are accessed by multiple queries in the Sales database.
Another table in the Current_Inventory database contains a self-join with an unlimited number of hierarchies. This table is modified by a stored procedure named SPUpdate2.
An external application named ExternalApp1 will periodically query the Current_Inventory database to generate statistical information. The TempReporting database contains a single table named GenInfo.
A stored procedure named SPUPdateGenInfo combines data from multiple databases and generates millions of rows of data in the GenInfo table.
The GenInfo table is used for reports.
When the information in GenInfo is generated, a reporting process reads data from the Inv_Current table and queries information in the GenInfo table based on that data.
The GenInfo table is deleted after the reporting process completes. The Products database contains tables named ProductNames and ProductTypes.

Current System
The current desktop application uses data stored in a SQL Server 2005 database named DesABCopAppDB. This database will remain online and data from the Current_Inventory database will be copied to it as soon as data is changed in the Current_Inventory database.

SQL Servers
A new SQL Server 2012 instance will be deployed to host the databases for the new system. The databases will be hosted on a Storage Area Network (SAN) that provides highly available storage.

Design Requirements
Your SQL Server infrastructure and database design must meet the following requirements:

- Confidential information in the Current_ Inventory database that is accessed by ExternalApp1 must be securely stored.
- Direct access to database tables by developers or applications must be denied.
- The account used to generate reports must have restrictions on the hours when it is allowed to make a connection.
- Deadlocks must be analyzed with the use of Deadlock Graphs.
- In the event of a SQL Server failure, the databases must remain available.
- Software licensing and database storage costs must be minimized.
- Development effort must be minimized.
- The Tempdb databases must be monitored for insufficient free space.
- Failed authentication requests must be logged.
- Every time a new row is added to the ProductTypes table in the Products database, a user defined function that validates the row must be called before the row is added to the table.
- When SPUpdateSalesInfo queries data in the OrderTotals table the first time, the same rows must be returned along with any newly added rows when SPUpdateSalesInfo queries data in the OrderTotals table the second time.

You need to configure a synchronization solution to copy data from the Current_Inventory database the DesABCopAppDB database.
What should you configure?

A. Transactional Replication.
B. Database Mirroring.
C. Snapshot Replication.
D. Incremental Backups

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 90
General Overview
You are the Senior Database Administrator (DBA) for a software development company named Leafield Solutions. The company develops software applications

custom designed to meet customer requirements.

Requirements Leafield Solutions has been asked by a customer to develop a web-based Enterprise Resource Planning and Management application. The new application will eventually replace a desktop application that the customer is currently using. The current application will remain in use while the users are trained to use the new webbased application.

You need to design the SQL Server and database infrastructure for the web-based application.

Databases
You plan to implement databases named Customers, Sales, Products, Current_Inventory, and TempReporting.
The Sales database contains a table named OrderTotals and a table named SalesInfo.
A stored procedure named SPUpdateSalesInfo reads data in the OrderTotals table and modifies data in the SalesInfo table.
The stored procedure then reads data in the OrderTotals table a second time and makes further changes to the information in the SalesInfo table.
The Current_Inventory database contains a large table named Inv_Current. The Inv_Current table has a clustered index for the primary key and a nonclustered index. The primary key column uses the identity property.
The data in the Inv_Current table is over 120GB in size. The tables in the Current_Inventory database are accessed by multiple queries in the Sales database.
Another table in the Current_Inventory database contains a self-join with an unlimited number of hierarchies. This table is modified by a stored procedure named SPUpdate2.
An external application named ExternalApp1 will periodically query the Current_Inventory database to generate statistical information. The TempReporting database contains a single table named GenInfo.
A stored procedure named SPUPdateGenInfo combines data from multiple databases and generates millions of rows of data in the GenInfo table.
The GenInfo table is used for reports.
When the information in GenInfo is generated, a reporting process reads data from the Inv_Current table and queries information in the GenInfo table based on that data.
The GenInfo table is deleted after the reporting process completes. The Products database contains tables named ProductNames and ProductTypes.

Current System
The current desktop application uses data stored in a SQL Server 2005 database named DesABCopAppDB. This database will remain online and data from the Current_Inventory database will be copied to it as soon as data is changed in the Current_Inventory database.

SQL Servers
A new SQL Server 2012 instance will be deployed to host the databases for the new system. The databases will be hosted on a Storage Area Network (SAN) that provides highly available storage.

Design Requirements
Your SQL Server infrastructure and database design must meet the following requirements:

- Confidential information in the Current_ Inventory database that is accessed by ExternalApp1 must be securely stored.
- Direct access to database tables by developers or applications must be denied.
- The account used to generate reports must have restrictions on the hours when it is allowed to make a connection.
- Deadlocks must be analyzed with the use of Deadlock Graphs.
- In the event of a SQL Server failure, the databases must remain available.

- Software licensing and database storage costs must be minimized.
- Development effort must be minimized.
- The Tempdb databases must be monitored for insufficient free space.
- Failed authentication requests must be logged.
- Every time a new row is added to the ProductTypes table in the Products database, a user defined function that validates the row must be called before the row is added to the table.
- When SPUpdateSalesInfo queries data in the OrderTotals table the first time, the same rows must be returned along with any newly added rows when SPUpdateSalesInfo queries data in the OrderTotals table the second time.

You need to enable users to modify data in the database tables using UPDATE operations.
You need to implement a solution that meets the design requirements.
What should you configure?

A. You should configure a server role.
B. You should configure a database role.
C. You should configure functions that use the EXECUTE AS statement.
D. You should configure stored procedures that use the EXECUTE AS statement.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 91
General Overview
You are the Senior Database Administrator (DBA) for a software development company named Leafield Solutions. The company develops software applications custom designed to meet customer requirements.

Requirements Leafield Solutions has been asked by a customer to develop a web-based Enterprise Resource Planning and Management application. The new application will eventually replace a desktop application that the customer is currently using. The current application will remain in use while the users are trained to use the new webbased application.

You need to design the SQL Server and database infrastructure for the web-based application.

Databases
You plan to implement databases named Customers, Sales, Products, Current_Inventory, and TempReporting.
The Sales database contains a table named OrderTotals and a table named SalesInfo.
A stored procedure named SPUpdateSalesInfo reads data in the OrderTotals table and modifies data in the SalesInfo table.

The stored procedure then reads data in the OrderTotals table a second time and makes further changes to the information in the SalesInfo table.
The Current_Inventory database contains a large table named Inv_Current. The Inv_Current table has a clustered index for the primary key and a nonclustered index. The primary key column uses the identity property.
The data in the Inv_Current table is over 120GB in size. The tables in the Current_Inventory database are accessed by multiple queries in the Sales database.
Another table in the Current_Inventory database contains a self-join with an unlimited number of hierarchies. This table is modified by a stored procedure named SPUpdate2.
An external application named ExternalApp1 will periodically query the Current_Inventory database to generate statistical information. The TempReporting database contains a single table named GenInfo.
A stored procedure named SPUPdateGenInfo combines data from multiple databases and generates millions of rows of data in the GenInfo table.
The GenInfo table is used for reports.
When the information in GenInfo is generated, a reporting process reads data from the Inv_Current table and queries information in the GenInfo table based on that data.
The GenInfo table is deleted after the reporting process completes. The Products database contains tables named ProductNames and ProductTypes.

Current System
The current desktop application uses data stored in a SQL Server 2005 database named DesABCopAppDB. This database will remain online and data from the Current_Inventory database will be copied to it as soon as data is changed in the Current_Inventory database.

SQL Servers
A new SQL Server 2012 instance will be deployed to host the databases for the new system. The databases will be hosted on a Storage Area Network (SAN) that provides highly available storage.

Design Requirements
Your SQL Server infrastructure and database design must meet the following requirements:

- Confidential information in the Current_ Inventory database that is accessed by ExternalApp1 must be securely stored.
- Direct access to database tables by developers or applications must be denied.
- The account used to generate reports must have restrictions on the hours when it is allowed to make a connection.
- Deadlocks must be analyzed with the use of Deadlock Graphs.
- In the event of a SQL Server failure, the databases must remain available.
- Software licensing and database storage costs must be minimized.
- Development effort must be minimized.
- The Tempdb databases must be monitored for insufficient free space.
- Failed authentication requests must be logged.
- Every time a new row is added to the ProductTypes table in the Products database, a user defined function that validates the row must be called before the row is added to the table.
- When SPUpdateSalesInfo queries data in the OrderTotals table the first time, the same rows must be returned along with any newly added rows when SPUpdateSalesInfo queries data in the OrderTotals table the second time.

You need to ensure that the account used to generate reports can only connect during certain hours.
What should you configure?

A. A CHECK constraint.
B. Windows Server Resource Manager (WSRM).
C. Logon Triggers.
D. Login Auditing.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 92
General Overview
You are the Senior Database Administrator (DBA) for a software development company named Leafield Solutions. The company develops software applications custom designed to meet customer requirements.

Requirements Leafield Solutions has been asked by a customer to develop a web-based Enterprise Resource Planning and Management application. The new application will eventually replace a desktop application that the customer is currently using. The current application will remain in use while the users are trained to use the new webbased application.

You need to design the SQL Server and database infrastructure for the web-based application.

Databases
You plan to implement databases named Customers, Sales, Products, Current_Inventory, and TempReporting.
The Sales database contains a table named OrderTotals and a table named SalesInfo.
A stored procedure named SPUpdateSalesInfo reads data in the OrderTotals table and modifies data in the SalesInfo table.
The stored procedure then reads data in the OrderTotals table a second time and makes further changes to the information in the SalesInfo table.
The Current_Inventory database contains a large table named Inv_Current. The Inv_Current table has a clustered index for the primary key and a nonclustered index. The primary key column uses the identity property.
The data in the Inv_Current table is over 120GB in size. The tables in the Current_Inventory database are accessed by multiple queries in the Sales database.
Another table in the Current_Inventory database contains a self-join with an unlimited number of hierarchies. This table is modified by a stored procedure named SPUpdate2.
An external application named ExternalApp1 will periodically query the Current_Inventory database to generate statistical information. The TempReporting database contains a single table named GenInfo.
A stored procedure named SPUPdateGenInfo combines data from multiple databases and generates millions of rows of data in the GenInfo table.
The GenInfo table is used for reports.
When the information in GenInfo is generated, a reporting process reads data from the Inv_Current table and queries information in the GenInfo table based on that data.
The GenInfo table is deleted after the reporting process completes. The Products database contains tables named ProductNames and ProductTypes.

Current System
The current desktop application uses data stored in a SQL Server 2005 database named DesABCopAppDB. This database will remain online and data from the Current_Inventory database will be copied to it as soon as data is changed in the Current_Inventory database.

SQL Servers
A new SQL Server 2012 instance will be deployed to host the databases for the new system. The databases will be hosted on a Storage Area Network (SAN) that provides highly available storage.

Design Requirements
Your SQL Server infrastructure and database design must meet the following requirements:

- Confidential information in the Current_ Inventory database that is accessed by ExternalApp1 must be securely stored.
- Direct access to database tables by developers or applications must be denied.
- The account used to generate reports must have restrictions on the hours when it is allowed to make a connection.
- Deadlocks must be analyzed with the use of Deadlock Graphs.
- In the event of a SQL Server failure, the databases must remain available.
- Software licensing and database storage costs must be minimized.
- Development effort must be minimized.
- The Tempdb databases must be monitored for insufficient free space.
- Failed authentication requests must be logged.
- Every time a new row is added to the ProductTypes table in the Products database, a user defined function that validates the row must be called before the row is added to the table.
- When SPUpdateSalesInfo queries data in the OrderTotals table the first time, the same rows must be returned along with any newly added rows when SPUpdateSalesInfo queries data in the OrderTotals table the second time.

You need to meet the design requirement for the ProductTypes table in the Product database. Which of the following would be the best solution?

A. A PRIMARY KEY constraint.
B. A CHECK constraint.
C. A UNIQUE constraint.
D. A Data Definitions Language (DDL) trigger.

E. A FOREIGN KEY constraint.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 93
General Overview
You are the Senior Database Administrator (DBA) for a software development company named Leafield Solutions. The company develops software applications custom designed to meet customer requirements.

Requirements Leafield Solutions has been asked by a customer to develop a web-based Enterprise Resource Planning and Management application. The new application will eventually replace a desktop application that the customer is currently using. The current application will remain in use while the users are trained to use the new webbased application.

You need to design the SQL Server and database infrastructure for the web-based application.

Databases
You plan to implement databases named Customers, Sales, Products, Current_Inventory, and TempReporting.
The Sales database contains a table named OrderTotals and a table named SalesInfo.
A stored procedure named SPUpdateSalesInfo reads data in the OrderTotals table and modifies data in the SalesInfo table.
The stored procedure then reads data in the OrderTotals table a second time and makes further changes to the information in the SalesInfo table.
The Current_Inventory database contains a large table named Inv_Current. The Inv_Current table has a clustered index for the primary key and a nonclustered index. The primary key column uses the identity property.
The data in the Inv_Current table is over 120GB in size. The tables in the Current_Inventory database are accessed by multiple queries in the Sales database.
Another table in the Current_Inventory database contains a self-join with an unlimited number of hierarchies. This table is modified by a stored procedure named SPUpdate2.
An external application named ExternalApp1 will periodically query the Current_Inventory database to generate statistical information. The TempReporting database contains a single table named GenInfo.
A stored procedure named SPUPdateGenInfo combines data from multiple databases and generates millions of rows of data in the GenInfo table.
The GenInfo table is used for reports.
When the information in GenInfo is generated, a reporting process reads data from the Inv_Current table and queries information in the GenInfo table based on that data.
The GenInfo table is deleted after the reporting process completes. The Products database contains tables named ProductNames and ProductTypes.

Current System
The current desktop application uses data stored in a SQL Server 2005 database named DesABCopAppDB. This database will remain online and data from the Current_Inventory database will be copied to it as soon as data is changed in the Current_Inventory database.

SQL Servers
A new SQL Server 2012 instance will be deployed to host the databases for the new system. The databases will be hosted on a Storage Area Network (SAN) that provides highly available storage.

Design Requirements
Your SQL Server infrastructure and database design must meet the following requirements:

- Confidential information in the Current_ Inventory database that is accessed by ExternalApp1 must be securely stored.
- Direct access to database tables by developers or applications must be denied.
- The account used to generate reports must have restrictions on the hours when it is allowed to make a connection.
- Deadlocks must be analyzed with the use of Deadlock Graphs.
- In the event of a SQL Server failure, the databases must remain available.
- Software licensing and database storage costs must be minimized.
- Development effort must be minimized.
- The Tempdb databases must be monitored for insufficient free space.
- Failed authentication requests must be logged.
- Every time a new row is added to the ProductTypes table in the Products database, a user defined function that validates the row must be called before the row is added to the table.
- When SPUpdateSalesInfo queries data in the OrderTotals table the first time, the same rows must be returned along with any newly added rows when SPUpdateSalesInfo queries data in the OrderTotals table the second time.

You need to plan the SQL Server 2012 deployment that meets the design requirements.
Which of the following steps should you perform?

A. Upgrade the existing SQL Server 2005 server to SQL Server 2012.
B. Install one new server running SQL Server 2012.
C. Install two new servers running SQL Server 2012
D. Configure Failover Clustering
E. Configure AllwaysOn

Correct Answer: ABE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 94
You work as a Database Administrator (DBA) for a company named ABC.com.

The company uses a Microsoft SQL Server 2012 infrastructure.

You are configuring a highly-available database solution using an AlwaysOn availability group on two servers running SQL Server 2012. The two servers are in separate datacenters.

The two datacenters are connected by a WAN link with a network latency of more than 200ms.

Which of the following failover types should you configure for the availability group?

A. You should configure the asynchronous manual failover failover type.
B. You should configure the synchronous manual failover failover type.
C. You should configure the synchronous automatic failover failover type.
D. You should configure the Asynchronous automatic failover failover type.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 95
You work as a Database Administrator (DBA) for a company named ABC.com.

The company uses a Microsoft SQL Server 2012 infrastructure.

You have a database named CorpDB.

A full backup of CorpDB is taken every week.

A differential backup of CorpDB is taken every night at midnight.

A transaction log backup of CorpDB is taken at 8am, 12pm, 4pm and 8pm.

You plan to deploy some changes to CorpDB at after the 4pm log backup completes.

You need to ensure that you can undo the changes quickly if the deployment fails.

During the deployment of the changes, no other changes must be made by users to the database. You need a backup and recovery strategy for deploying the changes.

Which two of the following actions would meet the backup and recovery requirements whilst ensuring the regular backup schedule is not disrupted? (Choose two.)

A. Take a full backup of the database before deploying the changes.
B. Take a copy-only backup of the database before deploying the changes.
C. Take a snapshot of the database before deploying the changes.
D. Restore the database from the backup.
E. Restore the snapshot to another server and recover the required objects from the snapshot.
F. Revert the database to the snapshot.

Correct Answer: CF
Section: (none)
Explanation

Explanation/Reference:

QUESTION 96
You work as a Database Administrator (DBA) for a company named ABC.com.

The company uses a Microsoft SQL Server 2012 infrastructure.

You have a database named CorpDB. CorpDB contains 2TB of data.

You plan to import a large amount of data into tables in CorpDB.

You want to minimize the size of the transaction log while the data is imported.

What should you do?

A. You should configure the recovery model of the database to Full.
B. You should configure the recovery model of the database to Bulk-Logged.
C. You should start a new transaction log file.
D. You should configure a new filegroup for the existing log file.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 97
You work as a Database Administrator (DBA) for a company named ABC.com.

The company uses a Microsoft SQL Server 2012 infrastructure.

You have a database named CorpDB. CorpDB contains a table named SalesInfo.

You discover that some table has been deleted from the SalesInfo table.

You are unable to find out who deleted the information.

You need to implement a solution to monitor the deletion of any further information from the SalesInfo table. You want to minimize the development effort required for the solution.

What should you configure?

A. You should configure table permissions.
B. You should configure a user role.
C. You should configure change data capture.
D. You should configure a trigger.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 98
You work as a Developer at ABC.com.

All databases are hosted on Windows Server 2012 servers running SQL Server 2012.

The company has a database named Products.

Tables in the Products database contain data including part numbers, product name, color, type and size.

Users in the Marketing department have created brochures for each product.

The brochures have been created in the XML Paper Specification (XPS) format.

You have been asked to add a table to the Products database to store the product brochures.

The brochures need to be stored in a folder structure.

Company users will also need to access the brochures from Windows applications using UNC paths. How can you meet these requirements?

A. By implementing the XMLNAMESPACES feature.
B. By implementing the FILEGROUP feature.
C. By implementing the FILETABLE feature.
D. By implementing the FILESTREAM feature.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 99
You administer two Microsoft SQL Server 2012 servers.
Each server resides in a different, untrusted domain.
You plan to configure database mirroring.
You need to be able to create database mirroring endpoints on both servers.
What should you do?

A. Configure the SQL Server service account to use Network Service.
B. Use a server certificate.
C. Use a database certificate.
D. Configure the SQL Server service account to use Local System.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 100

You administer a Microsoft SQL Server 2012 instance.

You need to configure a new database to support FILETABLES.

What should you do? Choose all that apply.

A. Disable FILESTREAM on the Database.
B. Enable FILESTREAM on the Server Instance.
C. Configure the Database for Partial Containment.
D. Create a non-empty FILESTREAM file group.
E. Enable Contained Databases on the Server Instance.
F. Set the FILESTREAM directory name on the Database.

Correct Answer: BDF
Section: (none)
Explanation

Explanation/Reference:
References: http://msdn.microsoft.com/en-us/library/gg509097.aspx

QUESTION 101
You need to validate rows before they are added to a table every time a row is added using a user-defined function.

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

A. DML Trigger
B. Default constraint
C. Foreign key
D. CHECK constraint

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 102
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. read committed
B. repeatable read
C. snapshot
D. serializable

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 103
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?

Option A.

```
BEGIN TRY
INSERT TABLE1 (FIELD1) VALUES ('ONE')
INSERT TABLE2 (FIELD1) VALUES ('TWO')
END TRY
BEGIN CATCH
ROLLBACK TRANSACTION
THROW
END CATCH
```

Option B.

```
BEGIN TRY
INSERT TABLE1 (FIELD1) VALUES ('ONE')
INSERT TABLE2 (FIELD1) VALUES ('TWO')
END TRY
BEGIN CATCH
THROW
ROLLBACK TRANSACTION
END CATCH
```

Option C.

```
BEGIN TRANSACTION
INSERT TABLE1 (FIELD1) VALUES ('ONE')
INSERT TABLE2 (FIELD1) VALUES ('TWO')
IF @@ERROR = 0
COMMIT TRANSACTION
ELSE
ROLLBACK TRANSACTION
```

Option D.

```
BEGIN TRY
BEGIN TRANSACTION
INSERT TABLE1 (FIELD1) VALUES ('ONE')
INSERT TABLE2 (FIELD1) VALUES ('TWO')
```

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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation: Structure should be:

```
BEGIN TRY
BEGIN TRANSACTION
..
COMMIT TRANSACTION
END TRY
BEGIN CATCH
ROLLBACK TRANSACTION
END CATCH.
```

QUESTION 104
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. Grant User1 the INSERT permission on Table2.
B. Add User1 to the db_datawriter role.
C. Change sp1 to run as the sa user.
D. Grant User1 the EXECUTE permission on sp1.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
References: http://msdn.microsoft.com/en-us/library/ms191291.aspx

QUESTION 105
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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.
Transactions can be monitored.

QUESTION 106
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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 Answers:
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 107
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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.

QUESTION 108
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
An application role is a database principal that enables an application to run with its own, userlike 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.

QUESTION 109
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- sys.dm_exec_sessions
Returns one row per authenticated session on SQL Server. sys.dm_exec_sessions is a serverscope 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 = ReadUncomitted
2 = ReadCommitted
3 = Repeatable
4 = Serializable
5 = Snapshot Is not nullable.

QUESTION 110
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- 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 serverscope 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.

Incorrect Answers:
- 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 111
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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.

Incorrect Answers:
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 112
Background
Corporate Information
Fabrikam, Inc. is a retailer that sells electronics products on the Internet. The company has a headquarters site and one satellite sales office. You have been hired as the database administrator, and the company wants you to change the architecture of the Fabrikam ecommerce site to optimize performance and reduce downtime while keeping capital expenditures to a minimum. To help with the solution, Fabrikam has decided to use cloud resources as well as on-premise servers.

Physical Locations
All of the corporate executives, product managers, and support staff are stationed at the headquarters office. Half of the sales force works at this location. There is also a satellite sales office. The other half of the sales force works at the satellite office in order to have sales people closer to clients in that area. Only sales people work at the satellite location.

Problem Statement

To be successful, Fabrikam needs a website that is fast and has a high degree of system uptime. The current system operates on a single server and the company is not happy with the single point of failure this presents. 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. During your investigation, you discover that the sales force reports are causing significant contention.

Configuration
Windows Logins
The network administrators have set up Windows groups to make it easier to manage security. Users may belong to more than one group depending on their role. The groups have been set up as shown in the following table:

Group	Members
OurDomain\Management	All corporate executives
OurDomain\SalesStaff	All sales people
OurDomain\ProductionStaff	All product managers and support staff
OurDomain\AllUsers	Everyone
OurDomain\CustomerSupport	Customer support representatives

Server Configuration The IT department has configured two physical servers with Microsoft Windows Server 2012 R2 and SQL Server 2014 Enterprise Edition and one Windows Azure Server. There are two tiers of storage available for use by database files only a fast tier and a slower tier. Currently the data and log files are stored on the fast tier of storage only. If a possible use case exists, management would like to utilize the slower tier storage for data files. The servers are configured as shown in the following table:

Location	Server
Company headquarters	HQ_Server
Satellite sales office	Satellite_Server
Microsoft Windows Azure (cloud)	Cloud_File Server

Database
Currently all information is stored in a single database called ProdDB, created with the following script:

```
CREATE DATABASE ProdDB
GO
ALTER DATABASE ProdDB SET RECOVERY SIMPLE
GO
```

The Product table is in the Production schema owned by the ProductionStaff Windows group. It is the main table in the system so access to information in the Product table should be as fast as possible. The columns in the Product table are defined as shown in the following table:

Column	Data type
ProductID	INT
ProductName	VARCHAR(100)
ProductDescription	VARCHAR(MAX)
ProductPrice	SMALLMONEY
QuantityOnHand	INT
ProductCost	SMALLMONEY
ProductSupplierID	INT

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. The columns in the SalesOrderDetail table are defined as shown in the following table:

Column	Data type
SalesOrderDetailID	INT
ProductID	INT
SalePrice	SMALLMONEY
SaleQuantity	INT

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.

Requirements
Database
The database should be configured to maximize uptime and to ensure that very little data is lost in the event of a server failure. 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 memoryoptimized table. The auto-update statistics option is set off on this database. Only product managers are allowed to add products or to make changes to the name, description, price, cost, and supplier. The changes are made in an internal database and pushed to the Product table in ProdDB during system maintenance time. Product managers and others working at the headquarters location also should be able to generate reports that include supplier and cost information.

Customer data access
Customers access the company's website to order products, so they must be able to read product information such asname, description, and price from the Product table. When customers place orders, stored procedures calledby the website update product quantityon-hand values. This means the product table is constantly updated at randomtimes.

Customer support data access
Customer support representatives need to be able to view and not update or change product information. Management does not want the customer support representatives to be able to see the product cost or any supplier information.

Sales force data access
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.

Historical Data
The system should keep historical information about customers who access the site so that sales people can see how frequently customers log in and how long they stay on the site.

The information should be stored in a table called Customer Access. Supporting this requirement should have minimal impact on production website performance.

Backups
The recovery strategy for Fabrikam needs to include the ability to do point in time restores and minimize the risk of data loss by performing transaction log backups every 15 minutes.

Database Maintenance
The company has defined a maintenance window every month when the server can be unavailable. Any maintenance functions that require exclusive access should be accomplished during that window.

Project milestones completed
Revoked all existing read and write access to the database, leaving the schema ownership in place.
Configured an Azure storage container secured with the storage account name MyStorageAccount with the primary access key StorageAccountKey on the cloud file server.
SQL Server 2014 has been configured on the satellite server and is ready for use.
On each database server, the fast storage has been assigned to drive letter F:, and the slow storage has been assigned to drive letter D:.

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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
- 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. ALTER DATABASE SET Options (Transact-SQL) SET Statements (Transact-SQL)

QUESTION 113
You manage database servers in a high security environment. Your company has the following auditing requirements:
- SQL Server auditing must be enabled on all server instances.
- Auditing results must be logged in the Windows Security even log.

A routine review shows that a SQL Server is writing auditing entries to Windows Application event log. You change the SQL Server audit target to Windows Security event long. SQL Server auditing stops working on the server.

You need to ensure that the server meets the auditing requirements.

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

A. Grant the manage auditing and security log permission to the SQL Server service account.
B. Grant the generate security audits permission on the SQL Server service account.
C. Update Windows security policy to audit object access.
D. Restart the SQL Server Agent service.

Correct Answer: BC
Section: (none)
Explanation

Explanation/Reference:
Explanation:
There are two key requirements for writing SQL Server server audits to the Windows Security log:
- The audit object access setting must be configured to capture the events.
- The account that the SQL Server service is running under must have the generate security audits permission to write to the Windows Security log.

References: https://docs.microsoft.com/en-us/sql/relational-databases/security/auditing/write-sql-server-audit-events-to-the-security-log

QUESTION 114
Background
Corporate Information
Fabrikam, Inc. is a retailer that sells electronics products on the Internet. The company has a headquarters site and one satellite sales office. You have been hired as the database administrator, and the company wants you to change the architecture of the Fabrikam ecommerce site to optimize performance and reduce downtime while keeping capital expenditures to a minimum. To help with the solution, Fabrikam has decided to use cloud resources as well as on-premise servers.

Physical Locations
All of the corporate executives, product managers, and support staff are stationed at the headquarters office. Half of the sales force works at this location. There is also a satellite sales office. The other half of the sales force works at the satellite office in order to have sales people closer to clients in that area. Only sales people work at the satellite location.

Problem Statement
To be successful, Fabrikam needs a website that is fast and has a high degree of system uptime. The current system operates on a single server and the company is not happy with the single point of failure this presents. 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. During your investigation, you discover that the sales force reports are causing significant contention.

Configuration
Windows Logins
The network administrators have set up Windows groups to make it easier to manage security. Users may belong to more than one group depending on their role. The groups have been set up as shown in the following table:

Group	Members
OurDomain\Management	All corporate executives
OurDomain\SalesStaff	All sales people
OurDomain\ProductionStaff	All product managers and support staff
OurDomain\AllUsers	Everyone
OurDomain\CustomerSupport	Customer support representatives

Server Configuration The IT department has configured two physical servers with Microsoft Windows Server 2012 R2 and SQL Server 2014 Enterprise Edition and one Windows Azure Server. There are two tiers of storage available for use by database files only a fast tier and a slower tier. Currently the data and log files are stored on the fast tier of storage only. If a possible use case exists, management would like to utilize the slower tier storage for data files. The servers are configured as shown in the following table:

Location	Server
Company headquarters	HQ_Server
Satellite sales office	Satellite_Server
Microsoft Windows Azure (cloud)	Cloud_File Server

Database
Currently all information is stored in a single database called ProdDB, created with the following script:

```
CREATE DATABASE ProdDB
GO
ALTER DATABASE ProdDB SET RECOVERY SIMPLE
GO
```

The Product table is in the Production schema owned by the ProductionStaff Windows group. It is the main table in the system so access to information in the Product table should be as fast as possible. The columns in the Product table are defined as shown in the following table:

Column	Data type
ProductID	INT
ProductName	VARCHAR(100)
ProductDescription	VARCHAR(MAX)
ProductPrice	SMALLMONEY
QuantityOnHand	INT
ProductCost	SMALLMONEY
ProductSupplierID	INT

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. The columns in the SalesOrderDetail table are defined as shown in the following table:

Column	Data type
SalesOrderDetailID	INT
ProductID	INT
SalePrice	SMALLMONEY
SaleQuantity	INT

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.

Requirements
Database
The database should be configured to maximize uptime and to ensure that very little data is lost in the event of a server failure. 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 memoryoptimized table. The auto-update statistics option is set off on this database. Only product managers are allowed to add products or to make changes to the name, description, price, cost, and supplier. The changes are made in an internal database and pushed to the Product table in ProdDB during system maintenance time. Product managers and others working at the headquarters location also should be able to generate reports that include supplier and cost information.

Customer data access
Customers access the company's website to order products, so they must be able to read product information such asname, description, and price from the Product table. When customers place orders, stored procedures calledby the website update product quantityon-hand values. This means the product table is constantly updated at randomtimes.

Customer support data access
Customer support representatives need to be able to view and not update or change product information. Management does not want the customer support representatives to be able to see the product cost or any supplier information.

Sales force data access
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.

Historical Data
The system should keep historical information about customers who access the site so that sales people can see how frequently customers log in and how long they stay on the site.

The information should be stored in a table called Customer Access. Supporting this requirement should have minimal impact on production website performance.

Backups
The recovery strategy for Fabrikam needs to include the ability to do point in time restores and minimize the risk of data loss by performing transaction log backups every 15 minutes.

Database Maintenance
The company has defined a maintenance window every month when the server can be unavailable. Any maintenance functions that require exclusive access should be accomplished during that window.

Project milestones completed
- Revoked all existing read and write access to the database, leaving the schema ownership in place.
- Configured an Azure storage container secured with the storage account name MyStorageAccount with the primary access key StorageAccountKey on the cloud file server.
- SQL Server 2014 has been configured on the satellite server and is ready for use.
- On each database server, the fast storage has been assigned to drive letter F:, and the slow storage has been assigned to drive letter D:.

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
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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 FileGroupDefinition.ContainsMemoryOptimizedData Property (Microsoft.SqlServer.TransactSql.ScriptDom)

QUESTION 115
DRAG DROP

Background
Corporate Information
Fabrikam, Inc. is a retailer that sells electronics products on the Internet. The company has a headquarters site and one satellite sales office. You have been hired as the database administrator, and the company wants you to change the architecture of the Fabrikam ecommerce site to optimize performance and reduce downtime while keeping capital expenditures to a minimum. To help with the solution, Fabrikam has decided to use cloud resources as well as on-premise servers.

Physical Locations
All of the corporate executives, product managers, and support staff are stationed at the headquarters office. Half of the sales force works at this location. There is also a satellite sales office. The other half of the sales force works at the satellite office in order to have sales people closer to clients in that area. Only sales people work at the satellite location.

Problem Statement
To be successful, Fabrikam needs a website that is fast and has a high degree of system uptime. The current system operates on a single server and the company is not happy with the single point of failure this presents. 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. During your investigation, you discover that the sales force reports are causing significant contention.

Configuration
Windows Logins
The network administrators have set up Windows groups to make it easier to manage security. Users may belong to more than one group depending on their role. The groups have been set up as shown in the following table:

Group	Members
OurDomain\Management	All corporate executives
OurDomain\SalesStaff	All sales people
OurDomain\ProductionStaff	All product managers and support staff
OurDomain\AllUsers	Everyone
OurDomain\CustomerSupport	Customer support representatives

Server Configuration The IT department has configured two physical servers with Microsoft Windows Server 2012 R2 and SQL Server 2014 Enterprise Edition and one Windows Azure Server. There are two tiers of storage available for use by database files only a fast tier and a slower tier. Currently the data and log files are stored on the fast tier of storage only. If a possible use case exists, management would like to utilize the slower tier storage for data files. The servers are configured as shown in the following table:

Location	Server
Company headquarters	HQ_Server
Satellite sales office	Satellite_Server
Microsoft Windows Azure (cloud)	Cloud_File Server

Database
Currently all information is stored in a single database called ProdDB, created with the following script:

```
CREATE DATABASE ProdDB
GO
ALTER DATABASE ProdDB SET RECOVERY SIMPLE
GO
```

The Product table is in the Production schema owned by the ProductionStaff Windows group. It is the main table in the system so access to information in the Product table should be as fast as possible. The columns in the Product table are defined as shown in the following table:

Column	Data type
ProductID	INT
ProductName	VARCHAR(100)
ProductDescription	VARCHAR(MAX)
ProductPrice	SMALLMONEY
QuantityOnHand	INT
ProductCost	SMALLMONEY
ProductSupplierID	INT

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. The columns in the SalesOrderDetail table are defined as shown in the following table:

Column	Data type
SalesOrderDetailID	INT
ProductID	INT
SalePrice	SMALLMONEY
SaleQuantity	INT

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.

Requirements
Database
The database should be configured to maximize uptime and to ensure that very little data is lost in the event of a server failure. 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 memoryoptimized table. The auto-update statistics option is set off on this database. Only product managers are allowed to add products or to make changes to the name, description, price, cost, and supplier. The changes are made in an internal database and pushed to the Product table in ProdDB during system maintenance time. Product managers and others working at the headquarters location also should be able to generate reports that include supplier and cost information.

Customer data access
Customers access the company's website to order products, so they must be able to read product information such asname, description, and price from the Product table. When customers place orders, stored procedures calledby the website update product quantityon-hand values. This means the product table is constantly updated at randomtimes.

Customer support data access
Customer support representatives need to be able to view and not update or change product information. Management does not want the customer support representatives to be able to see the product cost or any supplier information.

Sales force data access
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.

Historical Data
The system should keep historical information about customers who access the site so that sales people can see how frequently customers log in and how long they stay on the site.

The information should be stored in a table called Customer Access. Supporting this requirement should have minimal impact on production website performance.

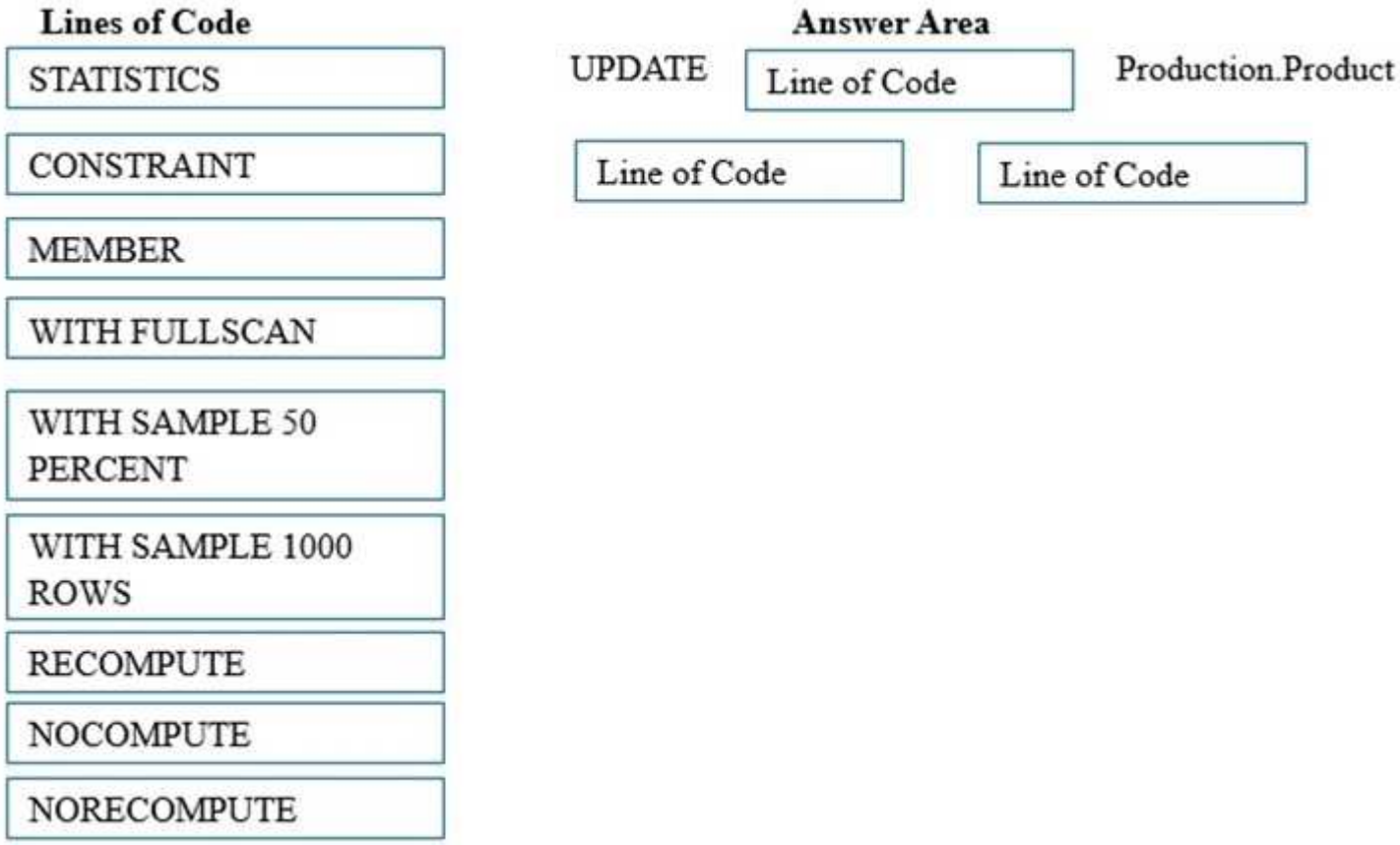
Backups
The recovery strategy for Fabrikam needs to include the ability to do point in time restores and minimize the risk of data loss by performing transaction log backups every 15 minutes.

Database Maintenance
The company has defined a maintenance window every month when the server can be unavailable. Any maintenance functions that require exclusive access should be accomplished during that window.

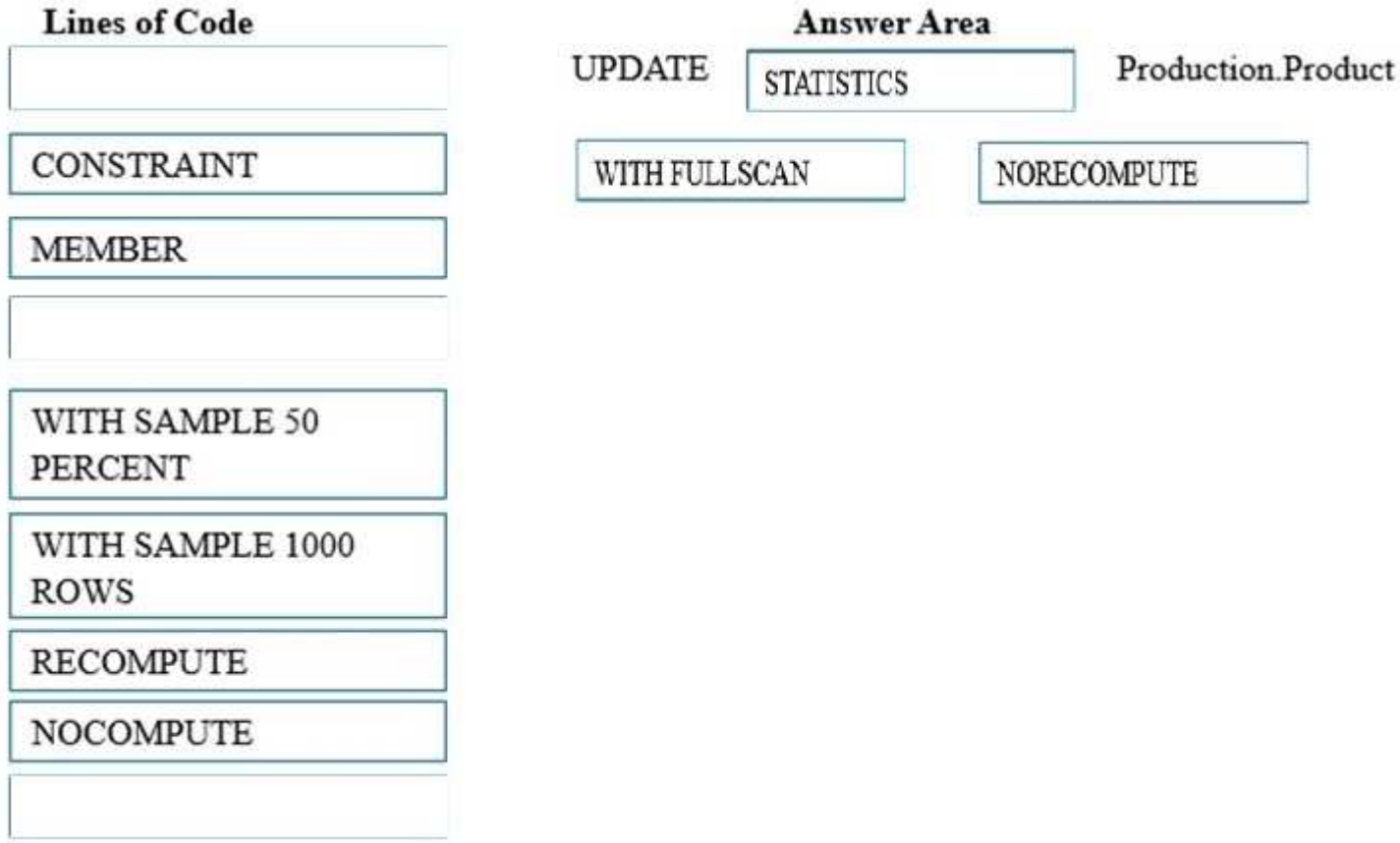
Project milestones completed
- Revoked all existing read and write access to the database, leaving the schema ownership in place.
- Configured an Azure storage container secured with the storage account name MyStorageAccount with the primary access key StorageAccountKey on the cloud file server.
- SQL Server 2014 has been configured on the satellite server and is ready for use.
- On each database server, the fast storage has been assigned to drive letter F:, and the slow storage has been assigned to drive letter D:.

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:



Correct Answer:



Section: (none)
Explanation

Explanation/Reference:

QUESTION 116
Background
Corporate Information
Fabrikam, Inc. is a retailer that sells electronics products on the Internet. The company has a headquarters site and one satellite sales office. You have been hired as the database administrator, and the company wants you to change the architecture of the Fabrikam ecommerce site to optimize performance and reduce

downtime while keeping capital expenditures to a minimum. To help with the solution, Fabrikam has decided to use cloud resources as well as on-premise servers.

Physical Locations
All of the corporate executives, product managers, and support staff are stationed at the headquarters office. Half of the sales force works at this location. There is also a satellite sales office. The other half of the sales force works at the satellite office in order to have sales people closer to clients in that area. Only sales people work at the satellite location.

Problem Statement
To be successful, Fabrikam needs a website that is fast and has a high degree of system uptime. The current system operates on a single server and the company is not happy with the single point of failure this presents. 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. During your investigation, you discover that the sales force reports are causing significant contention.

Configuration
Windows Logins
The network administrators have set up Windows groups to make it easier to manage security. Users may belong to more than one group depending on their role. The groups have been set up as shown in the following table:

Group	Members
OurDomain\Management	All corporate executives
OurDomain\SalesStaff	All sales people
OurDomain\ProductionStaff	All product managers and support staff
OurDomain\AllUsers	Everyone
OurDomain\CustomerSupport	Customer support representatives

Server Configuration The IT department has configured two physical servers with Microsoft Windows Server 2012 R2 and SQL Server 2014 Enterprise Edition and one Windows Azure Server. There are two tiers of storage available for use by database files only a fast tier and a slower tier. Currently the data and log files are stored on the fast tier of storage only. If a possible use case exists, management would like to utilize the slower tier storage for data files. The servers are configured as shown in the following table:

Location	Server
Company headquarters	HQ_Server
Satellite sales office	Satellite_Server
Microsoft Windows Azure (cloud)	Cloud_File Server

Database
Currently all information is stored in a single database called ProdDB, created with the following script:

```
CREATE DATABASE ProdDB
GO
ALTER DATABASE ProdDB SET RECOVERY SIMPLE
GO
```

The Product table is in the Production schema owned by the ProductionStaff Windows group. It is the main table in the system so access to information in the Product table should be as fast as possible. The columns in the Product table are defined as shown in the following table:

Column	Data type
ProductID	INT
ProductName	VARCHAR(100)
ProductDescription	VARCHAR(MAX)
ProductPrice	SMALLMONEY
QuantityOnHand	INT
ProductCost	SMALLMONEY
ProductSupplierID	INT

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. The columns in the SalesOrderDetail table are defined as shown in the following table:

Column	Data type
SalesOrderDetailID	INT
ProductID	INT
SalePrice	SMALLMONEY
SaleQuantity	INT

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.

Requirements

Database

The database should be configured to maximize uptime and to ensure that very little data is lost in the event of a server failure. 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 memoryoptimized table. The auto-update statistics option is set off on this database. Only product managers are allowed to add products or to make changes to the name, description, price, cost, and supplier. The changes are made in an internal database and pushed to the Product table in ProdDB during system maintenance time. Product managers and others working at the headquarters location also should be able to generate reports that include supplier and cost information.

Customer data access

Customers access the company's website to order products, so they must be able to read product information such asname, description, and price from the Product table. When customers place orders, stored procedures calledby the website update product quantityon-hand values. This means the product table is constantly updated at randomtimes.

Customer support data access

Customer support representatives need to be able to view and not update or change product information. Management does not want the customer support representatives to be able to see the product cost or any supplier information.

Sales force data access

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.

Historical Data

The system should keep historical information about customers who access the site so that sales people can see how frequently customers log in and how long they stay on the site.

The information should be stored in a table called Customer Access. Supporting this requirement should have minimal impact on production website performance.

Backups

The recovery strategy for Fabrikam needs to include the ability to do point in time restores and minimize the risk of data loss by performing transaction log backups every 15 minutes.

Database Maintenance

The company has defined a maintenance window every month when the server can be unavailable. Any maintenance functions that require exclusive access should be accomplished during that window.

Project milestones completed

- Revoked all existing read and write access to the database, leaving the schema ownership in place.
- Configured an Azure storage container secured with the storage account name MyStorageAccount with the primary access key StorageAccountKey on the cloud file server.

- SQL Server 2014 has been configured on the satellite server and is ready for use.
- On each database server, the fast storage has been assigned to drive letter F:, and the slow storage has been assigned to drive letter D:.

You need to recommend a solution to back up DB1. What should you include in the recommendation?

A. Azure Table Storage
B. Azure Queue storage
C. Azure Blob storage
D. Azure Document DB

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
For SQL Server the Azure Blob Storage service offers a better alternative to the often used tape option to archive backups. Tape storage might require physical transportation to an off-site facility and measures to protect the media. Storing your backups in Azure Blob Storage provides an instant, highly available, and a durable archiving option.

References: https://azure.microsoft.com/en-us/documentation/articles/storage-use-storage-sql-server-backup/restore

QUESTION 117
Background
Corporate Information
Fabrikam, Inc. is a retailer that sells electronics products on the Internet. The company has a headquarters site and one satellite sales office. You have been hired as the database administrator, and the company wants you to change the architecture of the Fabrikam ecommerce site to optimize performance and reduce downtime while keeping capital expenditures to a minimum. To help with the solution, Fabrikam has decided to use cloud resources as well as on-premise servers.

Physical Locations
All of the corporate executives, product managers, and support staff are stationed at the headquarters office. Half of the sales force works at this location. There is also a satellite sales office. The other half of the sales force works at the satellite office in order to have sales people closer to clients in that area. Only sales people work at the satellite location.

Problem Statement
To be successful, Fabrikam needs a website that is fast and has a high degree of system uptime. The current system operates on a single server and the company is not happy with the single point of failure this presents. 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. During your investigation, you discover that the sales force reports are causing significant contention.

Configuration
Windows Logins
The network administrators have set up Windows groups to make it easier to manage security. Users may belong to more than one group depending on their role. The groups have been set up as shown in the following table:

Group	Members
OurDomain\Management	All corporate executives
OurDomain\SalesStaff	All sales people
OurDomain\ProductionStaff	All product managers and support staff
OurDomain\AllUsers	Everyone
OurDomain\CustomerSupport	Customer support representatives

Server Configuration The IT department has configured two physical servers with Microsoft Windows Server 2012 R2 and SQL Server 2014 Enterprise Edition and one Windows Azure Server. There are two tiers of storage available for use by database files only a fast tier and a slower tier. Currently the data and log files are stored on the fast tier of storage only. If a possible use case exists, management would like to utilize the slower tier storage for data files. The servers are configured as shown in the following table:

Location	Server
Company headquarters	HQ_Server
Satellite sales office	Satellite_Server
Microsoft Windows Azure (cloud)	Cloud_File Server

Database
Currently all information is stored in a single database called ProdDB, created with the following script:

```
CREATE DATABASE ProdDB
GO
ALTER DATABASE ProdDB SET RECOVERY SIMPLE
GO
```

The Product table is in the Production schema owned by the ProductionStaff Windows group. It is the main table in the system so access to information in the Product table should be as fast as possible. The columns in the Product table are defined as shown in the following table:

Column	Data type
ProductID	INT
ProductName	VARCHAR(100)
ProductDescription	VARCHAR(MAX)
ProductPrice	SMALLMONEY
QuantityOnHand	INT
ProductCost	SMALLMONEY
ProductSupplierID	INT

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. The columns in the SalesOrderDetail table are defined as shown in the following table:

Column	Data type
SalesOrderDetailID	INT
ProductID	INT
SalePrice	SMALLMONEY
SaleQuantity	INT

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.

Requirements
Database
The database should be configured to maximize uptime and to ensure that very little data is lost in the event of a server failure. 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 memoryoptimized table. The auto-update statistics option is set off on this database. Only product managers are allowed to add products or to make changes to the name, description, price, cost, and supplier. The changes are made in an internal database and pushed to the Product table in ProdDB during system maintenance time. Product managers and others working at the headquarters location also should be able to generate reports that include supplier and cost information.

Customer data access
Customers access the company's website to order products, so they must be able to read product information such asname, description, and price from the Product table. When customers place orders, stored procedures calledby the website update product quantityon-hand values. This means the product table is constantly updated at randomtimes.

Customer support data access
Customer support representatives need to be able to view and not update or change product information. Management does not want the customer support representatives to be able to see the product cost or any supplier information.

Sales force data access
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.

Historical Data
The system should keep historical information about customers who access the site so that sales people can see how frequently customers log in and how long they stay on the site.

The information should be stored in a table called Customer Access. Supporting this requirement should have minimal impact on production website performance.

Backups
The recovery strategy for Fabrikam needs to include the ability to do point in time restores and minimize the risk of data loss by performing transaction log backups every 15 minutes.

Database Maintenance
The company has defined a maintenance window every month when the server can be unavailable. Any maintenance functions that require exclusive access should be accomplished during that window.

Project milestones completed
- Revoked all existing read and write access to the database, leaving the schema ownership in place.
- Configured an Azure storage container secured with the storage account name MyStorageAccount with the primary access key StorageAccountKey on the cloud file server.
- SQL Server 2014 has been configured on the satellite server and is ready for use.
- On each database server, the fast storage has been assigned to drive letter F:, and the slow storage has been assigned to drive letter D:.

What should you create in Azure to support the creation of the backups for DB1?

A. an Azure Content Delivery Network (CDN) endpoint
B. a Service Bus namespace
C. a storage account
D. a cloud service

Correct Answer: C

Section: (none)
Explanation

Explanation/Reference:

QUESTION 118
You have an SQL Server 2014 server named SQL1. You are designing a performance monitoring solution. You need to monitor the following events on SQL1:

- A deadlock graph
- Missing column statistics
- CPU performance statistics
- A batch of completed Transact-SQL statements

Which two tools should you use? Each correct answer presents a complete solution.

A. dynamic management views
B. Database Engine Tuning Advisor
C. SQL Server Profiler
D. Activity Monitor
E. Data Profile Viewer

Correct Answer: BC
Section: (none)
Explanation

Explanation/Reference:
Explanation:
B: Database Engine Tuning Advisor examines how queries are processed in the databases you specify.
When you run a Profiler Trace and feed it to the Database Engine Tuning Advisor, it also looks for missing column statistics, and it can automatically create them for you. C: 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.

References: https://msdn.microsoft.com/en-us/library/ms188246.aspx

QUESTION 119
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

You have a data warehouse that stored sales data. One fact table has 100 million rows.

You must reduce storage needs for the data warehouse.

You need to implement a solution that uses column-based storage and provides real-time analytics for the operational workload.

Solution: You remove all clustered indexes, sort the transactions in the table, and create a clustered index on the table, so that the table is not a heap.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Columnstore indexes are the standard for storing and querying large data warehousing fact tables. It uses column-based data storage and query processing to achieve up to 10x query performance gains in your data warehouse over traditional row-oriented storage, and up to 10x data compression over the uncompressed data size.

In SQL Server, rowstore refers to table where the underlying data storage format is a heap, a clustered index, or a memory-optimized table.

References: https://docs.microsoft.com/en-us/sql/relational-databases/indexes/columnstore-indexes-overview

QUESTION 120
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

You have a data warehouse that stored sales data. One fact table has 100 million rows.

You must reduce storage needs for the data warehouse.

You need to implement a solution that uses column-based storage and provides real-time analytics for the operational workload.

Solution: You generate a new certificate on new instance.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Certificates are of no use in this scenario.

QUESTION 121
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

You attempt to restore a database on a new SQL Server instance and receive the following error message:
"Msg 33111, Level 16, State 3, Line 2
Cannot find server certificate with thumbprint '0x7315277C70764B1F252DC7A5101F6F66EFB1069D."

You need to ensure that you can restore the database successfully.

Solution: You add the backup set password to the restore command.

Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The error is related to the certificate.

References: https://dba.stackexchange.com/questions/3388/restore-encrypted-database-to-another-server?rq=1

QUESTION 122
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

You have a database that includes a table named Candidate.

You need to update the statistics for a column named Skills in the table and turn off automatic statistics updates for the column.

Solution: You run the following query:

```
USE CustomerDatabase
GO
UPDATE STATISTICS Person.Candidate(Skills)
WITH FULLSCAN, NORECOMPUTE
GO
```

Does this meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
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.
USE AdventureWorks2012;
GO
UPDATE STATISTICS Production.Product(Products)
WITH FULLSCAN, NORECOMPUTE;

Note: NORECOMPUTE
Disable the automatic statistics update option, AUTO_UPDATE_STATISTICS, for the specified statistics. If this option is specified, the query optimizer completes this statistics update and disables future updates.

To re-enable the AUTO_UPDATE_STATISTICS option behavior, run UPDATE STATISTICS again without the NORECOMPUTE option or run sp_autostats.

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/update-statistics-transact-sql

QUESTION 123
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

You have a database that includes a table named Candidate.

You need to update the statistics for a column named Skills in the table and turn off automatic statistics updates for the column.

Solution: You run the following query:

```
USE CustomerDatabase
GO
UPDATE STATISTICS Person.Candidate(Skills)
RESAMPLE, NORECOMPUTE
GO
```

Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
RESAMPLE: Update each statistic using its most recent sample rate.

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/update-statistics-transact-sql

QUESTION 124
A company has an on-premises Microsoft SQL Server environment and Microsoft Azure SQL Database instances. The environment hosts several customer databases.

A customer that uses an on-premises instance reports that queries take a long time to complete.

You need to reconfigure table statistics so that the query optimizer can use the optimal query execution plans available.

Which Transact-SQL segment should you use?

A. `sp_autostats`
B. `AUTO_UPDATE_STATISTICS_ASYNC`
C. `SET AUTO_UPDATE_STATISTICS ON`
D. `CREATE STATISTICS`

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
You can turn on automatic statistics update by running this SQL statement:

SET AUTO_UPDATE_STATISTICS ON

Incorrect Answers:
A: sp_autostats without options just displays the settings.
B: The AUTO_UPDATE_STATISTICS_ASYNC option affects how automatic statistics updates are applied to your SQL Server database. When this option is enabled, the Query Optimizer will not wait for the update of statistics, but will run the query first and update the outdated statistics afterwards. When this option is disabled, the Query Optimizer will update the outdated statistics before compiling the query therefore possibly getting a better plan based on the most current statistics. This is referred to as synchronous statistics updates.

References: https://www.mssqltips.com/sqlservertip/2766/sql-server-auto-update-and-auto-create-statistics-options/

QUESTION 125
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

You support an application that stores data in a Microsoft SQL Server database. You have a query that returns data for a report that users run frequently.

The query optimizer sometimes generates a poorly-performing plan for the query when certain parameters are used. You observe that this is due to the distribution of data within a specific table that the query uses.

You need to ensure that the query optimizer always uses the query plan that you prefer.

Solution: You force the desired plan.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
KEEPFIXED PLAN should be used as it forces the query optimizer not to recompile a query due to changes in statistics.

When FORCEPLAN is set to ON, the SQL Server query optimizer processes a join in the same order as the tables appear in the FROM clause of a query. In addition, setting FORCEPLAN to ON forces the use of a nested loop join unless other types of joins are required to construct a plan for the query, or they are requested with join hints or query hints.

References: https://docs.microsoft.com/en-us/sql/t-sql/queries/hints-transact-sql-query?view=sql-server-2017

QUESTION 126
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

You support an application that stores data in a Microsoft SQL Server database. You have a query that returns data for a report that users run frequently.

The query optimizer sometimes generates a poorly-performing plan for the query when certain parameters are used. You observe that this is due to the distribution of data within a specific table that the query uses.

You need to ensure that the query optimizer always uses the query plan that you prefer.

Solution: You create a copy of the plan guide for the query plan.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
PLAN should be used as it forces the query optimizer not to recompile a query due to changes in statistics.

References: https://docs.microsoft.com/en-us/sql/t-sql/queries/hints-transact-sql-query?view=sql-server-2017

QUESTION 127
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

You support an application that stores data in a Microsoft SQL Server database. You have a query that returns data for a report that users run frequently.

The query optimizer sometimes generates a poorly-performing plan for the query when certain parameters are used. You observe that this is due to the distribution of data within a specific table that the query uses.

You need to ensure that the query optimizer always uses the query plan that you prefer.

Solution: You add the KEEPFIXED PLAN query hint to the query.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)

Explanation

Explanation/Reference:
Explanation:
PLAN forces the query optimizer not to recompile a query due to changes in statistics. Specifying KEEPFIXED PLAN makes sure that a query will be recompiled only if the schema of the underlying tables is changed or if sp_recompile is executed against those tables.

References: https://docs.microsoft.com/en-us/sql/t-sql/queries/hints-transact-sql-query?view=sql-server-2017

QUESTION 128
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

You have a data warehouse that stores sales data. One fact table has 100 million rows.

You must reduce storage needs for the data warehouse.

You need to implement a solution that uses column-based storage and provides real-time analytics for the operational workload.

Solution: You remove any clustered indexes and load the table for processing.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Clustered columnstore tables offer both the highest level of data compression as well as the best overall query performance. Clustered columnstore tables will generally outperform clustered index or heap tables and are usually the best choice for large tables. For these reasons, clustered columnstore is the best place to start when you are unsure of how to index your table.

Note: Dimensional tables can be used to reduce the size of fact tables.
Dimension tables contain attribute data that might change but usually changes infrequently. For example, a customer's name and address are stored in a dimension table and updated only when the customer's profile changes. To minimize the size of a large fact table, the customer's name and address do not need to be in every

row of a fact table. Instead, the fact table and the dimension table can share a customer ID. A query can join the two tables to associate a customer's profile and transactions.

References: https://docs.microsoft.com/en-us/azure/sql-data-warehouse/sql-data-warehouse-tables-overview

QUESTION 129
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

Your company is developing a new business intelligence application that will access data in a Microsoft Azure SQL Database instance. All objects in the instance have the same owner.

A new security principal named BI_User requires permission to run stored procedures in the database. The stored procedures read from and write to tables in the database. None of the stored procedures perform IDENTIFY_INSERT operations or dynamic SQL commands.

The scope of permissions and authentication of BI_User should be limited to the database. When granting permissions, you should use the principle of least privilege.

You need to create the required security principals and grant the appropriate permissions.

Solution: You run the following Transact-SQL statement:

```
CREATE USER BI_User WITH PASSWORD = 'Pa$$wørd'
GRANT EXECUTE TO BI_User
```

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
One method of creating multiple lines of defense around your database is to implement all data access using stored procedures or user-defined functions. You revoke or deny all permissions to underlying objects, such as tables, and grant EXECUTE permissions on stored procedures. This effectively creates a security

perimeter around your data and database objects.

Best Practices
Simply writing stored procedures isn't enough to adequately secure your application. You should also consider the following potential security holes.

- Grant EXECUTE permissions on the stored procedures for database roles you want to be able to access the data.
- Revoke or deny all permissions to the underlying tables for all roles and users in the database, including the public role. All users inherit permissions from public. Therefore denying permissions to public means that only owners and sysadmin members have access; all other users will be unable to inherit permissions from membership in other roles.
- Do not add users or roles to the sysadmin or db_owner roles. System administrators and database owners can access all database objects.

References: https://docs.microsoft.com/en-us/dotnet/framework/data/adonet/sql/managing-permissions-with-stored-procedures-in-sql-server

QUESTION 130
You have a database that stores information for a shipping company. You create a table named Customers by running the following Transact-SQL statement. (Line numbers are included for reference only.)

```
CREATE TABLE dbo.Customers (
customerId int,
customerName varchar(200),
salesPerson varchar(20)
)
```

The salesPerson column stores the username of the salesperson. You must create a security policy that ensures that salespeople can view data only for the customers that are assigned to them.

You need to create the function that will be used as the filter predicate for the security policy. You write the following Transact-SQL:

```
01 CREATE FUNCTION fn_securitypredicateSalesPerson (@salesPerson
sysname)
02
03 AS
04 RETURN SELECT 1 AS [fn_securityPredicateOrder_result]
05 FROM dbo.Customers
06 WHERE @salesPerson = user_name()
```

Which Transact-SQL segment should you insert at line 02?

A.
```
RETURNS dbo.Customers
ORDER BY @salesPerson
```

B.
```
RETURNS table
WITH Schemabinding
```

C.
```
RETURNS varchar(20)
WITH Schemabinding
```

D.
```
RETURNS table
ORDER BY @salesPerson
```

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The inline table-valued function required for a Stretch Database filter predicate looks like the following example.

The parameters for the function have to be identifiers for columns from the table.

Schema binding is required to prevent columns that are used by the filter function from being dropped or altered.

Example:
```
CREATE FUNCTION dbo.fn_stretchpredicate(@column1 datatype1, @column2 datatype2 [, ...n])
RETURNS TABLE
WITH SCHEMABINDING
AS
RETURN  SELECT 1 AS is_eligible
      WHERE <predicate>
```

References: https://docs.microsoft.com/en-us/sql/sql-server/stretch-database/select-rows-to-migrate-by-using-a-filter-function-stretch-database?view=sql-server-2017

QUESTION 131
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

A company has a Microsoft SQL Server environment that has multiple databases. A database named DB1 has multiple online file groups. It is configured to use the full recovery model. A full backup is preformed nightly and transaction logs are performed on the hour. A large number of records are accidentally deleted at 17:20.

You need to perform a point-in-time recovery. Which option should you use first?

A. backup compression
B. backup encryption
C. file snapshot backup
D. mirrored backup media sets
E. SQL Server backup to URL
F. SQL Server Managed Backup to Azure
G. tail-log backup
H. back up and truncate the transaction log

Correct Answer: G
Section: (none)
Explanation

Explanation/Reference:
Explanation:
To back up the tail of the log (that is, the active log), check Back up the tail of the log, and leave database in the restoring state.

A tail-log backup is taken after a failure to back up the tail of the log in order to prevent work loss. Back up the active log (a tail-log backup) both after a failure, before beginning to restore the database, or when failing over to a secondary database. Selecting this option is equivalent to specifying the NORECOVERY option in the BACKUP LOG statement of Transact-SQL.

References: https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/back-up-a-transaction-log-sql-server?view=sql-server-2017

QUESTION 132
Note: This question is part of a series of questions that use the same or similar answer choices. An answer choice may be correct for more than one question in the series. Each question is independent of the other questions in this series. Information and details provided in a question apply only to that question.

A company has a Microsoft SQL Server environment in Microsoft Azure. The databases are stored directly in Azure blob storage.

You need to ensure that you can restore a database to a specific point in time between backups while minimizing the number of Azure storage containers required.

Which option should you use?

A. backup compression
B. backup encryption
C. file snapshot backup
D. mirrored backup media sets
E. SQL Server backup to URL
F. SQL Server Managed Backup to Azure
G. tail-log backup
H. back up and truncate the transaction log

Correct Answer: F
Section: (none)
Explanation

Explanation/Reference:
Explanation:
SQL Server Managed Backup to Microsoft Azure supports point in time restore for the retention time period specified.

References: https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/sql-server-managed-backup-to-microsoft-azure?view=sql-server-2017

QUESTION 133
You have an application that queries a database. Users report that the application is slower than expected.

You discover that several server process identifiers (SPIDs) have PAGELATCH_UP and PAGELATCH_EX waits. The resource descriptions of the SPIDs contains 2:1:1.

You need to resolve the issue.

What should you do?

A. Allocate additional processor cores to the server.
B. Add files to the file group of the application database.
C. Reduce the fill factor of all clustered indexes.
D. Add data files to tempdb.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
PAGELATCH contention in tempdb is typically on allocation bitmaps and occurs with workloads with many concurrent connections creating and dropping small temporary tables (which are stored in tempdb).

Assuming that the temporary tables are needed for performance, the trick is to have multiple data files for tempdb so that the allocations are done round-robin among the files, the contention is split over multiple PFS pages, and so the overall contention goes down.

References: https://sqlperformance.com/2015/10/sql-performance/knee-jerk-wait-statistics-pagelatch

QUESTION 134
A company has an on-premises Microsoft SQL Server environment and Microsoft Azure SQL Database instances. The environment hosts several customer databases.

A customer that uses an on-premises instance reports that queries take a long time to complete.

You need to reconfigure table statistics so that the query optimizer can use the optimal query execution plans available.

Which Transact-SQL segment should you use?

A. sys.index_columns
B. UPDATE STATISTICS
C. CREATE STATISTICS
D. SET AUTO_CREATE_STATISTICS ON

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Explanation:
AUTO_UPDATE_STATISTICS { ON | OFF }
ON specifies that the query optimizer updates statistics when they are used by a query and when they might be out-of-date. Statistics become out-of-date after insert, update, delete, or merge operations change the data distribution in the table or indexed view. The query optimizer determines when statistics might be out-of-date by counting the number of data modifications since the last statistics update and comparing the number of modifications to a threshold. The threshold is based on the number of rows in the table or indexed view.

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/alter-database-transact-sql-set-options?view=sql-server-2017#auto_update_statistics

QUESTION 135
HOTSPOT

Your company hosts Microsoft SQL Server instances for customers. One customer requires that the SQL Server instance send an email when an alert is generated in the Sales database.

You need to create the alert.

How should you complete the Transact-SQL statement? To answer, select the appropriate options in the answer area.

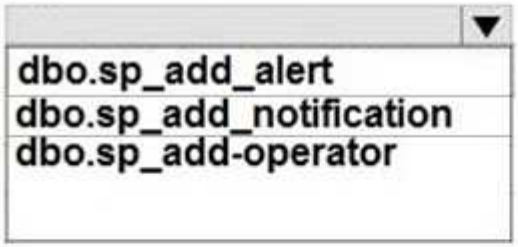
Hot Area:

Answer Area

USE

GO

EXEC

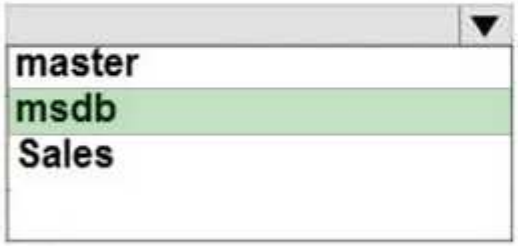



```
@name = N'TestAlert',
@message_id = 55001,
@severity = 0
@notification_message = N'An alert has
been raised';
GO
```

Correct Answer:

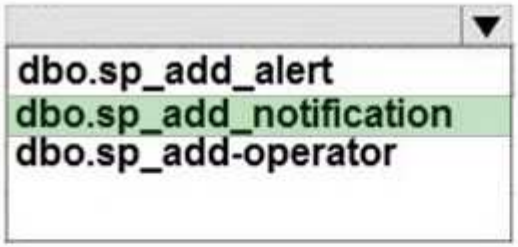
Answer Area

USE



GO

EXEC




```
@name = N'TestAlert',
@message_id = 55001,
@severity = 0
@notification_message = N'An alert has
been raised';
GO
```

Section: (none)
Explanation

Explanation/Reference:
Explanation:
The following example adds an e-mail notification for the specified alert (Test Alert).

NOTE: This example assumes that Test Alert already exists and that François Ajenstat is a valid operator name.

```
USE msdb ;
GO

EXEC dbo.sp_add_notification
 @alert_name = N'Test Alert',
 @operator_name = N'François Ajenstat',
 @notification_method = 1 ;
GO
```

References: https://docs.microsoft.com/en-us/sql/relational-databases/system-stored-procedures/sp-add-notification-transact-sql?view=sql-server-2017

QUESTION 136
You plan to implement a fault tolerance solution for a Microsoft SQL Server database.

The solution must provide failover storage on the local network.

You need to ensure the solution can route traffic to failover storage by using SMB 3.0.

Which storage option should you use?

A. Cluster Shared Volumes
B. Microsoft Azure Blob storage
C. Always On availability group
D. Stretch Database

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:

Clustered Shared Volumes (CSV) is a new clustered file system in Windows Server that is a layer of abstraction above the NTFS file system in a WSFC environment. It allows all Nodes in the failover cluster to read and write to the CSV volume. CSV leverages the investments Microsoft have made in SMB 3.0, such as SMB Direct and SMB Multichannel.

SQL Server 2014 was the first version of SQL Server to support CSVs.

References: https://www.microsoftpressstore.com/articles/article.aspx?p=2832586&seqNum=5

QUESTION 137
You have a table that has grown in the past six months.

A user reports that queries against the table take a long time to complete.

You need to update the statistics for the table in the least amount of time without disabling automatic statistics updates.

Which transact-SQL statement should you run?

A. UPDATE STATISTICS WITH RESAMPLE
B. UPDATE STATISTICS WITH FULLSCAN
C. UPDATE STATISTICS WITH SAMPLE 10 PERCENT
D. UPDATE STATISTICS WITH NORECOMPUTE

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
SAMPLE number { PERCENT | ROWS } specifies the approximate percentage or number of rows in the table or indexed view for the query optimizer to use when it updates statistics.

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/update-statistics-transact-sql?view=sql-server-2017

QUESTION 138
DRAG DROP

You are a database administrator for an organization.

Members of the human resources department can add new employee records to the HR.Employees table. All members of the human resources department can add new employee records to the HR.Employees table. All members of the human resources department are assigned the Human Resources database role.

You need to audit inserts to the table.

Which four transact-SQL statements should you use to develop the solution? To answer, move the appropriate Transact-SQL statements from the list of transact-SQL statements to the answer area and arrange them in the correct order.

Select and Place:

Correct Answer:

Section: (none)
Explanation

Explanation/Reference:
Explanation:

Box 1: Use MASTER;

Box 2: CREATE SERVER AUDIT …
Only specify the file path.

Box 3: Use DB1;

Box 4: CREATE DATABASE AUDIT..
Specify the table etc.

References: https://docs.microsoft.com/en-us/sql/t-sql/statements/create-database-audit-specification-transact-sql?view=sql-server-2017

QUESTION 139
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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

You attempt to restore a database on a new SQL Server instance and receive the following error message:

```
"Msg 33111, Level 16, State 3, Line 2
Cannot find server certificate with thumbprint
'0x7315277C70764B1F252DC7A5101F6F66EFB1069D'."
```

You need to ensure that you can restore the database successfully.

Solution: You generate a new certificate on the new instance.

Does this meet the goal?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
In order to successfully make the restore in a different server you will need to create a master certificate in the detonation and transfer the certificates and backups in that order.

References: https://deibymarcos.wordpress.com/2017/11/15/how-to-restore-encrypted-databases-cannot-find-server-certificate-with-thumbprint/

QUESTION 140
You maintain Microsoft SQL Server instances named SVR1 and SVR2 that are hosted on two different servers. You configure log shipping between the two instances as follows:

- **DB1** on SVR1 is configured as the primary database.
- **DB**1 on SVR2 is configured as the secondary database for **DB1** on SVR1.
- No monitoring server is configured.

You need to monitor error log messages about the copy job.

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

NOTE: Each correct selection is worth one point.

A. On SVR1, run the following Transact-SQL statement:
   `SELECT * FROM msdb.dbo.log_shipping_monitor_error_detail.`
B. Use the job Activity Monitor in SQL Server Management Studio by connecting to SVR1
C. View the Log Shipping Report in SQL Server Management Studio by connecting SVR1.
D. Use the Job Activity Monitor in SQL Server Management Studio by connecting to SVR2.
E. On SVR2 run the following Transact-SQL statement:
   `SELECT * FROM msdb.dbo.log_shipping_monitor_error_detail.`

Correct Answer: CE
Section: (none)
Explanation

Explanation/Reference:
Explanation:
C: The Log Shipping Report displays the status of any log shipping activity whose status is available from the server instance to which you are connected.

E: The history and status of the backup operation are stored at the primary server, and the history and status of the copy and restore operations are stored at the secondary server.

The log_shipping_monitor_error_detail table stores error details for log shipping jobs. You can query this table see the errors for an agent session. Optionally, you can sort the errors by the date and time at which each was logged. Each error is logged as a sequence of exceptions, and multiple errors (sequences) can per agent session.

References:
https://docs.microsoft.com/en-us/sql/database-engine/log-shipping/view-the-log-shipping-report-sql-server-management-studio?view=sql-server-2017
https://docs.microsoft.com/en-us/sql/database-engine/log-shipping/monitor-log-shipping-transact-sql