

# Microsoft

## Exam Questions 70-764

Administering a SQL Database Infrastructure (beta)



#### NEW QUESTION 1

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database that includes a table named Application.Events. Application.Events contains millions of records about user activity in an application.

Records in Application.Events that are more than 90 days old are purged nightly.

When records are purged, table locks are causing contention with inserts.

You need to be able to modify Application.Events without requiring any changes to the applications that utilize Application.Events.

Which type of solution should you use?

- A. Partitioned tables
- B. Online index rebuild
- C. Change data capture
- D. Change tracking

**Answer:** A

#### NEW QUESTION 2

- (Exam Topic 1)

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

**Answer:** B

#### NEW QUESTION 3

- (Exam Topic 1)

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.

**Answer:** D

#### NEW QUESTION 4

- (Exam Topic 1)

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	<p>Recovery model:</p> <ul style="list-style-type: none"> <li>• Full</li> </ul> <p>Backup schedule:</p> <ul style="list-style-type: none"> <li>• Full database backup: midnight, daily</li> <li>• Differential database backup: on the hour, every two hours starting at 02:00 hours except at 00:00 hours</li> <li>• Log backup: every half hour, except at the times of full and differential backups</li> </ul>
Reporting database	<p>Recovery model:</p> <ul style="list-style-type: none"> <li>• Simple</li> </ul> <p>Backup schedule:</p> <ul style="list-style-type: none"> <li>• Full database backup: 01:00 hours daily</li> <li>• Differential database backup: 13:00 hours daily</li> </ul> <p>Data updates:</p> <ul style="list-style-type: none"> <li>• Changes in data are updated from the transactional database to the reporting database at 00:30 hours and at 12:30 hours</li> <li>• The update takes 15 minutes</li> </ul>

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

**Answer: F**

**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>

**NEW QUESTION 5**

- (Exam Topic 1)

You plan to install Microsoft SQL Server 2016 for a web hosting company.

The company plans to host multiple web sites, each supported by a SQL Server database.

You need to select an edition of SQL Server that features backup compression of databases, basic data integration features, and low total cost of ownership.

Which edition should you choose?

- A. Express Edition with Tools
- B. Standard Edition
- C. Web Edition
- D. Express Edition with Advanced Services

**Answer:** B

**Explanation:**

Backup compression is supported on SQL Server 2016 editions: Enterprise, Standard, and Developer. References: <https://docs.microsoft.com/en-us/sql/sql-server/editions-and-components-of-sql-server-2016>

**NEW QUESTION 6**

- (Exam Topic 1)

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.

You manage a Microsoft SQL Server environment. You implement Transparent Data Encryption (TDE). A user will assist in managing TDE.

You need to ensure that the user can view the TDE metadata while following the principle of least privilege. Which permission should you grant?

- A. DDLAdmin
- B. db\_datawriter
- C. dbcreator
- D. dbo
- E. View Database State
- F. View Server State
- G. View Definition
- H. sysadmin

**Answer:** G

**Explanation:**

Viewing the metadata involved with TDE requires the VIEW DEFINITION permission on the certificate. References: <https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/transparent-data-encryption-tde>

**NEW QUESTION 7**

- (Exam Topic 1)

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

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

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

One customer reports that their database is not responding as quickly as the service level agreements dictate. You observe that the database is fragmented.

You need to optimize query performance.

Solution: You run the DBCC CHECKDB command. Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** B

**Explanation:**

DBCC CHECKDB only checks the logical and physical integrity of all the objects in the specified database. It does not update any indexes, and does not improve query performance.

References: <https://docs.microsoft.com/en-us/sql/t-sql/database-console-commands/dbcc-checkdb-transact-sql>

**NEW QUESTION 8**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 server.

When transaction logs grow, SQL Server must send an email message to the database administrators. You need to configure SQL Server to send the email messages.

What should you configure?

- A. SQL Mail
- B. An Extended Events session
- C. Alerts and operators in SQL Server Agent
- D. Policies under Policy-Based Management

**Answer:** C

**Explanation:**

Operators are aliases for people or groups that can receive electronic notification when jobs have completed or alerts have been raised. The SQL Server Agent service supports the notification of administrators through operators. Operators enable notification and monitoring capabilities of SQL Server Agent.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/database-mail/configure-sql-server-agent-mail-to-use-d>

**NEW QUESTION 9**

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 default instance. The instance is hosted by a server that has a local firewall configured.

The firewall only allows inbound connections on port 1433. The server only hosts a single instance of SQL Server.

You need to ensure that the instance is configured to allow remote connections even if the SQL Server is unresponsive to client connections.

What should you do?

- A. Enable inbound connections on TCP port 1434 in the Windows Firewall on the server.
- B. Execute the following Transact-SQL command: `sp_configure 'remote admin connections'`,
- C. Execute the Reconfigure command.

- D. Execute the following Transact-SQL command: sp\_configure 'remote access', 1
- E. Restart the SQL Server Agent Service.
- F. Enable inbound connections on TCP port 135 in the Windows Firewall on the server.

**Answer:** ABC

**Explanation:**

SQL Server provides a dedicated administrator connection (DAC). The DAC lets an administrator access a running server to execute diagnostic functions or Transact-SQL statements, or to troubleshoot problems on the server, even when the server is locked or running in an abnormal state and not responding to a SQL Server Database Engine connection. By default, the DAC is only available from a client on the server. To enable client applications on remote computers to use the DAC, use the remote admin connections option of sp\_configure.

By default, the DAC only listens on the loop-back IP address (127.0.0.1), port 1434 The following example enables the DAC from a remote computer.

sp\_configure 'remote admin connections', 1; GO

RECONFIGURE; GO

References:

<https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/remote-admin-connections-server-con>

**NEW QUESTION 10**

- (Exam Topic 1)

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 SQLServer\MSSQL11.MSSQLSERVER\MSSQL\Log>Errorlog
- B. %programfiles%\Microsoft SQL Server\110\setupBootstrap\Log\Summary.txt
- C. %programfiles%\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA\mastlog.idf
- D. %programfiles%\Microsoft SQLServer\110\Shared>ErrorDmpr[XXXX] .mdmp

**Answer:** A

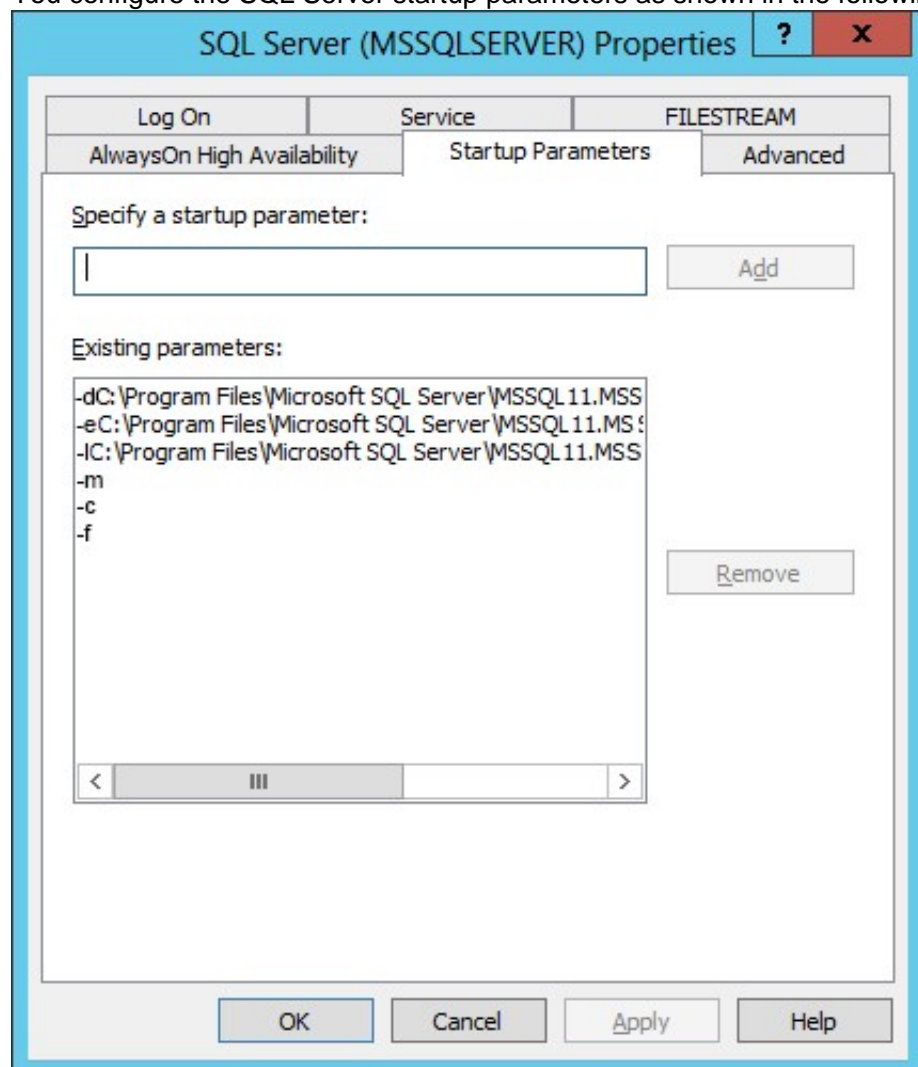
**NEW QUESTION 10**

- (Exam Topic 1)

You manage a Microsoft SQL Server environment. A server fails and writes the following event to the application event log:

MSG\_AUDIT\_FORCED\_SHUTDOWN

You configure the SQL Server startup parameters as shown in the following graphic:



Use the drop-down menus to select the answer choice that answers each question. NOTE: Each correct selection is worth one point.



## Answer Area

In which user mode will the SQL Server instance start?

▼

single-user

multi-user

restricted-user

With which server role can a local Windows administrator connect to the database?

▼

public

serveradmin

sysadmin

setupadmin

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Box 1: single-user

The startup option -m starts an instance of SQL Server in single-user mode. Box 2: sysadmin

Starting SQL Server in single-user mode enables any member of the computer's local Administrators group to connect to the instance of SQL Server as a member of the sysadmin fixed server role.

References:

<https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/database-engine-service-startup-option>

**NEW QUESTION 15**

- (Exam Topic 1)

You are the database administrator of a Microsoft SQL Server instance. Developers are writing stored procedures to send emails using sp\_send\_dbmail. Database Mail is enabled.

You need to configure each account's profile security and meet the following requirements:

Account SMTP1\_Account must only be usable by logins that have been given explicit permissions to use the SMTP1\_profile.

Account SMTP2\_Account must only be usable by logins who are a member of the [DatabaseMailUserRole] role in msdb.

In the table below, identify the profile type that must be used for each account. NOTE: Make only one selection in each column.

## Answer Area

Profile type	SMTP1_Account	SMTP2_Account
Private Profile	<input type="radio"/>	<input type="radio"/>
Public Profile	<input type="radio"/>	<input type="radio"/>
Default Profile	<input type="radio"/>	<input type="radio"/>

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

SMTP1\_Account1: Private Profile

When no profile\_name is specified, sp\_send\_dbmail uses the default private profile for the current user. If user does not have a default private profile, sp\_send\_dbmail uses the default public profile for the msdb database.

SMTP1\_Account2: Default Profile

Execute permissions for sp\_send\_dbmail default to all members of the DatabaseMailUser database role in the msdb database.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/system-stored-procedures/sp-send-dbmail-transact-sql>

#### NEW QUESTION 19

- (Exam Topic 1)

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

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

You need to configure a Microsoft SQL Server instance to ensure that a user named Mail1 can send mail by using Database Mail.

Solution: You add the DatabaseMailUserRole to Mail1 in the master database. Does the solution meet the goal?

- A. Yes
- B. No

**Answer: B**

#### Explanation:

Database Mail is guarded by the database role DatabaseMailUserRole in the msdb database, not the master database, in order to prevent anyone from sending arbitrary emails. Database users or roles must be created in the msdb database and must also be a member of DatabaseMailUserRole in order to send emails with the exception of sysadmin who has all privileges.

Note: Database Mail was first introduced as a new feature in SQL Server 2005 and replaces the SQL Mail feature found in previous versions.

References:

[http://www.iddevelopment.info/data/SQLServer/DBA\\_tips/Database\\_Administration/DBA\\_20.shtml](http://www.iddevelopment.info/data/SQLServer/DBA_tips/Database_Administration/DBA_20.shtml)

#### NEW QUESTION 20

- (Exam Topic 1)

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.

You are the database administrator for a company that hosts Microsoft SQL Server. You manage both on-premises and Microsoft Azure SQL Database environments.

You have a user database named HRDB that contains sensitive human resources data. The HRDB backup files must be encrypted.

You need to grant the correct permission to the service account that backs up the HRDB database. Which permission should you grant?

- A. DDLAdmin
- B. db\_datawriter
- C. dbcreator
- D. dbo
- E. View Database State
- F. View Server State
- G. View Definition
- H. sysadmin

**Answer: G**

#### Explanation:

Restoring the encrypted backup: SQL Server restore does not require any encryption parameters to be specified during restores. It does require that the certificate or the asymmetric key used to encrypt the backup file be available on the instance that you are restoring to. The user account performing the restore must have VIEW DEFINITION permissions on the certificate or key.

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

#### NEW QUESTION 21

- (Exam Topic 1)

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

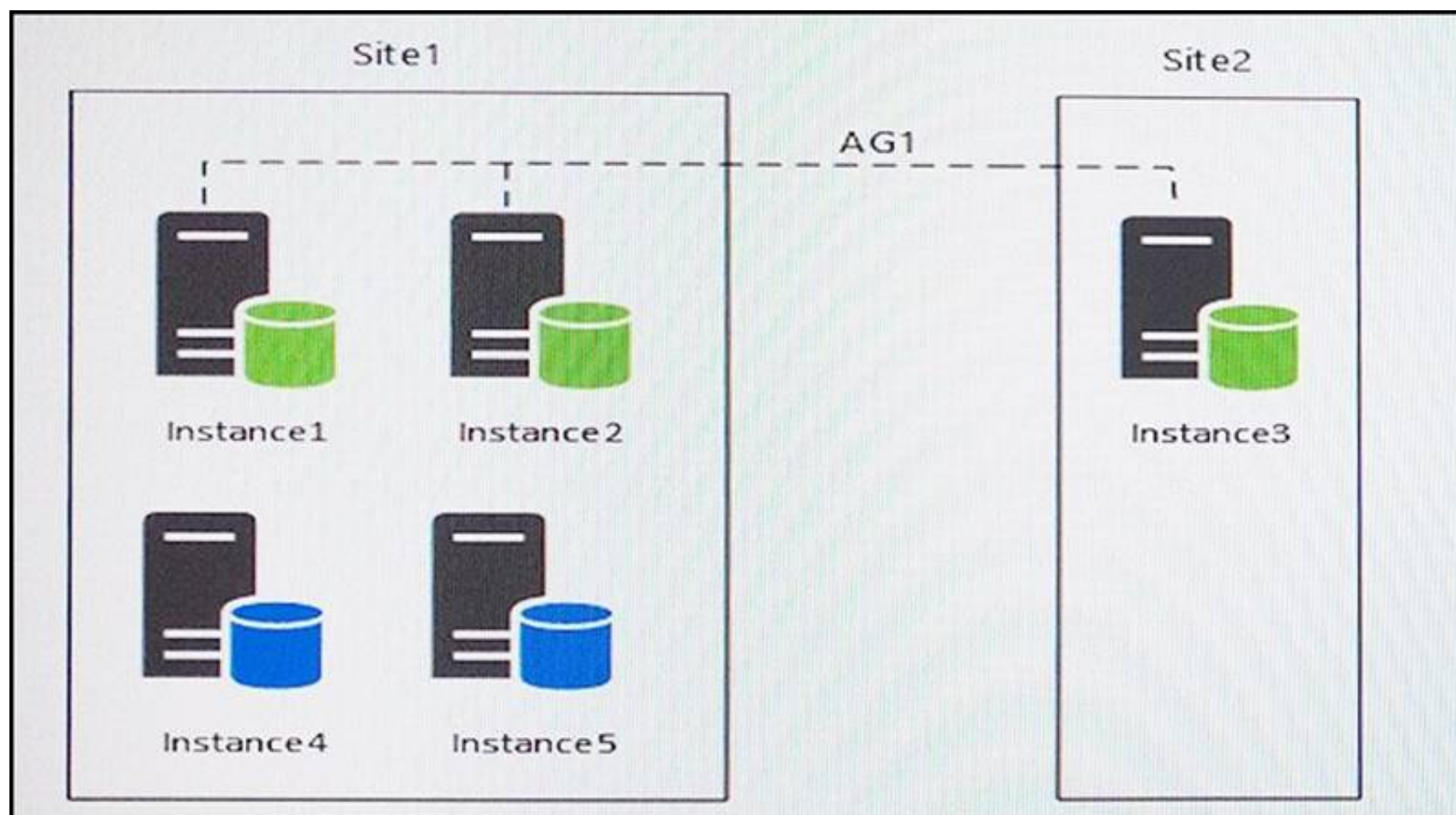
**Answer: B**

#### NEW QUESTION 22

- (Exam Topic 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 in DB1 with 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 in DB1 with 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 configure a new replica of AG1 on Instance6.

How should you complete the Transact-SQL statement? To answer, drag the appropriate Transact-SQL statements to the correct locations. Each Transact-SQL segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.



## Transact-SQL segments

DATABASE

REPLICA

SYNCHRONOUS\_COMMIT

ASYNCHRONOUS\_COMMIT

PRIMARY

MANUAL

AUTOMATIC

SECONDARY\_ONLY

• • • •

### Answer Area

```
ALTER AVAILABILITY GROUP AG_1 MODIFY Transact-SQL segment ON 'INSTANCE6'  
  
WITH (AVAILABILITY_MODE = Transact-SQL segment );  
  
ALTER AVAILABILITY GROUP AG_1 MODIFY Transact-SQL segment ON 'INSTANCE6'  
  
WITH (FAILOVER_MODE = Transact-SQL segment );
```

- A. Mastered  
B. Not Mastered

Answer: A

#### Explanation:

Scenario: 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.

Box 1: REPLICA

MODIFY REPLICA ON modifies any of the replicas of the availability group. Box 2: SYNCHRONOUS\_COMMIT

You must minimize latency between the nodes in AG1

AVAILABILITY\_MODE = { SYNCHRONOUS\_COMMIT | ASYNCHRONOUS\_COMMIT }

Specifies whether the primary replica has to wait for the secondary availability group to acknowledge the hardening (writing) of the log records to disk before the primary replica can commit the transaction on a given primary database.

FAILOVER AUTOMATIC (box 4) requires SYNCHRONOUS\_COMMIT Box 3: REPLICA

MODIFY REPLICA ON modifies any of the replicas of the availability group. Box 4: AUTOMATIC

You must minimize latency between the nodes in AG1 FAILOVER\_MODE = { AUTOMATIC | MANUAL }

Specifies the failover mode of the availability replica that you are defining.

FAILOVER\_MODE is required in the ADD REPLICA ON clause and optional in the MODIFY REPLICA ON clause.

AUTOMATIC enables automatic failover. AUTOMATIC is supported only if you also specify

AVAILABILITY\_MODE = SYNCHRONOUS\_COMMIT.

References: <https://docs.microsoft.com/en-us/sql/t-sql/statements/alter-availability-group-transact-sql>

#### NEW QUESTION 26

- (Exam Topic 1)

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

**Answer:** D

**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>

**NEW QUESTION 28**

- (Exam Topic 1)  
 You have a database. The existing backups for the database and their corresponding files are listed in the following table.

Backup type	Backup date/time	File name
Full	05/02/2016 21:00	Full_20160502_2100.bak
Transaction log	05/03/2016 6:00	Log_20160503_0600.trn
Transaction log	05/03/2016 9:00	Log_20160503_0900.trn
Differential	05/03/2016 12:00	Diff_20160503_1200.bak
Transaction log	05/03/2016 15:00	Log_20160503_1500.trn
Differential	05/03/2016 17:00	Diff_20160503_1700.bak
Transaction log	05/03/2016 19:00	Log_20160503_1900.trn

You purchase a new server. You must restore the database to the new server. You need to restore the data to the most recent time possible.  
 Which three files should you restore in sequence? To answer, move the appropriate files from the list of files to the answer area and arrange them in the correct order.

### Files

Log\_20160503\_0600.trn

Log\_20160503\_1500.trn

Full\_20160502\_2100.bak

Log\_20160503\_1900.trn

Log\_20160503\_0900.trn

Diff\_20160503\_1200.bak

Diff\_20160503\_1700.bak

### Answer Area

⬅

➡

⬆

⬇

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**  
 Step 1: Full.  
 Start with the full backup.  
 Step 2: Diff\_20160503\_1700.bak  
 Followed by the most recent differential backup. Step 3: Log\_20160503\_1900.bak  
 And finally the most recent log backup (the only log backup done after the most recent differential backup).  
 References:  
<https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/differential-backups-sql-server>

**NEW QUESTION 30**

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

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.  
You need to configure a Microsoft SQL Server instance to ensure that a user named Mail1 can send mail by using Database Mail.  
Solution: You add the DatabaseMailUserRole to Mail1 in the tempdb database. Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** B

**Explanation:**

Database Mail is guarded by the database role DatabaseMailUserRole in the msdb database, not the tempdb database, in order to prevent anyone from sending arbitrary emails. Database users or roles must be created in the msdb database and must also be a member of DatabaseMailUserRole in order to send emails with the exception of sysadmin who has all privileges.

Note: Database Mail was first introduced as a new feature in SQLServer 2005 and replaces the SQL Mail feature found in previous versions.

References:

[http://www.iddevelopment.info/data/SQLServer/DBA\\_tips/Database\\_Administration/DBA\\_20.shtml](http://www.iddevelopment.info/data/SQLServer/DBA_tips/Database_Administration/DBA_20.shtml)

**NEW QUESTION 34**

- (Exam Topic 1)

You manage a Microsoft-SQL Server database named sales Orders.

You need to verify the integrity of the database and attempt to repair any errors that are found. Repair must not cause any data to be lost in the database.

How should you complete the DBCC command? To answer, select the appropriate options in the answer area.

**Answer Area**

DBCC		('salesOrders',		)
CHECKDB		CHECKDB		
PHYSICAL_ONLY		PHYSICAL_ONLY		
REPAIR_FAST		REPAIR_FAST		
REPAIR_REBUILD		REPAIR_REBUILD		

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Box 1: CHECKDB

DBCC CHECKDB checks the logical and physical integrity of all the objects in the specified database. Partial syntax:

DBCC CHECKDB

[ ( database\_name | database\_id | 0 [ , NOINDEX

| , { REPAIR\_ALLOW\_DATA\_LOSS | REPAIR\_FAST | REPAIR\_REBUILD } ]

....

Box 2: REPAIR\_REBUILD

DBCC CHECKDB ...REPAIR\_ALLOW\_DATA\_LOSS | REPAIR\_FAST |REPAIR\_REBUILD specifies that

DBCC CHECKDB repair the found errors.

REPAIR\_REBUILD performs repairs that have no possibility of data loss. This can include quick repairs, such as repairing missing rows in non-clustered indexes, and more time-consuming repairs, such as rebuilding an index.

References: <https://docs.microsoft.com/en-us/sql/t-sql/database-console-commands/dbcc-checkdb-transact-sql>

**NEW QUESTION 37**

- (Exam Topic 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 are a database administrator for a company that has an on-premises Microsoft SQL Server environment and Microsoft Azure SQL Database instances. The environment hosts several customer databases, and each customer uses a dedicated instance. The environments that you manage are shown in the following table.



Customer	Cloud Type	Description
AdventureWorks Cycles	Private	The environment includes a database named <b>Adventureworks</b> that contains a single schema named ADVSchema. You must implement auditing for all objects in the ADVSchema schema. You must also implement auditing to record access to data that is considered sensitive by the company.
Tailspin Toys	Private	Tailspin Toys has a custom application that accesses a hosted database named <b>TSpinDB</b> . The application will monitor <b>TSpinDB</b> and capture information over time about which database objects are accessed and how frequently they are accessed.
Contoso, Ltd.	Private	The environment has a database named <b>ConDB</b> that was recently upgraded to Microsoft SQL Server 2016. Contoso reports that <b>ConDB</b> is slow to return results when the server is busy. You must modify the startup parameters to <b>ConDB</b> to optimize performance.
Wingtip Toys	Private	Wingtip Toys has a database named <b>WingDB</b> . All tables in the database have indexes. Users report system response time is slow during peak activity periods. You observe that the performance issues are related to locking.  Wingtip Toys receives data updates from suppliers each week. You must implement a process for importing the data into <b>WingDB</b> . You must use minimal logging and minimized data loss during import process.
Wide World Importers	Public	The environment includes a database named <b>WDWDB</b> . Neither auditing nor statistics are configured for <b>WDWDB</b> . You must log any deletion of views and all database record update operations.

You need to configure auditing for WDWDB.  
 In the table below, identify the event type that you must audit for each activity.

## Answer Area

Event type	View deletions	Update operations
Data changes	<input type="radio"/>	<input type="radio"/>
Schema changes	<input type="radio"/>	<input type="radio"/>
SQL batch	<input type="radio"/>	<input type="radio"/>
Data access	<input type="radio"/>	<input type="radio"/>

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:



Answer Area

Event type	View deletions	Update operations
Data changes	<input type="radio"/>	<input checked="" type="radio"/>
Schema changes	<input checked="" type="radio"/>	<input type="radio"/>
SQL batch	<input type="radio"/>	<input type="radio"/>
Data access	<input type="radio"/>	<input type="radio"/>

NEW QUESTION 42

- (Exam Topic 1)

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. You are the database administrator for a company that hosts Microsoft SQL Server. You manage both on-premises and Microsoft Azure SQL Database environments.

Clients connect to databases by using line-of-business applications. Developers connect by using SQL Server Management Studio (SSMS). You need to provide permissions to a service account that will be used to provision a new database for a client. Which permission should you grant?

- A. DDLAdmin
- B. db\_datawriter
- C. dbcreator
- D. dbo
- E. View Database State
- F. View Server State
- G. View Definition
- H. sysadmin

Answer: C

Explanation:

Members of the dbcreator fixed server role can create, alter, drop, and restore any database.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/authentication-access/server-level-roles>

NEW QUESTION 43

- (Exam Topic 1)

You administer a Microsoft SQL Server 2016 database instance.

You plan to migrate the database to Windows Azure SQL Database.

You verify that all objects contained in the database are compatible with Windows Azure SQL Database. You need to ensure that database users and required server logins are migrated to Windows Azure SQL Database.

What should you do?

- A. Use the Copy Database wizard.
- B. Back up the database from the local server and restore it to Windows Azure SQL Database.
- C. Use the Database Transfer wizard.
- D. Use SQL Server Management Studio to deploy the database to Windows Azure SQL Database.

Answer: D

NEW QUESTION 45

- (Exam Topic 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 are a database administrator for a company that has an on-premises Microsoft SQL Server environment and Microsoft Azure SQL Database instances. The environment hosts several customer databases, and each customer uses a dedicated instance. The environments that you manage are shown in the following table.

Customer	Cloud Type	Description
AdventureWorks Cycles	Private	The environment includes a database named <b>Adventureworks</b> that contains a single schema named ADVSchema. You must implement auditing for all objects in the ADVSchema schema. You must also implement auditing to record access to data that is considered sensitive by the company.
Tailspin Toys	Private	Tailspin Toys has a custom application that accesses a hosted database named <b>TSpinDB</b> . The application will monitor <b>TSpinDB</b> and capture information over time about which database objects are accessed and how frequently they are accessed.
Contoso, Ltd.	Private	The environment has a database named <b>ConDB</b> that was recently upgraded to Microsoft SQL Server 2016. Contoso reports that <b>ConDB</b> is slow to return results when the server is busy. You must modify the startup parameters to <b>ConDB</b> to optimize performance.
Wingtip Toys	Private	<p>Wingtip Toys has a database named <b>WingDB</b>. All tables in the database have indexes. Users report system response time is slow during peak activity periods. You observe that the performance issues are related to locking.</p> <p>Wingtip Toys receives data updates from suppliers each week. You must implement a process for importing the data into <b>WingDB</b>. You must use minimal logging and minimized data loss during import process.</p>
Wide World Importers	Public	The environment includes a database named <b>WDWDB</b> . Neither auditing nor statistics are configured for <b>WDWDB</b> . You must log any deletion of views and all database record update operations.

You need to implement a process for importing data into WingDB.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

## Actions

Perform a full backup of the database, and enable the bulk-logged recovery model.

Back up the tail of the transaction log.

Drop any clustered indexes from the tables being imported into.

Perform a full backup of the database and enable the simple recovery model.

Import the data.

Rebuild any indexes on the tables being imported into.

Drop any nonclustered indexes from the tables being imported into.

## Answer Area



- A. Mastered
- B. Not Mastered

**Answer:** A

### Explanation:

Step 1: Perform a full backup of the database and enable the bulk-logged recovery model. Not: Simple recovery model.

With the Simple recovery model we cannot minimize data loss. Step 2: Import the data

Step 3: Backup the tail of the transaction log.

For databases that use full and bulk-logged recovery, database backups are necessary but not sufficient. Transaction log backups are also required.

Note: Three recovery models exist: simple, full, and bulk-logged. Typically, a database uses the full recovery model or simple recovery model. A database can be switched to another recovery model at any time.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/backup-restore/recovery-models-sql-server>

### NEW QUESTION 48

- (Exam Topic 1)

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

**Answer:** A

### 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/cc73100>

### NEW QUESTION 53

- (Exam Topic 1)

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

Currently, Server01/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 Secondar



- B. Set the backup priority of Server02/HA to20. Set the backup priority of Server03/HA to 10.
- C. Set the backup preference of HaContoso to Secondary onl
- D. Set the backup priority of Server02/HA to20. Set the backup priority of Server03/HA to 10.
- E. Set the backup preference of HaContoso to Secondary onl
- F. Set the backup priority of Server02/HA to10. Set the backup priority of Server03/HA to 20.
- G. set the exclude replica of Server01/HA to tru
- H. Set the backup priority of Server02/HA to 10. Set the backup priority of Server03/HA to 20.

**Answer:** B

**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-availab>

**NEW QUESTION 58**

- (Exam Topic 1)

You administer two instances of Microsoft SQL Server 2016.

You deploy an application that uses a database on the named instance.

The application is unable to connect to the database on the named instance. You need to ensure that the application can connect to the named instance. What should you do?

- A. Use the Data Quality Client to configure the application.
- B. Start the SQL Server Browser Service.
- C. Use the Master Data Services Configuration Manager to configure the application.
- D. Start the SQL Server Integration Services Service.

**Answer:** B

**Explanation:**

The SQL ServerBrowser program runs as a Windows service. SQL Server Browser listens for incoming requests for Microsoft SQL Server resources and provides information about SQL Server instances installed on the computer. SQL Server Browser contributes to the following actions:

Browsing a list of available servers Connecting to the correct server instance Etc.

References: <https://docs.microsoft.com/en-us/sql/tools/configuration-manager/sql-server-browser-service>

**NEW QUESTION 60**

- (Exam Topic 1)

You are configuring a new Microsoft SQL Server Always On Availability Group. You plan to configure a shared network location at \\DATA-C11\\SQL.

You need to create an availability group listener named AGL1 on port 1433.

In which order should you perform the actions? To answer, move all actions from the list of actions to the answer area and arrange them in the correct order.

Answer options	Answer Area
Add and configure the replica and create an availability group listener named AGL1 on port 1433.	
Launch the Failover Cluster Manager and configure AO-AG1 and AO-AG2 as servers in the cluster. Name the cluster WINCL1.	
Create the Always On Availability Group and select the user databases for the availability group.	
Enable SQL Server 2016 Always On Availability Group feature.	
Select the Full data synchronization method and specify the network path: \\DATA-C11\\SQL.	

- A. Mastered
- B. Not Mastered



**Answer:** A

**Explanation:**

Step 1: Launch the Failover Cluster Manager and..

To support the Always On availability groups feature, ensure that every computer that is to participate in one or more availability groups meets requirements including:

\* Ensure that each computer is a node in a WSFC (Windows Server Failover Clustering). Step 2: Add and configure the replica and...

All the server instances that host availability replicas for an availability group must use the same SQL Server collation.

Step 3: Enable the SQL Server 2016 Always On Availability Group feature.

Enable the Always On availability groups feature on each server instance that will host an availability replica for any availability group. On a given computer, you can enable as many server instances for Always On availability groups as your SQL Server installation supports.

Step 4: Create the Always On Availability Group and..

Using Transact-SQL to create or configure an availability group listener Step 5: Select the Full data synchronization method and...

References: [https://technet.microsoft.com/en-us/library/jj899851\(v=sc.12\).aspx](https://technet.microsoft.com/en-us/library/jj899851(v=sc.12).aspx)

<https://docs.microsoft.com/en-us/sql/database-engine/availability-groups/windows/create-or-configure-an-availa>

**NEW QUESTION 62**

- (Exam Topic 1)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet 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 has several Microsoft SQL Server instances. Each instance hosts many databases. You observe I/O corruption on some of the instances.

You need to perform the following actions:

- Identify databases where the PAGE\_VERIFY option is not set
- Configure full page protection for the identified databases. Solution: You run the following Transact-SQL statement:

```
SELECT NAME, page_verify_option_desc
FROM master.sys.databases
WHERE page_verify_option_desc = 'NONE'
GO
```

For each database that you identify, you run the following Transact-SQL statement:

```
ALTER DATABASE <database_name>
SET PAGE_VERIFY TORN_PAGE_DETECTION
```

Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** B

**NEW QUESTION 64**

- (Exam Topic 1)

You are the database administrator for a Microsoft SQL Server instance. You develop an Extended Events package to look for events related to application performance.

You need to change the event session to include SQL Server errors that are greater than error severity 15. Which five 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.

### Transact-SQL segments

WHERE ((sqlserver.data-base\_id>(4)) AND (severity>(15)))

(ACTION(sqlserver.client\_app\_name, sqlserver.data-base\_id,sqlserver.session\_id)

ALTER EVENT SESSION Contoso1 ON SERVER

)

GO

ADD EVENT sqlserver.error\_reported

ADD TARGET sqlserver.error\_reported

### Answer Area

⏪

⏩

⏴

⏵

- A. Mastered  
 B. Not Mastered

**Answer:** A

**Explanation:**

Step 1: ALTER EVENT SESSION Contoso1 ON SERVER

Step 2: ADD EVENT ... Step 3: (ACTION ... Step 4: WHERE...

Step 5: ) GO

Example: To start an Extended Events sessions in order to trap SQL Server errors with severity greater than 10,just run the following script:

CREATE EVENT SESSION [error\_trap] ON SERVER

ADD EVENT sqlserver.error\_reported (

ACTION

(package0.collect\_system\_time,package0.last\_error,sqlserver.client\_app\_name,sqlserver.client\_hostname,sqlser

sqlserver.plan\_handle,sqlserver.query\_hash,sqlserver.session\_id,sqlserver.sql\_text,sqlserver.tsqf\_frame,sqlserve

WHERE ([severity]>10)

)

ADD TARGET package0.event\_file (

SET filename=N'D:\Program Files\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\XE\error\_trap.xel'

) WITH (

STARTUP\_STATE=OFF

) GO

References:

[http://sqlblog.com/blogs/davide\\_mauri/archive/2013/03/17/trapping-sql-server-errors-with-extended-events.aspx](http://sqlblog.com/blogs/davide_mauri/archive/2013/03/17/trapping-sql-server-errors-with-extended-events.aspx)

**NEW QUESTION 65**

- (Exam Topic 1)

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

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

Your company has several Microsoft SOI Server instances. Each instance hosts many databases. You observe I/O corruption on some of the instances.

You need to perform the following actions:

- Identify databases where the PAGE VERIFY option is not set.
- Configure full page protection for the identified databases. Solution: You run the following Transact-SQL statement:

```
SELECT NAME, page_verify_option_desc
FROM master.sys.databases
WHERE page_verify_option_desc != 'TORN_PAGE_DETECTION'
GO
```

For each database that you identify, you run the following Transact-SQL statement:

```
ALTER DATABASE <database_name>
SET PAGE_VERIFY TORN_PAGE_DETECTION
```

Does the solution meet the goal?

- A. Yes
- B. NO

**Answer:** B

#### NEW QUESTION 70

- (Exam Topic 1)

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.

You are the database administrator for a company that hosts Microsoft SQL Server. You manage both on-premises and Microsoft Azure SQL Database environments.

You plan to delegate encryption operations to a user.

You need to grant the user permission to implement cell-level encryption while following the principle of least privilege.

Which permission should you grant?

- A. DDLAdmin
- B. db\_datawriter
- C. dbcreator
- D. dbo
- E. View Database State
- F. View ServerState
- G. View Definition
- H. sysadmin

**Answer:** G

#### Explanation:

The following permissions are necessary to perform column-level encryption, or cell-level encryption.

CONTROL permission on the database.

CREATE CERTIFICATE permission on the database. Only Windows logins, SQL Server logins, and application roles can own certificates. Groups and roles cannot own certificates.

ALTER permission on the table.

Some permission on the key and must not have been denied VIEW DEFINITION permission. References:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/encrypt-a-column-of-data>

#### NEW QUESTION 72

- (Exam Topic 1)

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

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

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

One customer reports that their database is not responding as quickly as the service level agreements dictate. You observe that the database is fragmented.

You need to optimize query performance. Solution: You reorganize all indexes. Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** A

#### Explanation:

You can remedy index fragmentation by either reorganizing an index or by rebuilding an index. References: [https://msdn.microsoft.com/en-us/library/ms189858\(v=sql.105\).aspx](https://msdn.microsoft.com/en-us/library/ms189858(v=sql.105).aspx)

#### NEW QUESTION 75

- (Exam Topic 1)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet 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 database named DB1 that is 640 GB and is updated frequently.

You enabled log shipping for DB1 and configure backup and restore to occur every 30 minutes. You discover that the disks on the data server are almost full.

You need to reduce the amount of disk space used by the log shipping process. Solution: You enable compression for the transaction log backups:

Does this meet the goal?

- A. Yes
- B. No

**Answer:** A

#### NEW QUESTION 80

- (Exam Topic 2)

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.

Answer: D

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.

**NEW QUESTION 81**

- (Exam Topic 2)

Overview

General Overview

ADatum Corporation has offices in Miami and Montreal.

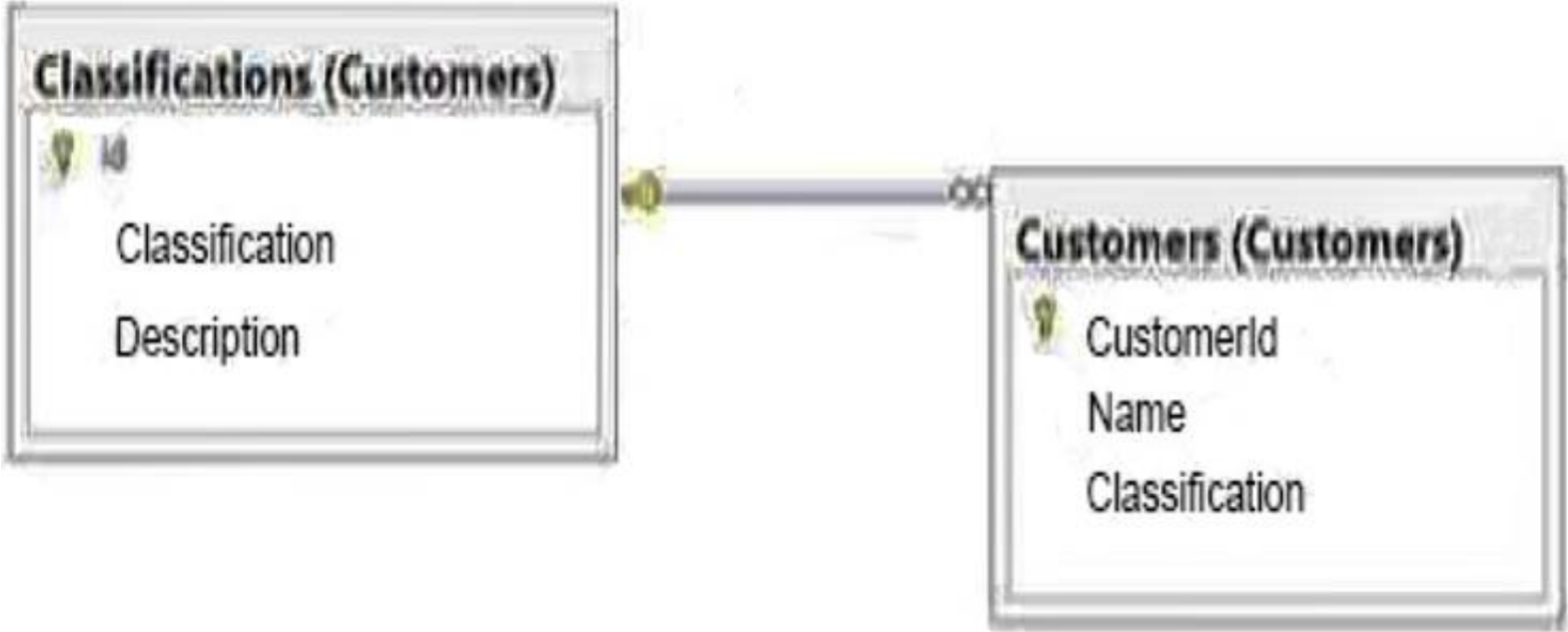
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

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 change to USP\_3 to ensure that the procedure continues to execute even if one of the UPDATE statements fails.

Which change should you recommend?

- A. Set the XACT\_ABORT option to off.
- B. Set the XACT\_ABORT option to on.
- C. Set the IMPLICIT\_TRANSACTIONS option to off.

D. Set the IMPLICIT\_TRANSACTIONS option to on.

**Answer:** A

**Explanation:**

- Scenario: A stored procedure named USP\_3 is used to update prices. USP\_3 is composed of several UPDATE statements called in sequence from within a transaction. Currently, if one of the UPDATE statements fails, the stored procedure continues to execute.
- When SET XACT\_ABORT is OFF, in some cases only the Transact-SQL statement that raised the error is rolled back and the transaction continues processing.

**NEW QUESTION 86**

- (Exam Topic 2)

**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](http://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 will 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 for the deployment of SQL Server 2014. The solution must meet the business requirements. What should you include in the recommendation?

A. Create a new instance of SQL Server 2014 on the server that hosts the SQL Server 2008 instance.

B. Upgrade the existing SQL Server 2008 instance to SQL Server 2014.

C. Deploy two servers that have SQL Server 2014 installed and implement Failover Clustering.

D. Deploy two servers that have SQL Server 2014 installed and implement database mirroring.

**Answer:** C

**Explanation:**

Scenario: The databases must be available if the SQL Server service fails.

**NEW QUESTION 89**

- (Exam Topic 2)

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.

Data Types

int

bigint

varchar

nvarchar

char

smalldatetime

date

Answer Area

ID

Name

Code

ModifiedDate

Data type

Data type

Data type

Data type

- A. Mastered
- B. Not Mastered

Answer: A

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

**NEW QUESTION 93**  
- (Exam Topic 2)  
You plan to deploy a database by using SQL Server 2014. Your company identifies the following requirements for the database:  
The name of all stored procedures must start with "usp\_"always.  
All distribution statistics must be updated daily  
You need to identify which feature must be used to meet each database requirement.  
Which features should you identify? To answer, drag the appropriate feature to the correct database requirement in the answer area.

Features

Change data capture

The CHECK constraint

Extended Event

A maintenance plan

Policy-Based Management

Answer Area

The name of all stored procedures must start with “usp\_” always.

All distribution statistics must be updated daily.

Feature

Feature

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:  
- Policy-Based Management Each Stored Procedure that are created and that will be created has to have prefix "USP\_".  
- Maintenance plans create a workflow of the tasks required to make sure that your database is optimized, regularly backed up, and free of inconsistencies.

**NEW QUESTION 95**  
- (Exam Topic 2)  
Overview  
General Overview  
ADatum Corporation has offices in Miami and Montreal.



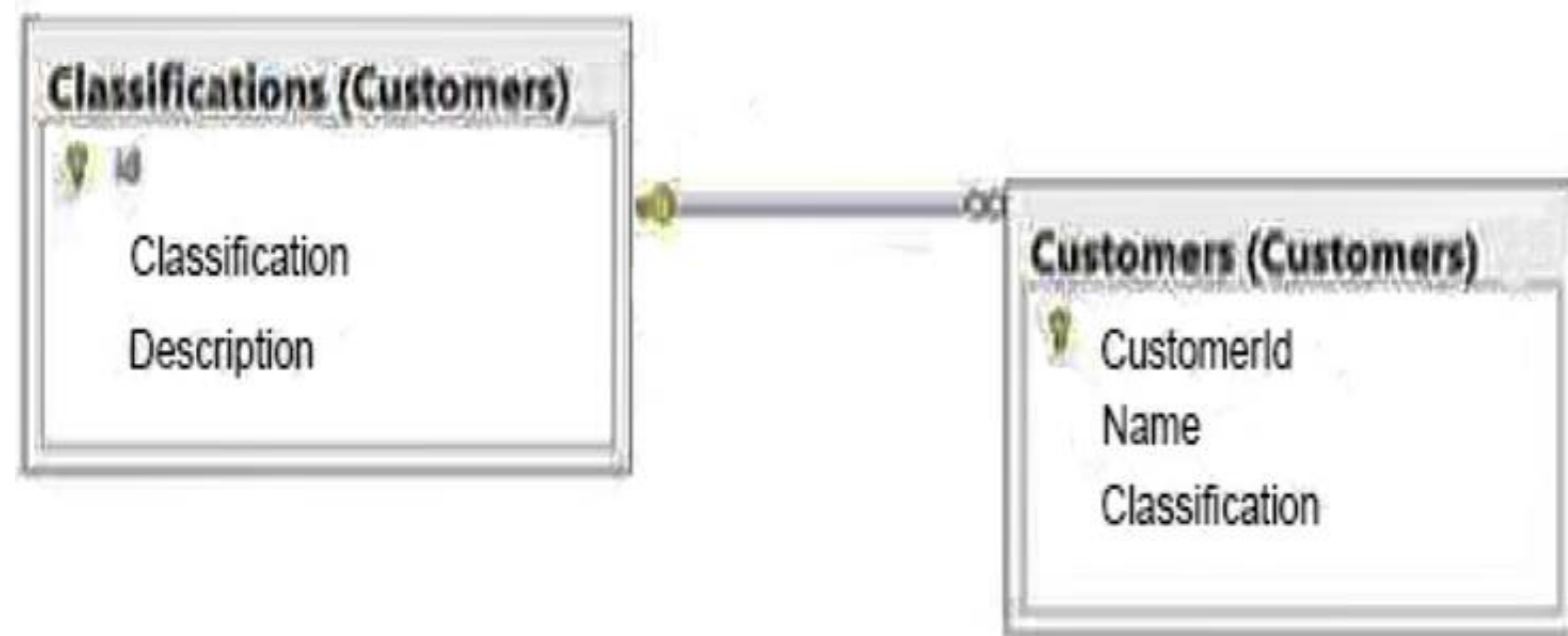
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

#### 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 meet the security requirements of the junior database administrators. What should you include in the recommendation?

- A. A server role
- B. A database role
- C. A credential
- D. A shared login

**Answer: C**

#### Explanation:

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

#### NEW QUESTION 98

- (Exam Topic 2)

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)

**Answer: B**

**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>

**NEW QUESTION 102**

- (Exam Topic 2)

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](http://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 will contain a stored procedure named usp\_UpdateInventory. usp\_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies. All data in Database2 is recreated each day and 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

**Answer: A**

**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:

You can use these reports to obtain information for monitoring system capacity and troubleshooting system performance.

**NEW QUESTION 107**

- (Exam Topic 2)

You are creating a database that will store usernames and credit card numbers for an application. You need to recommend a solution to store and reuse the credit card numbers in the database.

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

- A. Data encryption
- B. Transparent Data Encryption (TDE)
- C. Encrypting File System (EFS)
- D. Data hashing

**Answer: A**

**Explanation:**

If we are going to encrypt credit card number for storage, then we should have Data Encryption Key(DEK) for encrypting the credit card number.

**NEW QUESTION 111**

- (Exam Topic 2)

Overview

General Overview

ADatum Corporation has offices in Miami and Montreal.

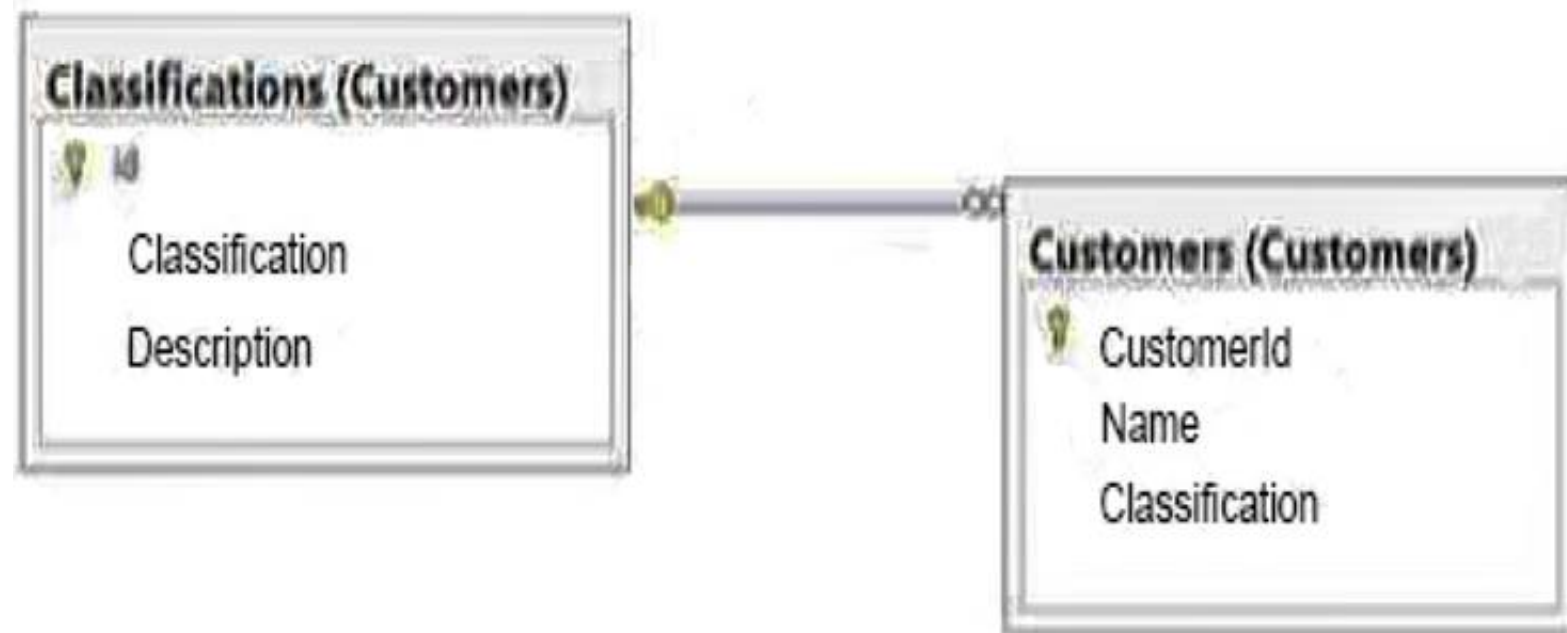
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

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:

Classifications (Customers)



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 disaster recovery strategy for the Inventory database. What should you include in the recommendation?

- A. Log shipping
- B. SQL Server Failover Clustering
- C. AlwaysOn availability groups
- D. Peer-to-peer replication

**Answer: A**

**Explanation:**

Scenario:

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

**NEW QUESTION 113**

- (Exam Topic 2)

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](http://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 will contain a stored procedure named usp\_UpdateInventory. usp\_UpdateInventory will manipulate a table that contains a self-join that has an unlimited number of hierarchies. All data in Database2 is recreated each day and 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 feature to support your backup solution. What should you include in the recommendation?

- A. Transparent Data Encryption (TDE)
- B. Column-level encryption
- C. An NTFS file permission
- D. A Secure Sockets Layer (SSL)

**Answer: A**

**Explanation:**

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

- Transparent data encryption (TDE) performs real-time I/O encryption and decryption of the data and log files. The encryption uses a database encryption key (DEK), which is stored in the database boot record for availability during recovery.

Transparent Data Encryption (TDE)

**NEW QUESTION 118**

- (Exam Topic 2)

You need to recommend a backup process for an Online Transaction Processing (OLTP) database. The process must meet the following requirements:

Ensure that if a hardware failure occurs, you can bring the database online with a minimum amount of data loss.

Minimize the amount of administrative effort required to restore any lost data.

What should you include in the recommendation? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.



Create a database snapshot

Perform a differential backup of the database every night

Ship the logs to a secondary server

Perform a backup of the transaction log every hour

Set the database to the simple recovery model

Set the database to the full recovery model

Perform a weekly full backup of the database

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Create a database snapshot

Perform a differential backup of the database every night

Ship the logs to a secondary server

Perform a backup of the transaction log every hour

Set the database to the simple recovery model

Set the database to the full recovery model

Perform a weekly full backup of the database

Set the database to the full recovery model

Perform a weekly full backup of the database

Perform a differential backup of the database every night

Perform a backup of the transaction log every hour

#### NEW QUESTION 123

- (Exam Topic 2)

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

**Answer:** D

**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>

**NEW QUESTION 125**

- (Exam Topic 2)

You plan to deploy SQL Server 2014. You are designing two stored procedures named SP1 and SP2 that have the following requirements:

- Prevent data read by SP1 from being modified by other active processes.
- Prevent SP2 from performing dirty reads.

You need to recommend the isolation level for each stored procedure.

The solution must maximize concurrency. Which isolation levels should you recommend? To answer, drag the appropriate isolation level to the correct stored procedure in the answer area.

Isolation Levels		Answer area
Read committed	SP1	Isolation level
Read uncommitted	SP2	Isolation level
Repeatable read		
Serializable		

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

SP1 – repeatable read; SP2 – read committed

- REPEATABLE READ

This isolation level includes the guarantees given by SNAPSHOT isolation level. In addition, REPEATABLE READ guarantees that for any row that is read by the transaction, at the time the transaction commits the row has not been changed by any other transaction. Every read operation in the transaction is repeatable up to the end of the transaction.

- Committed Read is SQL Server's default isolation level. It ensures that an operation will never read data another application has changed but not yet committed.

**NEW QUESTION 129**

- (Exam Topic 2)

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 Setting
- D. Set the maximum size of the file for the transaction log.
- E. 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.

**Answer:** D

**NEW QUESTION 133**

- (Exam Topic 2)

You are designing an authentication strategy for a new server that has SQL Server 2014 installed. The strategy must meet the following business requirements:

The account used to generate reports must be allowed to make a connection during certain hours only.

Failed authentication requests must be logged.

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

Which technologies should you recommend? To answer, drag the appropriate solution to the correct business requirement in the answer area.

Isolation Levels	Answer area	
Login auditing	The account used to generate reports must be allowed to make a connection during certain hours only.	Technology
Logon triggers		
C2 audit tracing	Failed authentication requests must be logged.	Technology
Policy-Based Management		

- A. Mastered  
B. Not Mastered

**Answer:** A

**Explanation:**

- Logon triggers fire stored procedures in response to a LOGON event. This event is raised when a user session is established with an instance of SQL Server. Logon triggers fire after the authentication phase of logging in finishes, but before the user session is actually established. You can use logon triggers to audit and control server sessions, such as by tracking login activity, restricting logins to SQL Server, or limiting the number of sessions for a specific login.
- Login auditing can be configured to write to the error log on the following events.
  - Failed logins
  - Successful logins
  - Both failed and successful logins

**NEW QUESTION 136**

- (Exam Topic 2)

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

**Answer:** B

**Explanation:**

Transparent Data Encryption (TDE) is a special case of encryption using a symmetric key. TDE encrypts an entire database using that symmetric key called the database encryption key. The database encryption key is protected by other keys or certificates which are protected either by the database master key or by an asymmetric key stored in an EKM module.

SQL Server provides the following mechanisms for encryption:

Transact-SQL functions  
Asymmetric keys  
Symmetric keys  
Certificates  
Transparent Data Encryption

**NEW QUESTION 139**

- (Exam Topic 2)

You are the lead database administrator (DBA) of a Microsoft SQL Server 2016 environment. All DBAs are members of the DOMAIN\JrDBAs Active Directory group.

You grant DOMAIN\JrDBAs access to the SQL Server.

You need to create a server role named SpecialDBARole that can perform the following functions:

View all databases.  
View the server state.  
Assign GRANT, DENY, and REVOKE permissions on logins.  
You need to add DOMAIN\JrDBAs to the server role.  
You also need to provide the least level of privileges necessary.  
Which SQL statement or statements should you use? Choose all that apply.

- A. CREATE SERVER ROLE [SpecialDBARole] AUTHORIZATION setupadmin;  
B. ALTER SERVER ROLE [SpecialDBARole] ADD MEMBER [DOMAIN\JrDBAs];  
C. CREATE SERVER ROLE [SpecialDBARole] AUTHORIZATION securityadmin;  
D. GRANT VIEW DEFINITION TO [SpecialDBARole];  
E. CREATE SERVER ROLE [SpecialDBARole] AUTHORIZATION serveradmin;  
F. GRANT VIEW SERVER STATE, VIEW ANY DATABASE TO [SpecialDBARole];

**Answer:** BCF

**NEW QUESTION 141**

- (Exam Topic 2)

You need to recommend the actions that are required to partition a table.

In which order should the four actions be performed? To answer, move the actions from the list of actions to the answer area and arrange them in the correct order.

Actions	Answer Area
Create a partition scheme	
Create a partition function	
Create filegroups	
Create the table	

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

References:

<http://technet.microsoft.com/en-us/library/ms188730.aspx>

#### NEW QUESTION 144

- (Exam Topic 2)

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.

**Answer:** BCDE

**Explanation:**

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

#### NEW QUESTION 147

- (Exam Topic 2)

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 reduces the time it takes to import the supplier data. What should you include in the recommendation?

- A. Enable instant file initialization.
- B. Reorganize the indexes.
- C. Disable Resource Governor.
- D. Enable Auto Update Statistics.

Answer: C

Explanation:  
- 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.

NEW QUESTION 152

- (Exam Topic 2)  
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](http://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 will 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

**Answer:** A

**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.

**NEW QUESTION 157**

- (Exam Topic 2)

You plan to deploy SQL Server 2014. Your company identifies the following monitoring requirements:

- Tempdb must be monitored for insufficient free space.
- Deadlocks must be analyzed by using Deadlock graphs.

You need to identify which feature meets each monitoring requirement. Which features should you identify? To answer, drag the appropriate feature to the correct monitoring requirement in the answer area.

Features	Answer area
Dynamic management view	Tempdb must be monitored for insufficient free space. Feature
Activity Monitor	Deadlocks must be analyzed by using Deadlock graphs. Feature
Resource Governor	
SQL Trace	

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

You can use the sys.dm\_db\_file\_space\_usage dynamic management view to monitor the disk space used by the user objects, internal objects, and version stores in the tempdb files. Additionally, to monitor the page allocation or deallocation activity in tempdb at the session or task level, you can use the sys.dm\_db\_session\_space\_usage and sys.dm\_db\_task\_space\_usage dynamic management views. These views can be used to identify large queries, temporary tables, or table variables that are using a large amount of tempdb disk space.

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

nodes, resource nodes, and edges representing the relationships between the processes and the resources. References: Troubleshooting Insufficient Disk Space in tempdb  
References: Analyze Deadlocks with SQL Server Profiler

**NEW QUESTION 161**

- (Exam Topic 2)

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

**Answer: D**

#### NEW QUESTION 165

- (Exam Topic 2)

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.

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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:

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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.

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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

**Answer:** B

**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.

#### NEW QUESTION 168

- (Exam Topic 2)

You have a SQL Server 2014 instance named SQL1. SQL1 creates error events in the Windows Application event log.

You need to recommend a solution that will run an application when SQL1 logs a specific error in the Application log.

Which SQL elements should you include in the recommendation? (Each correct answer presents part of the solution. Choose all that apply.)

- A. A policy
- B. A maintenance plan
- C. An alert
- D. A job
- E. A trigger

**Answer:** DE

**Explanation:**

Use a trigger that starts a job which executes the application.

References:

<http://technet.microsoft.com/en-us/library/hh849759.aspx>

#### NEW QUESTION 169

- (Exam Topic 2)

You have a server that has SQL Server 2014 installed. The server contains 100 user databases.

You need to recommend a backup solution for the user databases. The solution must meet the following requirements:

Perform a transaction log backup every hour.

Perform a full backup of each database every week.

Perform a differential backup of each database every day.

Ensure that new user databases are added automatically to the backup solution.

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

- A. A maintenance plan
- B. SQL Server Agent jobs
- C. Policy-Based Management
- D. A Data Definition Language (DDL) trigger

**Answer:** A

**Explanation:**

Maintenance plans create a workflow of the tasks required to make sure that your database is optimized, regularly backed up, and free of inconsistencies.

Maintenance plans can be created to perform the following task (among others): Back up the database and transaction log files. Database and log backups can be retained for a specified period. This lets you create a history of backups to be used if you have to restore the database to a time earlier than the last database backup. You can also perform differential backups.

#### NEW QUESTION 174

- (Exam Topic 2)

You administer a Microsoft SQL Server 2016 database named Contoso on a server named Server01.

You need to write messages to the Application Log when users are added to or removed from a fixed server role in Server01.

What should you create?

- A. a Database Audit Specification
- B. a Policy
- C. an Alert
- D. a SQL Profiler Trace
- E. a Resource Pool
- F. an Extended Event session
- G. a Server Audit Specification

**Answer:** G

**Explanation:**

The SQL Server Audit feature enables you to audit server-level and database-level groups of events and individual events.



Audits can have the following categories of actions:  
Server-level. These actions include server operations, such as management changes and logon and logoff operations.  
Database-level. These actions encompass data manipulation languages (DML) and data definition language (DDL) operations.  
Audit-level. These actions include actions in the auditing process.  
References:  
[http://technet.microsoft.com/en-us/library/cc280663\(v=sql.105\).aspx](http://technet.microsoft.com/en-us/library/cc280663(v=sql.105).aspx)

**NEW QUESTION 178**

- (Exam Topic 2)  
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 ONAccountTransaction.AccountCode REORGANIZE
- B. ALTER INDEX ALL ON AccountTransaction REBUILD
- C. ALTER INDEX IDX\_AccountTransaction\_AccountCode ONAccountTransaction.AccountCode REBUILD
- D. CREATE INDEX IDXAccountTransactionAccountCode ONAccountTransaction.AccountCode WITH DROP EXISTING

**Answer:** A

**NEW QUESTION 179**

- (Exam Topic 3)  
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

**Answer:** B

**Explanation:**  
The error is related to the certificate.  
References: <https://dba.stackexchange.com/questions/3388/restore-encrypted-database-to-another-server?rq=1>

**NEW QUESTION 184**

- (Exam Topic 3)  
You need to recommend a backup process for data warehouse database. The solution must meet the following requirements:  
Ensure that if a hardware failure occurs, you can bring the database online without losing more than 24 hours of transactions.  
Minimize the amount of administrative effort required to restore any lost data.  
Minimize the space used by transaction logs.  
What should you include in the recommendation? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Actions

Perform a weekly full backup of the database

Ship the logs to a secondary server

Set the database to the simple recovery model

Set the database to the full recovery model

Create a database snapshot

Perform a backup of the transaction log every hour

Perform a differential backup of the database every night

Work Area

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Set the database to the simple recovery model; Perform a weekly full backup of the database;  
Perform a differential backup of the database every night Note:  
- Simple recovery model No log backups.  
- Full recovery model Requires log backups

**NEW QUESTION 188**

- (Exam Topic 3)

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 memory optimized 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 as name, description, and price from the Product table. When customers place orders, stored procedures called by the website update product quantity on-hand values. This means the product table is constantly updated at random times.

#### 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 distribute functionality across the three servers. Which function should you assign to each server? To answer, drag the appropriate functions to the correct servers. Each function may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.



Functions		Answer Area
AlwaysOn primary replica	HQ office server.	Function
AlwaysOn secondary replica	Satellite office server.	Function
file backup server	Cloud server.	Function
witness server		
mirroring primary		
mirroring secondary		
log shipping primary		
log shipping secondary		

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:  
HQ office server - AlwaysOn primary replica;  
Satellite office server - AlwaysOn secondary replica; Cloud server - file backup server

NEW QUESTION 193

- (Exam Topic 3)  
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.

Answer: C

NEW QUESTION 196

- (Exam Topic 3)  
You need to ensure that a stored procedure fails if an INSERT statement within the stored procedure fails. What action should you take?

- A. THROW 51000, 'Abort!'
- B. SET XACT\_ABORT OFF
- C. SET XACT\_ABORT ON
- D. TRY....CATCH

Answer: C

NEW QUESTION 201

- (Exam Topic 3)  
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.

Answer: B

### NEW QUESTION 203

- (Exam Topic 3)

Overview

General Overview

ADatum Corporation has offices in Miami and Montreal.

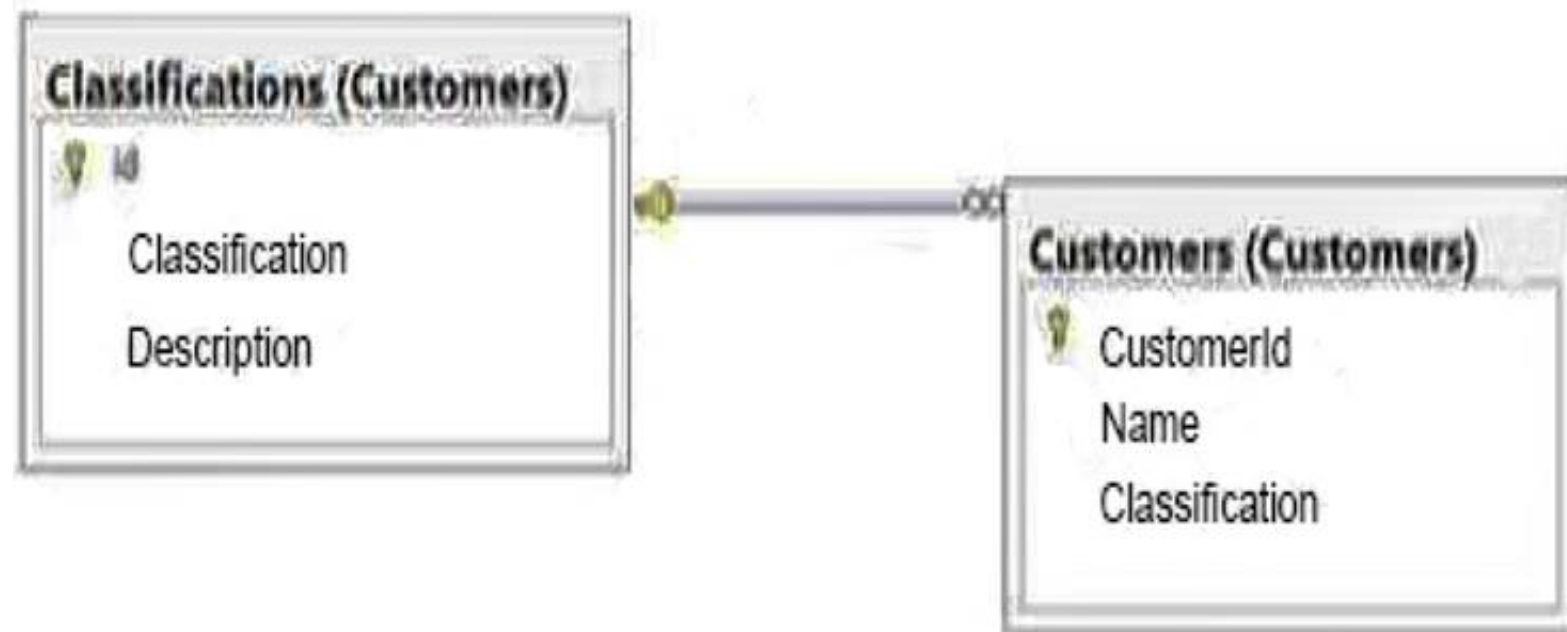
The network contains a single Active Directory forest named adatum.com. The offices connect to each other by using a WAN link that has 5-ms latency. A. Datum standardizes its database platform by using SQL Server 2014 Enterprise edition.

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.

Answer: B

**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.

**NEW QUESTION 206**

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