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QUESTION 1

Which of the following NoSQL database typesbestcategorizes MongoDB?

A. Document

B. Column-oriented

C. Graph

D. Key-value stores

Correct Answer: A

The NoSQL database type that best categorizes MongoDB is document. Document databases are databases that store and manage data as documents, which are collections of fields and values in formats such as JSON (JavaScript Object Notation) or XML (Extensible Markup Language). Document databases do not use any schema or structure to organize data, but rather use identifiers or indexes to enable flexible and dynamic access to data based on fields or values. Document databases are suitable for storing large amounts of complex or unstructured data that have variable attributes or nested structures. MongoDB is an example of a document database that uses JSON-like documents to store and query data. The other options are either different types of NoSQL databases or not related to NoSQL databases at all. For example, column-oriented databases are databases that store and manage data as columns rather than rows; graph databases are databases that store and manage data as nodes and edges that represent entities and relationships; key-value stores are databases that store and manage data as pairs of keys and values. References: CompTIA DataSys+ Course Outline, Domain 1.0 Database Fundamentals, Objective 1.1 Given a scenario, identify common database types.

QUESTION 2

Which of the following resources is the best way to lock rows in SQL Server?

A. TID

B. SID

C. RID

D. PID

Correct Answer: C

The resource that is the best way to lock rows in SQL Server is RID. RID, or Row IDentifier, is an attribute that uniquely identifies each row in a heap table in SQL Server. A heap table is a table that does not have a clustered index, which means that the rows are not stored in any particular order. A RID consists of the file number, page number, and slot number of the row in the database. A RID can be used to lock rows in SQL Server to prevent concurrent access or modification by other transactions or users. A RID lock is a type of lock that locks a single row using its RID. A RID lock can be applied using the HOLDLOCK or XLOCK hints in a SELECT statement. The other options are either not related or not effective for this purpose. For example, TID, or Transaction IDentifier, is an attribute that uniquely identifies each transaction in a database; SID, or Security IDentifier, is an attribute that uniquely identifies each user or group in a Windows system; PID, or Process IDentifier, is an attribute that uniquely identifies each process in an operating system. References: CompTIA DataSys+ Course Outline, Domain 3.0 Database Management and Maintenance, Objective 3.3 Given a scenario, implement database concurrency methods.

QUESTION 3

Which of the following outlines why replication is important during database management?

A. To ensure that all vulnerabilities within the database are classified and mitigated

B. To ensure consistency, availability, and reliability between databases

C. To ensure the performance of web applications is improved

D. To ensure that an administrator can easily retrieve data from the database

Correct Answer: B

QUESTION 4

Which of the following describes the purpose of a snapshot?

A. To create a dynamic data replication

B. To create a synonym

C. To create a

D. To create an image of a database

Correct Answer: D

The purpose of a snapshot is to create an image of a database. A snapshot is a copy of the state and content of a database at a specific point in time. A snapshot can be used for various purposes, such as backup and recovery, testing and development, reporting and analysis, etc. A snapshot can be created using various techniques, such as full copy, incremental copy, differential copy, etc. A snapshot can also be created using various tools or commands provided by the database system or software. The other options are either incorrect or irrelevant for this question. For example, dynamic data replication is a process that copies and synchronizes data from one database server (the source) to one or more database servers (the target) in real time; a synonym is an alias or an alternative name for an object in a database; C is an incomplete option. References: CompTIA DataSys+ Course Outline, Domain 5.0 Business Continuity, Objective 5.2 Given a scenario, implement backup and restoration of database management systems.

QUESTION 5

Which of the following is a reason to create a stored procedure?

A. To minimize storage space

B. To improve performance

C. To bypass case sensitivity requirements

D. To give control of the query logic to the user

Correct Answer: B

A reason to create a stored procedure is to improve performance. A stored procedure is a set of SQL statements or commands that are stored and compiled in the database server, and can be executed by name or by a trigger. A stored procedure can improve performance by reducing the network traffic between the client and the server, as only the name or the parameters of the stored procedure need to be sent, rather than the entire SQL code. A stored procedure can also improve performance by reusing the same execution plan, as the stored procedure is compiled only once and cached in the server memory. The other options are either not true or not relevant for this purpose. For example, a stored procedure does not necessarily minimize storage space, as it still occupies space in the database server; a stored procedure does not bypass case sensitivity requirements, as it still follows the rules of the database system; a stored procedure does not give control of the query logic to the user, as it is defined and maintained by the database administrator or developer. References: CompTIA DataSys+ Course Outline, Domain 2.0 Database Deployment, Objective 2.2

Given a scenario, create database objects using scripting and programming languages.

QUESTION 6

A database\\'s daily backup failed. Previous backups were completed successfully. Which of the following should the database administrator examinefirstto troubleshoot the issue?

A. CPU usage

B. Disk space

C. Event log

D. OS performance

Correct Answer: C

The first thing that the database administrator should examine to troubleshoot the issue is the event log. The event log is a file that records the events and activities that occur on a system, such as database backups, errors, warnings, or failures. By examining the event log, the administrator can identify the cause and time of the backup failure, and also check for any other issues or anomalies that may affect the backup process or the backup quality. The other options are either not relevant or not the first priority for this task. For example, CPU usage, disk space, and OS performance may affect the performance or availability of the system, but not necessarily cause the backup failure; moreover, these factors can be checked after reviewing the event log for more information. References: CompTIA DataSys+ Course Outline, Domain 5.0 Business Continuity, Objective 5.2 Given a scenario, implement backup and restoration of database management systems.

QUESTION 7

Which of the following statements contains an error?

A. Select EmpId from employee where EmpId=90030

B. Select EmpId where EmpId=90030 and DeptId=34

C. Select* from employee where EmpId=90030

D. Select EmpId from employee

Correct Answer: B

The statement that contains an error is option B. This statement is missing the FROM clause, which specifies the table or tables from which to retrieve data. The FROM clause is a mandatory clause in a SELECT statement, unless the

statement uses a subquery or a set operator. The correct syntax for option B would be:

SELECT EmpId FROM employee WHERE EmpId=90030 AND DeptId=34 Copy

The other options are either correct or valid SQL statements. For example, option A selects the employee ID from the employee table where the employee ID is equal to 90030; option C selects all columns from the employee table where the

employee ID is equal to 90030; option D selects the employee ID from the employee table without any filter condition. References: CompTIA DataSys+ Course Outline, Domain 1.0 Database Fundamentals, Objective 1.2 Given a scenario,

execute database tasks using scripting and programming languages.

QUESTION 8

Which of the following is the deployment phase in which a DBA ensures the most recent patches are applied to the new database?

A. Importing

B. Upgrading

C. Provisioning D. Modifying

Correct Answer: B

The deployment phase in which a DBA ensures the most recent patches are applied to the new database is upgrading. Upgrading is a process that updates an existing database system or software to a newer version or release that may include new features, enhancements, bug fixes, security patches, etc. Upgrading helps improve the performance, functionality, compatibility, and security of the database system or software. Upgrading can be done manually or automatically using tools or scripts provided by the vendor or developer. Upgrading can also involve testing, backup, migration, or rollback procedures to ensure the quality and reliability of the new version or release. The other options are either different deployment phases or not related to deployment at all. For example, importing is a process that transfers data from one source to another using files or formats; provisioning is a process that allocates resources such as servers, storage, network, etc., for a system or software; modifying is a process that changes existing data or objects in a database using commands or scripts. References: CompTIA DataSys+ Course Outline, Domain 2.0 Database Deployment, Objective 2.3 Given a scenario, update database systems.

QUESTION 9

Given the following customer table:

ID	First_Purchase_Date	State	Country
12365	02-02-2020	CA	US
36745	04-01-2022	NY	US
63456	01-07-2018	VT	US

Which of the following ORM snippets would return the ID, state, and country of all customers with the newest customers appearingfirst?

A.
```
result = session.execute(
        select(Customer.ID, Customer.State, Customer.Country).
        .order_by(Customer.First_Purchase_Date.asc())
)
```

B.
```
result = session.execute(
        select(Customer.ID, Customer.State, Customer.Country).
        .order_by(Customer.First_Purchase_Date.desc())
        )
```

C.
```
result = session.execute(
        select(Customer.ID, Customer.State, Customer.Country)
)
```

D.
```
result = session.execute(
        select(Customer.ID, Customer.State, Customer.Country).
        .order_by(Customer.First_Purchase_Date)
)
```

A. Option A

B. Option B

C. Option C

D. Option D

Correct Answer: C

The ORM snippet that would return the ID, state, and country of all customers with the newest customers appearing first is option C. This snippet uses the select method to specify the columns to be returned, the order method to sort the results by ID in descending order, and the all method to fetch all the records. The other options either have syntax errors, use incorrect methods, or do not sort the results correctly. References: CompTIA DataSys+ Course Outline, Domain 1.0 Database Fundamentals, Objective 1.2 Given a scenario, execute database tasks using scripting and programming languages.

QUESTION 10

Which of the following is recommended in order to provide encrypted data communication pathways for information as it is transmitted over a network?

A. TCP/IP

B. NFS

C. SMB

D. TLS

Correct Answer: D

The option that is recommended in order to provide encrypted data communication pathways for information as it is transmitted over a network is TLS. TLS, or Transport Layer Security, is a protocol that provides secure communication over the internet by encrypting the data using cryptographic algorithms and keys. TLS also provides authentication and integrity by verifying the identity of the parties involved and ensuring that the data has not been altered or tampered with. TLS can be used to protect various types of data, such as web traffic, email, instant messaging, voice over IP, etc. The other options are either not related or not sufficient for this purpose. For example, TCP/IP, or Transmission Control Protocol/ Internet Protocol, is a set of protocols that defines how data is transmitted and routed over the internet, but does not provide encryption or security; NFS, or Network File System, is a protocol that allows users to access and share files over a network, but does not provide encryption or security; SMB, or Server Message Block, is a protocol that allows users to access and share files, printers, and other resources over a network, but does not provide encryption or security. References: CompTIA DataSys+ Course Outline, Domain 4.0 Data and Database Security, Objective 4.2 Given a scenario, implement security controls for databases.

QUESTION 11

A DBA is reviewing the following logs to determine the current data backup plan for a primary data server:

Timestamp	Activity	Size	Duration
2023-Jan-23 23:59:00	Back up to disk	7.35GB	03:14:55
2023-Jan-24 23:59:00	Back up to disk	0.12GB	00:14:22
2023-Jan-25 23:59:00	Back up to disk	1.11GB	01:11:55
2023-Jan-26 23:59:00	Back up to disk	1.23GB	01:22:12
2023-Jan-27 23:59:00	Back up to disk	1.22GB	01:19:56
2023-Jan-28 23:59:00	Back up to disk	1.21GB	01:17:19
2023-Jan-29 23:59:00	Back up to disk	0.94GB	01:01:29
2023-Jan-30 23:59:00	Back up to disk	8.1GB	03:45:66

Which of the followingbestdescribes this backup plan?

A. Monthly full, daily differential

B. Daily differential

C. Daily full

D. Weekly full, daily incremental

Correct Answer: D

The backup plan that best describes the logs is weekly full, daily incremental. This means that a full backup of the entire database is performed once a week, and then only the changes made since the last backup are backed up every day. This can be inferred from the logs by looking at the size and duration of the backups. The full backups are larger and take longer than the incremental backups, and they occur every seven days. The other backup plans do not match the pattern of the logs. References: CompTIA DataSys+ Course Outline, Domain 5.0 Business Continuity, Objective 5.2 Given a scenario, implement backup and restoration of database management systems.

QUESTION 12

Which of the following constraints is used to enforce referential integrity?

A. Surrogate key

B. Foreign key

C. Unique key

D. Primary key

Correct Answer: B

The constraint that is used to enforce referential integrity is foreign key. A foreign key is a column or a set of columns in a table that references the primary key of another table. A primary key is a column or a set of columns in a table that uniquely identifies each row in the table. Referential integrity is a rule that ensures that the values in the foreign key column match the values in the primary key column of the referenced table. Referential integrity helps maintain the consistency and accuracy of the data across related tables. The other options are either different types of constraints or not related to referential integrity at all. For example, a surrogate key is a column that is artificially generated to serve as a primary key, such as an auto-increment number or a GUID (Globally Unique Identifier); a unique key is a column or a set of columns in a table that uniquely identifies each row in the table, but it can have null valuesunlike a primary key; there is no such constraint as TID. References: CompTIA DataSys+ Course Outline, Domain 1.0 Database Fundamentals, Objective 1.2 Given a scenario, execute database tasks using scripting and programming languages.

QUESTION 13

Which of the following is used to hide data in a database so the data can only be read by a user who has a key?

A. Data security

B. Data masking

C. Data protection

D. Data encryption

Correct Answer: D

The option that is used to hide data in a database so the data can only be read by a user who has a key is data encryption. Data encryption is a process that transforms data into an unreadable or scrambled form using an algorithm and a key. Data encryption helps protect data from unauthorized access or modification by third parties, such as hackers, eavesdroppers, or interceptors. Data encryption also helps verify the identity and authenticity of the source and destination of the data using digital signatures or certificates. Data encryption can be applied to data at rest (stored in a database) or data in transit (transmitted over a network). To read encrypted data, a user needs to have the corresponding key to decrypt or restore the data to its original form. The other options are either different concepts or not related to hiding data at all. For example, data security is a broad term that encompasses various methods and techniques to protect data from threats or risks; data masking is a technique that replaces sensitive data with fictitious but realistic data to protect its confidentiality or compliance; data protection is a term that refers to the legal or ethical obligations to safeguard personal or sensitive data from misuse or harm. References: CompTIA DataSys+ Course Outline, Domain 4.0 Data and Database Security, Objective 4.2 Given a scenario, implement security controls for databases.

QUESTION 14

A database administrator is conducting a stress test and providing feedback to a team that is developing an application that uses the Entity Framework. Which of the following explains the approach the administrator should use when

conducting the stress test?

A. Capture business logic, check the performance of codes, and report findings.

B. Check the clustered and non-clustered indexes, and report findings.

C. Review application tables and columns, and report findings.

D. Write queries directly into the database and report findings.

Correct Answer: A

The approach that the administrator should use when conducting the stress test is to capture business logic, check the performance of codes, and report findings. This will help the administrator to evaluate how well the application handles high volumes of data and transactions, identify any bottlenecks or errors in the code, and provide feedback to the development team on how to improve the application\\'s efficiency and reliability. The other options are either too narrow or too broad in scope, and do not address the specific needs of an application that uses the Entity Framework. References: CompTIA DataSys+ Course Outline, Domain 4.0 Data and Database Security, Objective 4.3 Given a scenario, monitor database performance and security.

QUESTION 15

An on-premises application server connects to a database in the cloud. Which of the following must be considered to ensure data integrity during transmission?

A. Bandwidth

B. Encryption

C. Redundancy

D. Masking

Correct Answer: B

The factor that must be considered to ensure data integrity during transmission is encryption. Encryption is a process that transforms data into an unreadable or scrambled form using an algorithm and a key. Encryption helps protect data integrity during transmission by preventing unauthorized access or modification of data by third parties, such as hackers, eavesdroppers, or interceptors. Encryption also helps verify the identity and authenticity of the source and destination of the data using digital signatures or certificates. The other options are either not related or not sufficient for this purpose. For example, bandwidth is the amount of data that can be transmitted over a network in a given time; redundancy is the duplication of data or components to provide backup or alternative sources in case of failure; masking is a technique that replaces sensitive data with fictitious but realistic data to protect its confidentiality orcompliance. References: CompTIA DataSys+ Course Outline, Domain 4.0 Data and Database Security, Objective 4.2 Given a scenario, implement security controls for databases.

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