DS0-001 Q&As

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QUESTION 1

A database administrator needs to ensure continuous availability of a database in case the server fails. Which of the following should the administrator implement to ensure high availability of the database?

A. ETL

B. Replication

C. Database dumping

D. Backup and restore

Correct Answer: B

The option that the administrator should implement to ensure high availability of the database is replication. Replication is a process that copies and synchronizes data from one database server (the primary or source) to one or more database servers (the secondary or target). Replication helps ensure high availability of the database by providing redundancy, fault tolerance, and load balancing. If the primary server fails, the secondary server can take over and continue to serve the data without interruption or data loss. The other options are either not related or not suitable for this purpose. For example, ETL is a process that extracts, transforms, and loads data from one source to another for analysis or reporting purposes; database dumping is a process that exports the entire content of a database to a file for backup or migration purposes; backup and restore is a process that copies and recovers data from a backup device or media in case of a disaster or corruption. References: CompTIA DataSys+ Course Outline, Domain 5.0 Business Continuity, Objective 5.3 Given a scenario, implement replication of database management systems.

QUESTION 2

Which of the following is an attack in which an attacker hopes to profit from locking the database software?

A. Spear phishing

B. Ransomware

C. SQL injection

D. On-path

Correct Answer: B

The attack in which an attacker hopes to profit from locking the database software is ransomware. Ransomware is a type of malware that encrypts the data or files on a system or network and demands a ransom from the victim to restore them. Ransomware can target database software and lock its access or functionality until the victim pays the ransom, usually in cryptocurrency. Ransomware can cause serious damage and loss to the victim, as well as expose them to further risks or threats. Ransomware can be delivered through various methods, such as phishing emails, malicious attachments, compromised websites, etc. The other options are either different types of attacks or not related to locking database software at all. For example, spear phishing is a type of phishing attack that targets a specific individual or organization with personalized or customized emails; SQL injection is a type of attack that inserts malicious SQL statements into an input field or parameter of a web application to manipulate or compromise the underlying database; on-path is a type of attack that intercepts and modifies the data in transit between two parties on a network. References: CompTIA DataSys+ Course Outline, Domain 4.0 Data and Database Security, Objective 4.4 Given a scenario, identify common types of attacks against databases

QUESTION 3

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.

QUESTION 4

Which of the following firewall types allows an administrator to control traffic and make decisions based on factors such as connection information and data flow communications?

A. Circuit-level

B. Stateful

C. Proxy

D. Packet

Correct Answer: B

The firewall type that allows an administrator to control traffic and make decisions based on factors such as connection information and data flow communications is stateful. A stateful firewall is a type of firewall that tracks the state of each connection and packet that passes through it, and applies rules or policies based on the context and content of the traffic. A stateful firewall can control traffic and make decisions based on factors such as source and destination IP addresses, ports, protocols, session status, application layer data, etc. The other options are either different types of firewalls or not related to firewalls at all. For example, a circuit-level firewall is a type of firewall that monitors and validates the establishment of TCP or UDP connections; a proxy firewall is a type of firewall that acts as an intermediary between the source and destination of the traffic; a packet firewall is a type of firewall that filters packets based on their header information. References: CompTIA DataSys+ Course Outline, Domain 4.0 Data and Database Security, Objective 4.2 Given a scenario, implement security controls for databases.

QUESTION 5

A database administrator is updating an organization\\'s ERD. Which of the following is thebestoption for the database administrator to use?

A. Word processor

B. Spreadsheet

C. UML tool

D. HTML editor

Correct Answer: C

The best option for the database administrator to use to update an organization\\'s ERD is a UML tool. A UML tool is a software application that allows users to create, edit, and visualize diagrams using the Unified Modeling Language (UML). UML is a standard language for modeling software systems and their components, such as classes, objects, relationships, behaviors, etc. UML can also be used to create entity relationship diagrams (ERDs), which are graphical representations of the entities (tables), attributes (columns), and relationships (constraints) in a database. A UML tool can help the administrator to update an organization\\'s ERD by providing features such as drag-and- drop, templates, symbols, validation, etc. The other options are either not suitable or not optimal for this task. For example, a word processor is a software application that allows users to create and edit text documents; a spreadsheet is a software application that allows users to organize and manipulate data in rows and columns; an HTML editor is a software application that allows users to create and edit web pages using HyperText Markup Language (HTML). References: CompTIA DataSys+ Course Outline, Domain2.0 Database Deployment, Objective 2.2 Given a scenario, create database objects using scripting and programming languages.

QUESTION 6

Which of the following NFs is considered themostpreferable for relational database design?

A. 1 NF

B. 3 NF

C. 4 NF

D. 2NF

Correct Answer: B

The NF (normal form) that is considered the most preferable for relational database design is 3 NF. 3 NF, or Third Normal Form, is a level of normalization that organizes data into tables and columns to reduce redundancy and improve consistency. Normalization is a process that applies a set of rules or criteria to eliminate or minimize the anomalies or problems that may arise from inserting, updating, or deleting data in a database. 3 NF is achieved when a table satisfies the following conditions: - It is in 2 NF (Second Normal Form), which means that every non-key column depends on the whole primary key and not on any subset of it - It has no transitive dependencies, which means that every non-key column depends directly on the primary key and not on any other non- key column 3 NF is considered the most preferable for relational database design because it ensures that each table has only one purpose or theme and that each column has only one value or meaning. This helps avoid data duplication, inconsistency, and update anomalies. The other options are either lower or higher levels of normalization that are either less preferable or less practical for relational database design. For example, 1 NF (First Normal Form) is the lowest level of normalization that requires each column to have atomic values and each row to have a unique identifier; 4 NF (Fourth Normal Form) is a higher level of normalization that requires each table to have no multi-valued dependencies, which means that there are no

columns that can have more than one value for the same primary key value; 2 NF (Second Normal Form) is an intermediate level of normalization that requires each non-key column to depend on the whole primary key and not on any subset of it. 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 7

Which of the following commands when executed will rebuild statistics against user-defined tables in a database?

A. sp_autostats

B. sp_updatestats

C. DBCC UPDATEUSAGE

D. DBCC SHOW_STATISTICS

Correct Answer: B

QUESTION 8

A programmer wants to configure a database to only allow read or write access when requests are coming from specific IP addresses. Which of the following can be used to configure IP addresses to allow access to the database?

A. Static IP address

B. Firewall

C. Dynamic IP address

D. IDNS

Correct Answer: B

The best option to configure IP addresses to allow access to the database is a firewall. A firewall is a network device or software that controls the incoming and outgoing traffic based on a set of rules or policies. A firewall can be used to filter the traffic by IP addresses, ports, protocols, or other criteria, and allow or deny access to the database accordingly. The other options are either not relevant or not sufficient for this task. For example, a static IP address is an IP address that does not change over time, but it does not determine the access to the database; a dynamic IP address is an IP address that changes periodically, but it does not control the traffic to the database; an IDNS is an Internet Domain Name System, which translates domain names into IP addresses, but it does not regulate the access to the database. References: CompTIA DataSys+ Course Outline, Domain 4.0 Data and Database Security, Objective 4.2 Given a scenario, implement security controls for databases.

QUESTION 9

A database administrator is new to a company and wants to create a document that illustrates the interaction between tables. Which of the following should the administrator create?

A. Troubleshooting guide

B. Entity relationship diagram

C. Data dictionary

D. Database reference manual

Correct Answer: B

The document that the administrator should create to illustrate the interaction between tables is an entity relationship diagram. An entity relationship diagram (ERD) is a graphical representation of the entities (tables), attributes (columns), and relationships (constraints) in a database. An ERD helps the administrator to visualize the structure and design of the database, as well as the dependencies and associations among the tables. The other options are either different types of documents or not related to the interaction between tables. For example, a troubleshooting guide is a document that provides instructions on how to solve common problems or errors in a database; a data dictionary is a document that describes the metadata (information about data) of a database; a database reference manual is a document that provides information on how to use or operate a database. 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 10

A database administrator manages a database server that is running low on disk space. A lot of backup files are stored on the server\\'s disks.

Which of the following is thebestaction for the administrator to take?

A. Move all the backup files to external disks.

B. Delete all the backup files containing data that is rated as classified.

C. Delete all the backup files that are not required by the backup retention policy.

D. Delete all the backup files except for the most recent one.

Correct Answer: C

The best action for the administrator to take is to delete all the backup files that are not required by the backup retention policy. This will free up disk space on the server and also comply with the best practices for data backup and recovery. The backup retention policy defines how long the backup files should be kept and when they should be deleted or archived. The other options are either risky, inefficient, or impractical. For example, moving all the backup files to external disks would require additional hardware and time, deleting all the backup files containing data that is rated as classified would compromise data security and compliance, and deleting all the backup files except for the most recent one would limit the recovery options in case of a disaster. 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 11

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 12

A database administrator has been asked to assign a user the ability to view a data set. Which of the following practices best describes this request?

A. Access control

B. Security audit

C. Database audit

D. Password policy implementation

Correct Answer: A

The practice that best describes this request is access control. Access control is a process that regulates who can access what data in a system based on predefined rules or policies. Access control helps protect data from unauthorized or inappropriate access or modification bygranting or denying permissions or privileges to users or groups based on their roles or identities. By applying access control, the database administrator can assign a user the ability to view a data set without allowing them to change or delete it. The other options are either different practices or not related to this request. For example, security audit is a process that evaluates the security level of a system by identifying vulnerabilities or risks; database audit is a process that monitors and records the activities or events that occur on a database; password policy implementation is a process that defines and enforces rules or standards for creating and managing passwords. References: CompTIA DataSys+ Course Outline, Domain 4.0 Data and Database Security, Objective 4.2 Given a scenario, implement security controls for databases.

QUESTION 13

Which of the following is the correct order of the steps in the database deployment process?

A. 1. Connect

2.

Install

3.

Configure

4.

Confirm prerequisites

5.

Validate

6.

Test

7.

Release

B. 1. Configure

2.

Install

3.

Connect

4.

Test

5.

Confirm prerequisites

6.

Validate

7.

Release

C. 1. Confirm prerequisites

2.

Install

3.

Configure

4.

Connect

5.

Test

6.

Validate

7.

Release

D. 1. Install

2.

Configure

3.

Confirm prerequisites

4.

Connect

5.

Test

6.

Validate

7.

Release

Correct Answer: C

The correct order of the steps in the database deployment process is option C. This order follows the best practices for deploying a database system, which are:

Confirm prerequisites: Check the system requirements and compatibility of the database software and tools before installation.

Install: Install the database software and tools on the target server or platform. Configure: Configure the database settings and parameters according to the specifications and needs of the application or organization. Connect: Connect the

database to the network and other systems or applications that will access it.

Test: Test the functionality and performance of the database system and verify that it meets the expectations and

requirements.

Validate: Validate the data quality and integrity of the database system and ensure that it complies with the standards and regulations. Release: Release the database system to production and make it available for use by end-users or

customers. The other options do not follow this order and may result in errors, inefficiencies, or security issues. References: CompTIA DataSys+ Course Outline, Domain 2.0 Database Deployment, Objective 2.1 Given a scenario, install and

configure database software and tools.

QUESTION 14

A company wants to deploy a new application that will distribute the workload to five different database instances. The database administrator needs to ensure that, for each copy of the database, users are able to read and write data that will be synchronized across all of the instances.

Which of the following should the administrator use to achieve this objective?

A. [Peer-to-peer replication

B. Failover clustering

C. Log shipping

D. Availability groups

Correct Answer: A

The administrator should use peer-to-peer replication to achieve this objective. Peer-to-peer replication is a type of replication that allows data to be distributed across multiple database instances that are equal partners, or peers. Each peer can read and write data that will be synchronized across all peers. This provides high availability, scalability, and load balancing for the application. The other options are either not suitable for this scenario or do not support bidirectional data synchronization. For example, failover clustering provides high availability but does not distribute the workload across multiple instances; log shipping provides disaster recovery but does not allow writing data to secondary instances; availability groups provide high availability and read-only access to secondary replicas but do not support peer-to-peer replication. References: CompTIA DataSys+ Course Outline, Domain 5.0 Business Continuity, Objective 5.3 Given a scenario, implement replication of database management systems.

QUESTION 15

Which of the following cloud delivery models provides users with thehighestlevel of flexibility regarding resource provisioning and administration?

A. DBaaS

B. IaaS

C. SaaS

D. PaaS

Correct Answer: B

The cloud delivery model that provides users with the highest level of flexibility regarding resource provisioning and administration is IaaS. IaaS, or Infrastructure as a Service, is a cloud delivery model that provides users with access to virtualized computing resources, such as servers, storage, network, and operating systems, over the internet. Users can provision, configure, and manage these resources according to their needs and preferences, without having to worry about the maintenance or security of the physical infrastructure. IaaS offers users the most control and customization over their cloud environment, as well as the ability to scale up or down as needed. The other options are either different cloud delivery models or not related to cloud computing at all. For example, DBaaS, or Database as a Service, is a cloud delivery model that provides users with access to database management systems and tools over the internet; SaaS, or Software as a Service, is a cloud delivery model that provides users with access to software applications and services over the internet; PaaS, or Platform as a Service, is a cloud delivery model that provides users with access to development platforms and tools over the internet. References: CompTIA DataSys+ Course Outline, Domain 2.0 Database Deployment, Objective 2.1 Given a scenario, select an appropriate database deployment method.