

Microsoft Azure Data Fundamentals v1.0 (DP-900) - Full Access

Question 1 (Describe core data concepts)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

Descriptive analytics tells you

what is most likely to occur in the future.
what occurred in the past.
which actions you can perform to affect outcomes.
why something occurred in the past.

Answer :

Answer Area

Descriptive analytics tells you

what is most likely to occur in the future.
what occurred in the past.
which actions you can perform to affect outcomes.
why something occurred in the past.

Reference:

<https://demand-planning.com/2020/01/20/the-differences-between-descriptive-diagnostic-predictive-cognitive-analytics/>

Question 2 (Describe core data concepts)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
------------	-----	----

Normalization involves eliminating relationships between database tables.

Normalizing a database reduces data redundancy.

Normalization improves data integrity.

Answer :

Answer Area

Statements	Yes	No
------------	-----	----

Normalization involves eliminating relationships between database tables.

Normalizing a database reduces data redundancy.

Normalization improves data integrity.

Reference:

<https://www.sqlshack.com/what-is-database-normalization-in-sql-server/>

Question 3 (Describe core data concepts)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

An extract, transform, and load (ETL) process
requires

- a matching schema in the data source and the data target.
- a target data store powerful enough to transform data.
- data that is fully processed before being loaded to the target data store.
- that the data target be a relational database.

Answer :

Answer Area

An extract, transform, and load (ETL) process
requires

- a matching schema in the data source and the data target.
- a target data store powerful enough to transform data.
- data that is fully processed before being loaded to the target data store.
- that the data target be a relational database.

Explanation:

Extract, transform, and load (ETL) is a data pipeline used to collect data from various sources, transform the data according to business rules, and load it into a destination data store.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/etl>

Question 4 (Describe core data concepts)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

In batch processing,

- data is always inserted one row at a time.
- data is processed in real-time.
- latency is expected.
- processing can only execute serially.

Answer :

Answer Area

In batch processing.

Question 5 (Describe core data concepts)



HOTSPOT -
To complete the sentence, select the appropriate option in the answer area.
Hot Area:

Answer Area

Transcribing audio files is an example of

cognitive
descriptive
predictive
prescriptive

analytics.

Answer :

Answer Area

Transcribing audio files is an example of

cognitive
descriptive
predictive
prescriptive

analytics.

Reference:

<https://azure.microsoft.com/en-us/services/cognitive-services/speech-services/>

Question 6 (Describe core data concepts)



DRAG DROP -

Match the types of analytics that can be used to answer the business questions.

To answer, drag the appropriate analytics type from the column on the left to its question on the right. Each analytics type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Analytics Types

- Cognitive
- Diagnostic
- Descriptive
- Predictive
- Prescriptive

Answer Area

Why did sales increase last month?

How do I allocate my budget to buy different inventory items?

Which people are mentioned in a company's business documents?

Answer : Incorrect Answer:

Explanation:

Box 1: Diagnostic -

Diagnostic Analytics: At this stage you can begin to answer some of those why questions. Historical data can begin to be measured against other data to answer the question of why something happened in the past. This is the process of gathering and interpreting different data sets to identify anomalies, detect patterns, and determine relationships.

Box 2: Prescriptive -

Prescriptive analytics is a combination of data, mathematical models, and various business rules to infer actions to influence future desired outcomes.

Predictive analytics, broadly speaking, is a category of business intelligence that uses descriptive and predictive variables from the past to analyze and identify the likelihood of an unknown future outcome

Box 3: Descriptive -
Generally speaking, data analytics comes in four types:

- Descriptive, to answer the question: What's happening?
- Diagnostic, to answer the question: Why's happening?
- Predictive, to answer the question: What will happen?
- Prescriptive, to answer the question: What actions should we take?



Reference:

<https://demand-planning.com/2020/01/20/the-differences-between-descriptive-diagnostic-predictive-cognitive-analytics/> <https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>

Question 7 (Describe core data concepts)



HOTSPOT -

You have the following JSON document.

```
"customer" : {  
    "first name" : "Ben",  
    "last name" : "Smith",  
    "address" : {  
        "line 1" : "161 Azure Ln",  
        "line 2" : "Palo Alto",  
        "ZIP code" : "54762"  
    },  
    "social media": [  
        {  
            "service" : "twitter",  
            "handle" : "@bensmith"  
        },  
        {  
            "service" : "linkedin",  
            "handle" : "bensmith"  
        }  
    ],  
    "phone numbers": [  
        {  
            "type" : "mobile",  
            "number" : "555-555-555"  
        }  
    ]  
}
```

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the JSON document.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Customer is [answer choice].

a nested array
a nested object
a root object

Address is [answer choice].

a nested array
a nested object
a root object

Social media is [answer choice].

a nested array
a nested object
a root object

Answer :

Answer Area

Customer is [answer choice].

a nested array
a nested object
a root object

Address is [answer choice].

a nested array
a nested object
a root object

Social media is [answer choice].

a nested array
a nested object
a root object

Reference:

https://www.w3schools.com/js/js_json_arrays.asp

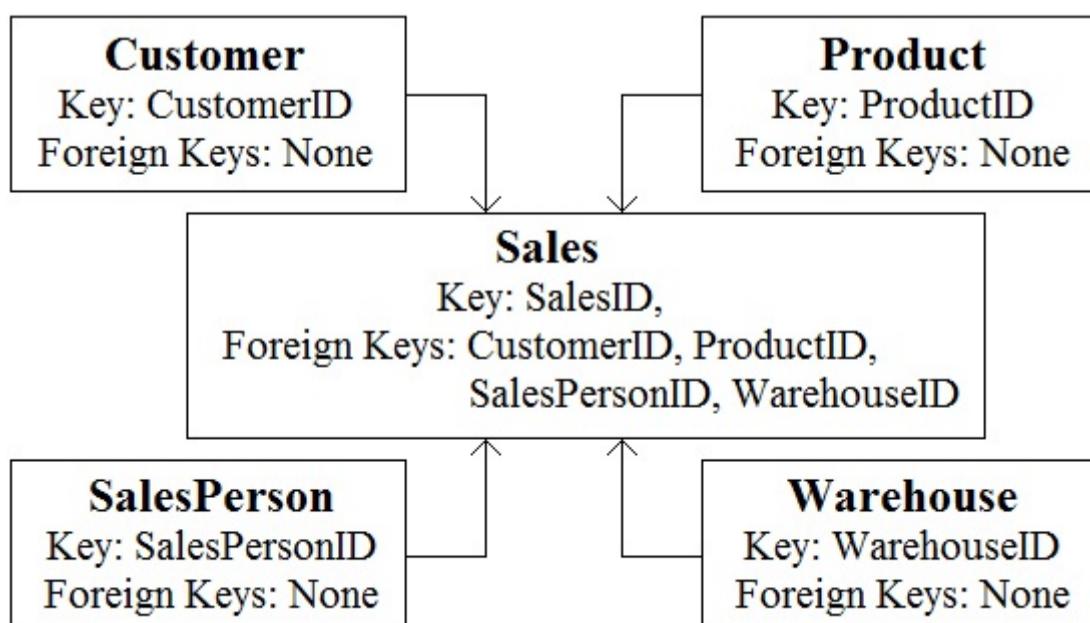
https://www.w3schools.com/js/js_json_objects.asp

Question 8 (Describe core data concepts)



HOTSPOT -

You are reviewing the data model shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point

Hot Area:

Answer Area

The data model is a [answer choice].

transactional model
star schema
snowflake schema

Customer is a [answer choice] table.

fact
dimension
bridge

Answer :

Answer Area

The data model is a [answer choice].

transactional model
star schema
snowflake schema

Customer is a [answer choice] table.

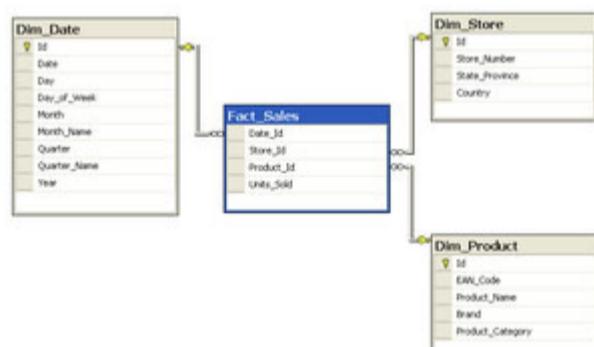
fact
dimension
bridge

Explanation:

Box 1: star schema -

In computing, the star schema is the simplest style of data mart schema and is the approach most widely used to develop data warehouses and dimensional data marts. The star schema consists of one or more fact tables referencing any number of dimension tables. The star schema is an important special case of the snowflake schema, and is more effective for handling simpler queries.

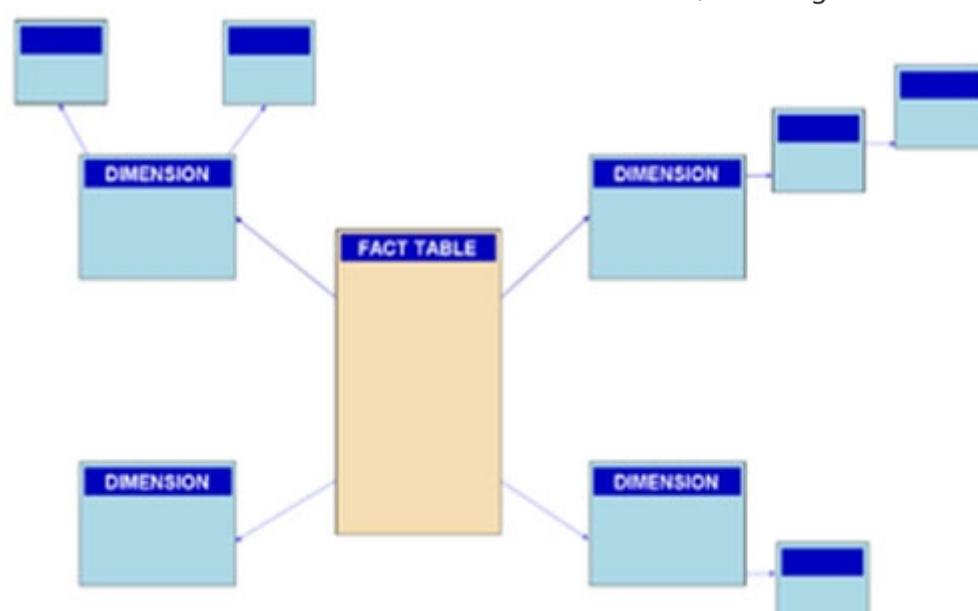
Example:



Incorrect Answers:

The data in the question is not normalized.

The snowflake schema is a variation of the star schema, featuring normalization of dimension tables. Example:



Note: A snowflake schema is a logical arrangement of tables in a multidimensional database such that the entity relationship diagram resembles a snowflake shape. The snowflake schema is represented by centralized fact tables which are connected to multiple dimensions [citation needed]. "Snowflaking" is a method

shape. The snowflake schema is represented by centralized fact tables which are connected to multiple dimensions. Iteration needed. Snowflaking is a method of normalizing the dimension tables in a star schema. When it is completely normalized along all the dimension tables, the resultant structure resembles a snowflake with the fact table in the middle.

Box 2: dimension -

The star schema consists of one or more fact tables referencing any number of dimension tables.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-overview> https://en.wikipedia.org/wiki/Star_schema

https://en.wikipedia.org/wiki/Snowflake_schema <https://azure.microsoft.com/en-us/blog/data-models-within-azure-analysis-services-and-power-bi/>

Question 9 (Describe core data concepts) 

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.
Hot Area:

Answer Area

The massively parallel processing (MPP) engine of Azure

Synapse Analytics

- distributes processing across compute nodes.
- distributes processing across control nodes.
- redirects client connections across compute nodes.
- redirects client connections across control nodes.

Answer :

Answer Area

The massively parallel processing (MPP) engine of Azure

Synapse Analytics

- distributes processing across compute nodes.
- distributes processing across control nodes.
- redirects client connections across compute nodes.
- redirects client connections across control nodes.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/massively-parallel-processing-mpp-architecture>

Question 10 (Describe core data concepts) 

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.
Hot Area:

Answer Area

A clustered index
A FileTable
A foreign key
A stored procedure

is an object associated with a table that sorts and stores the data rows in the table based on their key values.

Answer :

Answer Area

A clustered index
A FileTable
A foreign key

is an object associated with a table that sorts and stores the data rows in the table based on their key values.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/indexes/clustered-and-nonclustered-indexes-described?view=sql-server-ver15>

Question 11 (Describe core data concepts)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

A relational database is appropriate for scenarios that involve a high volume of

- | |
|---|
| changes to relationships between entities |
| geographically distributed writes |
| transactional writes |
| writes that have varying data structures |

Answer :

Answer Area

A relational database is appropriate for scenarios that involve a high volume of

- | |
|---|
| changes to relationships between entities |
| geographically distributed writes |
| transactional writes |
| writes that have varying data structures |

Explanation:

Disadvantages of non-relational databases include: Data Consistency – non-relational databases do not perform ACID transactions.

Note: Relational databases are optimized for writes. They are optimized for consistency and availability. Advantages of relational databases include simplicity, ease of data retrieval, data integrity, and flexibility.

Incorrect Answers:

Use a relational database when data that you work with is structured, and the structure is not subject to frequent changes.

Use Cloud storage (no relational database) for geographically distributed writes.

Reference:

<https://towardsdatascience.com/choosing-the-right-database-c45cd3a28f77>

Question 12 (Describe core data concepts)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
Batch processing can output data to a file store	<input type="radio"/>	<input type="radio"/>
Batch processing can output data to a relational database	<input type="radio"/>	<input type="radio"/>
Batch processing can output data to a NoSQL database	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Batch processing can output data to a file store	<input checked="" type="radio"/>	<input type="radio"/>
Batch processing can output data to a relational database	<input type="radio"/>	<input checked="" type="radio"/>
Batch processing can output data to a NoSQL database	<input type="radio"/>	<input checked="" type="radio"/>

Explanation:

Box 1: Yes -
Big data solutions often use long-running batch jobs to filter, aggregate, and otherwise prepare the data for analysis. Usually these jobs involve reading source files from scalable storage (like HDFS, Azure Data Lake Store, and Azure Storage), processing them, and writing the output to new files in scalable storage.

Box 2: No

Question 13 (Describe core data concepts)



DRAG DROP -

Your company plans to load data from a customer relationship management (CRM) system to a data warehouse by using an extract, load, and transform (ELT) process.

Where does data processing occur for each stage of the ELT process? To answer, drag the appropriate locations to the correct stages. Each location 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.

NOTE: Each correct selection is worth one point.

Select and Place:

Locations

- An in-memory data integration tool
- The CRM system
- The data warehouse

Answer Area

- | | |
|------------|----------|
| Extract: | Location |
| Load: | Location |
| Transform: | Location |

Answer :

Locations

- An in-memory data integration tool
- The CRM system
- The data warehouse

Answer Area

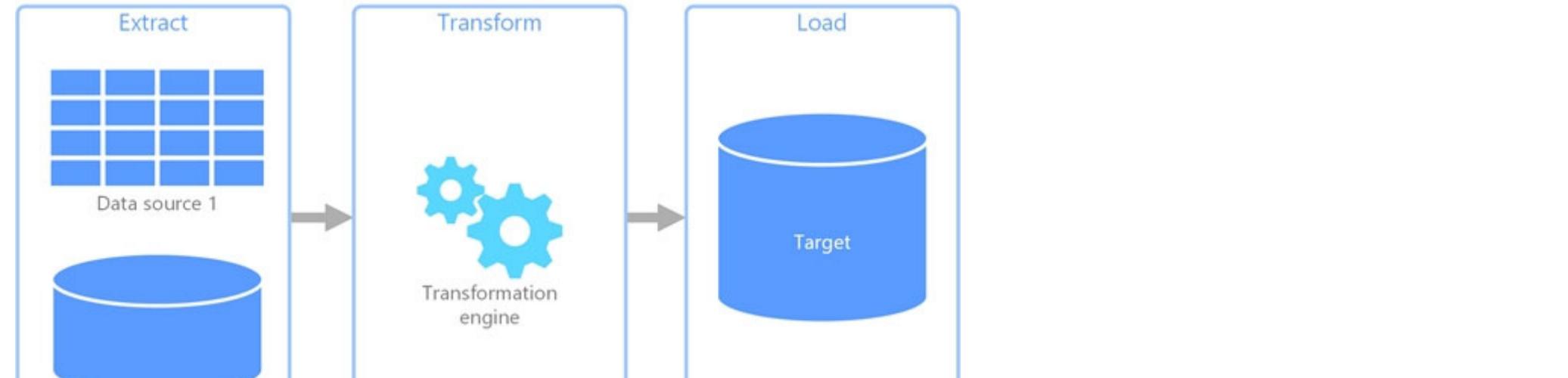
- | | |
|------------|------------------------------------|
| Extract: | The CRM system |
| Load: | The data warehouse |
| Transform: | An in-memory data integration tool |

Explanation:

Box 1: The CRM system -
Data is extracted from the CRM system.

Box 2: The data warehouse -
Data is loaded to the data warehouse.

Box 3: An in-memory data integration tool
The data transformation that takes place usually involves various operations, such as filtering, sorting, aggregating, joining data, cleaning data, deduplicating, and validating data.



Question 14 (Describe core data concepts)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

A visualization that shows a university's current student enrollment versus the maximum capacity is an example of

cognitive	▼
descriptive	
predictive	
prescriptive	

analytics.

Answer :

Answer Area

A visualization that shows a university's current student enrollment versus the maximum capacity is an example of

cognitive	▼
descriptive	
predictive	
prescriptive	

analytics.

Explanation:

Generally speaking, data analytics comes in four types (Figure 1):

Descriptive, to answer the question: What's happening?

Diagnostic, to answer the question: Why's happening?

Predictive, to answer the question: What will happen?

Prescriptive, to answer the question: What actions should we take?

Reference:

<https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>

Question 15 (Describe core data concepts)



DRAG DROP -

Match the types of visualizations to the appropriate descriptions.

To answer, drag the appropriate visualization type from the column on the left to its description on the right. Each visualization type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Visualizations

- Key influencer
- Scatter
- Treemap

Answer Area

- Visualization
- Visualization
- Visualization

A chart of colored, nested rectangles that displays individual data points represented by the size and color of a relative rectangle.

A chart that displays the major contributors of a selected result or value.

A chart that shows the relationship between two numerical values.

Answer :

Visualizations

Key influencer

Scatter

Treemap

Answer Area

Treemap

Key influencer

Scatter

A chart of colored, nested rectangles that displays individual data points represented by the size and color of a relative rectangle.

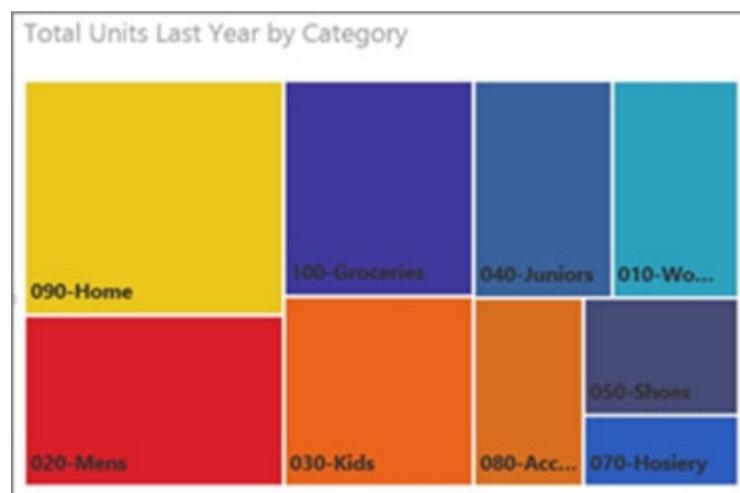
A chart that displays the major contributors of a selected result or value.

A chart that shows the relationship between two numerical values.

Explanation:

Box 1: Tree map -

Treemaps are charts of colored rectangles, with size representing value. They can be hierarchical, with rectangles nested within the main rectangles.



Box 2: Key influencer -

A key influencer chart displays the major contributors to a selected result or value.

Box 3: Scatter -

Scatter and Bubble charts display relationships between 2 (scatter) or 3 (bubble) quantitative measures -- whether or not, in which order, etc.

Question 16 (Describe core data concepts)



You need to create an Azure Storage account.

Data in the account must replicate outside the Azure region automatically.

Which two types of replication can you use for the storage account? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. zone-redundant storage (ZRS)
- B. read-access geo-redundant storage (RA-GRS)
- C. locally-redundant storage (LRS)
- D. geo-redundant storage (GRS)

Answer : BD

Explanation:

D: Azure Storage offers two options for copying your data to a secondary region:

Geo-redundant storage (GRS)

Geo-zone-redundant storage (GZRS)

B: With GRS or GZRS, the data in the secondary region isn't available for read or write access unless there is a failover to the secondary region. For read access to the secondary region, configure your storage account to use read-access geo-redundant storage (RA-GRS) or read-access geo-zone-redundant storage (RA-GZRS).

Reference:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy#redundancy-in-a-secondary-region>

Question 17 (Describe core data concepts)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
Platform as a service (PaaS) database offerings in Azure require less setup and configuration effort than infrastructure as a service (IaaS) database offerings.	<input type="radio"/>	<input type="radio"/>
Platform as a service (PaaS) database offerings in Azure provide end users with the ability to control and update the operating system version.	<input type="radio"/>	<input type="radio"/>
All relation and non-relational platform as a service (PaaS) database offerings in Azure can be paused to reduce costs.	<input type="radio"/>	<input type="radio"/>

Answer :

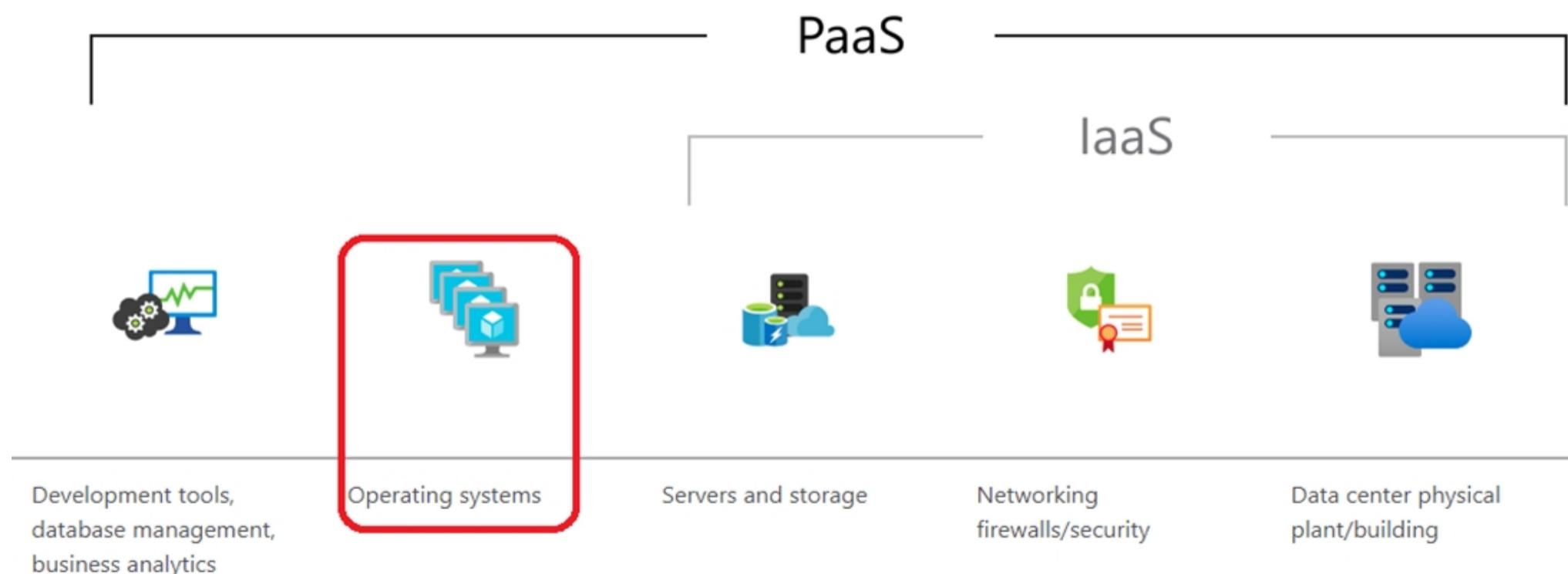
Answer Area

Statements	Yes	No
Platform as a service (PaaS) database offerings in Azure require less setup and configuration effort than infrastructure as a service (IaaS) database offerings.	<input checked="" type="radio"/>	<input type="radio"/>
Platform as a service (PaaS) database offerings in Azure provide end users with the ability to control and update the operating system version.	<input type="radio"/>	<input checked="" type="radio"/>
All relation and non-relational platform as a service (PaaS) database offerings in Azure can be paused to reduce costs.	<input type="radio"/>	<input checked="" type="radio"/>

Explanation:

Box 1: Yes -
Like IaaS, PaaS includes infrastructure "servers, storage, and networking" but also middleware, development tools, business intelligence (BI) services, database management systems, and more. PaaS is designed to support the complete web application lifecycle: building, testing, deploying, managing, and updating. PaaS allows you to avoid the expense and complexity of buying and managing software licenses, the underlying application infrastructure and middleware, container orchestrators such as Kubernetes, or the development tools and other resources

Box 2: No -
You manage the applications and services you develop, and the cloud service provider typically manages everything else.



Box 3: No -

There really is no way to pause / stop billing for your Azure SQL Database.

Microsoft's official answer "Yes, you can export your database. Delete the Azure SQL database and that will pause billing. Then when you need it you can create a new database and import your previously exported DB."

Reference:

<https://azure.microsoft.com/en-us/overview/what-is-paas>

Question 18 (Describe core data concepts) 

Which statement is an example of Data Manipulation Language (DML)?

- A. REVOKE
- B. DISABLE
- C. INSERT
- D. GRANT

Answer : C

Explanation:

Data Manipulation Language (DML) statements:

- ⇒ DELETE
- ⇒ INSERT
- ⇒ UPDATE

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-reference-tsql-statements>

Question 19 (Describe core data concepts) 

You have a SQL query that combines customer data and order data. The query includes calculated columns.

You need to create a database object that would allow other users to rerun the same SQL query.

What should you create?

- A. an index
- B. a view
- C. a scalar function
- D. a table

Answer : B

Explanation:

A view is a virtual table whose contents are defined by a query. A view acts as a filter on the underlying tables referenced in the view. The query that defines the view can be from one or more tables or from other views in the current or other databases.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/views/views>

Question 20 (Describe core data concepts) 

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

A key/value data store is optimized for

enforcing constraints
simple lookups
table joins
transactions

Answer :

Answer Area

A key/value data store is optimized for

enforcing constraints
simple lookups
table joins

transactions

Explanation:

Box 1: simple lookups -

A key/value store associates each data value with a unique key. Most key/value stores only support simple query, insert, and delete operations. To modify a value (either partially or completely), an application must overwrite the existing data for the entire value. In most implementations, reading or writing a single value is an atomic operation.

An application can store arbitrary data as a set of values. Any schema information must be provided by the application. The key/value store simply retrieves or stores the value by key.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

Question 21 (Describe core data concepts)



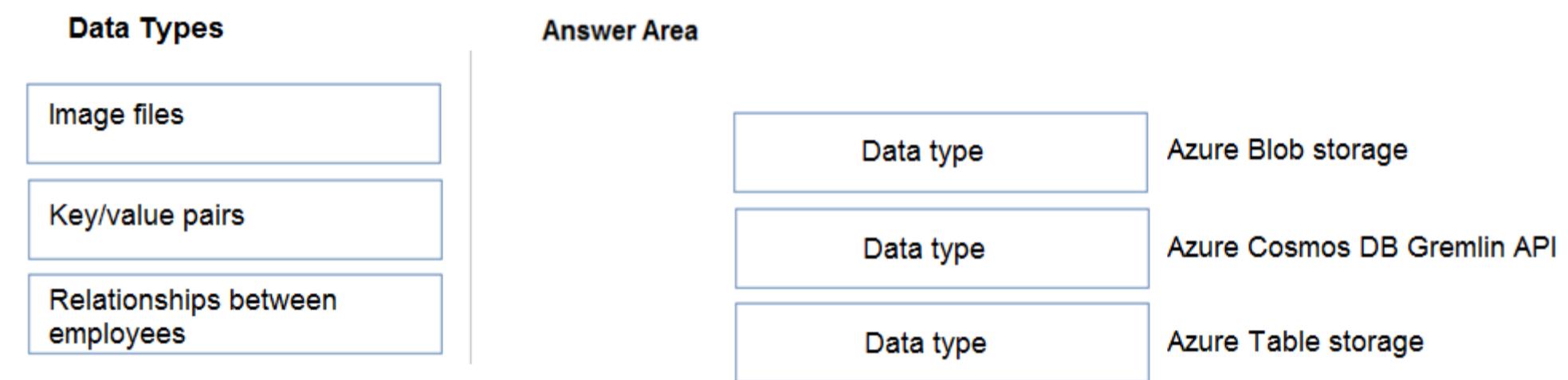
DRAG DROP -

Match the types of data to the appropriate Azure data services.

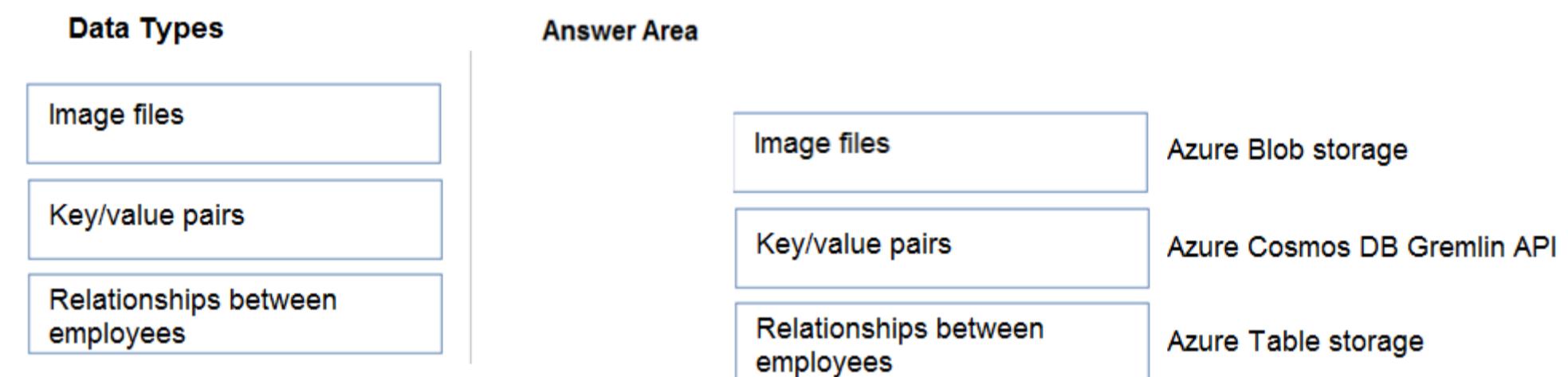
To answer, drag the appropriate data type from the column on the left to its service on the right. Each data type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:



Answer :



Explanation:

Box 1: Image files -

Azure Blob storage is suitable for image files.

Box 2: Key/value pairs -

Azure CosmosDB table API is a key-value storage hosted in the cloud.

Box 3: Relationship between employees

One-to-many relationships between business domain objects occur frequently: for example, one department has many employees. There are several ways to implement one- to-many relationships in the Azure Table service.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/tables/table-storage-design-modeling>

Question 22 (Describe core data concepts)



DRAG DROP -

Match the Azure Data Lake Storage Gen2 terms to the appropriate levels in the hierarchy.

To answer, drag the appropriate term from the column on the left to its level on the right. Each term may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Terms

Azure Storage account

File share

Container

Answer Area

Azure Resource Group

Term

Term

Folders

Files

Answer :

Terms

Azure Storage account

File share

Container

Answer Area

Azure Resource Group

Azure Storage account

File share

Folders

Files

Explanation:

Box 1: Azure Storage account -

Azure file shares are deployed into storage accounts, which are top-level objects that represent a shared pool of storage.

Box 2: File share -

Reference:

<https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-create-file-share>

Question 23 (Describe core data concepts)



What are two characteristics of real-time data processing? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

- A. Data is processed periodically
- B. Low latency is expected
- C. High latency is acceptable
- D. Data is processed as it is created

Answer : BD

Explanation:

Real time processing deals with streams of data that are captured in real-time and processed with minimal latency to generate real-time (or near-real-time) reports or automated responses.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guido/big-data/real-time-processing>

Question 24 (Describe core data concepts)



DRAG DROP -

Match the Azure Data Factory components to the appropriate descriptions.

To answer, drag the appropriate component from the column on the left to its description on the right. Each component may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Components

Answer Area

Dataset

Component

A representation of data structures within data stores

Linked service

Component

The information used to connect to external resources

Mapping data flow

Component

A logical grouping of activities that performs a unit of work and can be scheduled

Pipeline

Answer :

Components

Answer Area

Dataset

Dataset

A representation of data structures within data stores

Linked service

Linked service

The information used to connect to external resources

Mapping data flow

Pipeline

A logical grouping of activities that performs a unit of work and can be scheduled

Explanation:

Box 1: Dataset -

Datasets must be created from paths in Azure datastores or public web URLs, for the data to be accessible by Azure Machine Learning.

Box 2: Linked service -

Linked services are much like connection strings, which define the connection information needed for Data Factory to connect to external resources.

Box 3: Pipeline -

A pipeline is a logical grouping of activities that together perform a task.

Reference:

<https://k21academy.com/microsoft-azure/dp-100/datastores-and-datasets-in-azure/> <https://docs.microsoft.com/en-us/azure/data-factory/concepts-linked-services> <https://docs.microsoft.com/en-us/azure/data-factory/concepts-pipelines-activities>

Question 25 (Describe core data concepts)



DRAG DROP -

Match the types of workloads to the appropriate scenarios.

To answer, drag the appropriate workload type from the column on the left to its scenario on the right. Each workload type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Workload Types

Batch
Streaming

Answer Area

Workload type
Workload type
Workload type

Data for a product catalog will be loaded every 12 hours to a data warehouse.

Thousands of data sets per second for online purchases will be loaded into a data warehouse in real time

Updates to inventory data will be loaded to a data warehouse every 1 million transactions.

Answer :

Workload Types

Batch
Streaming

Answer Area

Batch
Streaming
Batch

Data for a product catalog will be loaded every 12 hours to a data warehouse.

Thousands of data sets per second for online purchases will be loaded into a data warehouse in real time

Updates to inventory data will be loaded to a data warehouse every 1 million transactions.

Explanation:

Box 1: Batch -

Batch processing refers to the processing of blocks of data that have already been stored over a period of time.

Box 2: Streaming -

Stream processing is a big data technology that allows us to process data in real-time as they arrive and detect conditions within a small period of time from the point of receiving the data. It allows us to feed data into analytics tools as soon as they get generated and get instant analytics results.

Box 3: Batch -

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/batch-processing>

Question 26 (Describe core data concepts)



DRAG DROP -

Your company plans to load data from a customer relationship management (CRM) system to a data warehouse by using an extract, load, and transform (ELT) process.

Where does data processing occur for each stage of the ELT process? To answer, drag the appropriate locations to the correct stages. Each location 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.

NOTE: Each correct selection is worth one point.

Select and Place:

Locations

- A standalone data analysis tool
- The CRM system
- The data warehouse

Answer Area

Extract:

Load:

Transform:

Answer :

Locations

-
-
-

Answer Area

Extract:

 The CRM system

Load:

 The data warehouse

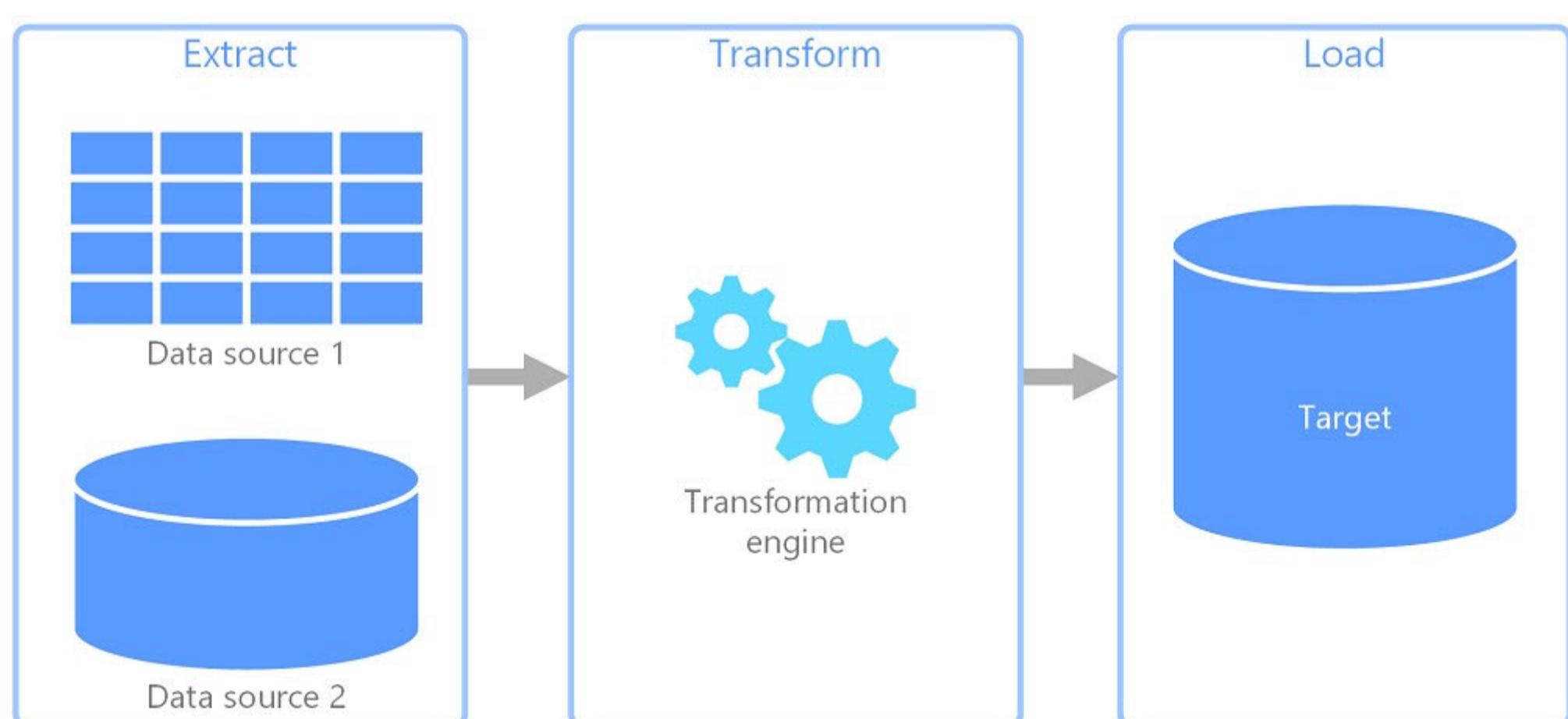
Transform:

 A standalone data analysis tool

Explanation:

Box 1: The CRM system -
Data is extracted from the CRM system.

Box 2: The data warehouse -
Data is loaded to the data warehouse.
Box 3: A standalone data analysis tool
The data transformation that takes place usually involves various operations, such as filtering, sorting, aggregating, joining data, cleaning data, deduplicating, and validating data.

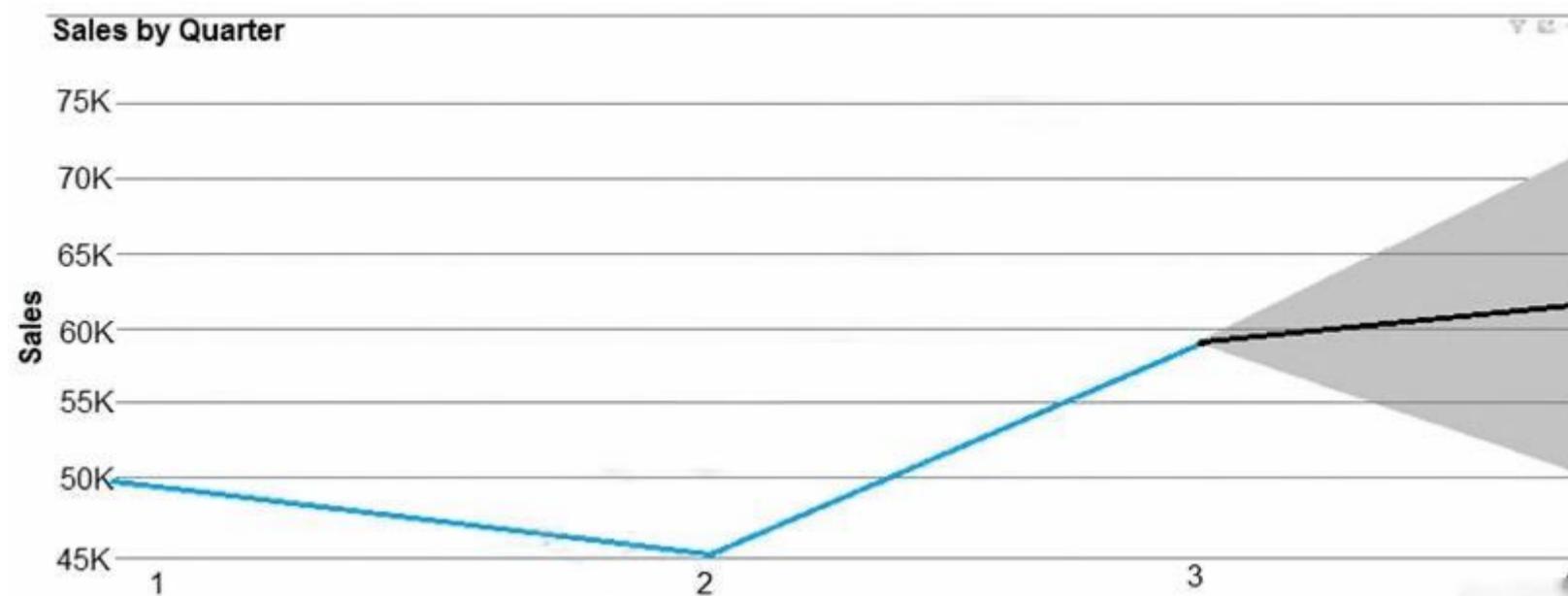


Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/etl>



Your company recently reported sales from the third quarter.
You have the chart shown in the following exhibit.



Which type of analysis is shown in the fourth quarter?

- A. predictive
- B. prescriptive
- C. descriptive
- D. diagnostic

Answer : A

Explanation:

Predictive, to answer the question: What will happen?



Reference:

<https://demand-planning.com/2020/01/20/the-differences-between-descriptive-diagnostic-predictive-cognitive-analytics/> <https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>

Question 28 (Describe core data concepts)



Which statement is an example of Data Manipulation Language (DML)?

- A. REVOKE
- B. DISABLE
- C. CREATE
- D. UPDATE

Answer : D

Explanation:

Data Manipulation Language (DML) affect the information stored in the database. Use these statements to insert, update, and change the rows in the database.

BULK INSERT -

DELETE -

INSERT -

SELECT -

UPDATE -

MERGE -

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/statements>



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

Creating closed caption text for audio files is an example of

	▼
cognitive	
descriptive	
predictive	
prescriptive	

analytics.

Answer :

Answer Area

Creating closed caption text for audio files is an example of

	▼
cognitive	
descriptive	
predictive	
prescriptive	

analytics.

Explanation:

Descriptive, to answer the question: What's happening?



Note: Azure Media Indexer enables you to make content of your media files searchable and to generate a full-text transcript for closed captioning and keywords. You can process one media file or multiple media files in a batch.

Reference:

<https://demand-planning.com/2020/01/20/the-differences-between-descriptive-diagnostic-predictive-cognitive-analytics/> <https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/> <https://docs.microsoft.com/en-us/azure/media-services/previous/media-services-index-content>



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

A visualization that illustrates a university's current student enrollment per department is an example of ▼ analytics.

cognitive
descriptive
predictive
prescriptive

Answer :

Answer Area

A visualization that illustrates a university's current student enrollment per department is an example of ▼ analytics.

cognitive
descriptive
predictive
prescriptive

Explanation:

Generally speaking, data analytics comes in four types:

1. Descriptive, to answer the question: What's happening?
2. Diagnostic, to answer the question: Why's happening?
3. Predictive, to answer the question: What will happen?
4. Prescriptive, to answer the question: What actions should we take?



Reference:

<https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>



Answer Area

An extract, load, and transform (ELT) process requires

- a separate transformation engine.
- a target data store powerful enough to transform data.
- data that is fully processed before being loaded to the target data store.
- a data pipeline that includes a transformation engine.

Answer :

Answer Area

An extract, load, and transform (ELT) process requires

- a separate transformation engine.
- a target data store powerful enough to transform data.
- data that is fully processed before being loaded to the target data store.
- a data pipeline that includes a transformation engine.

Explanation:

With ELT, the data store used to perform the transformation is the same data store where the data is ultimately consumed.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/elt>

Question 32 (Describe core data concepts)



You need to create an Azure resource to store data in Azure Table storage.

Which command should you run?

- A. az storage share create
- B. az storage account create
- C. az cosmosdb create
- D. az storage container create

Answer : D

Reference:

<https://docs.microsoft.com/en-us/cli/azure/storage/container?view=azure-cli-latest>

Question 33 (Describe core data concepts)



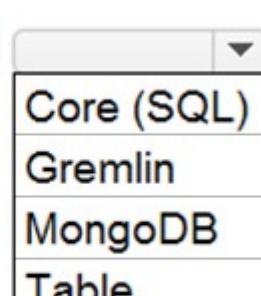
HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

The Azure Cosmos DB



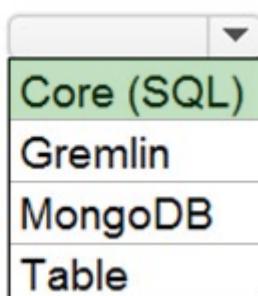
API enables the use of SELECT statements to

retrieve documents from Azure Cosmos DB.

Answer :

Answer Area

The Azure Cosmos DB



API enables the use of SELECT statements to

retrieve documents from Azure Cosmos DB.

Explanation:

Azure Cosmos DB SQL API accounts provide support for querying items using the Structured Query Language (SQL) syntax.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/choose-api>

Question 34 (Describe core data concepts)



You need to modify a view in a relational database by adding a new column.

Which statement should you use?

- A. MERGE
- B. ALTER
- C. INSERT
- D. UPDATE

Answer : B

Question 35 (Describe core data concepts)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements

Yes

No

Extract, transform, and load (ETL) can reduce the transfer of sensitive data to destination systems.

Extract, load, and transform (ELT) transforms data by using a compute resource independent of the source system and destination system.

Extract, load, and transform (ELT) minimizes the time it takes to copy large volumes of data to destination systems.

Answer :

Answer Area

Statements	Yes	No
Extract, transform, and load (ETL) can reduce the transfer of sensitive data to destination systems.	<input type="radio"/>	<input checked="" type="radio"/>
Extract, load, and transform (ELT) transforms data by using a compute resource independent of the source system and destination system.	<input checked="" type="radio"/>	<input type="radio"/>
Extract, load, and transform (ELT) minimizes the time it takes	<input type="radio"/>	<input checked="" type="radio"/>

Question 36 (Describe core data concepts)



HOTSPOT -

You plan to deploy a PostgreSQL database to Azure.

Which hosting model corresponds to the available deployment options? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

PostgreSQL on Azure VMs:

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

Azure Database for PostgreSQL:

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

Answer :

Answer Area

PostgreSQL on Azure VMs:

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

Azure Database for PostgreSQL:

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

Reference:

<https://azure.microsoft.com/en-us/overview/what-is-saas/>

<https://azure.microsoft.com/en-us/overview/what-is-paas/>

Question 37 (Describe core data concepts)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

▼	natively support the analysis of relationships between entities.
Column family databases	
Document databases	
Graph databases	
Key-value stores	

Answer :

Answer Area

▼	natively support the analysis of relationships between entities.
Column family databases	
Document databases	
Graph databases	
Key-value stores	

Question 38 (Describe core data concepts) 

Which Azure storage solution provides native support for POSIX-compliant access control lists (ACLs)?

- A. Azure Table storage
- B. Azure Data Lake Storage
- C. Azure Queue storage
- D. Azure Files

Answer : B

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-access-control>

Question 39 (Describe core data concepts) 

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

Relational data is stored in

a file system as unstructured data.
a hierachal folder structure.
a tabular form of rows and columns.
comma-separated value (CSV) files.

Answer :

Answer Area

Relational data is stored in

- a file system as unstructured data.
- a hierachal folder structure.
- a tabular form of rows and columns.**
- comma-separated value (CSV) files.

Question 40 (Describe core data concepts)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

physically sorts the data in a table based on the values in a specified column.

- A view
- A clustered index**
- A stored procedure
- A nonclustered index

Answer :

Answer Area

physically sorts the data in a table based on the values in a specified column.

- A view
- A clustered index**
- A stored procedure
- A nonclustered index

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/indexes/clustered-and-nonclustered-indexes-described?view=sql-server-ver15>

Question 41 (Describe core data concepts)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

A block of code that runs in a database is called

- a stored procedure.**
- a table.
- a view.
- an index.

Answer :

Answer Area

A block of code that runs in a database is called

a stored procedure.
a table.
a view.
an index.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/stored-procedures/stored-procedures-database-engine?view=sql-server-ver15>

Question 42 (Describe core data concepts)



DRAG DROP -

Match the types of analytics that can be used to answer the business questions.

To answer, drag the appropriate analytics type from the column on the left to its question on the right. Each analytics type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Analytics Types

Answer Area

Cognitive

Why did sales increase last month?

Diagnostic

Provide specific guidance on how to allocate current budget to buy different inventory items.

Descriptive

Detect images of the company's logo included in PDF documents

Predictive

Prescriptive

Answer : Incorrect Answer:

Explanation:

Box 1: Diagnostic -

Diagnostic Analytics: At this stage you can begin to answer some of those why questions. Historical data can begin to be measured against other data to answer the question of why something happened in the past. This is the process of gathering and interpreting different data sets to identify anomalies, detect patterns, and determine relationships.

Box 2: Prescriptive -

Prescriptive analytics is a combination of data, mathematical models, and various business rules to infer actions to influence future desired outcomes.

Predictive analytics, broadly speaking, is a category of business intelligence that uses descriptive and predictive variables from the past to analyze and identify the likelihood of an unknown future outcome

Box 3: Cognitive -

Reference:

<https://demand-planning.com/2020/01/20/the-differences-between-descriptive-diagnostic-predictive-cognitive-analytics/> <https://azure.microsoft.com/en-us/blog/answering-whats-happening-whys-happening-and-what-will-happen-with-iot-analytics/>

Question 43 (Describe core data concepts)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

presents content defined by a query.

A heap
A stored procedure
A view
An index

Answer :

Answer Area

A heap
A stored procedure
A view
An index

presents content defined by a query.

Question 44 (Describe core data concepts)



Which type of database is Azure Database for PostgreSQL?

- A. Platform as a service (PaaS)
- B. Infrastructure as a service (IaaS)
- C. Microsoft SQL Server
- D. on-premises

Answer : A

Reference:

<https://docs.microsoft.com/en-us/azure/postgresql/overview-postgres-choose-server-options>

Question 45 (Describe core data concepts)



Which storage solution supports access control lists (ACLs) at the file and folder level?

- A. Azure Data Lake Storage
- B. Azure Queue storage
- C. Azure Blob storage
- D. Azure Cosmos DB

Answer : A

Explanation:

Azure Data Lake Storage Gen2 implements an access control model that supports both Azure role-based access control (Azure RBAC) and POSIX-like access control lists (ACLs).

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-access-control>

Question 46 (Describe core data concepts)



HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

Answer Area

A

line chart
matrix
scatter
treemap

is a chart of colored rectangles. The size of the rectangles represent

the relative value of each item. The chart can be hierarchical, displaying data as a set of rectangles nested within the main rectangle.

Answer :

Answer Area

A

line chart
matrix
scatter
treemap

is a chart of colored rectangles. The size of the rectangles represent

the relative value of each item. The chart can be hierarchical, displaying data as a set of rectangles nested within the main rectangle.

Explanation:

A treemap chart divides the chart area into rectangles that represent the different levels and relative sizes of the data hierarchy.

Reference:

<https://docs.microsoft.com/en-us/sql/reporting-services/report-design/tree-map-and-sunburst-charts-in-reporting-services?view=sql-server-ver15>

Question 47 (Describe core data concepts)



What is a characteristic of batch processing?

- A. The data ingested during batch processing must be processed as soon as the data is received.
- B. Large datasets must be split into batches of less than 1 GB before the data can be processed.
- C. There is a noticeable time delay between ingesting data and obtaining the data processing results.
- D. Batch processing can only process data that is structured.

Answer : D

Question 48 (Describe core data concepts)



HOTSPOT -

Select the answer that correctly completes the sentence.

Hot Area:

Answer Area

In a SQL statement,

are examples of aggregate functions.

FROM and WHERE
GROUP BY and ORDER BY
JOIN and MERGE
MAX and MIN

Answer :

Answer Area

In a SQL statement,

are examples of aggregate functions.

FROM and WHERE
GROUP BY and ORDER BY
JOIN and MERGE
MAX and MIN

Explanation:

An aggregate function performs a calculation on a set of values, and returns a single value. The following are aggregate functions:

- ⇒ APPROX_COUNT_DISTINCT
- ⇒ AVG
- ⇒ CHECKSUM_AGG
- ⇒ COUNT
- ⇒ COUNT_BIG

⇒ GROUPING
⇒ GROUPING_ID
⇒ MAX
⇒ MIN
⇒ STDEV
⇒ STDEVP
⇒ STRING_AGG
⇒ SUM

VAR -

⇒ VARP

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/functions/aggregate-functions-transact-sql?view=sql-server-ver15>

Question 49 (Describe core data concepts)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements

Yes No

A job that processes sales data once daily is an example of a batch workload.

A job that calculates a rolling average temperature reading is an example of a streaming workload.

A job that calculates average revenue per product for the last month is an example of a streaming workload.

Answer :

Answer Area

Statements

Yes No

A job that processes sales data once daily is an example of a batch workload.

A job that calculates a rolling average temperature reading is an example of a streaming workload.

A job that calculates average revenue per product for the last month is an example of a streaming workload.

Explanation:

Box 1: Yes -

Batch processing refers to processing of high volume of data in batch within a specific time span. It processes large volume of data all at once. Batch processing is used when data size is known and finite. It takes little longer time to process data.

Box 2: Yes -

Stream processing refers to processing of continuous stream of data immediately as it is produced. It analyzes streaming data in real time. Stream processing is used when the data size is unknown and infinite and continuous.

Box 3: No -

Reference:

<https://www.geeksforgeeks.org/difference-between-batch-processing-and-stream-processing/>

Question 50 (Describe how to work with relational data on Azure)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

Relational data uses  to enforce relationships between different tables.

collections
rows
keys
partitions

Answer :

Answer Area

Relational data uses  to enforce relationships between different tables.

collections
rows
keys
partitions

Reference:
<https://teachcomputerscience.com/relational-databases/>

Question 51 (Describe how to work with relational data on Azure) 

You have an inventory management database that contains the following table.

ProductName	Quantity
Product1	100
Product2	129
Product3	176

Which statement should you use in a SQL query to change the inventory quantity of Product1 to 270?

- A. INSERT
- B. MERGE
- C. UPDATE
- D. CREATE

Answer : C

Reference:
<https://docs.microsoft.com/en-us/sql/t-sql/queries/update-transact-sql?view=sql-server-ver15>

Question 52 (Describe how to work with relational data on Azure) 

Your company needs to implement a relational database in Azure. The solution must minimize ongoing maintenance.
Which Azure service should you use?

- A. Azure HDInsight
- B. Azure SQL Database
- C. Azure Cosmos DB
- D. SQL Server on Azure Virtual Machines

Answer : B

Reference:
<https://azure.microsoft.com/en-us/services/sql-database/#features>

Question 53 (Describe how to work with relational data on Azure)



You are writing a set of SQL queries that administrators will use to troubleshoot an Azure SQL database.
You need to embed documents and query results into a SQL notebook.
What should you use?

- A. Microsoft SQL Server Management Studio (SSMS)
- B. Azure Data Studio
- C. Azure CLI
- D. Azure PowerShell

Answer : B

Reference:
<https://www.mssqltips.com/sqlservertip/5997/create-sql-server-notebooks-in-azure-data-studio/>

Question 54 (Describe how to work with relational data on Azure)



DRAG DROP -

Match the terms to the appropriate descriptions.

To answer, drag the appropriate term from the column on the left to its description on the right. Each term may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Terms	Answer Area
Index	<input type="text"/>
View	<input type="text"/>
Table	<input type="text"/>

A database object that holds data
A database object whose content is defined by a query
A database object that helps improve the speed of data retrieval

Answer :

Terms	Answer Area
Index	<input type="text"/> Table
View	<input type="text"/> View
Table	<input type="text"/> Index

A database object that holds data
A database object whose content is defined by a query
A database object that helps improve the speed of data retrieval

Reference:

[https://en.wikipedia.org/wiki/Table_\(database\)#:%~:text=A%20table%20is%20a%20collection,table%20format%20within%20a%20database.&text=In%20relational%20databases%2C%20and%20flat,a%20row%20and%20column%20intersect. https://en.wikipedia.org/wiki/View_\(SQL\)](https://en.wikipedia.org/wiki/Table_(database)#:%~:text=A%20table%20is%20a%20collection,table%20format%20within%20a%20database.&text=In%20relational%20databases%2C%20and%20flat,a%20row%20and%20column%20intersect. https://en.wikipedia.org/wiki/View_(SQL))
https://en.wikipedia.org/wiki/Database_index#:%~:text=A%20database%20index%20is%20a,maintain%20the%20index%20data%20structure.

Question 55 (Describe how to work with relational data on Azure)



You have an e-commerce application that reads and writes data to an Azure SQL database.
Which type of processing does the application use?

- A. stream processing
- B. batch processing
- C. Online Analytical Processing (OLAP)
- D. Online Transaction Processing (OLTP)

Answer : D

Explanation:

OLTP is designed to serve as a persistent data store for business or front-end applications. OLTP administers day to day transaction of an organization.

Reference:

<https://sqlwizard.blog/2020/03/15/sql-server-oltp-vs-olap/>

Question 56 (Describe how to work with relational data on Azure)



When can you use an Azure Resource Manager template?

- A. to automate the creation of an interdependent group of Azure resources in a repeatable way
- B. to apply Azure policies for multi-tenant deployments
- C. to provision Azure subscriptions
- D. to control which services and feature administrators and developers can deploy from the Azure portal

Answer : A

Explanation:

You can automate deployments and use the practice of infrastructure as code. In code, you define the infrastructure that needs to be deployed.

To implement infrastructure as code for your Azure solutions, use Azure Resource Manager templates (ARM templates). The template is a JavaScript Object Notation (JSON) file that defines the infrastructure and configuration for your project. The template uses declarative syntax, which lets you state what you intend to deploy without having to write the sequence of programming commands to create it. In the template, you specify the resources to deploy and the properties for those resources.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/overview>

Question 57 (Describe how to work with relational data on Azure)



You have an Azure SQL database that you access directly from the Internet.

You recently changed the public IP address of your computer.

After changing the IP address, you can no longer access the database. You can connect to other resources in Azure.

What is a possible cause of the issue?

- A. role-based access control (RBAC)
- B. Dynamic Host Configuration Protocol (DHCP)
- C. Domain Name Service (DNS)
- D. a database-level firewall

Answer : D

Explanation:

The Azure SQL Database firewall lets you decide which IP addresses may or may not have access to either your Azure SQL Server or your Azure SQL database.

When creating an Azure SQL Database, the firewall needs to be configured before anyone will be able to access the database. By default, no external access to your SQL Database will be allowed until you explicitly assign permission by creating a firewall rule.

Reference:

<https://www.sqlshack.com/configuring-the-azure-sql-database-firewall/>

Question 58 (Describe how to work with relational data on Azure)



DRAG DROP -

Match the tools to the appropriate descriptions.

To answer, drag the appropriate tool from the column on the left to its description on the right. Each tool may be used once, more than once, or not at all.

Select and Place:

Tools	Answer Area
Azure Data Studio	Tool A graphical tool for managing SQL Server or Azure SQL databases that supports access, configuration, management, and administration tasks.
Microsoft SQL Server Data Tools (SSDT)	Tool A lightweight source code editor with an mssql extension that supports connections to SQL Server and a rich editing experience for T-SQL.
Microsoft SQL Server Management Studio (SSMS)	Tool A lightweight editor that can run on-demand SQL queries and view and save results as text, JSON, or Microsoft Excel files.
Microsoft Visual Studio Code	Tool A development tool for building Azure SQL databases, Microsoft SQL Server relational databases, SQL Server Analysis Services (SSAS) data models, SQL Server Integration Services (SSIS) packages, and SQL Server Reporting Services (SSRS) reports.

Answer :

Tools

Answer Area

Azure Data Studio
Microsoft SQL Server Data Tools (SSDT)
Microsoft SQL Server Management Studio (SSMS)
Microsoft Visual Studio Code

Microsoft SQL Server Management Studio (SSMS)	A graphical tool for managing SQL Server or Azure SQL databases that supports access, configuration, management, and administration tasks.
Microsoft Visual Studio Code	A lightweight source code editor with an mssql extension that supports connections to SQL Server and a rich editing experience for T-SQL.
Azure Data Studio	A lightweight editor that can run on-demand SQL queries and view and save results as text, JSON, or Microsoft Excel files.
Microsoft SQL Server Data Tools (SSDT)	A development tool for building Azure SQL databases, Microsoft SQL Server relational databases, SQL Server Analysis Services (SSAS) data models, SQL Server Integration Services (SSIS) packages, and SQL Server Reporting Services (SSRS) reports.

Question 59 (Describe how to work with relational data on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
Relational database tables contain columns and rows	<input type="radio"/>	<input type="radio"/>
Indexes in a relational database describe the data types in a table	<input type="radio"/>	<input type="radio"/>
A database view is a virtual table whose content is defined by a query	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Relational database tables contain columns and rows	<input checked="" type="radio"/>	<input type="radio"/>
Indexes in a relational database describe the data types in a table	<input type="radio"/>	<input checked="" type="radio"/>
A database view is a virtual table whose content is defined by a query	<input checked="" type="radio"/>	<input type="radio"/>

Explanation:

Box 1: Yes -

Tables are database objects that contain all the data in a database. In tables, data is logically organized in a row-and-column format similar to a spreadsheet. Each row represents a unique record, and each column represents a field in the record.

Box 2: No -

An index is an on-disk structure associated with a table or view that speeds retrieval of rows from the table or view.

Box 3: Yes -

A view is a virtual table whose contents are defined by a query. Like a table, a view consists of a set of named columns and rows of data.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/tables/tables> <https://docs.microsoft.com/en-us/sql/relational-databases/indexes/clustered-and-nonclustered-indexes-described>

<https://docs.microsoft.com/en-us/sql/relational-databases/views/views?view=sql-server-ver15>

Question 60 (Describe how to work with relational data on Azure)



Which command-line tool can you use to query Azure SQL databases?

A. sqlecmd

B. t-sql

- b. bcp
- c. azdata
- d. Azure CLI

Answer : A

Explanation:

The sqlcmd utility lets you enter Transact-SQL statements, system procedures, and script files at the command prompt.

Incorrect Answers:

B: The bulk copy program utility (bcp) bulk copies data between an instance of Microsoft SQL Server and a data file in a user-specified format.

D: The Azure CLI is the defacto tool for cross-platform and command-line tools for building and managing Azure resources.

Reference:

<https://docs.microsoft.com/en-us/sql/tools/overview-sql-tools?view=sql-server-ver15>

Question 61 (Describe how to work with relational data on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
------------	-----	----

Azure SQL Database includes a managed backup service.

Azure SQL Database has built-in high availability.

Azure SQL Database can use Azure Defender.

Answer :

Answer Area

Statements	Yes	No
------------	-----	----

Azure SQL Database includes a managed backup service.

Azure SQL Database has built-in high availability.

Azure SQL Database can use Azure Defender.

Explanation:

Box 1: Yes -

Box 2: Yes -

Box 3: Yes -

Azure Defender provides security alerts and advanced threat protection for virtual machines, SQL databases, containers, web applications, your network, and more.

Azure Defender provides security alerts and advanced threat protection for virtual machines, SQL databases, containers, web applications, your network, and more.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-database-paas-overview> <https://azure.microsoft.com/en-us/blog/announcing-sql-atp-and-sql-vulnerability-assessment-general-availability/>

Question 62 (Describe how to work with relational data on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
-------------------	------------	-----------

You can use Azure Data Studio to query a Microsoft SQL Server big data cluster.

You can use Microsoft SQL Server Management Studio (SSMS) to query an Azure Synapse Analytics data warehouse.

You can use MySQL Workbench to query Azure Database for MariaDB databases.

Answer :

Answer Area

Statements	Yes	No
-------------------	------------	-----------

You can use Azure Data Studio to query a Microsoft SQL Server big data cluster.

You can use Microsoft SQL Server Management Studio (SSMS) to query an Azure Synapse Analytics data warehouse.

You can use MySQL Workbench to query Azure Database for MariaDB databases.

Reference:

<https://docs.microsoft.com/en-us/sql/big-data-cluster/connect-to-big-data-cluster?view=sql-server-ver15> <https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-query-ssms> <https://docs.microsoft.com/en-us/azure/mariadb/connect-workbench>

Question 63 (Describe how to work with relational data on Azure)

**HOTSPOT -**

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
-------------------	------------	-----------

Platform as a service (PaaS) database offerings in Azure provide built-in high availability.

Platform as a service (PaaS) database offerings in Azure provide configurable scaling options.

Platform as a service (PaaS) database offerings in Azure reduce the administrative overhead for managing hardware.

Answer :

Answer Area

Statements	Yes	No
------------	-----	----

Platform as a service (PaaS) database offerings in Azure provide built-in high availability.



Platform as a service (PaaS) database offerings in Azure



Question 64 (Describe how to work with relational data on Azure)



HOTSPOT -

You have the following SQL query.

```
INSERT INTO dbo.Products (ProductID, ProductName, Price, ProductDescription)
VALUES (1, 'Clamp', 12.48, 'Workbench clamp') ;
```

What are dbo.Products and ProductName? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Dbo.Products :

A column
A database
A table
An index

ProductName :

A column
A database
A table
An index

Answer :

Answer Area

Dbo.Products :

A column
A database
A table
An index

ProductName :

A column
A database
A table
An index

Question 65 (Describe how to work with relational data on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
You must apply operating system updates to Azure SQL databases regularly.	<input type="radio"/>	<input type="radio"/>
You need a Microsoft 365 subscription to create an Azure SQL database.	<input type="radio"/>	<input type="radio"/>
You can use existing Microsoft SQL Server licenses to reduce the cost of Azure SQL databases.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
You must apply operating system updates to Azure SQL databases regularly.	<input type="radio"/>	<input checked="" type="radio"/>
You need a Microsoft 365 subscription to create an Azure SQL database.	<input type="radio"/>	<input checked="" type="radio"/>
You can use existing Microsoft SQL Server licenses to reduce the cost of Azure SQL databases.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:

<https://azure.microsoft.com/en-gb/blog/hot-patching-sql-server-engine-in-azure-sql-database/> <https://azure.microsoft.com/en-us/services/sql-database/#product-overview>

Question 66 (Describe how to work with relational data on Azure)



Which statement is an example of Data Definition Language (DDL)?

- A. SELECT
- B. JOIN
- C. UPDATE
- D. CREATE

Answer : D

Explanation:

Data Definition Language (DDL) statements defines data structures. Use these statements to create, alter, or drop data structures in a database. These statements include:

- ⇒ ALTER
- ⇒ Collations
- ⇒ CREATE
- ⇒ DROP
- ⇒ DISABLE TRIGGER
- ⇒ ENABLE TRIGGER
- ⇒ RENAME
- ⇒ UPDATE STATISTICS
- ⇒ TRUNCATE TABLE
- ⇒ INSERT

Reference:

Question 67 (Describe how to work with relational data on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
Azure Data Studio can be used to query an Azure SQL database from a device that runs macOS.	<input type="radio"/>	<input type="radio"/>
Microsoft SQL Server Management Studio (SSMS) enables users to create and use SQL notebooks.	<input type="radio"/>	<input type="radio"/>
Azure Data Studio can be used to restore a database.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Azure Data Studio can be used to query an Azure SQL database from a device that runs macOS.	<input checked="" type="radio"/>	<input type="radio"/>
Microsoft SQL Server Management Studio (SSMS) enables users to create and use SQL notebooks.	<input type="radio"/>	<input checked="" type="radio"/>
Azure Data Studio can be used to restore a database.	<input checked="" type="radio"/>	<input type="radio"/>

Explanation:

Box 1: Yes -

Azure Data Studio is a cross-platform database tool for data professionals using on-premises and cloud data platforms on Windows, macOS, and Linux. You can use Azure Data Studio to connect to an Azure SQL Database server. You'll then run Transact-SQL (T-SQL) statements to create and query Azure SQL databases.

Box 2: No -

SQL Server Management Studio is for configuring, managing, and administering all components within Microsoft SQL Server, not to create SQL notebooks. Instead use Azure Data Studio to create SQL notebook.

Box 3: Yes -

You can use the Azure Data Studio to restore databases.

Reference:

<https://docs.microsoft.com/en-us/sql/azure-data-studio/what-is-azure-data-studio>

Question 68 (Describe how to work with relational data on Azure)



You are deploying a software as a service (SaaS) application that requires a relational database for Online Transaction Processing (OLTP). Which Azure service should you use to support the application?

- A. Azure Cosmos DB
- B. Azure HDInsight
- C. Azure SQL Database
- D. Azure Synapse Analytics

Answer : C

Explanation:

Azure SQL Database is relational database and a managed service.

Incorrect Answers:

A, B: Cosmos DB, HDInsight are non-relational databases.

D: Azure Synapse Analytics is for data warehousing, not for Online Transaction Processing

Reference:

<https://cloud.netapp.com/blog/azure-cvo-blg-azure-database-review-your-guide-for-database-assessment>

Question 69 (Describe how to work with relational data on Azure)



What are two benefits of platform as a service (PaaS) relational database offerings in Azure, such as Azure SQL Database? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

- A. access to the latest features
- B. complete control over backup and restore processes
- C. in-database machine learning services
- D. reduced administrative effort for managing the server infrastructure

Answer : AD

Explanation:

A: Azure SQL Database is a fully managed platform as a service (PaaS) database engine that handles most of the database management functions such as upgrading, patching, backups, and monitoring without user involvement.

D: SQL Database delivers predictable performance with multiple resource types, service tiers, and compute sizes. It provides dynamic scalability with no downtime, built-in intelligent optimization, global scalability and availability, and advanced security options. These capabilities allow you to focus on rapid app development and accelerating your time-to-market, rather than on managing virtual machines and infrastructure.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-database-paas-overview>

Question 70 (Describe how to work with relational data on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
If you have a platform as a service (PaaS) database in Azure, you are responsible for applying operating system updates.	<input type="radio"/>	<input type="radio"/>
If you have a platform as a service (PaaS) database in Azure, backups are performed automatically.	<input type="radio"/>	<input type="radio"/>
If you have a platform as a service (PaaS) database in Azure, you are responsible for installation of the database engine.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
If you have a platform as a service (PaaS) database in Azure, you are responsible for applying operating system updates.	<input type="radio"/>	<input checked="" type="radio"/>
If you have a platform as a service (PaaS) database in Azure, backups are performed automatically.	<input checked="" type="radio"/>	<input type="radio"/>
If you have a platform as a service (PaaS) database in Azure, you are responsible for installation of the database engine.	<input type="radio"/>	<input checked="" type="radio"/>

Explanation:

Box 1: No -

Microsoft handles all patching and updating of the SQL and operating system code. You don't have to manage the underlying infrastructure.

Box 2: Yes -

SQL Database is a fully managed service that has built-in high availability, backups, and other common maintenance operations.

Box 3: No -

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-database-paas-overview>

Question 71 (Describe how to work with relational data on Azure)



DRAG DROP -

You have a table named Sales that contains the following data.

SalesDate	SalesAmount	ProductID
4-Apr-20	\$2,000	1
5-Apr-20	\$40	2
5-Apr-20	\$2,300	1
6-Apr-20	\$40	3
6-Apr-20	\$200	4

You need to query the table to return the average sales amount per day. The output must produce the following results.

SalesDate	AVG(SalesAmount)
4-Apr-20	\$2,000
5-Apr-20	\$1,170
6-Apr-20	\$120

How should you complete the query? To answer, drag the appropriate values to the correct targets. Each value 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.

NOTE: Each correct selection is worth one point.

Select and Place:

Values

-
-
-
-

Answer Area

```
Value    SalesDate, AVG(SalesAmount)
FROM Sales
Value    SalesDate
ORDER BY SalesDate
```

Answer :

Values

-
-
-
-

Answer Area

```
SELECT    SalesDate, AVG(SalesAmount)
FROM Sales
GROUP BY   SalesDate
ORDER BY   SalesDate
```

Explanation:

Box 1: SELECT -

Box 2: GROUP BY -
Example:

When used with a GROUP BY clause, each aggregate function produces a single value covering each group, instead of a single value covering the whole table. The following example produces summary values for each sales territory in the AdventureWorks2012 database. The summary lists the average bonus received by the sales people in each territory, and the sum of year-to-date sales for each territory.

SELECT TerritoryID, AVG(Bonus)as 'Average bonus', SUM(SalesYTD) as 'YTD sales'

FROM Sales.SalesPerson -
GROUP BY TerritoryID;

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/functions/avg-transact-sql>



- A. the Azure Active Directory (Azure AD) account that created the database
 - B. the server admin login account of the logical server
- C. the Azure Active Directory (Azure AD) administrator account
- D. the sa account

Answer : B

Explanation:

When you first deploy Azure SQL, you specify an admin login and an associated password for that login. This administrative account is called Server admin.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/single-database-create-quickstart>

Question 73 (Describe how to work with relational data on Azure)



Which statement is an example of Data Definition Language (DDL)?

- A. SELECT
- B. INSERT
- C. DELETE
- D. DROP

Answer : D

Explanation:

Data Definition Language (DDL) statements defines data structures. Use these statements to create, alter, or drop data structures in a database. These statements include:

- ⇒ ALTER
- ⇒ Collations
- ⇒ CREATE
- ⇒ DROP
- ⇒ DISABLE TRIGGER
- ⇒ ENABLE TRIGGER
- ⇒ RENAME
- ⇒ UPDATE STATISTICS
- ⇒ TRUNCATE TABLE
- ⇒ UPDATE

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/statements>

Question 74 (Describe how to work with relational data on Azure)



A team of developers has computers that run Windows 10 and Ubuntu Desktop.

The developers need to connect to and query an Azure SQL database from each of their computers. The developers require code assistance features such as IntelliSense.

What should the developers use?

- A. sqlcmd
- B. Microsoft SQL Server Management Studio (SSMS)
- C. Azure Data Studio
- D. Azure Data Explorer

Answer : C

Explanation:

Azure Data Studio is a cross-platform database tool for data professionals who use on-premises and cloud data platforms on Windows, macOS, and Linux.

Azure Data Studio offers a modern editor experience with IntelliSense, code snippets, source control integration, and an integrated terminal.

Reference:

<https://docs.microsoft.com/en-us/sql/azure-data-studio/download-azure-data-studio>

Question 75 (Describe how to work with relational data on Azure)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

Transparent Data Encryption (TDE) encrypts

a column to protect data at rest and in transit.
queries and their results in order to protect data in transit.
the database to protect data at rest.
the server to protect data at rest.

Answer :

Answer Area

Transparent Data Encryption (TDE) encrypts

a column to protect data at rest and in transit.
queries and their results in order to protect data in transit.
the database to protect data at rest.
the server to protect data at rest.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/transparent-data-encryption-tde-overview?tabs=azure-portal>

Question 76 (Describe how to work with relational data on Azure) 

You need to ensure that users use multi-factor authentication (MFA) when connecting to an Azure SQL database.

Which type of authentication should you use?

- A. service principal authentication
- B. Azure Active Directory (Azure AD) authentication
- C. SQL authentication
- D. certificate authentication

Answer : B

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/authentication-mfa-ssms-overview>

Question 77 (Describe how to work with relational data on Azure) 

What is a benefit of hosting a database on Azure SQL managed instance as compared to an Azure SQL database?

- A. built-in high availability
- B. native support for cross-database queries and transactions
- C. system-initiated automatic backups
- D. support for encryption at rest

Answer : B

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/features-comparison>

Question 78 (Describe how to work with relational data on Azure) 

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

By default, each Azure SQL database is protected by

a network security group (NSG).
a server-level firewall.
Azure Firewall.
Azure Front Door.

Answer :

Answer Area

By default, each Azure SQL database is protected by

a network security group (NSG).
a server-level firewall.
Azure Firewall.
Azure Front Door.

Explanation:

When you create a new server in Azure SQL Database or Azure Synapse Analytics named mysqlserver, for example, a server-level firewall blocks all access to the public endpoint for the server.

Reference:

<https://docs.microsoft.com/en-us/azure/security/fundamentals/infrastructure-sql>

Question 79 (Describe how to work with relational data on Azure)

You need to design and model a database by using a graphical tool that supports project-oriented offline database development.

What should you use?

- A. Microsoft SQL Server Data Tools (SSDT)
- B. Microsoft SQL Server Management Studio (SSMS)
- C. Azure Databricks
- D. Azure Data Studio

Answer : A

Reference:

<https://docs.microsoft.com/en-us/sql/ssdt/project-oriented-offline-database-development?view=sql-server-ver15>

Question 80 (Describe how to work with relational data on Azure)**DRAG DROP -**

Match the security components to the appropriate scenarios.

To answer, drag the appropriate component from the column on the left to its scenario on the right. Each component may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Components

- Authentication
- Firewall
- Encryption

Answer Area

Prevent access to an Azure SQL database from another network.

Support Azure Active Directory (Azure AD) sign-ins to an Azure SQL database.

Ensure that sensitive data never appears as plain text in an Azure SQL database.

Answer :

Components

- Authentication
- Firewall
- Encryption

Answer Area

Firewall
Authentication
Encryption

Prevent access to an Azure SQL database from another network.

Support Azure Active Directory (Azure AD) sign-ins to an Azure SQL database.

Ensure that sensitive data never appears as plain text in an Azure SQL database.

Reference:

<https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/configure-a-windows-firewall-for-database-engine-access?view=sql-server-ver15> <https://docs.microsoft.com/en-us/azure/azure-sql/authentication-aad-overview> <https://docs.microsoft.com/en-us/azure/azure-sql/database/always-encrypted-certificate-store-configure>

Question 81 (Describe how to work with relational data on Azure)

You have a transactional application that stores data in an Azure SQL managed instance.

When should you implement a read-only database replica?

- A. You need to generate reports without affecting the transactional workload.
- B. You need to audit the transactional application.
- C. You need to implement high availability in the event of a regional outage.
- D. You need to improve the recovery point objective (RPO).

Answer : A

Explanation:

Use read-only replicas to offload read-only query workloads.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-sql/database/read-scale-out>

Question 82 (Describe how to work with relational data on Azure)

HOTSPOT -
To complete the sentence, select the appropriate option in the answer area.
Hot Area:

Answer Area

A relational database must be used when

a dynamic schema is required.
data will be stored as key/value pairs.
storing large images and videos.
strong consistency guarantees are required.

Answer :

Answer Area

A relational database must be used when

a dynamic schema is required.
data will be stored as key/value pairs.
storing large images and videos.
strong consistency guarantees are required.

Question 83 (Describe how to work with relational data on Azure)



HOTSPOT -
To complete the sentence, select the appropriate option in the answer area.
Hot Area:

Answer Area

Relational data uses ▼ to enforce relationships between different tables.

collections
columns
keys
partitions

Answer :

Answer Area

Relational data uses ▼ to enforce relationships between different tables.

collections
columns
keys
partitions

Reference:
<https://teachcomputerscience.com/relational-databases/>

Question 84 (Describe how to work with relational data on Azure)



HOTSPOT -
To complete the sentence, select the appropriate option in the answer area.
Hot Area:

Answer Area

▼	is a virtual table that contains content defined by a query.
A heap	
A stored procedure	
A view	
An index	

Answer :

Answer Area

▼	is a virtual table that contains content defined by a query.
A heap	
A stored procedure	
A view	
An index	

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/views/views>

Question 85 (Describe how to work with relational data on Azure)



You need to query a table named Products in an Azure SQL database.

Which three requirements must be met to query the table from the internet? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. You must be assigned the Reader role for the resource group that contains the database.
- B. You must have SELECT access to the Products table.
- C. You must have a user in the database.
- D. You must be assigned the Contributor role for the resource group that contains the database.
- E. Your IP address must be allowed to connect to the database.

Answer : BCE

Explanation:

Incorrect Answers:

A, D: Resource group permissions is not required to query an Azure SQL database table.

Reference:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/authentication-access/getting-started-with-database-engine-permissions?view=sql-server-ver15>

Question 86 (Describe how to work with relational data on Azure)



Which clause should you use in a SELECT statement to combine rows in one table with rows in another table?

- A. SET
- B. VALUES
- C. KEY
- D. JOIN

Answer : D

Reference:

<https://www.tutorialspoint.com/sql/sql-using-joins.htm>





Your company needs to ensure that an Azure virtual machine can connect to Azure SQL databases without exposing the databases to the internet.
What should you use?

- A. Azure Application Gateway
- B. Azure Traffic Manager
- C. Azure DNS
- D. Azure Private Link

Answer : D

Explanation:

Azure Private Link enables you to access Azure PaaS Services (for example, Azure Storage and SQL Database) and Azure hosted customer-owned/partner services over a private endpoint in your virtual network. Traffic between your virtual network and the service travels the Microsoft backbone network. Exposing your service to the public internet is no longer necessary

Reference:

<https://techcommunity.microsoft.com/t5/azure-database-support-blog/azure-sql-db-private-link-private-endpoint-connectivity/ba-p/1235573>



Which setting can only be configured during the creation of an Azure Cosmos DB account?

- A. geo-redundancy
- B. multi-region writes
- C. production or non-production account type
- D. API

Answer : D

Explanation:

You must create a separate account for each API.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/how-to-manage-database-account>



DRAG DROP -

Match the types of data stores to the appropriate scenarios.

To answer, drag the appropriate data store type from the column on the left to its scenario on the right. Each data store type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Data Store Types

- Graph
- Object
- Key/value

Answer Area

- | | |
|--|--|
| | Application users and their default language |
| | Medical images and their associated metadata |
| | Employee data that shows the relationships between employees |

Answer :

Data Store Types

- Graph
- Object
- Key/value

Answer Area

- | | |
|-----------|--|
| Key/value | Application users and their default language |
| Object | Medical images and their associated metadata |
| Graph | Employee data that shows the relationships between employees |

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>



You have an Azure Cosmos DB account that uses the Core (SQL) API.

Which two settings can you configure at the container level? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. the throughput
- B. the read region
- C. the partition key
- D. the API

Answer : AC

Reference:
<https://www.sqlshack.com/start-your-journey-with-azure-cosmos-db/>

Question 91 (Describe how to work with non-relational data on Azure) 

Your company is designing a data store that will contain student data. The data has the following format.

StudentNumber	StudentInformation
7634634	First name: Ben Last: Smith Preferred Name: Benjamin
7634634	First Name: Dominik Last Name: Paiha Email Address: dpaiha@contoso.com MCP ID: 931817
7634636	First Name: Reshma Last Name: Patel Phone number: 514-555-1101
7634637	First Name: Yun-Feng Last Name: Peng

Which type of data store should you use?

- A. graph
- B. key/value
- C. object
- D. columnar

Answer : D

Question 92 (Describe how to work with non-relational data on Azure) 

Which storage solution supports role-based access control (RBAC) at the file and folder level?

- A. Azure Disk Storage
- B. Azure Data Lake Storage
- C. Azure Blob storage
- D. Azure Queue storage

Answer : B

Reference:
<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-access-control>

Question 93 (Describe how to work with non-relational data on Azure) 

You need to store data in Azure Blob storage for seven years to meet your company's compliance requirements. The retrieval time of the data is unimportant. The solution must minimize storage costs. Which storage tier should you use?

- A. Archive
- B. Hot
- C. Cool

Answer : A

Reference:
https://cloud.netapp.com/blog/azure-blob-storage-pricing-the-complete-guide-azure-cvo-blg#H1_4

Question 94 (Describe how to work with non-relational data on Azure) 

Which type of non-relational data store supports a flexible schema, stores data as JSON files, and stores all the data for an entity in the same document?

- A. document
 - B. columnar
 - C. graph
- D. time series

Answer : A

Question 95 (Describe how to work with non-relational data on Azure) 

DRAG DROP -

Match the Azure Cosmos DB APIs to the appropriate data structures.

To answer, drag the appropriate API from the column on the left to its data structure on the right. Each API may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

APIs

Cassandra API
Gremlin API
MongoDB API
Table API

Answer Area

[] Graph data
[] JSON documents
[] Key/value data

Answer :

APIs

Cassandra API
Gremlin API
MongoDB API
Table API

Answer Area

[] Gremlin API Graph data
[] MongoDB API JSON documents
[] Table API Key/value data

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/faq>

Question 96 (Describe how to work with non-relational data on Azure) 

HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

To configure an Azure Storage account to support both security at the folder level and atomic directory manipulation,

[] enable the hierarchical namespace.
[] set Account kind to BlobStorage.
[] set Performance to Premium.
[] set Replication to Read-access geo-redundant storage (RA-GRS).

Answer :

Answer Area

To configure an Azure Storage account to support both security at the folder level and atomic directory manipulation.

Question 97 (Describe how to work with non-relational data on Azure)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

You can query a graph database in Azure Cosmos DB

as a JSON document by using a SQL-like language.
as a partitioned row store by using Cassandra Query Language (CQL).
as a partitioned row store by using Language-Integrated Query (LINQ).
as nodes and edges by using the Gremlin language.

Answer :

Answer Area

You can query a graph database in Azure Cosmos DB

as a JSON document by using a SQL-like language.
as a partitioned row store by using Cassandra Query Language (CQL).
as a partitioned row store by using Language-Integrated Query (LINQ).
as nodes and edges by using the Gremlin language.

Reference:

<https://www.sqlshack.com/graph-database-implementation-with-azure-cosmos-db-using-the-api/>

Question 98 (Describe how to work with non-relational data on Azure)



When provisioning an Azure Cosmos DB account, which feature provides redundancy within an Azure region?

- A. multi-master replication
- B. Availability Zones
- C. the strong consistency level
- D. automatic failover

Answer : B

Explanation:

With Availability Zone (AZ) support, Azure Cosmos DB will ensure replicas are placed across multiple zones within a given region to provide high availability and resiliency to zonal failures. Note: Azure Cosmos DB provides high availability in two primary ways. First, Azure Cosmos DB replicates data across regions configured within a Cosmos account. Second, Azure Cosmos DB maintains 4 replicas of data within a region.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/high-availability>

Question 99 (Describe how to work with non-relational data on Azure)



What is a benefit of the Azure Cosmos DB Table API as compared to Azure Table storage?

- A. provides resiliency if an Azure region fails
- B. supports partitioning
- C. provides a higher storage capacity
- D. supports a multi-master model

Answer : D

Explanation:

Multi-master support for Azure Cosmos DB is now available in all public regions. Azure CosmosDB table API is a key-value storage hosted in the cloud. It's a part of Azure Cosmos DB, that is Microsoft's multi-model database.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/table-support>

Question 100 (Describe how to work with non-relational data on Azure)



Your company needs to design a database that shows how changes in network traffic in one area of a network affect network traffic in other areas of the network.
Which type of data store should you use?

- A. graph
- B. key/value
- C. document
- D. columnar

Answer : A

Explanation:

Data as it appears in the real world is naturally connected. Traditional data modeling focuses on defining entities separately and computing their relationships at runtime. While this model has its advantages, highly connected data can be challenging to manage under its constraints.

A graph database approach relies on persisting relationships in the storage layer instead, which leads to highly efficient graph retrieval operations. Azure Cosmos DB's Gremlin API supports the property graph model.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/graph-introduction#introduction-to-graph-databases>

Question 101 (Describe how to work with non-relational data on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
Azure Databricks can consume data from Azure SQL Database	<input type="radio"/>	<input type="radio"/>
Azure Databricks can consume data from Azure Event Hubs	<input type="radio"/>	<input type="radio"/>
Azure Databricks can consume data from Azure Cosmos DB	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Azure Databricks can consume data from Azure SQL Database	<input checked="" type="radio"/>	<input type="radio"/>
Azure Databricks can consume data from Azure Event Hubs	<input checked="" type="radio"/>	<input type="radio"/>
Azure Databricks can consume data from Azure Cosmos DB	<input checked="" type="radio"/>	<input type="radio"/>

Explanation:

Box 1: Yes -

Azure Databricks can consume data from SQL Databases using JDBC and from SQL Databases using the Apache Spark connector.

The Apache Spark connector for Azure SQL Database and SQL Server enables these databases to act as input data sources and output data sinks for Apache Spark jobs.

Box 2: Yes -

You can stream data into Azure Databricks using Event Hubs.

Box 3: Yes -

You can run Spark jobs with data stored in Azure Cosmos DB using the Cosmos DB Spark connector. Cosmos can be used for batch and stream processing, and as a serving layer for low latency access.

You can use the connector with Azure Databricks or Azure HDInsight, which provide managed Spark clusters on Azure.

Reference:

<https://docs.microsoft.com/en-us/azure/databricks/data/structured-data-layers/integration-with-database-sources>

Question 102 (Describe how to work with non-relational data on Azure)



DRAG DROP -

Match the datastore services to the appropriate descriptions.

To answer, drag the appropriate service from the column on the left to its description on the right. Each service may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Services	Answer Area
Azure Blob storage	Service Enables the use of SQL queries against data stored in JSON documents
Azure Cosmos DB	Service Enables users to access data by using the Server Message Block (SMB) version 3 protocol
Azure Files	
Azure Table storage	

Answer :

Services	Answer Area
Azure Blob storage	Azure Cosmos DB Enables the use of SQL queries against data stored in JSON documents
Azure Cosmos DB	Azure Files Enables users to access data by using the Server Message Block (SMB) version 3 protocol
Azure Files	
Azure Table storage	

Explanation:

Box 1: Azure Cosmos DB -

In Azure Cosmos DB's SQL (Core) API, items are stored as JSON. The type system and expressions are restricted to deal only with JSON types.

Box 2: Azure Files -

Azure Files offers native cloud file sharing services based on the SMB protocol.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/sql-query-working-with-json> <https://cloud.netapp.com/blog/azure-smb-server-message-block-in-the-cloud-for-azure-files>

Question 103 (Describe how to work with non-relational data on Azure)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

When provisioning an Azure Cosmos DB ▼, you need to specify which type of API you will use.

account
container
database
item

Answer :

Answer Area

When provisioning an Azure Cosmos DB

account
container
database
item

, you need to specify which type of API you will use.

Question 104 (Describe how to work with non-relational data on Azure)



You need to store data by using Azure Table storage.
What should you create first?

- A. an Azure Cosmos DB instance
- B. a storage account
- C. a blob container
- D. a table

Answer : B

Explanation:

First create an Azure storage account, then use Table service in the Azure portal to create a table.

Note: An Azure storage account contains all of your Azure Storage data objects: blobs, files, queues, and tables.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/tables/table-storage-quickstart-portal> <https://docs.microsoft.com/en-us/azure/storage/common/storage-account-create>

Question 105 (Describe how to work with non-relational data on Azure)



You need to recommend a data store service that meets the following requirements:

- ⇒ Native SQL API access
- ⇒ Configurable indexes

What should you recommend?

- A. Azure Files
- B. Azure Blob storage
- C. Azure Table storage
- D. Azure Cosmos DB

Answer : D

Explanation:

Azure Cosmos DB comes with native Core (SQL) API support.

In Azure Cosmos DB, data is indexed following indexing policies that are defined for each container. The default indexing policy for newly created containers enforces range indexes for any string or number. This policy can be overridden with your own custom indexing policy.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/sql/how-to-manage-indexing-policy>

Question 106 (Describe how to work with non-relational data on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements

Yes

No

Azure Table storage within a single Azure Storage account supports multiple concurrent reads in different Azure regions.

Azure Table storage within a single Azure Storage account supports multiple concurrent writes in different Azure regions.

An Azure Cosmos DB account that uses the Table API supports multiple concurrent reads in different Azure regions.

An Azure Cosmos DB account that uses the Table API supports multiple concurrent writes in different Azure regions.

Answer :

Answer Area

Statements	Yes	No
Azure Table storage within a single Azure Storage account supports multiple concurrent reads in different Azure regions.	<input checked="" type="radio"/>	<input type="radio"/>
Azure Table storage within a single Azure Storage account supports multiple concurrent writes in different Azure regions.	<input type="radio"/>	<input checked="" type="radio"/>
An Azure Cosmos DB account that uses the Table API supports multiple concurrent reads in different Azure regions.	<input checked="" type="radio"/>	<input type="radio"/>
An Azure Cosmos DB account that uses the Table API supports multiple concurrent writes in different Azure regions.	<input checked="" type="radio"/>	<input type="radio"/>

Explanation:

Box 1: Yes -

For read access to the secondary region, configure your storage account to use read-access geo-redundant storage (RA-GRS) or read-access geo-zone-redundant storage (RA-GZRS).

Box 2: No -

Box 3: Yes -

Box 4: Yes -

Azure Cosmos DB supports multi-region writes.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy> <https://manojchoudhari.wordpress.com/2019/12/16/azure-cosmos-db-enable-multi-region-writes>

Question 107 (Describe how to work with non-relational data on Azure)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

To configure an Azure Storage account to support access control lists
that have object-level permissions,

- enable the hierarchical namespace.
- set Account kind to BlobStorage.
- set Performance to Premium.
- set Replication to Read-access geo-redundant storage (RA-GRS).

Answer :

Answer Area

To configure an Azure Storage account to support access control lists
that have object-level permissions,

- enable the hierarchical namespace.
- set Account kind to BlobStorage.
- set Performance to Premium.
- set Replication to Read-access geo-redundant storage (RA-GRS).

Explanation:

A key mechanism that allows Azure Data Lake Storage Gen2 to provide file system performance at object storage scale and prices is the addition of a hierarchical namespace. This allows the collection of objects/files within an account to be organized into a hierarchy of directories and nested subdirectories in the same way that the file system on your computer is organized. With a hierarchical namespace enabled, a storage account becomes capable of providing the scalability and cost-effectiveness of object storage, with file system semantics that are familiar to analytics engines and frameworks.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-namespace>

Question 108 (Describe how to work with non-relational data on Azure)



Your company needs to design a database that illustrates the relationships between utilization levels of individual network devices across a local area network.
Which type of data store should you use?

- A. graph
- B. key/value
- C. document
- D. columnar

Answer : A

Explanation:

Data as it appears in the real world is naturally connected. Traditional data modeling focuses on defining entities separately and computing their relationships at runtime. While this model has its advantages, highly connected data can be challenging to manage under its constraints.
A graph database approach relies on persisting relationships in the storage layer instead, which leads to highly efficient graph retrieval operations. Azure Cosmos DB's Gremlin API supports the property graph model.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/graph-introduction#introduction-to-graph-databases>

Question 109 (Describe how to work with non-relational data on Azure)



You manage an application that stores data in a shared folder on a Windows server.
You need to move the shared folder to Azure Storage.
Which type of Azure Storage should you use?

- A. queue
- B. blob
- C. file
- D. table

Answer : C

Explanation:

Azure file shares can be mounted concurrently by cloud or on-premises deployments of Windows, Linux, and macOS. Azure file shares can also be cached on Windows Servers with Azure File Sync for fast access near where the data is being used.

Reference:

<https://azure.microsoft.com/en-us/services/storage/files/>

Question 110 (Describe how to work with non-relational data on Azure)



Your company is designing a database that will contain session data for a website. The data will include notifications, personalization attributes, and products that are added to a shopping cart.
Which type of data store will provide the lowest latency to retrieve the data?

- A. key/value
- B. graph
- C. columnar
- D. document

Answer : C

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/analytical-data-stores>

Question 111 (Describe how to work with non-relational data on Azure)



You have an application that runs on Windows and requires access to a mapped drive.
Which Azure service should you use?

- A. Azure Files
- B. Azure Blob storage
- C. Azure Cosmos DB
- D. Azure Table storage

Answer : A

Explanation:

Azure Files is Microsoft's easy-to-use cloud file system. Azure file shares can be seamlessly used in Windows and Windows Server.
To use an Azure file share with Windows, you must either mount it, which means assigning it a drive letter or mount point path, or access it via its UNC path.

Reference:

Question 112 (Describe how to work with non-relational data on Azure)

HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
The Azure Cosmos DB API is configured separately for each database in an Azure Cosmos DB account.	<input type="radio"/>	<input type="radio"/>
Partition keys are used in Azure Cosmos DB to optimize queries.	<input type="radio"/>	<input type="radio"/>
Items contained in the same Azure Cosmos DB logical partition can have different partition keys.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
The Azure Cosmos DB API is configured separately for each database in an Azure Cosmos DB account.	<input type="radio"/>	<input checked="" type="radio"/>
Partition keys are used in Azure Cosmos DB to optimize queries.	<input checked="" type="radio"/>	<input type="radio"/>
Items contained in the same Azure Cosmos DB logical partition can have different partition keys.	<input type="radio"/>	<input checked="" type="radio"/>

Explanation:

Box 1: No -

The API determines the type of account to create. Azure Cosmos DB provides five APIs: Core (SQL) and MongoDB for document data, Gremlin for graph data, Azure Table, and Cassandra. Currently, you must create a separate account for each API.

Box 2: Yes -

Azure Cosmos DB uses partitioning to scale individual containers in a database to meet the performance needs of your application. In partitioning, the items in a container are divided into distinct subsets called logical partitions. Logical partitions are formed based on the value of a partition key that is associated with each item in a container.

Box 3: No -

Logical partitions are formed based on the value of a partition key that is associated with each item in a container.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/partitioning-overview>

Question 113 (Describe how to work with non-relational data on Azure)

Your company is designing an application that will write a high volume of JSON data and will have an application-defined schema.
Which type of data store should you use?

- A. columnar
- B. key/value
- C. document
- D. graph

Answer : B

Explanation:

A key/value store associates each data value with a unique key.

An application can store arbitrary data as a set of values. Any schema information must be provided by the application. The key/value store simply retrieves or stores the value by key.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

Question 114 (Describe how to work with non-relational data on Azure)

You need to recommend a non-relational data store that is optimized for storing and retrieving text files, videos, audio streams, and virtual disk images. The data store must store data, some metadata, and a unique ID for each file.

Which type of data store should you recommend?

- A. key/value
- B. columnar
- C. object
- D. document

Answer : C

Explanation:

Object storage is optimized for storing and retrieving large binary objects (images, files, video and audio streams, large application data objects and documents, virtual machine disk images). Large data files are also popularly used in this model, for example, delimiter file (CSV), parquet, and ORC. Object stores can manage extremely large amounts of unstructured data.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

Question 115 (Describe how to work with non-relational data on Azure)



Your company is designing a data store for internet-connected temperature sensors.

The collected data will be used to analyze temperature trends.

Which type of data store should you use?

- A. relational
- B. time series
- C. graph
- D. columnar

Answer : B

Explanation:

Time series data is a set of values organized by time. Time series databases typically collect large amounts of data in real time from a large number of sources. Updates are rare, and deletes are often done as bulk operations. Although the records written to a time-series database are generally small, there are often a large number of records, and total data size can grow rapidly.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

Question 116 (Describe how to work with non-relational data on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
Copying data to Azure Data Lake Storage from another Azure region results in extra cost.	<input type="radio"/>	<input type="radio"/>
You can use blob, table, and file storage in the same Azure Storage account.	<input type="radio"/>	<input type="radio"/>
You implement Azure Data Lake Storage by creating an Azure Storage account.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Copying data to Azure Data Lake Storage from another Azure region results in extra cost.	<input checked="" type="radio"/>	<input type="radio"/>
You can use blob, table, and file storage in the same Azure Storage account.	<input checked="" type="radio"/>	<input type="radio"/>
You implement Azure Data Lake Storage by creating an Azure Storage account.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:

Question 117 (Describe how to work with non-relational data on Azure)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

When using the Azure Cosmos DB Gremlin API, the container resource type is projected as a

graph.	▼
table.	
partition key.	
document.	

Answer :

Answer Area

When using the Azure Cosmos DB Gremlin API, the container resource type is projected as a

graph.	▼
table.	
partition key.	
document.	

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/create-graph-gremlin-console>

Question 118 (Describe how to work with non-relational data on Azure)



At which two levels can you set the throughput for an Azure Cosmos DB account? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. database
- B. item
- C. container
- D. partition

Answer : AC

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/set-throughput>

Question 119 (Describe how to work with non-relational data on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
------------	-----	----

Azure Table storage supports multiple read replicas.

Azure Table storage supports multiple write regions.

The Azure Cosmos DB Table API supports multiple read replicas.

The Azure Cosmos DB Table API supports multiple write regions.

Answer :

Answer Area

Statements	Yes	No
Azure Table storage supports multiple read replicas.	<input checked="" type="radio"/>	<input type="radio"/>
Azure Table storage supports multiple write regions.	<input type="radio"/>	<input checked="" type="radio"/>
The Azure Cosmos DB Table API supports multiple read replicas.	<input checked="" type="radio"/>	<input type="radio"/>
The Azure Cosmos DB Table API supports multiple write regions.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:
<https://docs.microsoft.com/en-us/azure/cosmos-db/high-availability>

Question 120 (Describe an analytics workload on Azure)



HOTSPOT -
To complete the sentence, select the appropriate option in the answer area.
Hot Area:

Answer Area

<input type="button" value="▼"/>	is an Azure Synapse Analytics feature that retrieves data from Azure Blob storage by using Transact-SQL queries.
<input type="button" value="A hierarchical namespace"/>	
<input type="button" value="Azure Synapse Link"/>	
<input type="button" value="PolyBase"/>	
<input type="button" value="The Data Movement Service (DMS)"/>	

Answer :

Answer Area

<input type="button" value="▼"/>	is an Azure Synapse Analytics feature that retrieves data from Azure Blob storage by using Transact-SQL queries.
<input type="button" value="A hierarchical namespace"/>	
<input type="button" value="Azure Synapse Link"/>	
<input checked="" type="button" value="PolyBase"/>	
<input type="button" value="The Data Movement Service (DMS)"/>	

Reference:
<https://docs.microsoft.com/en-us/sql/relational-databases/polybase/polybase-guide?view=sql-server-ver15>

Question 121 (Describe an analytics workload on Azure)



You need to gather real-time telemetry data from a mobile application.
Which type of workload describes this scenario?

- A. Online Transaction Processing (OLTP)
- B. batch
- C. massively parallel processing (MPP)
- D. streaming

Answer : D

Reference:
<https://docs.microsoft.com/en-in/azure/azure-monitor/overview>

Question 122 (Describe an analytics workload on Azure)



You have a dedicated SQL pool in Azure Synapse Analytics that is only used actively every night for eight hours. You need to minimize the cost of the dedicated SQL pool as much as possible during idle times. The solution must ensure that the data remains intact. What should you do on the dedicated SQL pool?

- A. Scale down the data warehouse units (DWUs).
- B. Pause the pool.
- C. Create a user-defined restore point.
- D. Delete the pool

Answer : B

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-manage-compute-overview>

Question 123 (Describe an analytics workload on Azure)



Which Azure Data Factory component initiates the execution of a pipeline?

- A. a control flow
- B. a trigger
- C. a parameter
- D. an activity

Answer : B

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/concepts-pipeline-execution-triggers#trigger-execution>

Question 124 (Describe an analytics workload on Azure)



Your company has a reporting solution that has paginated reports. The reports query a dimensional model in a data warehouse. Which type of processing does the reporting solution use?

- A. stream processing
- B. batch processing
- C. Online Analytical Processing (OLAP)
- D. Online Transaction Processing (OLTP)

Answer : C

Reference:

<https://datawarehouseinfo.com/how-does-oltp-differ-from-olap-database/>

Question 125 (Describe an analytics workload on Azure)



DRAG DROP -

Match the types of activities to the appropriate Azure Data Factory activities.

To answer, drag the appropriate activity type from the column on the left to its Data Factory activity on the right. Each activity type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Activity Types

Answer Area

Control	
Data movement	
Data transformation	

	Copy
	Mapping data flow
	Lookup

Answer :

Activity Types

Answer Area

Control

Data movement

Copy

Data movement

Data transformation

Mapping data flow

Data transformation

Control

Lookup

Explanation:

Box 1: Data movement -

Box 2: Data transformation -

A pipeline could contain a set of activities that ingest and clean log data, and then kick off a mapping data flow to analyze the log data.

Box 3: Control -

Lookups Activity is a control flow activity.

Question 126 (Describe an analytics workload on Azure)



What are three characteristics of an Online Transaction Processing (OLTP) workload? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

- A. denormalized data
- B. heavy writes and moderate reads
- C. light writes and heavy reads
- D. schema on write
- E. schema on read
- F. normalized data

Answer : BDF

Explanation:

- B: Transactional data tends to be heavy writes, moderate reads.
- D: Typical traits of transactional data include: schema on write, strongly enforced
- F: Transactional data tends to be highly normalized.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/online-transaction-processing>

Question 127 (Describe an analytics workload on Azure)



Which two activities can be performed entirely by using the Microsoft Power BI service without relying on Power BI Desktop? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

- A. report and dashboard creation
- B. report sharing and distribution
- C. data modeling
- D. data acquisition and preparation

Answer : AD

Question 128 (Describe an analytics workload on Azure)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

In Azure Data Factory, you can use

▼
a control flow
a dataset
a linked service
an integration runtime

to orchestrate pipeline

activities that depend on the output of other pipeline activities.

Answer :

Answer Area

In Azure Data Factory, you can use

a control flow
a dataset
a linked service
an integration runtime

to orchestrate pipeline

activities that depend on the output of other pipeline activities.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/frequently-asked-questions>

Question 129 (Describe an analytics workload on Azure)



You need to develop a solution to provide data to executives. The solution must provide an interactive graphical interface, depict various key performance indicators, and support data exploration by using drill down. What should you use in Microsoft Power BI?

- A. a view
- B. a report
- C. a dataflow
- D. Microsoft Power Apps

Answer : B

Reference:

<https://docs.microsoft.com/en-us/power-bi/consumer/end-user-dashboards> <https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-kpi> <https://docs.microsoft.com/en-us/power-bi/consumer/end-user-drill>

Question 130 (Describe an analytics workload on Azure)



Which two Azure services can be used to provision Apache Spark clusters? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Azure Time Series Insights
- B. Azure HDInsight
- C. Azure Databricks
- D. Azure Log Analytics

Answer : BC

Reference:

<https://www.sqlshack.com/a-beginners-guide-to-azure-databricks/>

Question 131 (Describe an analytics workload on Azure)



You have a quality assurance application that reads data from a data warehouse.

Which type of processing does the application use?

- A. Online Transaction Processing (OLTP)
- B. batch processing
- C. Online Analytical Processing (OLAP)
- D. stream processing

Answer : A

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/online-transaction-processing>

Question 132 (Describe an analytics workload on Azure)



Which three objects can be added to a Microsoft Power BI dashboard? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. a report page
- B. a Microsoft PowerPoint slide
- C. a visualization from a report
- D. a dataflow

E. a text box

Answer : ACE

Reference:
<https://docs.microsoft.com/en-us/power-bi/consumer/end-user-dashboards> <https://docs.microsoft.com/en-us/power-bi/create-reports/service-dashboard-add-widget>

Question 133 (Describe an analytics workload on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
------------	-----	----

A Microsoft Power BI dashboard is associated with a single workspace.

A Microsoft Power BI dashboard can only display visualizations from a single dataset.

A Microsoft Power BI dashboard can display visualizations from a Microsoft Excel workbook.

Answer :

Answer Area

Statements	Yes	No
------------	-----	----

A Microsoft Power BI dashboard is associated with a single workspace.

A Microsoft Power BI dashboard can only display visualizations from a single dataset.

A Microsoft Power BI dashboard can display visualizations from a Microsoft Excel workbook.

Reference:

<https://docs.microsoft.com/en-us/power-bi/connect-data/service-datasets-across-workspaces> <https://docs.microsoft.com/en-us/power-bi/consumer/end-user-dashboards> <https://powerbi.microsoft.com/en-us/excel-and-power-bi/>

Question 134 (Describe an analytics workload on Azure)



Which Azure Data Factory component provides the compute environment for activities?

- A. SSIS packages
- B. an integration runtime
- C. a control flow
- D. a pipeline

Answer : B

Explanation:

The Integration Runtime (IR) is the compute infrastructure used by Azure Data Factory to provide the following data integration capabilities across different network environments:

- ⇒ Data Flow
- ⇒ Data movement
- ⇒ Activity dispatch
- ⇒ SSIS package execution

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/concepts-integration-runtime>

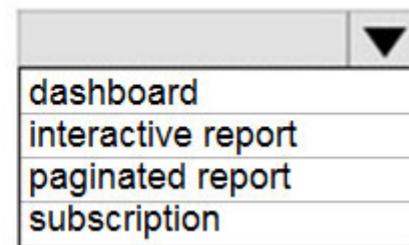
Question 135 (Describe an analytics workload on Azure)



HOTSPOT -
To complete the sentence, select the appropriate option in the answer area.
Hot Area:

Answer Area

A Microsoft Power BI



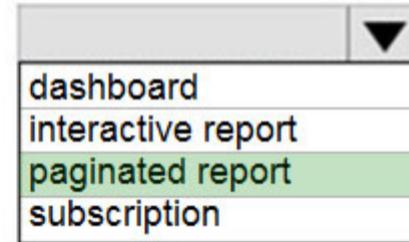
enables users to create highly formatted,

fixed-layout documents optimized for printing and archiving.

Answer :

Answer Area

A Microsoft Power BI



enables users to create highly formatted,

fixed-layout documents optimized for printing and archiving.

Explanation:

Paginated Reports in Power BI now allows users to generate these fixed-layout documents optimized for printing and archiving, such as PDF and Word files. These document-style reports with visualizations that provide additional control, like which tables expand horizontally and vertically to display all their data and continue from page to page as needed.

Reference:

<https://powerbi.microsoft.com/en-us/blog/announcing-paginated-reports-in-power-bi-general-availability/>

Question 136 (Describe an analytics workload on Azure)



What are two uses of data visualization? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Represent trends and patterns over time
- B. Implement machine learning to predict future values
- C. Communicate the significance of data
- D. Enforce business logic across reports

Answer : AC

Explanation:

Data visualization is a key component in being able to gain insight into your data. It helps make big and small data easier for humans to understand. It also makes it easier to detect patterns, trends, and outliers in groups of data.

Data visualization brings data to help you find key business insights quickly and effectively.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/spark/apache-spark-data-visualization>

Question 137 (Describe an analytics workload on Azure)



You need to use Transact-SQL to query files in Azure Data Lake Storage Gen 2 from an Azure Synapse Analytics data warehouse.

What should you use to query the files?

- A. Azure Functions
- B. Microsoft SQL Server Integration Services (SSIS)
- C. PolyBase
- D. Azure Data Factory

Answer : C

Reference:

<https://docs.databricks.com/data/data-sources/azure/synapse-analytics.html>

Question 138 (Describe an analytics workload on Azure)



HOTSPOT -

NOTE
For each of the following statements, select Yes if the statement is true. Otherwise, select No.
NOTE: Each correct selection is worth one point.
Hot Area:

Answer Area

Statements	Yes	No
You can copy a dashboard between Microsoft Power BI workspaces.	<input type="radio"/>	<input type="radio"/>
A Microsoft Power BI dashboard can only display visualizations from a single dataset.	<input type="radio"/>	<input type="radio"/>
A Microsoft Power BI dashboard can display visualizations from a Microsoft Excel workbook.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
You can copy a dashboard between Microsoft Power BI workspaces.	<input type="radio"/>	<input checked="" type="radio"/>
A Microsoft Power BI dashboard can only display visualizations from a single dataset.	<input type="radio"/>	<input checked="" type="radio"/>
A Microsoft Power BI dashboard can display visualizations from a Microsoft Excel workbook.	<input checked="" type="radio"/>	<input type="radio"/>

Explanation:

Box 1: No -
You can duplicate a dashboard. The duplicate ends up in the same Power BI workspace.
There is no current functionality that allows you to move reports from one workspace to another.

Box 2: No -

Box 3: Yes -
Reference:
<https://docs.microsoft.com/en-us/power-bi/connect-data/service-datasets-across-workspaces> <https://docs.microsoft.com/en-us/power-bi/consumer/end-user-dashboards> <https://powerbi.microsoft.com/en-us/excel-and-power-bi/>

Question 139 (Describe an analytics workload on Azure)



What are three characteristics of an Online Transaction Processing (OLTP) workload? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

- A. denormalized data
- B. heavy writes and moderate reads
- C. light writes and heavy reads
- D. schema defined in a database
- E. schema defined when reading unstructured data from a database
- F. normalized data

Answer : BDF

Explanation:
B: Transactional data tends to be heavy writes, moderate reads.
D: Typical traits of transactional data include: schema on write, strongly enforced. The schema is defined in a database.
F: Transactional data tends to be highly normalized.
Reference:
<https://docs.microsoft.com/en-us/azure/architecture/data-guide relational-data/online-transaction-processing>

Question 140 (Describe an analytics workload on Azure)



What is the primary purpose of a data warehouse?

- A. to provide answers to complex queries that rely on data from multiple sources
- B. to provide transformation services between source and target data stores
- C. to provide read-only storage of relational and non-relational historical data
- D. to provide storage for transactional line-of-business (LOB) applications

Answer : C

Explanation:

Consider using a data warehouse when you need to keep historical data separate from the source transaction systems for performance reasons. Data warehouses make it easy to access historical data from multiple locations, by providing a centralized location using common formats, keys, and data models.

Query both relational and nonrelational data.

Incorrect Answers:

D: Data warehouses don't need to follow the same terse data structure you may be using in your OLTP databases.

Reference:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/relational-data/data-warehousing>

Question 141 (Describe an analytics workload on Azure)



DRAG DROP -

Match the Azure services to the appropriate locations in the architecture.

To answer, drag the appropriate service from the column on the left to its location on the right. Each service may be used once, more than once, or not at all.

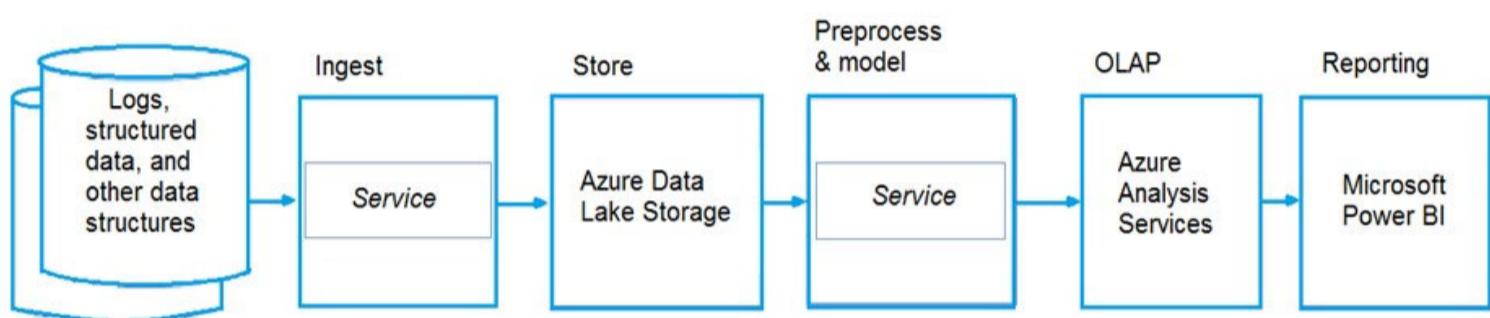
NOTE: Each correct match is worth one point.

Select and Place:

Services

- Azure Cognitive Search
- Azure Data Catalog
- Azure Data Factory
- Azure Synapse Analytics

Answer Area

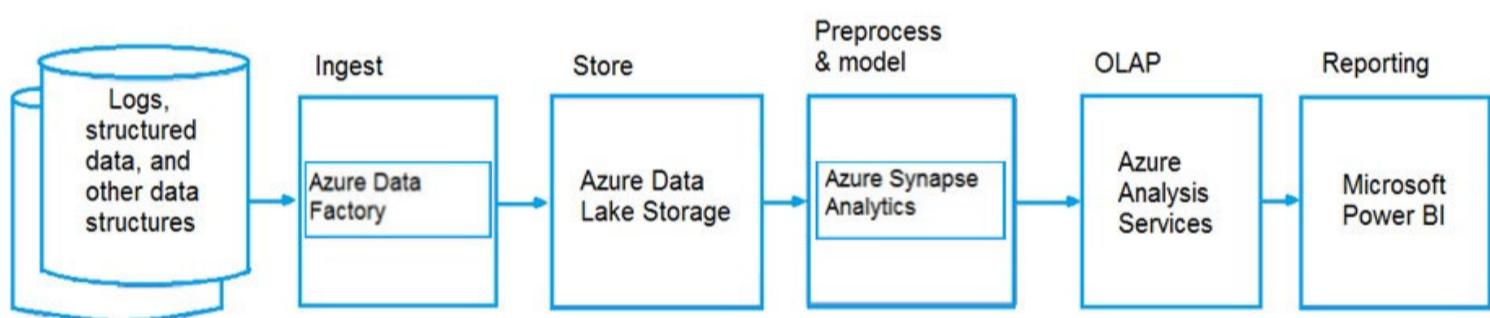


Answer :

Services

- Azure Cognitive Search
- Azure Data Catalog
- Azure Data Factory
- Azure Synapse Analytics

Answer Area



Explanation:

Box Ingest: Azure Data Factory -

You can build a data ingestion pipeline with Azure Data Factory (ADF).

Box Preprocess & model: Azure Synapse Analytics

Use Azure Synapse Analytics to preprocess data and deploy machine learning models.

Reference:

<https://docs.microsoft.com/en-us/azure/machine-learning/how-to-data-ingest-adf> <https://docs.microsoft.com/en-us/azure/machine-learning/team-data-science-process/sql-dw-walkthrough>

Question 142 (Describe an analytics workload on Azure)



DRAG DROP -

Match the types of workloads to the appropriate scenarios.

To answer, drag the appropriate workload type from the column on the left to its scenario on the right. Each workload type may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:

Workload Types

- Batch
- Streaming

Answer Area

Workload type

Analyzing historical data containing web traffic collected during the previous year.

Workload type

Classifying images that were uploaded last month.

Workload type

Tracking in real time how many people are currently

workload type

using a website.

Answer :

Workload Types

Answer Area

Batch

Batch

Analyzing historical data containing web traffic collected during the previous year.

Streaming

Batch

Classifying images that were uploaded last month.

Streaming

Tracking in real time how many people are currently using a website.

Explanation:

Box 1: Batch -

The batch processing model requires a set of data that is collected over time while the stream processing model requires data to be fed into an analytics tool, often in micro-batches, and in real-time. The batch Processing model handles a large batch of data while the Stream processing model handles individual records or micro-batches of few records.

In Batch Processing, it processes over all or most of the data but in Stream Processing, it processes over data on a rolling window or most recent record.

Box 2: Batch -

Box 3: Streaming -

Reference:

<https://k21academy.com/microsoft-azure/dp-200/batch-processing-vs-stream-processing>

Question 143 (Describe an analytics workload on Azure)



HOTSPOT -

To complete the sentence, select the appropriate option in the answer area.

Hot Area:

Answer Area

In a data warehousing workload, data

from a single source is distributed to multiple locations
from multiple sources is combined in a single location
is added to a queue for multiple systems to process
is used to train machine learning models

Answer :

Answer Area

In a data warehousing workload, data

from a single source is distributed to multiple locations
from multiple sources is combined in a single location
is added to a queue for multiple systems to process
is used to train machine learning models

Explanation:

Note: The data warehouse workload encompasses:

- ⇒ The entire process of loading data into the warehouse
- ⇒ Performing data warehouse analysis and reporting
- ⇒ Managing data in the data warehouse
- ⇒ Exporting data from the data warehouse

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-workload-management>

Question 144 (Describe an analytics workload on Azure)



HOTSPOT -
For each of the following statements, select Yes if the statement is true. Otherwise, select No.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
A pipeline is a representation of a data structure within Azure Data Factory	<input type="radio"/>	<input type="radio"/>
Azure Data Factory pipelines can execute other pipelines	<input type="radio"/>	<input type="radio"/>
A processing step within an Azure Data Factory pipeline is an activity	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
A pipeline is a representation of a data structure within Azure Data Factory	<input type="radio"/>	<input checked="" type="radio"/>
Azure Data Factory pipelines can execute other pipelines	<input checked="" type="radio"/>	<input type="radio"/>
A processing step within an Azure Data Factory pipeline is an activity	<input checked="" type="radio"/>	<input type="radio"/>

Explanation:

Box 1: No -
A pipeline is a logical grouping of activities that together perform a task.

Box 2: Yes -
You can construct pipeline hierarchies with data factory.

Box 3: Yes -
A pipeline is a logical grouping of activities that together perform a task.
Reference:
<https://mrpaulandrew.com/2019/09/25/azure-data-factory-pipeline-hierarchies-generation-control/>

Question 145 (Describe an analytics workload on Azure)



DRAG DROP -
Match the Azure services to the appropriate requirements.
To answer, drag the appropriate service from the column on the left to its requirement on the right. Each service may be used once, more than once, or not at all.
NOTE: Each correct match is worth one point.

Select and Place:

Services	Answer Area	
Azure Data Lake Storage	Service	Output data to Parquet format
Azure SQL Database	Service	Store data that is in Parquet format
Azure Synapse Analytics	Service	Persist a tabular representation of data that is stored in Parquet format

Answer :

Services	Answer Area	
Azure Data Lake Storage	Azure SQL Database	Output data to Parquet format
Azure SQL Database	Azure Data Lake Storage	Store data that is in Parquet format
Azure Synapse Analytics	Azure Synapse Analytics	Persist a tabular representation of data that is stored in Parquet format

Explanation:

Box 1: Azure Data Factory -

Box 2: Azure Data Lake Storage -

Azure Data Lake Storage (ADLA) now natively supports Parquet files. ADLA adds a public preview of the native extractor and outputter for the popular Parquet file format

Box 3: Azure Synapse Analytics -

Question 146 (Describe an analytics workload on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
Azure Synapse Analytics scales storage and compute independently	<input type="radio"/>	<input type="radio"/>
Azure Synapse Analytics can be paused to reduce compute costs	<input type="radio"/>	<input type="radio"/>
An Azure Synapse Analytics data warehouse has a fixed storage capacity	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Azure Synapse Analytics scales storage and compute independently	<input checked="" type="radio"/>	<input type="radio"/>
Azure Synapse Analytics can be paused to reduce compute costs	<input checked="" type="radio"/>	<input type="radio"/>
An Azure Synapse Analytics data warehouse has a fixed storage capacity	<input type="radio"/>	<input checked="" type="radio"/>

Explanation:

Box 1: Yes -

Compute is separate from storage, which enables you to scale compute independently of the data in your system.

Box 2: Yes -

You can use the Azure portal to pause and resume the dedicated SQL pool compute resources.

Pausing the data warehouse pauses compute. If your data warehouse was paused for the entire hour, you will not be charged compute during that hour.

Box 3: No -

Storage is sold in 1 TB allocations. If you grow beyond 1 TB of storage, your storage account will automatically grow to 2 TBs.

Reference:

<https://azure.microsoft.com/en-us/pricing/details/synapse-analytics/>



What should you use to build a Microsoft Power BI paginated report?

- A. Charticulator
- B. Power BI Desktop
- C. the Power BI service
- D. Power BI Report Builder

Answer : D

Explanation:

Power BI Report Builder is the standalone tool for authoring paginated reports for the Power BI service.

Reference:

<https://docs.microsoft.com/en-us/power-bi/paginated-reports/paginated-reports-report-builder-power-bi>



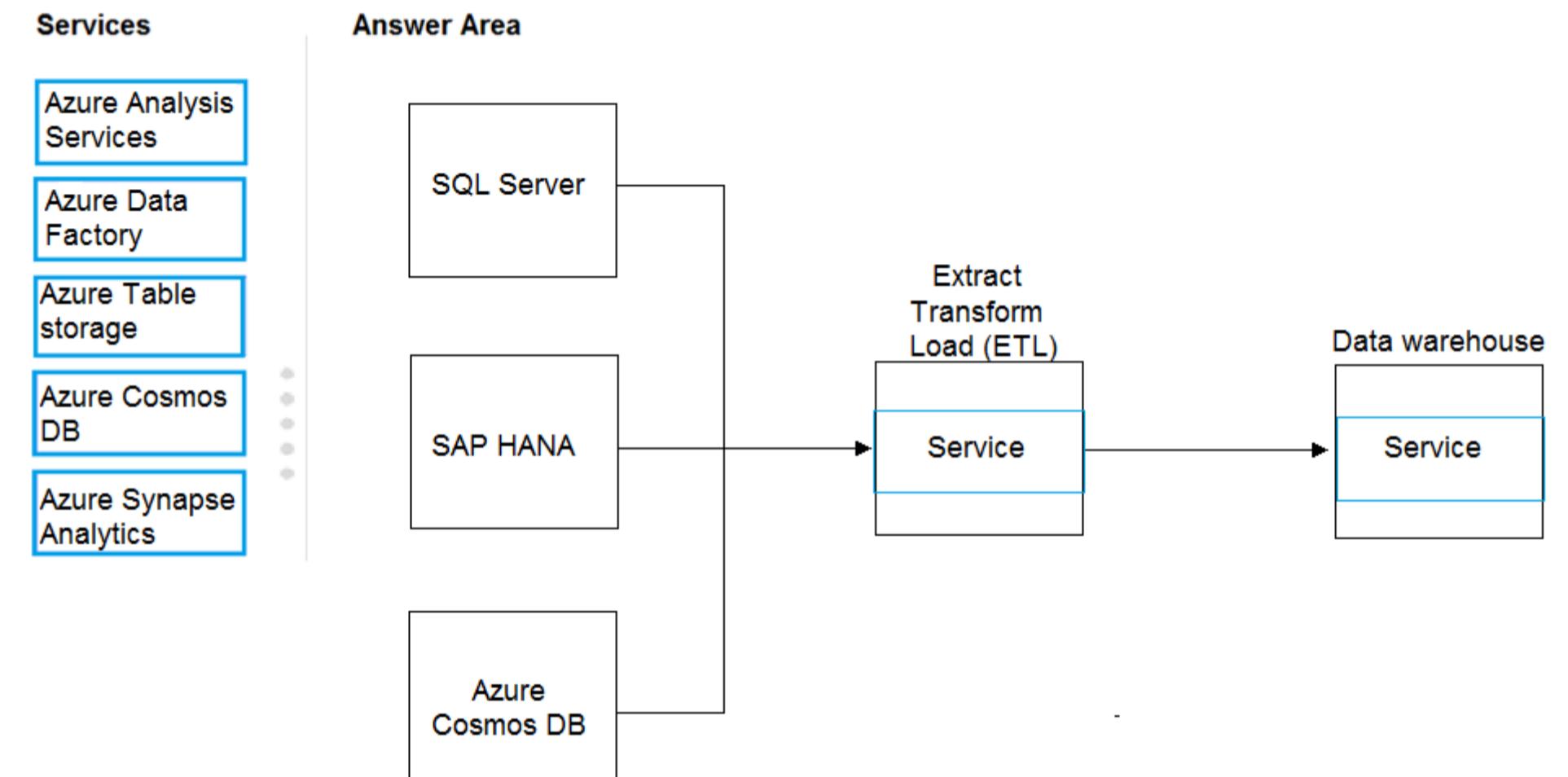
DRAG DROP -

Match the Azure services to the appropriate locations in the architecture.

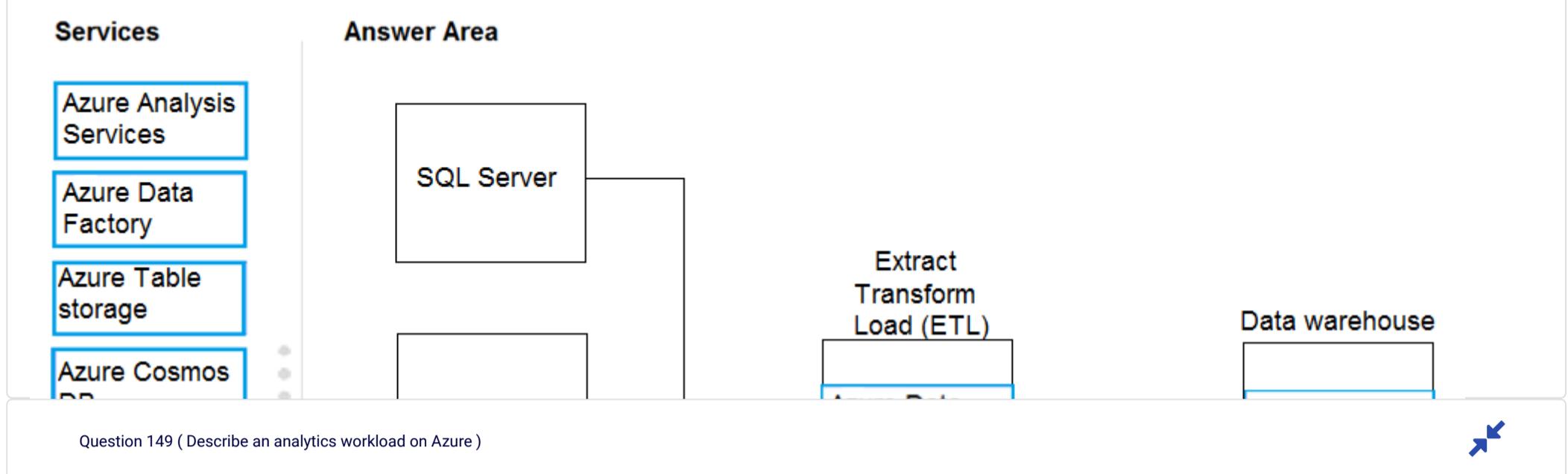
To answer, drag the appropriate service from the column on the left to its location on the right. Each service may be used once, more than once, or not at all.

NOTE: Each correct match is worth one point.

Select and Place:



Answer :



HOTSPOT -
For each of the following statements, select Yes if the statement is true. Otherwise, select No.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
Azure Databricks is an Apache Spark-based analytics platform.	<input type="radio"/>	<input type="radio"/>
Azure Analysis Services is used for transactional workloads.	<input type="radio"/>	<input type="radio"/>
Azure Data Factory orchestrates data integration workflows.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Azure Databricks is an Apache Spark-based analytics platform.	<input checked="" type="radio"/>	<input type="radio"/>
Azure Analysis Services is used for transactional workloads.	<input type="radio"/>	<input checked="" type="radio"/>
Azure Data Factory orchestrates data integration workflows.	<input checked="" type="radio"/>	<input type="radio"/>

Reference:
<https://docs.microsoft.com/en-us/azure/databricks/scenarios/what-is-azure-databricks> <https://docs.microsoft.com/en-us/azure/analysis-services/analysis-services-overview> <https://docs.microsoft.com/en-us/azure/data-factory/introduction>

Question 150 (Describe an analytics workload on Azure) 

Which scenario is an example of a streaming workload?

- A. sending transactions that are older than a month to an archive
- B. sending transactions daily from point of sale (POS) devices
- C. sending telemetry data from edge devices
- D. sending cloud infrastructure metadata every 30 minutes

Answer : C

Question 151 (Describe an analytics workload on Azure) 

HOTSPOT -
To complete the sentence, select the appropriate option in the answer area.
Hot Area:

Answer Area

Batch workloads

- process data in memory, row-by-row.
- collect and process data at most once a day.
- process data as new data is received in near real-time.
- collect data and then process the data when a condition is met.

Answer :

Answer Area

Batch workloads

- process data in memory, row-by-row.
- collect and process data at most once a day.
- process data as new data is received in near real-time.
- collect data and then process the data when a condition is met.

Question 152 (Describe an analytics workload on Azure)



HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements

Yes

No

Processing salary payments once a month is an example of a batch workload.

A wind turbine that sends 50 sensor readings per second is an example of a streaming workload.

A home electricity meter that sends readings once a day to an energy provider is an example of a streaming workload.

Answer :

Answer Area

Statements

Yes

No

Processing salary payments once a month is an example of a batch workload.

A wind turbine that sends 50 sensor readings per second is an example of a streaming workload.

A home electricity meter that sends readings once a day to

an energy provider is an example of a streaming workload.

Question 153 (Describe an analytics workload on Azure)

A bar chart showing year-to-date sales by region is an example of which type of analytics?

- A. predictive
- B. prescriptive
- C. descriptive
- D. diagnostic

Answer : D

Question 154 (Describe an analytics workload on Azure)

HOTSPOT -

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
Stream processing has access to the most recent data received or data within a rolling time window.	<input type="radio"/>	<input type="radio"/>
Batch processing must occur immediately and have latency in the order of seconds or milliseconds.	<input type="radio"/>	<input type="radio"/>
Stream processing is used for simple response functions, aggregates, or calculations such as rolling averages.	<input type="radio"/>	<input type="radio"/>

Answer :

Answer Area

Statements	Yes	No
Stream processing has access to the most recent data received or data within a rolling time window.	<input checked="" type="radio"/>	<input type="radio"/>
Batch processing must occur immediately and have latency in the order of seconds or milliseconds.	<input type="radio"/>	<input checked="" type="radio"/>
Stream processing is used for simple response functions, aggregates, or calculations such as rolling averages.	<input type="radio"/>	<input checked="" type="radio"/>

Reference:

<https://www.precisely.com/blog/big-data/big-data-101-batch-stream-processing>

Question 155 (Describe an analytics workload on Azure)

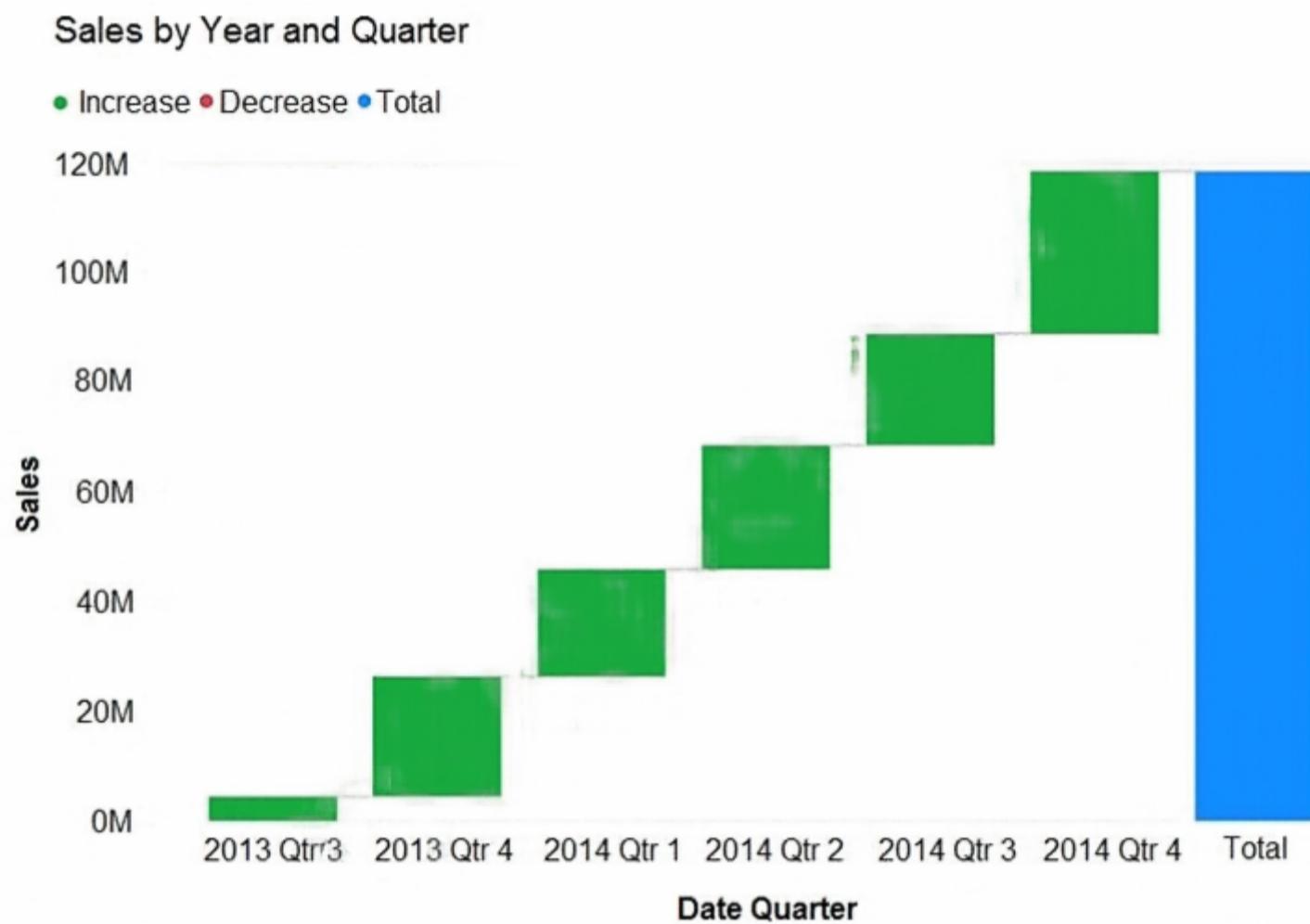
You need to perform hybrid transactional and analytical processing (HTAP) queries against Azure Cosmos DB data sources by using Azure Synapse Analytics. What should you use?

- A. Synapse pipelines
- B. a Synapse SQL pool
- C. Synapse Link
- D. Synapse Studio

Answer : C

Question 156 (Describe an analytics workload on Azure) 

You need to create a visualization of running sales totals per quarter as shown in the following exhibit.



What should you create in Power BI Desktop?

- A. a waterfall chart
- B. a ribbon chart
- C. a bar chart
- D. a decomposition tree

Answer : A