

DP-900 Microsoft Azure Data Fundamentals

215 Exam Question and Answers



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

Descriptive analysis summarizes raw data and makes that data easily deciphered. It describes **the past**, where **the past refers to any point of time when an event has occurred, whether it was one minute ago, or one year ago.**

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

Answer Area

Statements	Yes	No
Normalization involves eliminating relationships between database tables.	<input type="radio"/>	<input checked="" type="radio"/>
Normalizing a database reduces data redundancy.	<input checked="" type="radio"/>	<input type="radio"/>
Normalization improves data integrity.	<input checked="" type="radio"/>	<input type="radio"/>

Normalization is the process of organizing data in a database. This includes creating tables and establishing relationships between those tables according to rules designed both to protect the data and to make the database more flexible by eliminating redundancy and inconsistent dependency.

3. To complete the sentence, select the appropriate option in the answer 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. |

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.

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

Answer Area

In batch processing,




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

When to use batch processing.

You might expect latencies when using batch processing. For many situations, however, this type of delay before the transfer of data begins is not a big issue - the processes that use this function are not mission critical at the exact moment.

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

Answer Area

Transcribing audio files is an example of 

	▼
cognitive	
descriptive	
predictive	
prescriptive	

 analytics.

Transcribe means converting from Audio to Text. This is similar to Alexa, Alexa is a Cognitive device

6. 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.

Analytics Types	Answer Area	
Cognitive	<input type="text"/>	Why did sales increase last month?
Diagnostic	<input type="text"/>	How do I allocate my budget to buy different inventory items?
Descriptive	<input type="text"/>	Which people are mentioned in a company's business documents?
Predictive		
Prescriptive		

1 diagnostic : it answers the question "why did it happen?"

2 prescriptive : it answers the question "how can we make it happen?"

3 descriptive: it answers the question "what happened"

			
Descriptive <i>What's happening?</i>	Diagnostic <i>Why's happening?</i>	Predictive <i>What will happen?</i>	Prescriptive <i>What actions should we take?</i>

7. You have the following JSON document.

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.

Answer Area

Customer is [answer choice].	<div><div>▼</div><div>a nested array</div><div>a nested object</div><div>a root object</div></div>
Address is [answer choice].	<div><div>▼</div><div>a nested array</div><div>a nested object</div><div>a root object</div></div>
Social media is [answer choice].	<div><div>▼</div><div>a nested array</div><div>a nested object</div><div>a root object</div></div>

```
"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"
    }
  ]
}
```


8. 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.

Answer Area

The data model is a [answer choice].

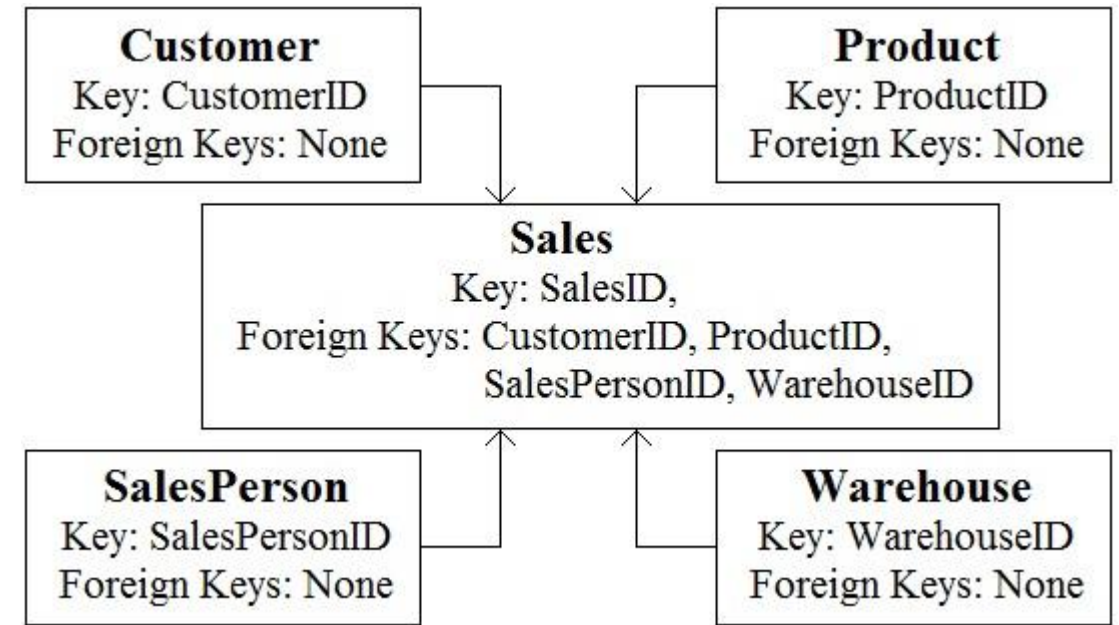


	▼
transactional model	
star schema	
snowflake schema	

Customer is a [answer choice] table.



	▼
fact	
dimension	
bridge	



1. 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.

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

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

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

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

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.

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

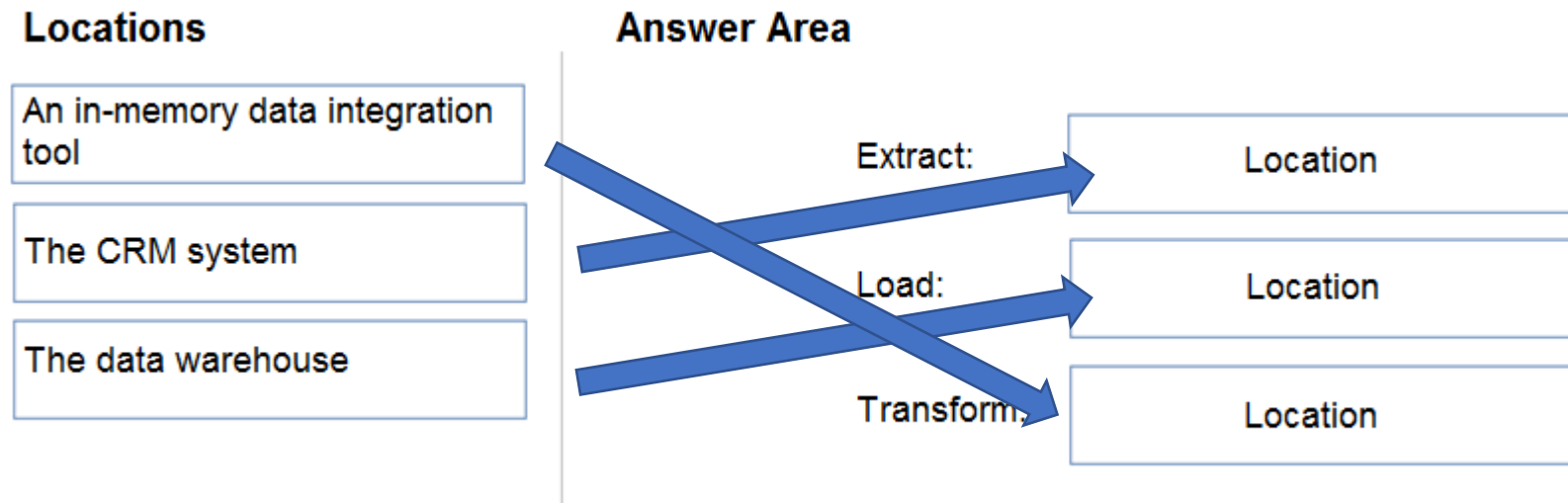
Answer Area

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"/>

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.

13. 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.

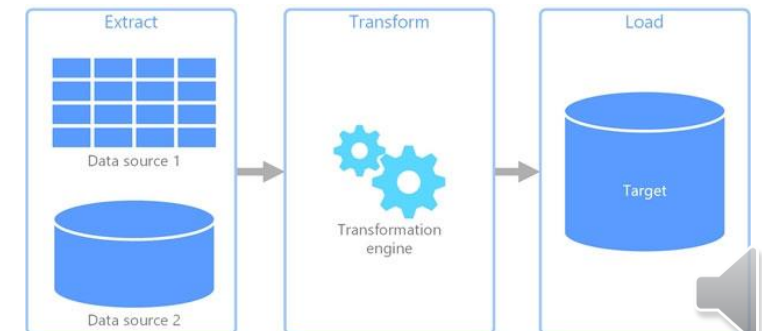


Box 1: The CRM system - Data is extracted from the CRM system.

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.

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

Answer Area

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



	▼
cognitive	
descriptive	
predictive	
prescriptive	

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?

15. 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.

Visualizations	Answer Area
Key influencer	Visualization A chart of colored, nested rectangles that displays individual data points represented by the size and color of a relative rectangle.
Scatter	Visualization A chart that displays the major contributors of a selected result or value.
Treemap	Visualization A chart that shows the relationship between two numerical values.

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.

16. 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)

Correct Answer: *BD*

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).

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

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"/>

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.

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

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


Correct Answer: C

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

- ☐ DELETE
- ☐ INSERT
- ☐ SELECT
- ☐ UPDATE
- ☐ MERGE

19. 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

Correct Answer: B

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.

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

Answer Area

A key/value data store is optimized for



	▼
enforcing constraints	
simple lookups	
table joins	
transactions	

simple lookups -

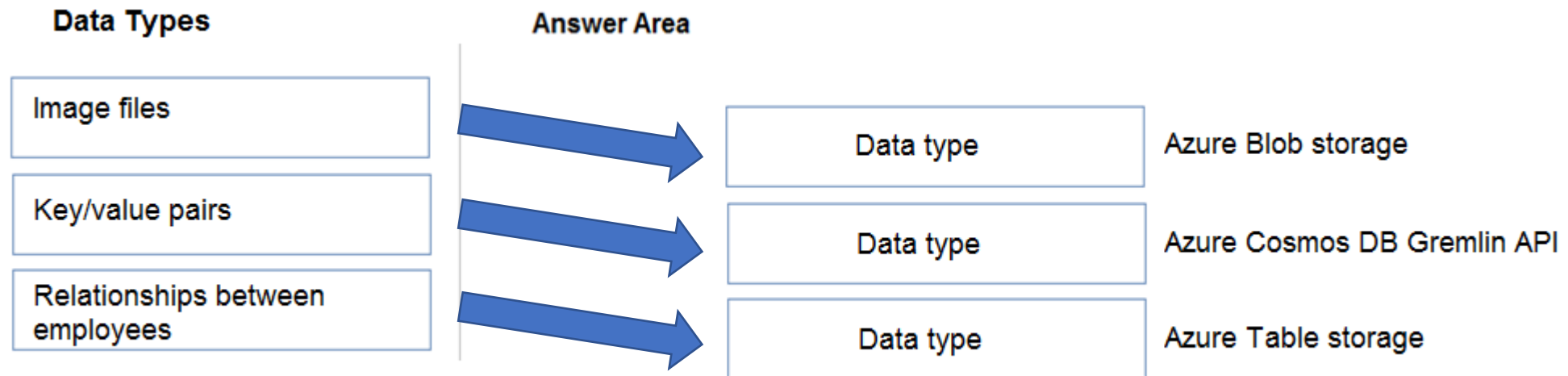
A key/value store associates each data value with a unique key. Most key/value stores only support simple query, insert, and delete operations. To modify a value (either partially or completely), an application must overwrite the existing data for the entire value. In most implementations, reading or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

21. 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.



Box 1: Image files -

Azure Blob storage is suitable for image files.

Box 2: Key/value pairs -

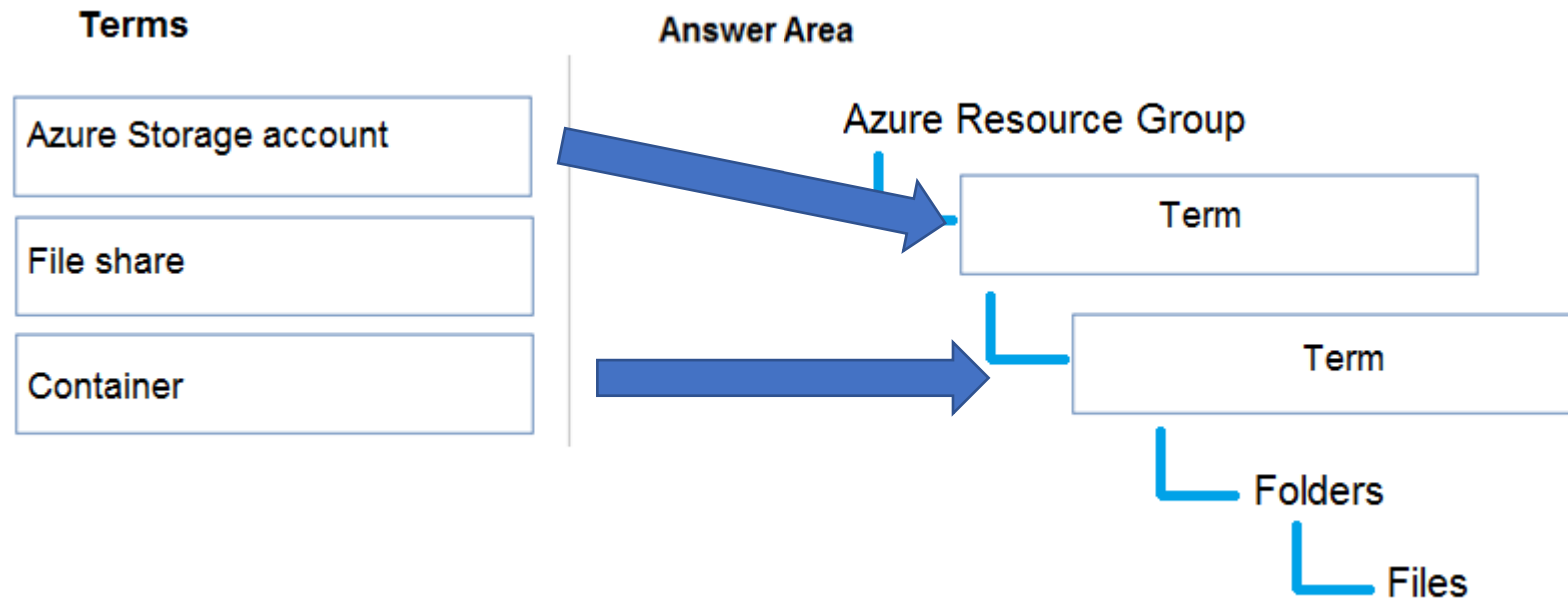
Azure CosmosDB table API is a key-value storage hosted in the cloud.

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.

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22. 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:



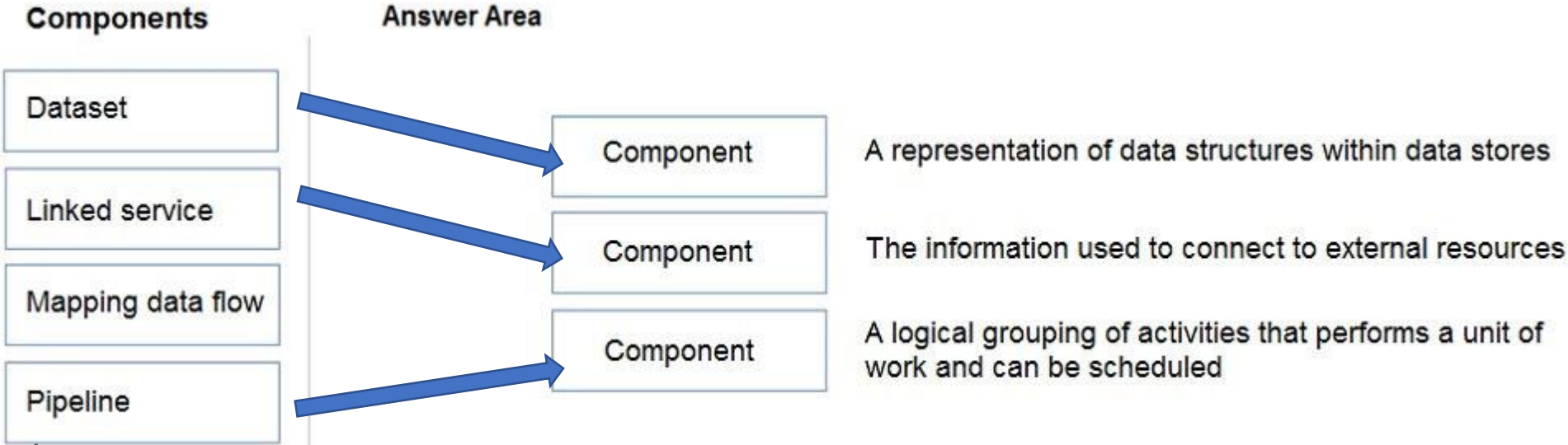
23. What are two characteristics of real-time data processing? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

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

Correct Answer: *BD*

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.

24. 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.



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.

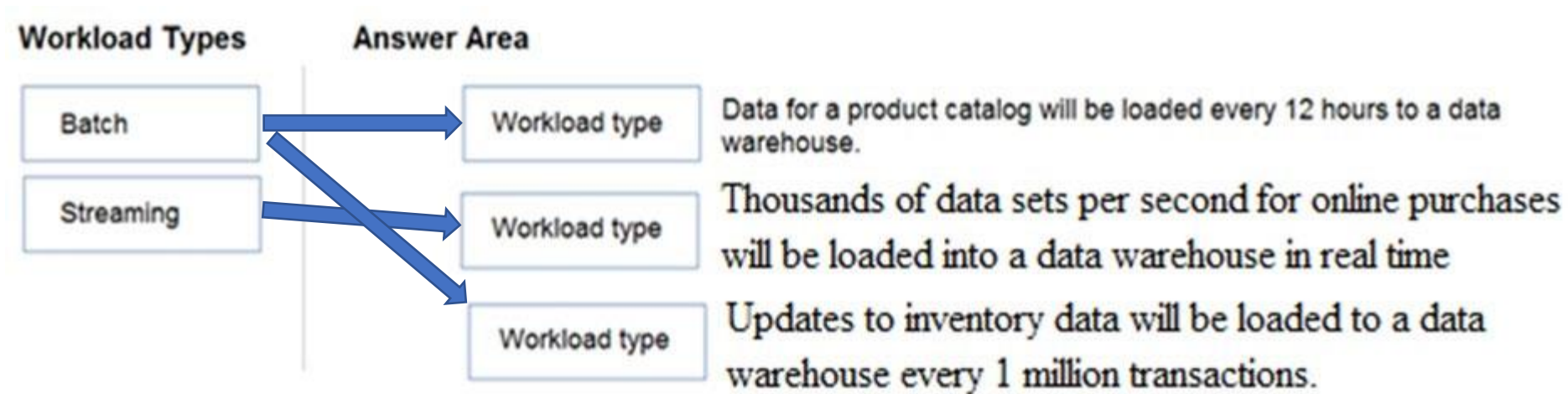
Box 2: Linked service -
Linked services are much like connection strings, which define the connection information needed for Data Factory to connect to external resources.

Box 3: Pipeline -
A pipeline is a logical grouping of activities that together perform a task.

25. 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.



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 -

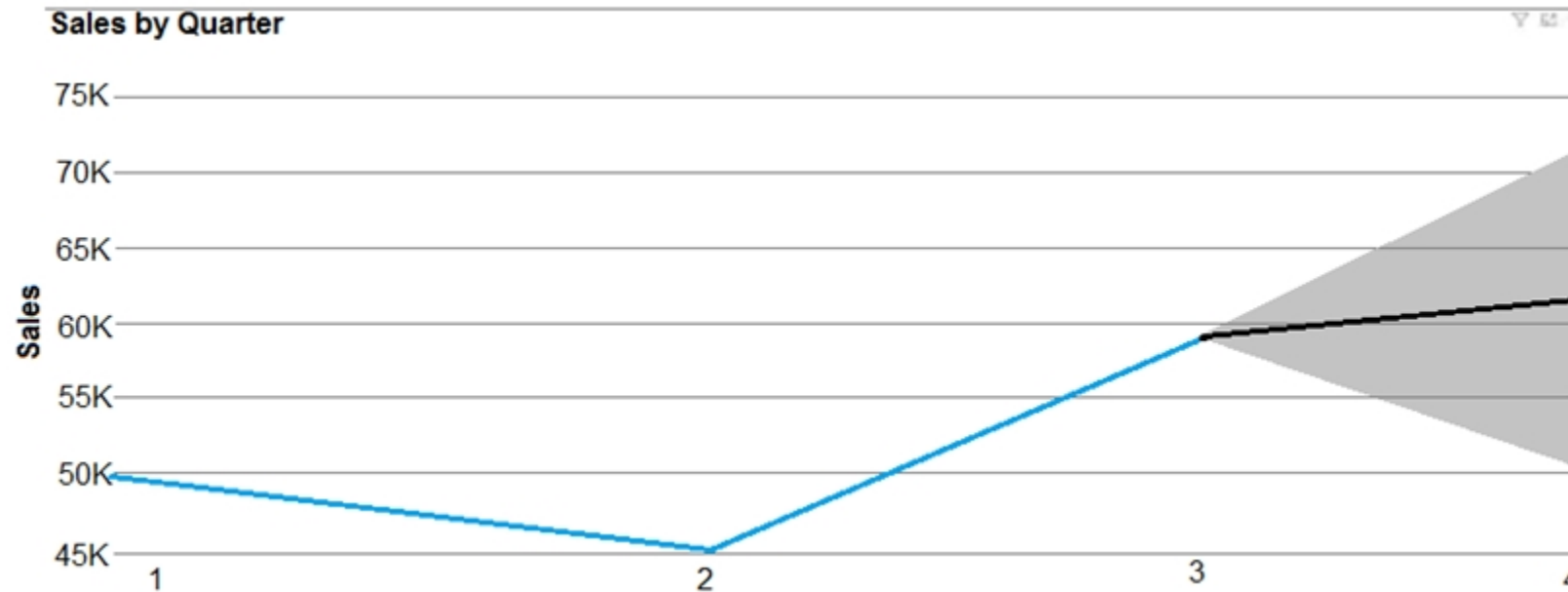
26. Your company plans to load data from a customer relationship management (CRM) system to a data warehouse by using an extract, load, and transform (ELT) process. Where does data processing occur for each stage of the ELT process? To answer, drag the appropriate locations to the correct stages. Each 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.

Locations		Answer Area
<div>A standalone data analysis tool</div>	Extract:	<div></div>
<div>The CRM system</div>	Load:	<div></div>
<div>The data warehouse</div>	Transform:	<div></div>

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

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

27. 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

Correct Answer: A

Predictive, to answer the question: What will happen?

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

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



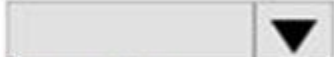
Correct Answer: *D*

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 -

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

Answer Area

Creating closed caption text for audio files is an example of  analytics.



- cognitive
- descriptive
- predictive
- prescriptive

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

Answer Area

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



	▼
cognitive	
descriptive	
predictive	
prescriptive	

analytics.



Descriptive
What's happening?



Diagnostic
Why's happening?



Predictive
What will happen?



Prescriptive
What actions should we take?

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

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.	

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

32. 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

Correct Answer: *D*


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

Answer Area

The Azure Cosmos DB  API enables the use of SELECT statements to

retrieve documents from Azure Cosmos DB.

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

34. 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

Correct Answer: *B*

ALTER is used to change the table structure in a relational database.

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

Answer Area

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

- 1. Yes--During data transformation stage, you can apply filters to filter sensitive data
- 2. No -- ELT uses the compute resource of the destination system to transform data (In the ELT pipeline, the transformation occurs in the target data store. Instead of using a separate transformation engine, the processing capabilities of the target data store are used to transform data.)
- 3. Yes (The key point with ELT is that the data store used to perform the transformation is the same data store where the data is ultimately consumed. This data store reads directly from the scalable storage, instead of loading the data into its own proprietary storage. This approach skips the data copy step present in ETL, which often can be a time consuming operation for large data sets.)

36. 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.

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)

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

Answer Area

  _____ ▼ natively support the analysis of relationships between entities.

38. 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

Correct Answer: *B*

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

Answer Area


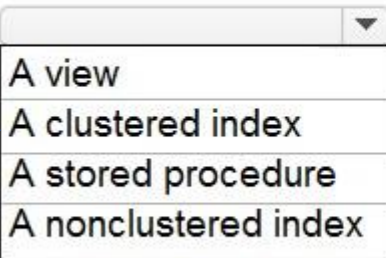
Relational data is stored in



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

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

Answer Area

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

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




Answer Area

A block of code that runs in a database is called



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

42. 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.

Analytics Types	Answer Area
 Cognitive	Why did sales increase last month? <input type="text"/>
 Diagnostic	Provide specific guidance on how to allocate current budget to buy different inventory items. <input type="text"/>
Descriptive	
Predictive	Detect images of the company's logo included in PDF documents <input type="text"/>
 Prescriptive	

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 -

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

Answer Area


	▼	presents content defined by a query.
	A heap	
	A stored procedure	
	A view	
	An index	

44. 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

Correct Answer: A

45. 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

Correct Answer: A

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).

46. Select the answer that correctly completes the sentence.

Answer Area

A  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.

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

47. 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.

Correct Answer: C

48. Select the answer that correctly completes the sentence.

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



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

Answer Area

Statements	Yes	No
A job that processes sales data once daily is an example of a batch workload.	<input checked="" type="radio"/>	<input type="radio"/>
A job that calculates a rolling average temperature reading is an example of a streaming workload.	<input checked="" type="radio"/>	<input type="radio"/>
A job that calculates average revenue per product for the last month is an example of a streaming workload.	<input type="radio"/>	<input checked="" type="radio"/>

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 processes 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 -

50. Select the answer that correctly completes the sentence.

Answer Area

In a relational database, each row in a table has



	▼
a different set of columns	
a key-value pair	
the same set of columns	
unstructured data	

The same set of columns.

In relational databases, a row is a data record within a table. Each row, which represents a complete record of specific item data, holds different data within the same structure. A row is occasionally referred to as a tuple.

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

Answer Area

Statements	Yes	No
Normalizing a database increases the throughput of writing transactions.	<input checked="" type="radio"/>	<input type="radio"/>
Analytics systems are more normalized than transactional systems.	<input type="radio"/>	<input checked="" type="radio"/>
Normalizing a database results in queries that require more joins.	<input checked="" type="radio"/>	<input type="radio"/>


Box 1: Yes -Normalizing a Database increases the throughput for reading but reduces for writing.

Box 2: No -Analytics systems are denormalized to increase performance.
Transactional database systems are normalized to increase data consistency.

Box 3: Yes -Transactional database systems are more normalized and requires more joins.

52. Select the answer that correctly completes the sentence.

Answer Area

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

A graph database stores two types of information, nodes and edges. Edges specify relationships between nodes. Nodes and edges can have properties that provide information about that node or edge, similar to columns in a table. Edges can also have a direction indicating the nature of the relationship.

53. Select the answer that correctly completes the sentence.

Answer Area

A key/value data store is optimized for



	▼
enforcing constraints.	
simple lookups.	
table joins.	

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

Key/value stores are highly optimized for applications performing simple lookups, but are less suitable if you need to query data across different key/value stores.

Key/value stores are also not optimized for querying by value.

A single key/value store can be extremely scalable, as the data store can easily distribute data across multiple nodes on separate machines.

54. Select the answer that correctly completes the sentence.

Answer Area

In an infrastructure as a service (IaaS) instance of Microsoft SQL Server on Azure, you manage the



	▼
elastic pool	
MySQL server	
PostgreSQL server	
virtual machine	

that hosts SQL Server

SQL Server on Azure VM -

SQL Server on Azure VM falls into the industry category Infrastructure-as-a-Service (IaaS) and allows you to run SQL Server inside a fully managed virtual machine (VM) in Azure.

The most significant difference from SQL Database and SQL Managed Instance is that SQL Server on Azure Virtual Machines allows full control over the database engine. You can choose when to start maintenance/patching, change the recovery model to simple or bulk-logged, pause or start the service when needed, and you can fully customize the SQL Server database engine. With this additional control comes the added responsibility to manage the virtual machine.

55. Select the answer that correctly completes the sentence.

Answer Area

Varying fields for each entity in a JSON document is an example of



	▼
relational data.	
semi-structured data.	
structured data.	
unstructured data.	

56. Select the answer that correctly completes the sentence.

Answer Area

A JSON document is an example of



	▼
graph data.	
relational data.	
semi-structured data.	
unstructured data.	

Semi-structured data -

Semi-structured data (e.g., JSON, CSV, XML) is the bridge between structured and unstructured data. It does not have a predefined data model and is more complex than structured data, yet easier to store than unstructured data.

57. Which property of a transactional workload guarantees that each transaction is treated as a single unit that either succeeds completely or fails completely?


- ➡ A. atomicity
B. isolation
C. durability
D. consistency

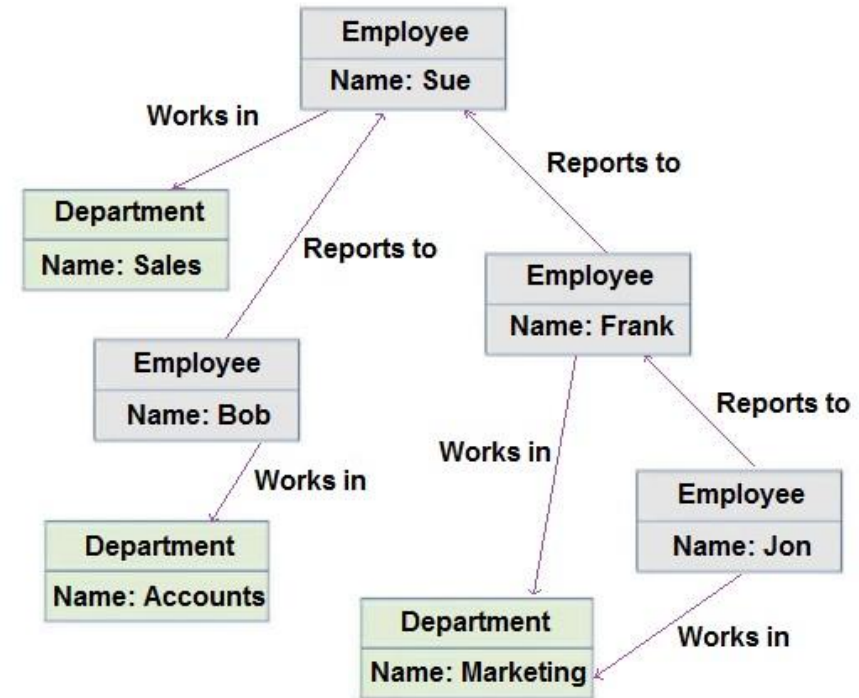
Correct Answer: A

The purpose of making transactions atomic is to prevent different transactions from interfering with one another. This can only happen if more than one user process is trying to access the database at the same time, as when a server allows several clients to use it concurrently. The simplest way to enforce atomicity is for the DBMS to refuse to start any transaction until the previous one has committed.

58. You have a data store that has the structure shown in the following exhibit.

Which type of data store is this?

- A. key/value
- B. object data
-  C. graph
- D. time series



Correct Answer: C

A graph database stores two types of information, nodes and edges. Edges specify relationships between nodes. Nodes and edges can have properties that provide information about that node or edge, similar to columns in a table. Edges can also have a direction indicating the nature of the relationship.

59. Which type of database contains nodes and edges?




- A. graph
- B. key/value
- C. columnar
- D. time series

Correct Answer: A

A graph database stores two types of information, nodes and edges. Edges specify relationships between nodes. Nodes and edges can have properties that provide information about that node or edge, similar to columns in a table. Edges can also have a direction indicating the nature of the relationship.

60. Select the answer that correctly completes the sentence.

Answer Area



	▼
A data analyst	
A data engineer	
A data scientist	

 is responsible for identifying which business rules must be applied to the data of a company.

Data Analyst analyzes numeric data and uses it to help companies make better decisions.
Data Engineer involves in preparing data. They develop, constructs, tests & maintain complete architecture.
A data scientist analyzes and interpret complex data.


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

Answer Area

Relational data uses

	▼
collections	
rows	
keys	
partitions	


 to enforce relationships between different tables.



62. 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

Correct Answer: C

63. 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

Correct Answer: *B*

64. 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

Correct Answer: B

65. 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.

Terms

Index
View
Table

Answer Area

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

66. 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)

Correct Answer: D

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.

67. 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

Correct Answer: A


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.

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68. 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

Correct Answer: D

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.

69. 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
	<div>Microsoft SQL Server Management Studio (SSMS)</div> <div>A graphical tool for managing SQL Server or Azure SQL databases that supports access, configuration, management, and administration tasks.</div>
	<div>Azure Data Studio</div> <div>A lightweight editor that can run on-demand SQL queries and view and save results as text, JSON, or Microsoft Excel files.</div>
	<div>Microsoft SQL Server Data Tools (SSDT)</div> <div>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.</div>

Box 1: Microsoft SQL Server Management Studio (SSMS) SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure, from SQL Server to Azure SQL Database.

Box 2: Azure Data Studio - Azure Data Studio offers a modern, keyboard-focused SQL coding experience that makes your everyday tasks easier with built-in features, such as multiple tab windows, a rich SQL editor, IntelliSense, keyword completion, code snippets, code navigation, and source control integration (Git). Run on-demand SQL queries, view and save results as text, JSON, or Excel. Edit data, organize your favourite database connections, and browse database objects in a familiar object browsing experience.

Box 3: Microsoft SQL Server Data Tools (SSDT)

SQL Server Data Tools (SSDT) is a modern development tool for building SQL Server relational databases, databases in Azure SQL, Analysis Services (AS) data models, Integration Services (IS) packages, and Reporting Services (RS) reports. With SSDT, you can design and deploy any SQL Server content type with the same ease as you would develop an application in Visual Studio.

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

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"/>

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.

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

- ➔ A. sqlcmd
- B. bcp
- C. azdata
- D. Azure CLI

Correct Answer: A

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.

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

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
Azure SQL Database includes a managed backup service.	<input checked="" type="radio"/>	<input type="radio"/>
Azure SQL Database has built-in high availability.	<input checked="" type="radio"/>	<input type="radio"/>
Azure SQL Database can use Azure Defender.	<input checked="" type="radio"/>	<input type="radio"/>

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

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

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
You can use Azure Data Studio to query a Microsoft SQL Server big data cluster.	<input checked="" type="radio"/>	<input type="radio"/>
You can use Microsoft SQL Server Management Studio (SSMS) to query an Azure Synapse Analytics data warehouse.	<input checked="" type="radio"/>	<input type="radio"/>
You can use MySQL Workbench to query Azure Database for MariaDB databases.	<input checked="" type="radio"/>	<input type="radio"/>

74. For each of the following statements, select Yes if the statement is true.

Otherwise, select No.

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
Platform as a service (PaaS) database offerings in Azure provide built-in high availability.	<input checked="" type="radio"/>	<input type="radio"/>
Platform as a service (PaaS) database offerings in Azure provide configurable scaling options.	<input checked="" type="radio"/>	<input type="radio"/>
Platform as a service (PaaS) database offerings in Azure reduce the administrative overhead for managing hardware.	<input checked="" type="radio"/>	<input type="radio"/>

75. 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.

Answer Area

Dbo.Products :	<div><div></div><div></div></div>
	<div><div></div><div></div><div></div><div></div></div>
	<div><div></div><div></div><div></div><div></div></div>
	<div><div></div><div></div><div></div><div></div></div>
	<div><div></div><div></div><div></div><div></div></div>
ProductName :	<div><div></div><div></div></div>
	<div><div></div><div></div></div>
	<div><div></div><div></div><div></div><div></div></div>
	<div><div></div><div></div><div></div><div></div></div>
	<div><div></div><div></div><div></div><div></div></div>


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

NOTE: Each correct selection is worth one point.

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"/>

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

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

Correct Answer: D

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

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

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"/>

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.

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79. 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

Correct Answer: C

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

80. 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

Correct Answer: AD

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.

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81. For each of the following statements, select Yes if the statement is true.

Otherwise, select No.

NOTE: Each correct selection is worth one point.

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"/>

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 -

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

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

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

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.

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

Values

CREATE

GROUP BY

ORDER BY

SELECT

Answer Area

SELECT

SalesDate, AVG(SalesAmount)


FROM Sales

GROUP BY

SalesDate

ORDER BY SalesDate

83. When you create an Azure SQL database, which account can always connect to the database?

- 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

Correct Answer: B

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.

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

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




Correct Answer: *D*

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

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85. 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

Correct Answer: C

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.

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

Transparent data encryption (TDE) helps protect Azure SQL Database, Azure SQL Managed Instance, and Azure Synapse Analytics against the threat of malicious offline activity by encrypting data at rest.


87. 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

Correct Answer: B

88. 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

Correct Answer: B

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

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

90. 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

Correct Answer: A

91. 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.

Components

Authentication

Firewall

Encryption

Answer Area

Firewall

Prevent access to an Azure SQL database from another network.

Authentication

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

Encryption

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

92. 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).

Correct Answer: A

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

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

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

Answer Area

Relational data uses

	▼
--	---

 to enforce relationships between different tables.



	▼
collections	
columns	
keys	
partitions	

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

Answer Area

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

96. 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.

Correct Answer: *BCE*


97. 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



Correct Answer: *D*

98. 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

Correct Answer: D

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

99. Match the Azure SQL services to the appropriate use cases.
To answer, drag the appropriate service from the column on the left to its use case on the right. Each service may be used once, more than once, or not at all.
NOTE: Each correct match its worth one point.


Azure SQL services	Answer Area
Azure SQL Database elastic pool	Azure SQL Database single database A serverless configuration
Azure SQL Database single database	Azure SQL Managed instance A database that has the highest compatibility with on-premises Microsoft SQL Server
Azure SQL Managed instance	Azure SQL Database elastic pool A low-cost, low-maintenance database

Box 1: Azure SQL Database single database- Serverless is a compute tier for single databases in Azure SQL Database that automatically scales compute based on workload demand and bills for the amount of compute used per second. The serverless compute tier also automatically pauses databases during inactive periods when only storage is billed and automatically resumes databases when activity returns.

Box 2: Azure SQL Managed Instance-Azure SQL Managed Instance is the intelligent, scalable cloud database service that combines the broadest SQL Server database engine compatibility with all the benefits of a fully managed and evergreen platform as a service.

Box 3: Azure SQL Database elastic pool- Azure SQL Database elastic pools are a simple, cost-effective solution for managing and scaling multiple databases that have varying and unpredictable usage demands. The databases in an elastic pool are on a single server and share a set number of resources at a set price. Elastic pools in SQL Database enable software as a service (SaaS) developers to optimize the price performance for a group of databases within a prescribed budget while delivering performance elasticity for each database.

100. Which T-SQL statement should be used to instruct a database management system to use an index instead of performing a full table scan?

-  A. SELECT
B. WHERE
C. JOIN

Correct Answer: A

Table hints override the default behavior of the Query Optimizer for the duration of the data manipulation language (DML) statement by specifying a locking method, one or more indexes, a query-processing operation such as a table scan or index seek, or other options. Table hints are specified in the FROM clause of the DML statement and affect only the table or view referenced in that clause.

This applies to the following commands:

DELETE -

INSERT -

SELECT -

UPDATE -

101. Select the answer that correctly completes the sentence.

Answer Area

	▼	is a platform as a service (PaaS) relational data service that uses massively parallel processing (MPP).
Azure SQL Database		
Azure Synapse Analytics		
Azure Database for MariaDB		
SQL Server on Azure virtual machines		

Azure Synapse Analytics is an platform as a service (PAAS) that combines data integration, warehousing, and analytics into one solution.

Azure Synapse Analytics offers cloud-based, relational data warehousing services, massively parallel processing (MPP) scale-out technology, and enough computational power to efficiently manage petabytes and petabytes of data.

102. Select the answer that correctly completes the sentence.

Answer Area

	▼
A view	
A clustered index	
A stored procedure	
A nonclustered index	

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

A clustered index defines the order in which data is physically stored in a table. Table data can be sorted in only one way, therefore, there can be only one clustered index per table. In SQL Server, the primary key constraint automatically creates a clustered index on that particular column.

103. 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.

Answer Area

Dbo.Products:

	▼
A column	
A database	
A table	
An index	

ProductName:

	▼
A column	
A database	
A table	
An index	

104. Select the answer that correctly completes the sentence.

Answer Area

In a relational database, the

	▼
foreign key	
primary key	
WHERE clause	
nonclustered index	

 uniquely identifies each row in a table :

A primary key is a special relational database table column (or combination of columns) designated to uniquely identify each table record (row).


105. Select the answer that correctly completes the sentence.

Answer Area

	▼	presents content defined by a query.
A heap		
A stored procedure		
A view		
An index		

A database view is a subset of a database and is based on a query that runs on one or more database tables.

106. Which Azure service provides the highest compatibility for databases migrated from Microsoft SQL Server 2019 Enterprise edition?

- A. Azure SQL Database
- B. Azure Database for MySQL
-  C. Azure SQL Managed Instance
- D. an Azure SQL Database elastic pool

Correct Answer: C

SQL Managed Instance has near 100% compatibility with the latest SQL Server (Enterprise Edition) database engine, providing a native virtual network (VNet) implementation that addresses common security concerns, and a business model favorable for existing SQL Server customers.

Note: Azure SQL Managed Instance is the intelligent, scalable cloud database service that combines the broadest SQL Server database engine compatibility with all the benefits of a fully managed and evergreen platform as a service.

107. 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

Correct Answer: D

You must create a separate account for each API.

Reference:

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

108. 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.

Data Store Types

- Graph
- Object
- Key/value

Answer Area

- Key/value A list of application user names and, for each, the default language e
- Object A collection of medical images and their associated metadata.
- Graph Employee data that shows the relationships between employees

Box 1: Key/value -

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





Box 2: Object -

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).

Box 3: Graph -

A graph database stores two types of information, nodes and edges. Edges specify relationships between nodes. Nodes and edges can have properties that provide information about that node or edge, similar to columns in a table. Edges can also have a direction indicating the nature of the relationship.

109. 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.

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

Correct Answer: AC

Reference:

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

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

Which type of data store should you use?

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

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

Correct Answer: D

111) 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

Correct Answer: B

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



112) 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

Correct Answer: A


Archive - Optimized for storing data that is rarely accessed and stored for at least 180 days with flexible latency requirements, on the order of hours.

Reference:

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



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

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

Correct Answer: A

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



114) 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.

APIs

- Cassandra API
- Gremlin API
- MongoDB API
- Table API

Answer Area

- Gremlin API Graph data
- MongoDB API JSON documents
- Table API Key/value data

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



115) To complete the sentence, select the appropriate option in the answer 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).

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.

One advantage of hierarchical namespace is atomic directory manipulation: Object stores approximate a directory hierarchy by adopting a convention of embedding slashes (/) in the object name to denote path segments.



116) To complete the sentence, select the appropriate option in the answer 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.	

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



117) 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

Correct Answer: *B*


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.

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



118) 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

Correct Answer: D

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.

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



119) 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

Correct Answer: A

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.

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



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

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"/>

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.



121) 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.

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

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.



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

Answer Area


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

account
container
database
item

<https://docs.microsoft.com/en-us/azure/cosmos-db/create-cosmosdb-resources-portal>



123) 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

Correct Answer: B

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.



124) 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

Correct Answer: D

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.



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

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"/>



126) To complete the sentence, select the appropriate option in the answer 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).	

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.



127) Your office is planning to use Power BI for its analytics reports but needs to know which of its existing Azure resources will not support Power BI paginated reports.

Which of the following Azure services does not support Power BI?

- A. SQL Server via Gateway
- B. Teradata
- C. Oracle databases
- D. Azure Data Lake



Correct Answer: D

Azure Data Lake is not a supported data source of Power BI:


The following are the supported Data sources

- Azure SQL Database and Data Warehouse (via Basic and oAuth)
- Azure Analysis Services (via SSO)
- SQL Server via a gateway
- SQL Server Analysis Services via a gateway
- Power BI Datasets
- Oracle
- Teradata



128) An office heating and cooling system's temperature detection devices will gather and store temperature data from various offices on different floors within a building, and send the stored data once a week to a backend server for analysis.

This is an example of which type of data processing?


- 
- A. Batch processing
 - B. Real-time processing
 - C. Stream processing
 - D. Transactional processing

Correct Answer: A

At the sensors gather and store data for each week before it is sent, the data is considered 'historic' even though a week is far from ancient history. Essential, if it not gathered in real-time or near real-time, it is still considered historic data and is it qualifies as batch analysis.



129) Your manager has approached you with a request to reduce Azure storage costs in your department, and asks you if changing storage tiers from hot to cool would help. What key consideration should you inform him about when performing this change?


- A. Hot storage has a higher storage cost, but lower access costs
- B. Storage tiers are relative to the amount of data stored, not the age of the data; we should move all data to cool storage.
-  C. Cool storage has a lower storage cost, but higher access costs; we should ensure the data is not frequently accessed.
- D. Storage tiering is complicated; we should move back to storage accounts or page blob storage and see if this helps.

Correct Answer: C

The Azure cool storage tier is optimized for storing data that is infrequently accessed and long-lived. Data in the cool storage tier can tolerate slightly lower availability, but still requires high durability and similar time-to-access and throughput characteristics as hot data. For cool data a slightly lower availability SLA and higher access costs are acceptable trade-offs for much lower storage costs.



130) Which of the following is not a feature of Azure table storage?

- A. Azure Table Storage can store petabytes of semi-structured data and non-relational data.
- B. Azure Table Storage can support different rows in the same table with different structures.
- C. Azure Table Storage can offer a strong consistency model.
-  D. Azure Table Storage supports Go and .NET client libraries

Correct Answer: *D*


The first three options are the features of Azure Table storage. Azure Storage provides rich client libraries for building apps with .NET, Java, Android, C++, Node.js, PHP, Ruby, and Python, but currently, the client library of Go Language is not available.



131) Review the following SQL statement:

```
INSERT INTO abc.employees (userid, jobcode, name)  
VALUES (mark742, 62577, Mark);
```

Which parameter is abc.employees in the SQL statement?


- 
- A. table name
 - B. column name
 - C. database name
 - D. values to be inserted

Correct Answer: A

This is a SQL statement and as per the syntax, abc.employees is the table into which the data is entered.



132) Your employer will be moving an application to Azure soon. You have been tasked with choosing a relational database management system that makes the transition go as smoothly as possible. The new database management system must be compatible with Oracle Database, it must allow the application to query older versions of data, and it must be low-maintenance once provisioned. Which solution below would be the best choice?

- 
- A. MariaDB
 - B. SQL Server
 - C. PostgreSQL
 - D. MySQL

Correct Answer: A

MariaDB is the only choice that meets all of the listed requirements. It has built-in support for temporal data. There is very little additional administration required once it has been provisioned in Azure, and It offers compatibility with Oracle.



133) Your company onboarded to Azure recently. You host an on-premises graph database which uses Gremlin on-premises.

Your manager asked you to look into the possible platform-as-a-service (PaaS) database service that you can host your on-premises database Azure service.

Which Azure database service will fulfill your requirements?


- 
- A. Azure Cosmos DB
 - B. Azure SQL Database
 - C. Azure Cache for Redis
 - D. Azure Database for MariaDB

Correct Answer: A

Azure Cosmos DB is the globally distributed, multi-model database service from Microsoft for mission-critical applications. Azure Cosmos DB provides a graph database service via the Gremlin API on a fully managed database service designed for any scale.



134) Which of the following SQL actions is an example of Data Manipulation Language (DML)?


- 
- A. INSERT
 - B. DROP
 - C. ALTER
 - D. CREATE

Correct Answer: A

A data manipulation language (DML) is a computer programming language used for adding (inserting), deleting, and modifying (updating) data in a database. A DML is often a sublanguage of a broader database language such as SQL, with the DML comprising some of the operators in the language



135) You are setting up the backend for an online game that uses microtransactions for revenue. The totals are billed to the users at the end of the month. There are thousands of users, and you would like the transactions to be processed during off-peak time. What term best describes how this data workload is processed?


- 
- A. Batch data processing
 - B. Asynchronous data processing
 - C. Streaming data processing
 - D. Relational data processing

Correct Answer: A

"Batch data processing" describes the situation in which large amounts of data are processed all at one, usually at a convenient time.



136) Which of the following is used as Data Definition Language (DDL)?


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

Correct Answer: C

A DDL is a language used to define data structures and modify data. For example, DDL commands can be used to add, remove, or modify tables within a database. DDLs used in database applications are considered a subset of SQL, the Structured Query Language.



137) A support specialist is writing SQL queries for custom client reports in Microsoft SQL Server. Which dialect of SQL would be most appropriate for this querying tool?


-  A. Transact-SQL
B. DML
C. pgSQL
D. PL/SQL

Correct Answer: A

Transact-SQL (T-SQL) is the correct answer. T-SQL is used in both Microsoft SQL Server and Azure SQL Database. pgSQL and PL/SQL are used in other querying tools. DML (Data Manipulation Language) is not a SQL dialect.



138) Which blob access storage tier would you use when dealing with a large amount of data that is rarely used and mainly stored for compliance or tax purposes?


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

Correct Answer: C

Blob storage has multiple access tiers: hot, cool, and archive. The hot tier is for frequently accessed files. The cool tier is for files you expect to access only about once a month or less. The advantage is that it costs less than the hot tier as long as you don't access it frequently. The archive tier is for files that are rarely accessed, such as backup files. It has the lowest storage costs but the highest retrieval costs. It also takes several hours to retrieve files from the archive tier.



139) You will upload a few dozen data blobs to Azure, and you need to choose the best type of storage account for this data. The data is mostly short videos and images from recent corporate retreats that will be shared periodically at conferences. You have been directed to use best practices and to avoid legacy storage solutions. This data will be accessed infrequently by internal parties only, and latency is not a concern. What would be the best storage account type to recommend in this situation?


- 
- A. General-purpose v2 accounts
 - B. BlobStorage accounts
 - C. BlockBlobStorage accounts
 - D. FileStorage accounts

Correct Answer: A

General-purpose v2 accounts would be the best Azure Storage solution for this scenario. FileStorage is not for blobs. BlobStorage is a legacy solution. BlobBlockStorage would work, but it is a premium solution, definitely overkill in this particular scenario.



140) Your network admin recently purchased licenses for an internal chat client that should improve productivity company-wide. This particular hosted application is installed and hosted on virtual hardware managed by a third-party. Which term below best describes this type of service?

-  A. Software-as-a-Service (SaaS)
B. Internet-of-Things (IoT)
C. Infrastructure-as-a-Service (IaaS)
D. Platform-as-a-Service (PaaS)

Correct Answer: A

SaaS is the correct answer, because this service includes the client application hosted on virtual hardware by a third party.



141) While working as a data analyst, your client has asked for an analysis of internal data from a Microsoft SQL Server Database compared with thirty-party data that can only be export as a CSV file.

Which method below would be best for loading both data sets to Azure Synapse Analytics?

- A. Use SQL Server Integration Service (SSIS) to load the data from both sources into Synapse.
- B. Reach out to the third-party app's support team to see if they have an API.
- C. Export internal data to CSV to get everything into the same format before uploading to Synapse.
- D. Create a new table in the SQL Server database containing the third-party data so that all of the data is in the same place before beginning analysis.

Correct Answer: A

Use SQL Server Integration Service (SSIS) to load the data from both sources into Synapse. SSIS is native to SQL server and it allows database, flat file, and XML integration.

<https://docs.microsoft.com/en-us/learn/modules/explore-data-ingestion-azure/3-load-data>



142) You are a data analyst working for a small firm, and you have been asked to determine if a data warehouse solution is needed. Of the following scenarios, which is most likely to require a robust, modern data warehousing solution?

- A. You track raw streaming website traffic data, heat map results, and compare those with batches of revenue data coming in weekly.
- B. The client is an insurance broker looking to perform a forensic analysis of their digital ledgers from the past two years.
- C. Your client is a political campaign and tracking how often and what time of day your employer's opponent is posting to social media.
- D. The client is a library looking to examine historical check-out records in an attempt to predict which selections will be popular in the coming year.

Correct Answer: A

The correct answer is the website and sales data because it requires capturing both streaming and batch data. The other three answers only include one type of data or historical data which would not require a modern data warehousing solution.

<https://docs.microsoft.com/en-us/learn/modules/examine-components-of-modern-data-warehouse/2-describe-warehousing>



143) You are the lead data analyst in one of the leading grocery chains in the country. You need to analyze existing quarterly sales data from the previous fiscal year and have to draw inferences out of it. These results will be studied by the business development team to improve the marketing strategies. What is the generalized name for this type of analytics?

- A. Descriptive analytics
- B. Predictive analytics
- C. Prescriptive analytics
- D. Cognitive analytics

Correct Answer: *D*

Cognitive analytics attempts to draw inferences from existing data and patterns, derive conclusions based on existing knowledge bases, and then add these findings back into the knowledge base for future inferences--a self-learning feedback loop. Cognitive analytics helps you to learn what might happen if circumstances change, and how you might handle these situations.

<https://docs.microsoft.com/en-us/learn/modules/explore-concepts-of-data-analytics/4-explore>



144) Your development team is working on a new application. You have been asked to provision a new Azure SQL database. Which of the following tools cannot complete this task? (Choose two answers.)

- A. Azure Data Factory
- B. Azure Command-Line Interface
- C. The Azure Portal
- D. Azure Cosmos DB API

Correct Answer: AD

There are four tools that can be used to provision a new Azure SQL DB: The Azure Portal; Azure Resource Manager templates; the Azure command-line tool (CLI); and Azure PowerShell. The two correct answers, Azure Cosmos DB API and Azure Data Factory, cannot be used to provision a new Azure SQL DB.



145) You are using Azure Data Lake Storage to stage data for analysis that is coming in from Twitter and Facebook. Which of the following statements is true about how Azure Data Lake Storage organizes the data as it streams in?

- A. Azure Data Lake Storage organizes incoming unprocessed data files into directories and subdirectories to make the data easier to manipulate and analyze.
- B. Azure Data Lake Storage is a managed analytics service based on Hadoop. Spark jobs are split into various subtasks that are run on a cluster.
- C. Azure Data Lake Storage organizes incoming data into relational database tables with defined columns and rows.
- D. Azure Data Lake Storage is a data integration service that retrieves data from various sources and converts it into usable formats.

Correct Answer: A

Azure Data Lake Storage organizes incoming unprocessed data files into directories and subdirectories to make the data easier to manipulate and analyze. It is a repository for large quantities of raw data. It is not a "data integration service" - that answer is describing Azure Data Factory. It is not a "managed analytics service" - that answer is referring to Azure HDInsight. It does not convert data into relational database tables.

<https://docs.microsoft.com/en-us/learn/modules/examine-components-of-modern-data-warehouse/>



146) You have to connect with a database server hosted in Azure SQL Database over the public internet; the server is hosted in a network for a new office location. You are unable to establish a connection until you make several network reconfigurations related to the Azure SQL database, assuming all modifications for all other network resources have been made. Which of these methods will allow you to connect with the database over the public internet in the new office?

- A. Update the range of allowed IP addresses within your database-level IP firewall rules.
- B. Set the 'Allow Azure Services' parameter for the specific SQL Database to ON.
- C. Update the range of allowed IP addresses within your server-level IP firewall rules.
- D. Set up a private endpoint to connect to the database via PrivateLink.

Correct Answer: A

<https://docs.microsoft.com/en-us/azure/azure-sql/database/firewall-configure>



147) Review the following SQL statement:

```
INSERT INTO abc.employees (userid, jobcode, name)  
VALUES (mark742, 62577, Mark);
```

Which parameter is abc.employees in the SQL statement?

- A. table name
- B. column name
- C. database name
- D. values to be inserted

Correct Answer: A

This is a SQL statement and as per the syntax, abc.employees is the table into which the data is entered.

https://www.w3schools.com/sql/sql_insert.asp



148) You will upload a few dozen data blobs to Azure, and you need to choose the best type of storage account for this data. The data is mostly short videos and images from recent corporate retreats that will be shared periodically at conferences. You have been directed to use best practices and to avoid legacy storage solutions. This data will be accessed infrequently by internal parties only, and latency is not a concern. What would be the best storage account type to recommend in this situation?

- A. General-purpose v2 accounts
- B. BlobStorage accounts
- C. BlockBlobStorage accounts
- D. FileStorage accounts

Correct Answer: A

General-purpose v2 accounts would be the best Azure Storage solution for this scenario. FileStorage is not for blobs. BlobStorage is a legacy solution. BlobBlockStorage would work, but it is a premium solution, definitely overkill in this particular scenario.

<https://docs.microsoft.com/en-us/azure/storage/common/storage-account-overview?toc=/azure/storage/blobs/toc.json>



149) A social media application uses a URL shortener feature to make it easier for users to quickly share their content. The URLs are stored in a key-value store database. This type of storage is very simple, but it is also limited in functionality. Which two write operations are allowed on key-value store data? (Choose 2 answers)

- A. insert
- B. delete
- C. update
- D. select

Correct Answer: *AB*

Insert and delete are the only write actions allowed on key-value store data. Update operations cannot be performed on key-value store data. Select and Count are not write actions.

<https://docs.microsoft.com/en-us/learn/modules/explore-concepts-of-non-relational-data/4-describe-types-nosql-databases>



150) You are a data analyst at a small direct marketing firm. The executives have asked you to create an interactive dashboard to display year-over-year sales and affiliate marketing data. Which two of the tools below would be best for Data Visualization and Reporting? (Choose 2 answers)

- A. Power BI
- B. Microsoft Excel
- C. SQL Server Management Studio
- D. PostgreSQL

Correct Answer: AB

Power Bi and Microsoft Excel are the correct answers. Power BI is a powerful visualization platform. Excel can also be used to build dashboards and create reports. The other options are not data visualization tools.

<https://docs.microsoft.com/en-us/learn/modules/explore-roles-responsibilities-world-of-data/5-review-tasks-tools-for-data-visualization-reporting>



151) Your manager has approached you with a request to reduce Azure storage costs in your department, and asks you if changing storage tiers from hot to cool would help. What key consideration should you inform him about when performing this change?

- A. Hot storage has a higher storage cost, but lower access costs
- B. Storage tiers are relative to the amount of data stored, not the age of the data; we should move all data to cool storage.
- C. Cool storage has a lower storage cost, but higher access costs; we should ensure the data is not frequently accessed.
- D. Storage tiering is complicated; we should move back to storage accounts or page blob storage and see if this helps.

Correct Answer: C

The Azure cool storage tier is optimized for storing data that is infrequently accessed and long-lived. Data in the cool storage tier can tolerate slightly lower availability, but still requires high durability and similar time-to-access and throughput characteristics as hot data. For cool data a slightly lower availability SLA and higher access costs are acceptable trade-offs for much lower storage costs.

<https://docs.microsoft.com/en-us/azure/storage/storage-blob-storage-tiers>



152) Which of the following SQL actions is an example of Data Manipulation Language (DML)?

- A. INSERT
- B. DROP
- C. ALTER
- D. CREATE

Correct Answer: A

A data manipulation language (DML) is a computer programming language used for adding (inserting), deleting, and modifying (updating) data in a database. A DML is often a sublanguage of a broader database language such as SQL, with the DML comprising some of the operators in the language

https://en.wikipedia.org/wiki/Data_manipulation_language



153) You demonstrate a Power BI dashboard with your client in the service in your web browser, and they are excited about the visualizations. They would like to be able to share this data with their customers at conventions. How can your client accomplish this?

- A. They can log into the service on a laptop and share their dashboards or they can use the mobile app on a phone or tablet.
- B. Because they have access to the dataset, it would be best to show them how to build their own dashboards instead of having to view yours.
- C. They will need to log into Power BI Desktop, and make sure they schedule updates to ensure the data remains accurate.
- D. Because they do not have Power BI installed on their computers, you will need to export the dashboard and host it on a custom web application for the client.

Correct Answer: A

They can log into the service on a laptop and share their dashboards or they can use the mobile app on a phone or tablet. For viewing and sharing the dashboard, the Power BI Service or the mobile app is sufficient.

<https://docs.microsoft.com/en-us/learn/modules/get-started-with-power-bi/4-exercise-touring-and-using-power-bi>



154) An office heating and cooling system's temperature detection devices will gather and store temperature data from various offices on different floors within a building, and send the stored data once a week to a backend server for analysis. This is an example of which type of data processing?

- A. Batch processing
- B. Real-time processing
- C. Near-real time processing
- D. Transactional processing

Correct Answer: A

At the sensors gather and store data for each week before it is sent, the data is considered 'historic' even though a week is far from ancient history. Essential, if it not gathered in real-time or near real-time, it is still considered historic data and is it qualifies as batch analysis.

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



155) Which of the following is used as Data Definition Language (DDL)?

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

Correct Answer: C

A DDL is a language used to define data structures and modify data. For example, DDL commands can be used to add, remove, or modify tables within a database. DDLs used in database applications are considered a subset of SQL, the Structured Query Language.



156) Your company onboarded to Azure recently. You host an on-premises graph database which uses Gremlin on-premises. Your manager asked you to look into the possible platform-as-a-service (PaaS) database service that you can host your on-premises database Azure service.

Which Azure database service will fulfill your requirements?

- A. Azure Cosmos DB
- B. Azure SQL Database
- C. Azure Cache for Redis
- D. Azure Database for MariaDB

Correct Answer: A

Azure Cosmos DB is the globally distributed, multi-model database service from Microsoft for mission-critical applications. Azure Cosmos DB provides a graph database service via the Gremlin API on a fully managed database service designed for any scale.

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



157) Which of the following is not a feature of Azure table storage? (Choose 3 answers)

- A. Azure Table Storage can store petabytes of semi-structured data and non-relational data.
- B. Azure Table Storage can support different rows in the same table with different structures.
- C. Azure Table Storage can offer a strong consistency model.
- D. Azure Table Storage supports Go and .NET client libraries

Correct Answer: ABC

The first three options are the features of Azure Table storage. Azure Storage provides rich client libraries for building apps with .NET, Java, Android, C++, Node.js, PHP, Ruby, and Python, but currently, the client library of Go Language is not available.

<https://azure.microsoft.com/en-in/services/storage/tables/#features>



158) You are working for an eCommerce company, and you have been tasked with creating a new table in a customer database. The table will contain all customers who have signed up for the new customer loyalty program. Which of the following columns would make the best choice for a Primary Key?

- A. CustomerID
- B. Birth Date
- C. ProductID
- D. Address

Correct Answer: A

The customer ID would be the best choice for Primary Key. The primary key must uniquely identify the row in the table. None of the other choices are necessarily unique to a specific row in the table.

<https://docs.microsoft.com/en-us/learn/modules/describe-concepts-of-relational-data/2-explore-characteristics>



159) Your company is searching for a data analytics service hosted on Microsoft Azure that supports the following:

- integration with Apache Spark for big data workloads
- integration with SQL technologies for data warehousing
- integration with Azure ML and Power BI

Which Azure service below meets this company's requirements?

- A. Azure Synapse Analytics
- B. Azure Databricks
- C. Azure Data Explorer
- D. Azure HD Insights

Correct Answer: A

All the listed options are analytics services available from Azure, but all three requirements of the company can be managed only by Azure Synapse Analytics.

Azure Synapse removes the traditional technology barriers between using SQL and Spark together. You can seamlessly mix and match based on your needs and expertise.

A shared Hive-compatible metadata system allows tables defined on files in the data lake to be seamlessly consumed by either Spark or Hive. SQL and Spark can directly explore and analyze Parquet, CSV, TSV, and JSON files stored in the data lake with fast, scalable load and unload for data going between SQL and Spark databases.

Azure Synapse removes the traditional technology barriers between using SQL and Spark together. You can seamlessly mix and match based on your needs and expertise.

<https://docs.microsoft.com/en-in/azure/synapse-analytics/overview-what-is>



160) Review the following statements about Cosmos DB.

1. Azure Cosmos DB backs its consistency and throughput with service-level agreements. It is a fully managed NoSQL database.
2. Azure Cosmos DB supports provides a graph database service via multiple popular APIs including Gremlin, Cassandra, and MongoDB.
3. In the event of a regional failure, Cosmos DB can restore service with both an RTO and an RPO of zero.

Which description of these statements about Cosmos DB is correct?

- A. Statement 1 and 2 are true and Statement 3 is false.
- B. Statement 1 and 3 are true and Statement 2 is false.
- C. All of the statements are true.
- D. Statement 3 is true and Statements 1 and 2 are false.

Correct Answer: A

These statements are true:

- Azure Cosmos DB backs its consistency and throughput with service-level agreements. It is a fully managed NoSQL database.
- Azure Cosmos DB supports provides a graph database service via multiple popular APIs including Gremlin, Cassandra, and MongoDB.

This statement is false based on the CAP theorem.

- In the event of a regional failure, Cosmos DB can restore service with both an RTO and an RPO of zero.

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



161) Your network admin recently purchased licenses for an internal chat client that should improve productivity company-wide. This particular hosted application is installed and hosted on virtual hardware managed by a third-party. Which term below best describes this type of service?

- A. Software-as-a-Service (SaaS)
- B. Internet-of-Things (IoT)
- C. Infrastructure-as-a-Service (IaaS)
- D. Platform-as-a-Service (PaaS)

Correct Answer: A

SaaS is the correct answer, because this service includes the client application hosted on virtual hardware by a third party.

<https://docs.microsoft.com/en-us/learn/modules/explore-relational-data-offerings/2-azure-data-services>



162) You are working with a company offering online-financial services.

When processing requests, a source account will be deducted and the target account will be updated sequentially. In case of any mismatches, the whole process should be reverted and updated in databases.

Which type of database is the best fit within this process?

- A. Online Analytical Processing database
- B. Online Transactional Processing database
- C. Graph Database
- D. Time series databases

Correct Answer: B

Banks and Financial firms will have transactions that are critical and sequential. They commonly use SQL databases, to be precise, OLTP Databases. OLAP databases are not suitable for this requirement and are used for analytics.

A graph database (GDB) is a database that uses graph structures for semantic queries with nodes, edges, and properties to represent and store data, so it will not a right fit here

Time series databases answer questions about trends and events. While it is a type of key-value store with time as the key, a time series database looks at ranges of data points to calculate answers.

<https://database.guide/what-is-oltp/>



163) Your office is planning to use Power BI for its analytics reports but needs to know which of its existing Azure resources will not support Power BI paginated reports.

Which of the following Azure services does not support Power BI?

- A. SQL Server via Gateway
- B. Teradata
- C. Oracle databases
- D. Azure Data Lake

Correct Answer: D

Azure Data Lake is not a supported data source of Power BI:

The following are the supported Data sources

- Azure SQL Database and Data Warehouse (via Basic and oAuth)
- Azure Analysis Services (via SSO)
- SQL Server via a gateway
- SQL Server Analysis Services via a gateway
- Power BI Datasets
- Oracle
- Teradata

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



164) You are setting up the backend for an online game that uses microtransactions for revenue. The totals are billed to the users at the end of the month. There are thousands of users, and you would like the transactions to be processed during off-peak time. What term best describes how this data workload is processed?

- A. Batch data processing
- B. Asynchronous data processing
- C. Streaming data processing
- D. Relational data processing

Correct Answer: A

"Batch data processing" describes the situation in which large amounts of data are processed all at one, usually at a convenient time.

<https://docs.microsoft.com/en-us/learn/modules/explore-core-data-concepts/4-describe-difference>



165) Review the following SQL statement:

```
INSERT INTO abc.employees (userid, jobcode, name)  
VALUES (mark742, 62577, Mark);
```

Which parameter is userid in the SQL statement?

- A. table name
- B. column name
- C. database name
- D. values to be inserted

Correct Answer: B

This is a SQL query and as per the syntax, userid is the name of the first column to which the data is stored.

https://www.w3schools.com/sql/sql_insert.asp



166) A real estate company wants to design a solution that recommends plots of land for their customers to visit based on the user's live location.

The recommendations will be sent as push notifications to their customer's mobile devices in real-time. It is critical for the real estate company's business that this should be shown as soon the user enters any location where plots are available for sale.

Which type of data processing would this solution need to support in order to provide these locations to customers in real-time?

- A. Batch processing
- B. Stream processing
- C. Distributed processing
- D. Transaction processing

Correct Answer: B

Because the recommendations are based on real time/near-real time location of the user, the solution will require stream processing. Batch Processing is ideal for historic data analysis workloads.

Distributed processing, also known as distributed computing, is defined as using a network of computers to perform specific tasks with one main computer used for more complicated tasks.

Transactional processing is technology responsible for making the exchange balanced and predictable. For example office activities, financial functions, credit card transactions, the insurance industry, order processing, invoicing, and many service functions such as helplines and help desks are also not the right fit here.



167) A support specialist is writing SQL queries for custom client reports in Microsoft SQL Server. Which dialect of SQL would be most appropriate for this querying tool?

- A. Transact-SQL
- B. DML
- C. pgSQL
- D. PL/SQL

Correct Answer: A

Transact-SQL (T-SQL) is the correct answer. T-SQL is used in both Microsoft SQL Server and Azure SQL Database. pgSQL and PL/SQL are used in other querying tools. DML (Data Manipulation Language) is not a SQL dialect.

<https://docs.microsoft.com/en-us/learn/modules/query-relational-data/2-introduction-to-sql>



168) Which Azure Storage data redundancy options will actually keep your data in more than one region? (Choose two answers.)

- A. Locally-redundant storage (LRS)
- B. Zone-redundant storage (ZRS)
- C. Geo-redundant storage (GRS)
- D. Read-access geo-redundant storage (RA-GRS)

Correct Answer: *CD*

Locally-redundant storage (LRS) is replicated across racks in the same data center. This means that if there is a disaster at that data center, your data could be lost. Although this is highly unlikely, you should only use locally-redundant storage if you can easily reconstruct your data.

Zone-redundant storage (ZRS) is replicated across three zones within one region, so if an entire zone goes down, your data will still be available

Geo-redundant storage (GRS) is replicated across two regions, so even if an entire region goes down, your data will still be available

Read access geo-redundant storage (RA-GRS) ensures that if there's a disaster in your primary region, then you can read your data from the secondary region immediately. You won't have write access.

<https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy>



169) Your company's data analysis team is searching for a suitable data analysis and reporting tool that is compatible with Microsoft Azure.

This needs to be a managed solution, can connect to hundreds of data sources, and allows your team to work offline in case of network connection issues.

Which of the following data visualization services meet your requirements?

- A. Jupyter Notebooks
- B. Zeppelin Notebooks
- C. Power BI
- D. Microsoft Azure Notebooks

Correct Answer: C

Power BI is a suite of business analytics tools. It can connect to hundreds of data sources, and can be used for ad hoc analysis. It meets the requirements, most notably the capability to work offline through Power BI Desktop.

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



170) You have designed a relational database that will primarily serve to handle purchasing transactions. One vital aspect of transactional databases is that each transaction must be handled as an individual unit. If one of your purchases fails, the entire transaction must fail as a unit to preserve the data's integrity, and any changes that have already been applied at the point of failure must be reverted. Which term below best describes this property of relational databases?

- A. Atomicity
- B. Consistency
- C. Durability
- D. Isolation

Correct Answer: A

Atomicity is the correct answer because it is the property that ensures all transactions are handled as a single unit. Consistency may seem a likely answer, but the property of consistency only ensures that every loss or creation of data is properly accounted for. Atomicity helps to ensure consistency, but they are not synonyms.

<https://docs.microsoft.com/en-us/learn/modules/explore-core-data-concepts/3-identify-types-storage>



171) Which blob access storage tier would you use when dealing with a large amount of data that is rarely used and mainly stored for compliance or tax purposes?

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

Correct Answer: C

Blob storage has multiple access tiers: hot, cool, and archive. The hot tier is for frequently accessed files. The cool tier is for files you expect to access only about once a month or less. The advantage is that it costs less than the hot tier as long as you don't access it frequently. The archive tier is for files that are rarely accessed, such as backup files. It has the lowest storage costs but the highest retrieval costs. It also takes several hours to retrieve files from the archive tier.



172) Which of the following statements about ETL and ELT is false?

- A. ELT is considered a schema on read.
- B. Ultimately, if scale is a concern, ETL is the preferred strategy over ELT.
- C. ETL is considered a schema on write.
- D. ELT essentially replicates data to storage as-is.

Correct Answer: *B*

ETL is considered a schema on write because the data is first transformed into some standard format or schema before it's written to storage. The ELT process, or extract, load, and transform process, essentially replicates data to storage as-is. Only after the data is written to storage is it transformed into a usable format. This is referred to as schema on read. By breaking the process apart in ELT, it's possible to ingest lots more data than with ETL. You can essentially ingest data as fast as it's written. Ultimately, if scale is a concern, ELT is the preferred strategy over ETL.



173) You are making the case to your supervisor that customer data should be stored in a NoSQL service like Azure Table storage instead of a relational database.

She wants you to explain how the services are different.

Which statement below best explains the differences between Azure Table storage and a relational database solution?

- A. Azure Table storage is a schemaless data storage solution made up of tables of entities. Entities are similar to relational database rows but without a set schema of columns. The number and variety of properties can vary by entity.
- B. Azure Table storage stores data in the Avro format. Instead of using columns and rows like a relational database, data is stored as binary information. It is a great solution for compressing data and reducing bandwidth usage.
- C. Azure Table storage is great for storing amorphous blobs of data. These "Binary Large Objects" might include data that does not usually contain fields, like audio or video data.
- D. Azure Table storage places data that might conventionally be stored in relational database tables and stores it in JSON documents. Each field within the document has a name label, and fields may vary by entity.

Correct Answer: A

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



174) You created a web form to capture data about customers who subscribe to your newsletter. You will be storing the data in a semi-structured format in a non-relational database because most of the fields on the form are optional, and you will not have all of the same pieces of information for each customer. Of the options listed below, which is a common, effective way to store this type of data?

- A. a JSON Document
- B. MYSQL Database
- C. Microsoft Excel
- D. Azure SQL Database

Correct Answer: A

A JSON document is the correct answer. JavaScript Object Notation is a common way to store semi-structured non-relational data. Excel is not a database. Azure SQL and MYSQL are relational databased with tables, and the question is specifically asking for a non-relational data solution.

<https://docs.microsoft.com/en-us/learn/modules/explore-concepts-of-non-relational-data/3-describe-types>



175) Your employer will be moving an application to Azure soon. You have been tasked with choosing a relational database management system that makes the transition go as smoothly as possible. The new database management system must be compatible with Oracle Database, it must allow the application to query older versions of data, and it must be low-maintenance once provisioned. Which solution below would be the best choice?

- A. MariaDB
- B. SQL Server
- C. PostgreSQL
- D. MySQL

Correct Answer: A

MariaDB is the only choice that meets all of the listed requirements. It has built-in support for temporal data. There is very little additional administration required once it has been provisioned in Azure, and It offers compatibility with Oracle.

<https://docs.microsoft.com/en-us/learn/modules/explore-relational-data-offerings/6-postgresql-mariadb-mysql>



176) Your application is hosted in the cloud, and you are ready to begin work on an analytics strategy. Thinking about the balance of streaming and batch data you will be processing, you now must decide which approach for data processing best fits your model.

Choose the statement below that best highlights the difference between "Extract, Transform, and Load" (ETL) and "Extract, Load, Transform" (ELT).

- A. ETL is better for streaming data because raw data is being processed on the fly in a continuous pipeline. ELT is better for batch data because it allows the superior cloud processing power to handle large chunks of data at once.
- B. ETL is best for handling large amounts of data. ELT is a better option for basic data cleaning tasks.
- C. ELT is better for streaming data because raw data is being processed on the fly in a continuous pipeline. ETL is better for batch data because it allows you to take advantage of the superior cloud processing power to handle large chunks of data at once.
- D. ETL and ELT are essentially the same, and all that changes is when the data gets transformed. The choice really depends on which tools you are using, and is not determined based on whether you are processing batch or streaming data.

Correct Answer: A

<https://docs.microsoft.com/en-us/learn/modules/explore-concepts-of-data-analytics/2-describe-data-ingestion-process>



177) Your supervisor has asked you to provision and deploy an Azure Cosmos DB instance using PowerShell. However, you are not familiar with PowerShell, and you would be more comfortable provisioning using a different tool. Which two of the tools listed below could be used to deploy a service in Azure? (Choose 2 answers)

- A. The Azure Portal
- B. The Azure command-line-interface
- C. Azure Data Studio
- D. Azure Data Share

Correct Answer: AB

The Azure command-line interface (CLI) and the Azure Portal are the only two correct answers. None of the other Azure tools are used for deployment or provisioning of services.

<https://docs.microsoft.com/en-us/learn/modules/explore-provision-deploy-non-relational-data-services-azure/5-describe-configure-non-relational-data-services>



178) Which of the following Azure Services can be managed/administered using SQL Server Management Studio (SSMS)?
(Choose 3 answers)

- A. Azure SQL Database
- B. Azure SQL Managed Instance
- C. Azure Synapse Analytics
- D. Azure Blob Storage

Correct Answer: *ABC*

SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure. Use SSMS to access, configure, manage, administer, and develop all components of SQL Server, Azure SQL Database, and Azure Synapse Analytics. SSMS provides a single comprehensive utility that combines a broad group of graphical tools with a number of rich script editors to provide access to SQL Server for developers and database administrators of all skill levels.

<https://docs.microsoft.com/en-us/sql/ssms/sql-server-management-studio-ssms?view=sql-server-ver15>



179) 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

Correct Answer: C



180) 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

Correct Answer: C

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>



181) 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

Correct Answer: B

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>



182) 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.

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:

<https://docs.microsoft.com/en-us/azure/data-lake-store/data-lake-store-get-started-portal>

<https://docs.microsoft.com/en-us/azure/storage/common/storage-account-overview> <https://azure.microsoft.com/en-us/pricing/details/bandwidth/>



183) 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.	

Reference:

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



184) 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

Correct Answer: A

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>



185) 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

Correct Answer: C

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/>



186) 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

Correct Answer: C

Reference:

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



187) 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

Correct Answer: A

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:

<https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-use-files-windows>



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

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"/>

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.



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

<https://shapingpixel.com>

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

Answer Area

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

account
container
database
item

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/create-cosmosdb-resources-portal>



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

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"/>

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 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>
<https://shapingpixel.com>

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

NOTE: Each correct selection is worth one point.

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

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

NOTE: Each correct selection is worth one point.

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

Answer(s): A,D

Reference:

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

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

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

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

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

Answer(s): D

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>

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

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

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

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

Answer(s): A

194) 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

194) 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(s): A,C

Reference:

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

195) What is a characteristic of non-relational data?

- A.no indexes
- B.self-describing entities
- C.a well-defined schema
- D.no unique key values

195) What is a characteristic of non-relational data?

- A.no indexes
- B.self-describing entities
- C.a well-defined schema
- D.no unique key values

Answer(s): D

Explanation:

A relational database works by linking information from multiple tables through the use of keys. The non-relational database, or NoSQL database, stores data. However, unlike the relational database, there are no tables, rows, primary keys or foreign keys. Instead, the non-relational database uses a storage model optimized for specific requirements of the type of data being stored.

Reference:

<https://www.pluralsight.com/blog/software-development/relational-vs-non-relational-databases>

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

Hot Area:

Answer Area

	▼
A hierarchical namespace	
Azure Synapse Link	
PolyBase	
The Data Movement Service (DMS)	

is an Azure Synapse Analytics feature that retrieves data from Azure Blob storage by using Transact-SQL queries.

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

Hot Area:

Answer Area

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A hierarchical namespace	
Azure Synapse Link	
PolyBase	
The Data Movement Service (DMS)	

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197) 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

197) 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(s): D

Reference:

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

198) 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

198) You have a dedicated SQL pool in Azure Synapse Analytics that is only used actively every night for eight hours.

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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(s): B

Reference:

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

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

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

199) 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(s): B

Reference:

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

200) 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)

200) 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(s): C

Reference:

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

201) 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	<div></div> Copy
Data movement	<div></div> Mapping data flow
Data transformation	<div></div> Lookup

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Select and Place:

Activity Types	Answer Area	
Control	Data movement	Copy
Data movement	Data transformation	Mapping data flow
Data transformation	Control	Lookup

Reference:
<https://docs.microsoft.com/en-us/azure/data-factory/concepts-pipelines-activities#data-transformation-activities>

202) 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

202) 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(s): B,D,F

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>

<https://shapingpixel.com>

203) 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

203) 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.

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

Answer(s): A,D

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

Answer Area

In Azure Data Factory, you can use

	▼
--	---

 to orchestrate pipeline

a control flow

a dataset

a linked service

an integration runtime

activities that depend on the output of other pipeline activities.

204) To complete the sentence, select the appropriate option in the answer area.
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Answer Area

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205) 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

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

Answer(s): 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>

206) 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

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NOTE: Each correct selection is worth one point.

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

Answer(s): B,C

Reference:

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

207) 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

207) 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(s): A

Reference:

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

208) 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

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

Answer(s): A,C,E

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>

209) 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.	<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"/>

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210) 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

210) 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(s): 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>

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

Hot Area:

Answer Area

A Microsoft Power BI

	▼
dashboard	
interactive report	
paginated report	
subscription	

enables users to create highly formatted,

fixed-layout documents optimized for printing and archiving.

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

Answer Area

A Microsoft Power BI

	▼
dashboard	
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paginated report	
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 enables users to create highly formatted,
fixed-layout documents optimized for printing and archiving.

Reference:

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

212) 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

212) What are two uses of data visualization? Each correct answer presents a complete solution.
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- 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(s): A,C

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>

213) 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

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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(s): C

Reference:

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

214) 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"/>
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215) To complete the sentence, select the appropriate option in the 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.

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

Answer Area

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Reference:

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