Knowledge Check

Total points 6

1. Question 1

High-availability systems must be available most of the time. Service-level agreements (SLAs) specify your organization's availability expectations. System uptime can be expressed as three nines, four nines, or five nines. These expressions indicate system uptimes of 99.9 percent, 99.99 percent, or 99.999 percent. How many downtime hours per year will be covered with an SLA of 99.9% uptime?

How many downtime hours per year will be covered with an 3LA or 99.9% uptime:
1/1 point
C .88 Hours
C 24 Hours
8.76 Hours
C .09 Hours
Correct An SLA of 99.9% uptime covers downtime of 8.76 hours per year.
2. Question 2 Which of the following terms describes the final cost of owning a given technology and includes the following costs:
Hardware
Software licensing
Labor (installation, upgrades, maintenance)
Datacenter overhead (power, telecommunications, building, heating and cooling)
1/1 point
© RPO
<u>C</u> MTD
C TCO
C RTO
Correct
The total cost of ownership (TCO) is the purchase price of an asset plus the costs of operation. Assessing the total cost of ownership represents taking a bigger picture look at what the product is and what its value

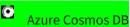
3. Question 3

is over time.

Azure supports both structured and unstructured data. Unstructured data in Azure would commonly be held in which of the following?

1/1 point

C Azure SQL Database



Azure SOL Data Warehouse Correct For unstructured (NoSQL) databases, each data element can have its own schema at query time. Data can

be stored as a file in Azure Blob storage or as NoSQL data in Azure Cosmos DB or Azure HDInsight.

4. Question 4

The term lift and shift is used when migrating physical or virtualized servers from an on-premises environment to a Microsoft Azure virtual machine cloud-based environment without the need to rearchitect the application.

Which of the following are benefits of carrying out a Lift and Shift operation? Select all options that apply.

1/1 point



Correct

The lift-and-shift strategy provides immediate benefits, including higher availability, lower operational costs, and the ability to transfer workloads from one datacenter to another

✓ Lower operational costs

Correct

The lift-and-shift strategy provides immediate benefits, including higher availability, lower operational costs, and the ability to transfer workloads from one datacenter to another.

Take advantage of all Azure Features.

5. Question 5

The schema of what data type can be defined at guery time.

1/1 point

Structured data

Azure Cosmos DB

Unstructured data

Correct

The schema of unstructured data is typically defined at query time. This means that data can be loaded onto a data platform in its native format.

6. Question 6

Which cloud technical requirement is met by duplicating customer content for redundancy and meeting service-level agreements (SLAs) in Azure?

1/1 point

Maintainability

High availability

Multilingual support

High availability duplicates customer content for redundancy and meets SLAs in Azure.

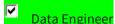
Knowledge check

Total points 6

1. Question 1

As data processing techniques change with technology, new roles are starting to appear. These roles provide specialized skills to help streamline the data engineering process. Which of the following roles have been identified as new roles in modern data Projects?

1/1 point



Correct

Data Engineer has been identified as a new role with specialized skills to help streamline the data engineering process.

Database Administrator

Artificial Intelligence Engineer

Correct

Artificial Intelligence Engineer has been identified as a new role with specialized skills to help streamline the data engineering process

Data Scientist

Correct

Data Scientist has been identified as a new role with specialized skills to help streamline the data engineering process.

2. Question 2

The role of a Data Engineer includes which of the following tasks? Select all options that apply.

1/1 point

Manage, monitor, and ensure the security and privacy of data to satisfy business needs

Correct

The Azure data engineer focuses on data-related tasks in Azure. Including Managing, monitoring, and ensure the security and privacy of data to satisfy business needs.

Using services and tools to ingest, egress, and transform data from multiple sources.

Correct

The Azure data engineer focuses on data-related tasks in Azure. Primary responsibilities include using services and tools to ingest, egress, and transform data from multiple sources.

Perform advanced analytics to extract value from data

Working with services such as Cognitive Services, Cognitive Search, and Bot Framework.

3. Question 3

Data Engineers may sometimes perform ETL process when processing data. The extract may come from many sources including databases, files, and streams. As part of the Extract process which of the following information must be supplied?

0.3333333333333 / 1 point

Define the Transformation

This should not be selected

Data Engineers define any data transformation operations after extracting the data, which can include splitting, combining, deriving, adding, removing, or pivoting columns and is part of the Transformation process.

Define the Data Source

Define the Data

Correct

During the extraction process, Data Engineers must define the Data to be processed.

4. Question 4

In Microsoft Azure, Data Engineers will use several tools to perform ETL processes.

Which of the following tools will commonly be used to perform ETL processes in Azure?

1/1 point

Azure Cosmos DB



Azure Synapse Analytics

Correct

The most common tool is Azure Data Factory, which provides robust resources and nearly 100 enterprise connectors. Data Factory also allows you to transform data by using a wide variety of languages.

5. Question 5

Which role works with Azure Cognitive Services, Cognitive Search, and the Bot Framework?

1/1 point

Al engineer

C Data scientist

C Data engineer

Correct

Artificial intelligence (AI) engineers work with AI services such as Cognitive Services, Cognitive Search, and the Bot Framework.

6. Question 6

Which Azure data platform is commonly used to process data in an ELT framework?

1/1 point

C Azure Data Lake Storage

Azure Databricks

Azure Data Factory

Correct

Azure Data Factory is a cloud-integration service that orchestrates the movement of data between various data stores.

Knowledge check

Total points 6

1. Question 1

Azure provides many data platform technologies to meet the needs of common data varieties. In relational database systems like Microsoft SQL Server which of the following types of data structures is used?

1/1 point

Semi-structured Data

Unstructured Data

Structured Data

Correct

In relational database systems like Microsoft SQL Server, Azure SQL Database, and Azure SQL Data Warehouse, Structured Data is used as the data structure.

2. Question 2

Nonstructured data is stored in nonrelational systems, commonly called unstructured or NoSQL systems. Which of the following are types of NoSQL databases? Select all options that apply.

1/1 point

Key-value store

Correct

Key Value store stores key-value pairs of data in a table structure. They are a type of NoSQL database.

Column Store Database

Correct

Column Store Databases store data based on columns rather than rows. They are a type of NoSQL database. Columns can be defined at the query's runtime, allowing flexibility in the data that's returned performantly.

Relational database

Graph database

Correct

Graph database finds relationships between data points by using a structure that's composed of vertices and edges. They are a type of NoSQL database.

Document databases.

Correct

Document databases store documents that are tagged with metadata to aid document searches. They are a type of NoSQL database.

3. Question 3

You need to provision a data store that will store but not query data. You also want to avail of the cheapest storage option. Which of the following is most suitable in this scenario?

1/1 point

Azure Queue:

Azure Files Correct Azure Blob is a scalable object store for text and binary data and is the cheapest option for this type of storage. 4. Question 4 Azure Data Lake Storage Gen 2 is designed to store massive amounts of data for big-data analytics. Which of the following are features of Azure Data Lake? Select all options that apply. 1/1 point Hadoop compatibility Correct One of the features of Data Lake Storage includes Hadoop compatibility. Security support for access control lists (ACLs) Correct One of the features of Data Lake Storage includes support for access control lists. **Unlimited scalability** Correct One of the features of Data Lake Storage includes unlimited scalability. Limited support for Zone Redundant storage **5.** Question 5 Which data platform technology is a globally distributed, multi model database that can perform queries in less than a second? 1/1 point Azure SOL Data Warehouse Azure SQL Database Azure Cosmos DB Azure Cosmos DB is a globally distributed, multi model database that can offer sub second query performance. **6.** Question 6 Which Azure service is the best choice to store documentation about a data source? 1/1 point \circ Azure Data Factory Azure Data Lake Storage

Correct

Azure Data Catalog

Azure Data Catalog is a central place where an organization's users can contribute their knowledge. Together, they build a community of data sources that the organization owns.

Knowledge check

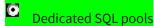
Total points 4

1. Question 1

Synapse SQL offers both serverless and dedicated resource models to work with both descriptive and diagnostic analytical scenarios. To provide predictable performance and cost you should create which of the following.

1/1 point

Serverless SQL endpoints



Correct

For predictable performance and cost, create dedicated SQL pools to reserve processing power for data stored in SQL tables.

2. Question 2

Azure Synapse Pipelines leverages the capabilities of Azure Data Factory and is a cloud-based solution for which of the following types of data ingestion and transformation?

1/1 point

U ELT



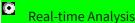
Correct

Azure Synapse Pipelines leverages the capabilities of Azure Data Factory and is the cloud-based ETL and data integration service that allows you to create data-driven workflows for orchestrating data movement and transforming data at scale.

3. Question 3

Azure Stream Analytics is a perfect solution to implement when your data is which of the following types?

1/1 point



C Batch process

Correct

If your organizations' challenge is to respond to data event in real-time or perform a post mortem of large batches of data in a continuous time bound stream, then Azure Stream Analytics is for your organization

4. Question 4

Data Engineers configure ingestion components of Azure Stream Analytics by configuring data inputs from sources including Azure Event Hubs, Azure IoT Hub, or Azure Blob storage.

Azure Event Hub provides which of the following features.

Select all that apply!

1/1 point

Azure Storage



Partitioned consumer model

Correct

Event Hubs uses a partitioned consumer model to scale out your data stream and is integrated into the big data and analytics services of Azure including Databricks, Stream Analytics, ADLS, and HDInsight.

Big data streaming service

Correct

Event hubs provide a big data streaming service of Azure. It is designed for high throughput data streaming scenarios where customers may send billions of requests per day.

Test Prep

Latest Submission Grade 93.75%

1. Question 1

Moving resources such as servers and services from an on-premises environment to a cloud-based solution will have a benefit on which of the following.

1/1 point

Operational expenditure only



Capital expenditure only

Correct

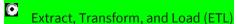
One benefit of Cloud environments requires no capital investment. T- You pay for a service or product as you use it i.e., pay-as-you-go pricing. Moving servers and services to the cloud also reduces operational costs.

2. Question 2

Which of the following data processing frameworks are used by data engineers to ingest data from an on-premises database to an on-premises data warehouse?

1/1 point

Online Transactional Processing (OLTP)



Extract, Load, and Transform (ELT)

Correct

Extract, Transform and Load (ETL) is a typical process for ingesting data from an on-premises database to an on-premises data warehouse.

3. Question 3

Unstructured data differs from Structured Data in many features.

Which of the following are features of Unstructured data?

Select all options that apply.

1/1 point

Schema-on-read.
Correct Selection on read in a feature of constructioned data
Schema on read is a feature of unstructured data
Schema-on-write
Predefined format
Native format
Correct
Native Format is a feature of unstructured data.
Commonly stored in data warehouses
Commonly stored in data takes
Correct Storage in Data Lakes is a feature of unstructured data
4. Question 4 Data Engineers may sometimes perform ETL process when processing data. The extract may come from many sources including databases, files, and streams. These data sources can have unique data formats including which of the following? Choose all that apply.
0.5 / 1 point
Partially structured
This should not be selected
Partially structured is not a term used in Azure. The nearest term would be semi-structured. Try going back and reviewing The tasks of a data engineer lesson.
Structured
Semi-structured
Correct
Each data source has unique data formats one of which and can be structured, semi-structured, or
unstructured.
Unstructured
Correct
Each data source has unique data formats one of which and can be structured, semi-structured, or unstructured.

5. Question 5

The Extract Load and Transform (ELT) process has which of the following benefits.

Select all options that apply.

1/1 point

Data can be stored in its original format.

Correct

A benefit of ELT is that you can store data in its original format, be it JSON, XML, PDF, or images.

Reduces the time required to load the data into a destination system.
Correct In an ELT process, data is extracted and loaded in its native format. This change reduces the time required to load the data into a destination system. The change also limits resource contention on the data sources.
Data will be transformed prior to storage in the destination
6. Question 6 A Data Engineers scope of work includes the process of getting, ingesting, transforming, validating, and cleaning up data to meet business requirements. Which of the following terms describe this process? 1/1 point
C Data Whaling
Data Wrangling Data Wrangling
Correct A data engineer's scope of work goes well beyond looking after a database and the server where it's hosted. Data engineers must also get, ingest, transform, validate, and clean up data to meet business requirements.
7. Question 7 Which data processing framework will a data engineer use to ingest data onto cloud data platforms in Azure?
1/1 point
Extract, load, and transform (ELT)
Online transaction processing (OLTP)
Extract, transform, and load (ETL)
Correct ELT is a typical process for ingesting data from an on-premises database into the cloud.
8. Question 8 Data Engineers may sometimes perform ETL process when processing data. The extract may come from many sources including databases, files, and streams. As part of the Extract process which of the following information must be supplied?
Select all options that apply.
1/1 point
Define the Transformation
Define the Data
Correct This is an initial step to specify the source data.
Define the Data Source
Correct
During the extraction process, Data Engineers must define the Data Source.

Test prep

Latest Submission Grade 90.63%

1. Question 1

Azure Cosmos DB is a globally distributed, multimodal database and can be deployed using several API models. Which of the following APIs are supported in Cosmos DB?

Select all options that apply. 1/1 point 哮 MongoDB **Correct** MongoDB API is a supported model with Azure Cosmos DB. Cassandra **Correct** Cassandra API is a supported model with Azure Cosmos DB. SOL **Correct** SQL API is a supported model with Azure Cosmos DB. Ansible 2. Question 2 What type of data is typically stored in a relational database such as SQL Server or Azure SQL? 1/1 point 0 Structured Semi-structured Unstructured Correct Structured data is typically stored in a relational database such as SQL Server or Azure SQL Database. Azure SOL Database is a service that runs in the cloud.

3. Ouestion 3

Which of the following services allow customers to store semi-structured datasets in Microsoft Azure?



Correct

Azure File Storage is primarily for unstructured data but can store semi-structured data as well.

Azure SQL Database
Azure Blob Storage
Correct Azure Blob Storage is primarily for unstructured data but can store semi-structured data as well.
4. Question 4
Azure Synapse Analytics is an integrated analytics platform and brings together which of the following features?
Select all options that apply.
1/1 point
Data backup Data integration
Correct Agure Synapse Analytics is an integrated analytics platform, which combines data warehousing, big data
Azure Synapse Analytics is an integrated analytics platform, which combines data warehousing, big data analytics, data integration, and visualization into a single environment.
Big data analytics
Correct
Azure Synapse Analytics is an integrated analytics platform, which combines data warehousing, big data
analytics, data integration, and visualization into a single environment. Visualization
Correct
Azure Synapse Analytics is an integrated analytics platform, which combines data warehousing, big data analytics, data integration, and visualization into a single environment.
Data warehousing
Correct
Azure Synapse Analytics is an integrated analytics platform, which combines data warehousing, big data analytics, data integration, and visualization into a single environment.
5. Question 5
Which of the following is a globally distributed multi-model database?
1 / 1 point
Azure Synapse Analytics
Azure SQL Database
Azure Cosmos DB
Correct
Azure Cosmos DB is a globally distributed, multi-model database that can offer sub second query performance.
6. Question 6
Which Azure service is the best choice to store documentation about a data source?
1/1 point

C Azure Data Lake Storage



Azure Data Factory

Correct

Azure Data Catalog is a central place where an organization's users can contribute their knowledge. Together, they build a community of data sources that the organization owns.

7. Ouestion 7

Which of the following are types of NoSQL database?

Select all options that apply.

1/1 point



Graph Database

Correct

Graph database finds relationships between data points by using a structure that's composed of vertices and edges. They are a type of NoSQL database.



Key-value store

Correct

Key Value store stores key-value pairs of data in a table structure. They are a type of NoSQL database.

B: Relational Database

8. Question 8

You have been asked by management to investigate a database solution in Azure that will satisfy the following.

Ability to build applications with guaranteed low latency and high availability anywhere, at any scale, and the capability to migrate existing MongoDB, and other NoSQL workloads to the cloud.

Which of the following solutions will be most appropriate?

0.25 / 1 point

Azure Database for MySQL

Azure Cosmos DB



This should not be selected

This will allow you to migrate your SQL workloads to Azure while maintaining complete SQL Server compatibility and operating system-level access. Try going back and reviewing Core Microsoft Azure data platform technologies Lesson.

Feedback. This will provide a managed, intelligent SQL only solution. Try going back and reviewing Core Microsoft Azure data platform technologies Lesson.

This should not be selected

Course Practice Exam

Latest Submission Grade 95%

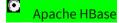
1. Question 1

Which of the following is a cloud integration service that orchestrates the movement of data between

various data stores? 1/1 point Azure HDInsight Azure Synapse Analytics **Azure Data Factory Correct** Azure Data Factory (ADF) is a cloud integration service that orchestrates that movement of data between various data stores. Data Engineers can create data-driven workflows in the cloud for orchestrating and automating data movement and data transformation. 2. Question 2 Azure HDInsight provides technologies for ingesting, processing, and analyzing big data to support batch processing, data warehousing, IoT, and Data Science. Which of the following technologies integrated into HDInsight provides a NoSQL database built upon Hadoop commonly used for search engines and includes automatic failover?

1/1 point

Apache Storm



Apache Kafka

Correct

Apache HBase is a NoSQL database built upon Hadoop commonly used for search engines and includes automatic failover.

3. Question 3

As part of an ETL process, data in date-formats may be modified to match the destination format. At what step in the ETL process is this carried out?

1/1 point

Transformation

0 Extraction

0 Load

Correct

In the ETL process, data is modified during the transformation step.

4. Question 4

Which one of the following is a benefit of using the Azure SQL Database cloud-based Platform-as-a-Service (PaaS) service rather than on-premises database management systems?

1/1 point

Increased scalability
Increased day to day management costs
C Increased functionality
Correct
PaaS increases scalability as resources can be scaled up and scaled out on demand.
5. Question 5
Which Cosmos DB API works with Graph Databases? 1/1 point
Gremlin
C Table
C MongoDB
C CassandraDB
Correct
The Gremlin API enables you to perform graph queries over data.
6. Question 6 Which of the following services in Microsoft Azure are used to process data?
Select all options that apply.
0.5 / 1 point
Azure Blob Storage
Event Hub
This should not be selected Try going back and reviewing Services on the Microsoft Azure Data Platform.
Stream Analytics Job
Correct
Feedback: An Azure Stream Analytics job consists of an input, query, and an output.
Synapse Analytics
7. Question 7
Which service in Azure consists of input and output pipelines, and can be used to process streaming data? 1/1 point
6
Synapse Analytics
Azure Databricks
Stream Analytics Job
Correct An Azure Stream Analytics job consists of an input, query, and output.

8. Question 8

Data Engineers configure ingestion components of Azure Stream Analytics by configuring data inputs from sources including Azure Event Hubs, Azure IoT Hub, or Azure Blob storage.

Which of the following is a feature of Azure Event Hub? 1/1 point Partitioned consumer model Azure Storage Big data streaming service Event hubs provide a big data streaming service of Azure. It is designed for high throughput data streaming scenarios where customers may send billions of requests per day. 9. Ouestion 9 Nonstructured data is stored in nonrelational systems, commonly called unstructured or NoSQL systems. Which of the following are types of NoSQL databases? Select all options that apply. 1/1 point Key-value store Correct A Key Value store can store key-value pairs of data in a table structure. Document databases. Correct A document database can store documents that are tagged with metadata to aid document searches. Relational database 哮 Column database Correct Column Databases store data based on columns rather than rows. Columns can be defined at the query's runtime, allowing flexibility in the data that's returned performantly. Graph database Correct Graph database finds relationships between data points by using a structure that's composed of vertices and edges. **10.** Question 10 Which of the following is not a data job role? 1/1 point

Data Analyst

Data Administrator

Systems Administrator

Systems administrators are responsible for maintaining and managing components such as networks, virtual machines, and other physical devices in a datacenter.