# **Knowledge check**

## **Total points** 5

### 1. Question 1

Azure Synapse Link for Azure Cosmos DB provides the capability that enables you to run near real-time analytics over operational data stored in Azure Cosmos DB. This capability is referred to as cloud-native:

## 1/1 point

OLAP

OLTP



#### **Correct**

Azure Synapse Link for Azure Cosmos DB is a cloud-native HTAP capability that enables you to run near real-time analytics over operational data stored in Azure Cosmos DB

## 2. Question 2

True or false?

Azure Cosmos DB provides a transactional store and an analytical store with a fully managed autosync process that keeps the data within these stores in sync.

## 1/1 point



False

#### **Correct**

Azure Cosmos DB provides both a transactional store optimized for transactional workloads and an analytical store optimized for analytical workloads and a fully managed autosync process to keep the data within these stores in sync.

## 3. Question 3

The benefits of enabling the analytical store on an Azure Cosmos DB container include which of the following?

Select all options that apply.

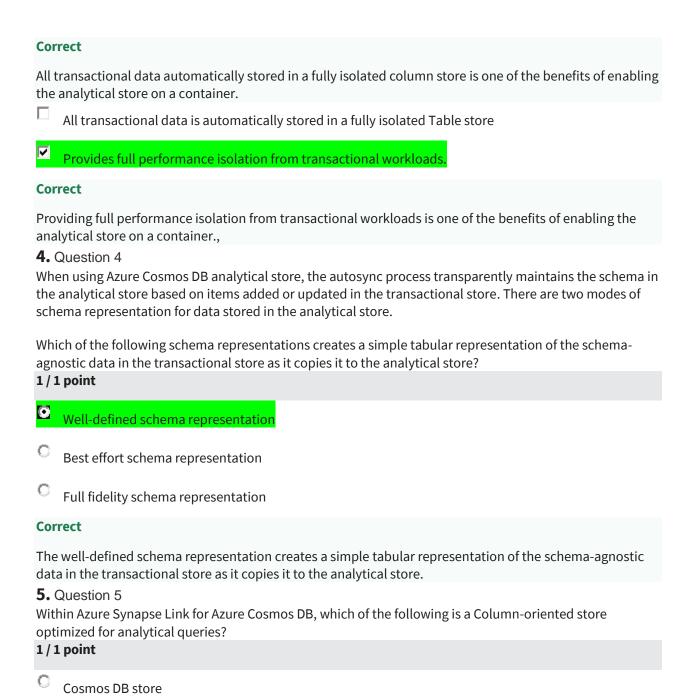
## 1/1 point

Run near real-time analytics with no-ETL required

#### **Correct**

Running near real-time analytics over operational data with no-ETL is one of the benefits of enabling the analytical store on a container.

All transactional data is automatically stored in a fully isolated Column store



Transactional store

Analytical store

An analytical store is a data store optimized for analytical queries.

# **Knowledge check**

## **Total points** 5

## 1. Question 1

Synapse Link is not enabled by default. When will Synapse Link begin to incur billing charges once it has been enabled?

## 0 / 1 point

- As soon as the Analytical store is enabled
- As soon as Synapse Link is initially enabled
- As soon as the Analytical store is enabled, and containers are created
- As soon as containers are created

## **Incorrect**

Enabling Synapse Link on the account has no billing implications until containers are created with the analytical store enabled.

## 2. Question 2

To verify that the Azure Synapse Link feature is enabled on an Azure Cosmos DB SQL (Core) API account, which of the following steps would you complete?

## 1/1 point

Navigate to the Azure Cosmos DB SQL (Core) API account -> select Features - > Verify the Synapse Link feature shows a Status of ON

Navigate to the Azure Cosmos DB SQL (Core) API account - > Select Data Explorer - > select Features - Verify the Synapse Link feature shows a Status of onON
Navigate to the Azure Cosmos DB SQL (Core) API account - > Select Connection string - > select Features - > Verify the Synapse Link feature shows a Status of on
Correct
To verify Azure Synapse Link is enabled navigate to the Azure Cosmos DB SQL (Core) API account - > select Features - > Verify the Synapse Link feature shows a Status of ONon
<b>3.</b> Question 3 In Azure Cosmos DB enabling an analytical store is available only at the time of creating a container. How can you effectively disable an analytical store?
Choose all that apply.
1 / 1 point
Delete the container
Correct
Enabling analytical store is available only at the time of creating a container and cannot be completely disabled without deleting the container.
From within the API disable the analytical store feature
Set the default TTL to 0 (Null)
Correct
Setting the default analytical store TTL value to 0 or NULL effectively disables the analytical store by no longer synchronizing new items to it from the transactional store and deleting items already synchronized from the analytical store.
4. Question 4
From where do you enable Azure Synapse Link for Azure Cosmos DB?  1/1 point
In Azure Synapse Link
C Azure Synapse Analytics
In Azure Cosmos DB

When you enable Azure Synapse Link for Azure Cosmos DB it must be done in Azure Cosmos DB.

## 5. Question 5

With Synapse Link, you can directly connect to your Azure Cosmos DB containers from Azure Synapse Analytics. Azure Synapse Analytics currently supports Synapse Link with which of the following

Choose all that apply
1/1 point
Dedicated SQL Pool
Synapse Apache Spark
Correct
Azure Synapse Analytics supports Synapse Link with Synapse Apache Spark
Serverless SQL pool
Correct
Azura Synansa Analytics sunnorts Synansa Link with sarvarlass SOL nools

# **Knowledge check**

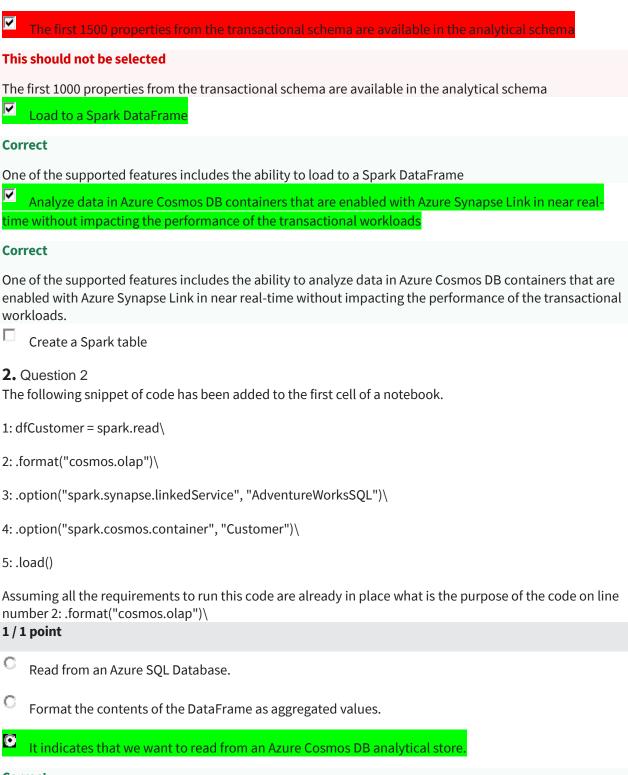
## **Total points** 6

## 1. Question 1

While interacting with Azure Cosmos DB using Apache Spark in Azure Synapse Link which of the following capabilities are supported?

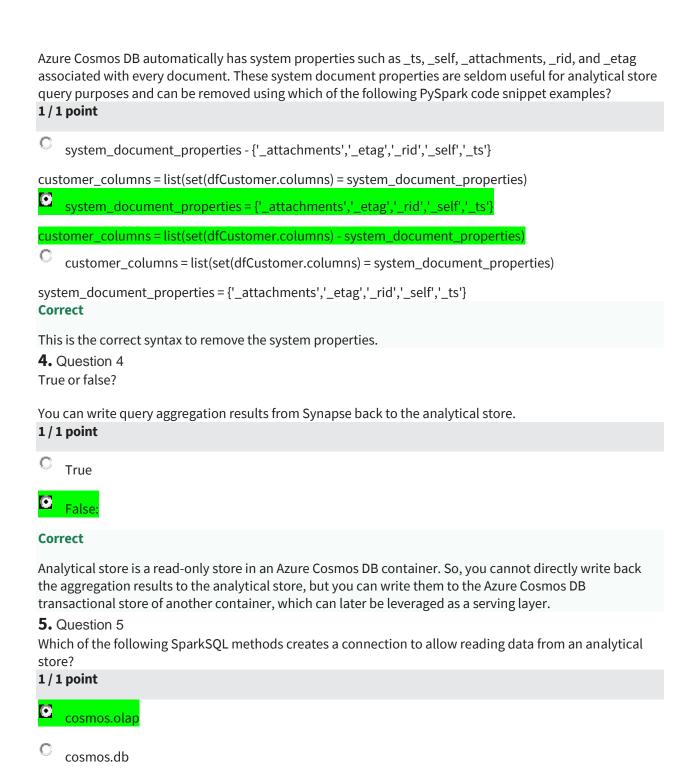
Choose all that apply.

0.5 / 1 point



cosmos.olap indicates that we are want to read from an Azure Cosmos DB analytical store.

3. Question 3



Cosmos.olap is the method that connects to the analytical store in Azure Cosmos DB.

## 6. Question 6

cosmos.oltp

When you want to switch to SparkSQL in a notebook, what is the first command to type?

1/1 point
© %%spark
° %%sparksql
7070341
Correct  When you want to switch to SparkSQL in a notebook, type the %%sql command.
Knowledge check Total points 4
<b>1.</b> Question 1 By default, the OPENJSON table-valued function returns three columns. These are?
Select all that apply.  1/1 point
Schema Name
<mark>☑ Value</mark>
Correct
Value contains the value of the property.

Name
<mark>☑ Key</mark>
Correct
Key contains the name of the specified property or the index of the element in the specified array.  Type
Correct
Contains the JSON type of the value. This is represented as an int value (from 0 to 5). This column is only returned when you use the default schema.
2. Question 2
By default, the OPENJSON table-valued function returns three columns. As an alternative, you can explicitly specify the schema of the result set that OPENJSON returns by providing which of the following clauses?
Select all that apply.
1/1 point
C Include
<mark>© <sub>With</sub> </mark>
© Explicit
C Insert
Correct
You can explicitly specify the schema of the result set that OPENJSON returns by providing a "with" clause.
<b>3.</b> Question 3 Once Azure Synapse Link is configured on Cosmos DB, what is the first step to perform to use Azure Synapse Analytics serverless SQL pools to query the Azure Cosmos DB data?
1/1 point
Create a database
Use the OPENROWSET function
Use a SELECT clause.
Correct
Before being able to issue any queries using Azure Synapse Analytics serverless SQL pools, you first must create a database.

4. Question 4

What function provides a rowset view over a JSON document?
1/1 point
© with
OPENJSON OPENJSON
C OPENROWSET
Correct
The OPENJSON function provides a rowset view over a JSON document.
Test prep Latest Submission Grade 95.83%
1. Question 1 HTAP (Hybrid Transactional/Analytical processing) enables business to run advanced analytics in near real-time on data stored and processed in which of the following? 1/1 point
C ELT
C <sub>ETL</sub>
OLTP
° OLAP
Correct

Online Transactional processing, commonly referred to as OLTP systems, work with operational data. HTAP enables business to run advanced analytics in near real-time on data stored and processed by OLTP systems.
<b>2.</b> Question 2 Which of the following are common use cases for using Azure Synapse Link for Azure Cosmos DB?
Choose all that apply.
0.75 / 1 point
Integration with APIs such as Gremlin API, Cassandra API, and Table API
Supply chain analytics, forecasting and reporting
Correct
Azure Synapse Link for Cosmos DB allows organizations to store data from their sales systems, ingest real-time telemetry data from in vehicle systems and integrate date from their ERP systems into a common operational store in Azure Cosmos DB and then leverage the data from Synapse analytics to enable both predictive analytics scenarios, such as stock out monitoring and supply chain bottleneck management.
IOT predictive maintenance
10 1 predictive maintenance
Real-time personalization
Correct
In retail, many web-based retailers will perform real-time basket analysis to make product recommendations to customers who are about to purchase products. This increased revenues for these organizations by providing targeted suggestions at the point of sales.
You didn't select all the correct answers
<b>3.</b> Question 3 With Synapse Link, you can directly connect to your Azure Cosmos DB containers from Azure Synapse Analytics. Azure Synapse Analytics currently supports Synapse Link with which of the following? Choose all that apply.
1/1 point
Serverless SQL pool
Correct
Azure Synapse Analytics supports Synapse Link with serverless SQL pools.  Synapse Apache Spark

Azure Synapse Analytics supports Synapse Link with Synapse Apache Spark

Correct

Dedicated SQL Pool



True or False

In Azure Cosmos DB you can enable an analytical store on an existing container.

## 1/1 point



C True

### **Correct**

Analytical store can only be enabled for new containers. To use analytical store for existing containers, migrate data from your existing containers to new containers using Azure Cosmos DB migration tools.

### **5.** Question 5

How can you manage the lifecycle of data and define how long it will be retained for in an analytical store?

## 1/1 point

- Configure the purge duration in a container
- Configure the deletion duration for records in the transactional store.
- Configure the default Time to Live (TTL) property for records stored.

#### **Correct**

Configuring the default Time to Live (TTL) property for records stored in an analytical store can manage the lifecycle of data and define how long it will be retained for.

## 6. Question 6

The benefits of enabling the analytical store on an Azure Cosmos DB container include which of the following?

Choose all that apply.

## 1/1 point

provides full performance isolation from transactional workloads

### **Correct**

Providing full performance isolation from transactional workloads is one of the benefits of enabling the analytical store on a container.

Run near real-time analytics with no-ETL required

#### **Correct**

Running near real-time analytics over operational data with no ETL is one of the benefits of enabling the analytical store on a container.

All transactional data is automatically stored in a fully isolated Table store
All transactional data is automatically stored in a fully isolated Column store
Correct
All transactional data automatically stored in a fully isolated column store is one of the benefits of enabling the analytical store on a container.
Test prep Latest Submission Grade 87.5%
1. Question 1 Synapse Apache Spark allows you to ingest data into an Azure Cosmos DB. Data is always ingested into
Azure Cosmos DB containers through which of the following:  1/1 point
The Transactional store
C The Relational store
C The Analytical store

Synapse Apache Spark allows you to ingest data into Azure Cosmos DB. Data is always ingested into Azure Cosmos DB containers through the transactional store.

## 2. Question 2

The following snippet of code has been added to the first cell of a notebook.

dfCustomer = spark.read\
$. format ("cosmos.olap") \backslash$
$. option ("spark.synapse.linkedService", "AdventureWorksSQL") \\ \\ \\ \\ \\$
.option("spark.cosmos.container", "Customer")\
.load()
Assuming all the requirements to run this code are already in place, what is the purpose of the code on line 4?
.option("spark.cosmos.container", "Customer")\
0 / 1 point
Specifies the destination to load data into after a query has run against the source data
Specifies the name of the container that we wish to read
Creates a new container
Incorrect
Try going back and reviewing the Query Azure Cosmos DB with Apache Spark for Azure Synapse Analytics lesson.
<b>3.</b> Question 3 Assuming all prerequisites have been met to run the following snippet of code in an Azure Synapse Analytics notebook what will this piece of code output?
display(dfCustomer.groupBy("address.country","address.city").count().orderBy("count", ascending=False).limit(10))
1/1 point
The result will display the top 10 country, city combinations having the most customers, At the top of the list will be customers who have no country or city information within the customer profile
The result will only display the top 10 countries having the most customers, At the bottom of the list will be customers who have no country or city information within the customer profile
The result will display the top 10 country, city combinations having the most customers, At the bottom of the list will be customers who have no country or city information within the customer profile
The result will only display the top 10 countries having the most customers, At the top of the list will be customers who have no country or city information within the customer profile
Correct

The result will display the top 10 country, city combinations having the most customers, At the top of the list will be customers who have no country or city information within the customer profile.

#### 4. Question 4

Which of the following SparkSQL methods creates a connection to allow reading data from an analytical store?

## 1/1 point

0		
_	cosmos.ol	ap

- cosmos.oltp
- Cosmos.db

## Correct

Cosmos.olap is the method that connects to the analytical store in Azure Cosmos DB.

## 5. Question 5

Azure Cosmos Core API account for MongoDB, uses full fidelity schema representation by default. This means that all top-level properties of a document are represented as columns with the associated property values as the value of the column.

Azure Cosmos DB automatically has system properties such as \_ts, \_self, \_attachments, \_rid, and \_etag associated with every document. These system document properties are seldom useful for analytical store query purposes and can be removed using which of the following PySpark code snippet examples?

## 1/1 point

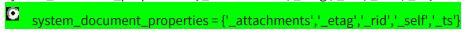
system\_document\_properties - {'\_attachments','\_etag','\_rid','\_self','\_ts'}

customer\_columns = list(set(dfCustomer.columns) = system\_document\_properties)

0

customer\_columns = list(set(dfCustomer.columns) = system\_document\_properties)

system\_document\_properties = {'\_attachments','\_etag','\_rid','\_self','\_ts'}



customer\_columns = list(set(dfCustomer.columns) - system\_document\_properties)

### **Correct**

This is the correct syntax to remove the system properties.

## 6. Question 6

By default, the OPENJSON table-valued function returns three columns. As an alternative, you can explicitly specify the schema of the result set that OPENJSON returns by providing which of the following clauses?

### 1/1 point

Include

C Explicit
<b>O</b> With
C Insert
Correct
You can explicitly specify the schema of the result set that OPENJSON returns by providing a "with" clause.  7. Question 7  Once Azure Synapse Link is configured on Cosmos DB, what is the first step to perform to use Azure Synapse Analytics serverless SQL pools to query the Azure Cosmos DB data?
1/1 point
C Use a SELECT clause
Use the OPENROWSET function
Create a database
Correct
Before being able to issue any queries using Azure Synapse Analytics serverless SQL pools, you first must create a database.
8. Question 8
What function provides a rowset view over a JSON document?  1/1 point
OPENJSON
© with
C OPENROWSET
Correct
The OPENJSON function provides a rowset view over a JSON document.

# **Course practice exam**

**Latest Submission Grade 90%** 

## 1. Question 1

HTAP (Hybrid Transactional/Analytical processing) enables business to run advanced analytics in near-real-time on data stored and processed in which of the following?

real-time on data stored and processed in which of the following?
1/1 point
C <sub>ELT</sub>
C <sub>ETL</sub>
OLTP
C OLAP
Correct
Online Transactional processing commonly referred to as OLTP systems work with operational data. HTAP enables business to run advanced analytics in near-real-time on data stored and processed by OLTP systems.
<b>2.</b> Question 2 Which of the following are common use cases for using Azure Synapse Link for Azure Cosmos DB?
Choose all that apply.
1/1 point
Real-time personalization
Correct
In retail, many web-based retailers will perform real-time basket analysis to make product recommendations to customers who are about to purchase products. This increased revenues for these organizations as the provided targeted suggestions at the point of sales.
IOT predictive maintenance
Correct
Industrial IOT innovations have drastically reduced downtimes of machinery and increased overall efficiency across all fields of industry. One of such innovations is predictive maintenance analytics for machinery at the edge of the cloud.
Integration with APIs such as Gremlin API, Cassandra API, and Table API
Supply chain analytics, forecasting and reporting

## Correct

Azure Synapse Link for Cosmos DB allows these organizations to store data from their sales systems, ingest real-time telemetry data from in vehicle systems and integrate date from their ERP systems into a common operational store in Azure Cosmos DB and then leverage the data from Synapse analytics to enable both predictive analytics scenarios such as stock out monitoring and supply chain bottleneck management.

## 3. Question 3

Analytical store

With Synapse Link, you can directly connect to your Azure Cosmos DB containers from Azure Synapse Analytics. Azure Synapse Analytics currently supports Synapse Link with which of the following?

Choose all that apply 1/1 point **Dedicated SQL Pool** Serverless SOL pool Correct Azure Synapse Analytics supports Synapse Link with serverless SQL pools. Synapse Apache Spark **Correct** Azure Synapse Analytics supports Synapse Link with Synapse Apache Spark. 4. Question 4 True or false? In Azure Cosmos DB you can enable an analytical store on an existing container. 1/1 point True **Correct** Analytical store can only be enabled for new containers. To use analytical store for existing containers, migrate data from your existing containers to new containers using Azure Cosmos DB migration tools. 5. Question 5 Within Azure Synapse Link for Azure Cosmos DB, which of the following is a Column-oriented store optimized for analytical queries? 0/1 point Cosmos DB store

#### **Incorrect**

Try going back and reviewing Design hybrid transactional and analytical processing using Azure Synapse Analytics.

### 6. Question 6

Currently once the Azure Synapse Link feature is enabled on an account you cannot disable it. Enabling Synapse Link on an account. When will Synapse Link begin to incur billing charges?

## 1/1 point

As soon as co	ntainers are	created

As soon as Synanso Link is initi	ially anables
 As soon as Synapse Link is initi	ially enabled

o	As soon as the Anal				
_	As soon as the Anal	ytical store is	s enabled, and	containers ar	e created

As soon as the Analytical store is enabled

#### **Correct**

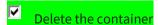
Enabling Synapse Link on the account has no billing implications until containers are created with the analytical store enabled.

## 7. Question 7

In Azure Cosmos DB enabling an analytical store is only available at the time of creating a container. How can you effectively disable an analytical store?

Choose all that apply.

## 1/1 point



## Correct

Enabling analytical store is only available at the time of creating a container and cannot be completely disabled without deleting the container.

From within the API disable the analytical store feature



#### **Correct**

Setting the default analytical store TTL value to 0 or null effectively disables the analytical store by no longer synchronize new items to it from the transactional store and deleting items already synchronized from the analytical store.

### 8. Question 8

Azure Cosmos DB automatically has system properties such as \_ts, \_self, \_attachments, \_rid, and \_etag associated with every document. These system document properties are seldom useful for analytical store query purposes and can be removed using which of the following PySpark code snippet examples

## 1/1 point

system\_document\_properties = {'\_attachments','\_etag','\_rid','\_self','\_ts'}

## customer\_columns = list(set(dfCustomer.columns) - system\_document\_properties)

customer\_columns = list(set(dfCustomer.columns) = system\_document\_properties)

system\_document\_properties = {'\_attachments','\_etag','\_rid','\_self','\_ts'}

system\_document\_properties - {'\_attachments','\_etag','\_rid','\_self','\_ts'}

customer\_columns = list(set(dfCustomer.columns) = system\_document\_properties)

#### Correct

This is the correct syntax to remove the system properties.

#### 9. Question 9

The following snippet of code has been added to the first cell of a notebook.

- 1: dfCustomer = spark.read\
- 2: .format("cosmos.olap")\
- 3: .option("spark.synapse.linkedService", "AdventureWorksSQL")\
- 4: .option("spark.cosmos.container", "Customer")\
- 5: .load()

Assuming all the requirements to run this code are already in place, what is the purpose of the code on line number 2? .format("cosmos.olap")\

## 1/1 point

- indicates that we want to read from an Azure Cosmos DB analytical store
- Format the contents of the DataFrame as aggregated values
- C Read from an Azure SQL Database.

#### Correct

cosmos.olap indicates that we are want to read from an Azure Cosmos DB analytical store.

## **10.** Question 10

By default, the OPENJSON table-valued function returns three columns. These are?

## 1/1 point



Corre	ect
Value	e contains the value of the property.
V	<mark>Key</mark>
Corre	ect
Key c	ontains the name of the specified property or the index of the element in the specified array.
	Name
	Schema Name
☑ .	Гуре

Contains the JSON type of the value. This is represented as an int value (from 0 to 5). This column is only returned when you use the default schema.