Question 1

tb.564416.11.010

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

Which of the following Cloud Spanner configurations would have the highest hourly cost?

- A. Located in us-central1
- B. Located in nam3
- C. Located in us-west-1a
- ● D. Located in nam-eur-asia1

Rationale

❌ **A. Located in us-central1**

The multiregional and multi-super-regional location of nam-eur-aisa1 is the most expensive, which makes option D the right answer. Option A is a region that costs less than the multi-super-regional nam-eur-asia1. Option C is incorrect; that is a zone, and Spanner is configured to regions or super regions. Option B is incorrect; it is only a single super-region, which cost less than deploying to multiple super-regions.

Rationale

❌ **B. Located in nam3**

The multiregional and multi-super-regional location of nam-eur-aisa1 is the most expensive, which makes option D the right answer. Option A is a region that costs less than the multi-super-regional nam-eur-asia1. Option C is incorrect; that is a zone, and Spanner is configured to regions or super regions. Option B is incorrect; it is only a single super-region, which cost less than deploying to multiple super-regions.

Rationale

❌ **C. Located in us-west-1a**

The multiregional and multi-super-regional location of nam-eur-aisa1 is the most expensive, which makes option D the right answer. Option A is a region that costs less than the multi-super-regional nam-eur-asia1. Option C is incorrect; that is a zone, and Spanner is configured to regions or super regions. Option B is incorrect; it is only a single super-region, which cost less than deploying to multiple super-regions.

Rationale

✅ **D. Located in nam-eur-asia1**

The multiregional and multi-super-regional location of nam-eur-aisa1 is the most expensive, which makes option D the right answer. Option A is a region that costs less than the multi-super-regional nam-eur-asia1. Option C is incorrect; that is a zone, and Spanner is configured to regions or super regions. Option B is incorrect; it is only a single super-region, which cost less than deploying to multiple super-regions.

Question 2

tb.564416.12.013

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: medium

Your manager asks you to set up a bare-bones Pub/Sub system as a sandbox for new developers to learn about messaging systems. What are the two resources within Pub/Sub you will need to create?

○ A. Topics and tables

○ B. Topics and databases

● C. Topics and subscriptions

○ D. Tables and subscriptions

Rationale

❌ **A. Topics and tables**

Pub/Sub works with topics, which receive and hold messages, and subscriptions, which make messages available to consuming applications; therefore, option C is correct. Option A is incorrect; tables are data structures in relational databases, not message queues. Similarly, option B is wrong because databases exist in instances of database management systems, not messaging systems. Option D is wrong because tables are not a resource in messaging systems.

Rationale

❌ **B. Topics and databases**

Pub/Sub works with topics, which receive and hold messages, and subscriptions, which make messages available to consuming applications; therefore, option C is correct. Option A is incorrect; tables are data structures in relational databases, not message queues. Similarly, option B is wrong because databases exist in instances of database management systems, not messaging systems. Option D is wrong because tables are not a resource in messaging systems.

Rationale

✅ **C. Topics and subscriptions**

Pub/Sub works with topics, which receive and hold messages, and subscriptions, which make messages available to consuming applications; therefore, option C is correct. Option A is incorrect; tables are data structures in relational databases, not message queues. Similarly, option B

is wrong because databases exist in instances of database management systems, not messaging systems. Option D is wrong because tables are not a resource in messaging systems.

Rationale

❌ D. Tables and subscriptions

Pub/Sub works with topics, which receive and hold messages, and subscriptions, which make messages available to consuming applications; therefore, option C is correct. Option A is incorrect; tables are data structures in relational databases, not message queues. Similarly, option B is wrong because databases exist in instances of database management systems, not messaging systems. Option D is wrong because tables are not a resource in messaging systems.

Question 3

tb.564416.12.003

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: medium

Which of the following commands will run an automatic backup at 3:00 a.m. on an instance called `ace-exam-mysql`?

- ⦿ A. `gcloud sql instances patch ace-exam-mysql --backup-start-time 03:00`
- ○ B. `gcloud sql databases patch ace-exam-mysql --backup-start-time 03:00`
- ⦿ C. `cbt sql instances patch ace-exam-mysql --backup-start-time 03:00`
- ○ D. `bq gcloud sql instances patch ace-exam-mysql --backup-start-time 03:00`

Rationale

✅ **A.** `gcloud sql instances patch ace-exam-mysql --backup-start-time 03:00`

Option A is the correct answer. The base command is `gcloud sql instances patch`, which is followed by the instance name and a start time passed to the `--backup-start-time` parameter. Option B is incorrect because `databases` is not the correct resource to reference; `instances` is. Option C uses the `cbt` command, which is for use with Bigtable, so it is incorrect. Similarly, Option D is incorrect because it uses the `bq` command, which is used to manage BigQuery resources.

Rationale

❌ **B.** `gcloud sql databases patch ace-exam-mysql --backup-start-time 03:00`

Option A is the correct answer. The base command is `gcloud sql instances patch`, which is followed by the instance name and a start time passed to the `--backup-start-time` parameter. Option B is incorrect because `databases` is not the correct resource to reference; `instances` is. Option C uses the `cbt` command, which is for use with Bigtable, so it is incorrect. Similarly, Option D is incorrect because it uses the `bq` command, which is used to manage BigQuery resources.

Rationale

❌ **C.** `cbt sql instances patch ace-exam-mysql --backup-start-time 03:00`

Option A is the correct answer. The base command is `gcloud sql instances patch`, which is followed by the instance name and a start time passed to the `--backup-start-time` parameter. Option B is incorrect because `databases` is not the correct resource to reference; `instances` is. Option C uses the `cbt` command, which is for use with Bigtable, so it is incorrect. Similarly, Option D is incorrect because it uses the `bq` command, which is used to manage BigQuery resources.

Rationale

❌ **D.** `bq gcloud sql instances patch ace-exam-mysql --backup-start-time 03:00`

Option A is the correct answer. The base command is `gcloud sql instances patch`, which is followed by the instance name and a start time passed to the `--backup-start-time` parameter. Option B is incorrect because `databases` is not the correct resource to reference; `instances` is. Option C uses the `cbt` command, which is for use with Bigtable, so it is incorrect. Similarly, Option D is incorrect because it uses the `bq` command, which is used to manage BigQuery resources.

Question 4

tb.564416.11.003

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

You are working with a startup developing analytics software for IoT data. You have to be able to ingest large volumes of data consistently and store it for several months. The startup has several applications that will need to query this data. Volumes are expected to grow to petabyte volumes. Which database should you use?

○ A. Cloud Spanner

⊙ B. Bigtable

○ C. BigQuery

○ D. Datastore

Rationale

❌ **A. Cloud Spanner**

Bigtable is a wide-column database that can ingest large volumes of data consistently, so option B is correct. It also supports low-millisecond latency, making it a good choice for supporting querying. Cloud Spanner is a global relational database that is not suitable for high-speed ingest of large volumes of data. Datastore is an object data model and not a good fit for IoT or other time series data. BigQuery is an analytics database and not designed for ingest of large volumes of data in short periods of time.

Rationale

✅ **B. Bigtable**

Bigtable is a wide-column database that can ingest large volumes of data consistently, so option B is correct. It also supports low-millisecond latency, making it a good choice for supporting querying. Cloud Spanner is a global relational database that is not suitable for high-speed ingest of large volumes of data. Datastore is an object data model and not a good fit for IoT or other time series data. BigQuery is an analytics database and not designed for ingest of large volumes of data in short periods of time.

Rationale

❌ **C. BigQuery**

Bigtable is a wide-column database that can ingest large volumes of data consistently, so option B is correct. It also supports low-millisecond latency, making it a good choice for supporting querying. Cloud Spanner is a global relational database that is not suitable for high-speed

ingest of large volumes of data. Datastore is an object data model and not a good fit for IoT or other time series data. BigQuery is an analytics database and not designed for ingest of large volumes of data in short periods of time.

Rationale

❌ D. Datastore

Bigtable is a wide-column database that can ingest large volumes of data consistently, so option B is correct. It also supports low-millisecond latency, making it a good choice for supporting querying. Cloud Spanner is a global relational database that is not suitable for high-speed ingest of large volumes of data. Datastore is an object data model and not a good fit for IoT or other time series data. BigQuery is an analytics database and not designed for ingest of large volumes of data in short periods of time.

Question 5

tb.564416.12.010

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: medium

You have just created a Cloud Spanner instance. You have been tasked with creating a way to store data about a product catalog. What is the next step after creating a Cloud Spanner instance that you would perform to enable you to load data?

○ A. Run `gcloud spanner update-security-patches`

● B. Create a database within the instance

○ C. Create tables to hold the data

○ D. Use the Cloud Spanner console to import data into tables created with the instance

Rationale

❌ **A. Run** `gcloud spanner update-security-patches`

Option B is correct; the next step is to create a database within the instance. Once a database is created, tables can be created, and data can be loaded into tables. Option A is incorrect; Cloud Spanner is a managed database, so you do not need to apply security patches. Option C is incorrect because you can't create tables without first having created a database. Option D is incorrect; no tables are created that you could import data into when an instance is created.

Rationale

✅ **B. Create a database within the instance**

Option B is correct; the next step is to create a database within the instance. Once a database is created, tables can be created, and data can be loaded into tables. Option A is incorrect; Cloud Spanner is a managed database, so you do not need to apply security patches. Option C is incorrect because you can't create tables without first having created a database. Option D is incorrect; no tables are created that you could import data into when an instance is created.

Rationale

❌ **C. Create tables to hold the data**

Option B is correct; the next step is to create a database within the instance. Once a database is created, tables can be created, and data can be loaded into tables. Option A is incorrect; Cloud Spanner is a managed database, so you do not need to apply security patches. Option C is

incorrect because you can't create tables without first having created a database. Option D is incorrect; no tables are created that you could import data into when an instance is created.

Rationale

❌ **D. Use the Cloud Spanner console to import data into tables created with the instance**

Option B is correct; the next step is to create a database within the instance. Once a database is created, tables can be created, and data can be loaded into tables. Option A is incorrect; Cloud Spanner is a managed database, so you do not need to apply security patches. Option C is incorrect because you can't create tables without first having created a database. Option D is incorrect; no tables are created that you could import data into when an instance is created.

Question 6

tb.564416.11.012
Lesson Reference: Chapter 11: Planning Storage in the Cloud
Difficulty: easy
What kind of data model is used by Datastore?

○ A. Relational

● B. Document

○ C. Wide-column

○ D. Graph

Rationale

❌ **A. Relational**

Datastore is a document database, which makes option B correct. Cloud SQL and Spanner are relational databases. Bigtable is a wide-column database. Google does not offer a managed graph database.

Rationale

✅ **B. Document**

Datastore is a document database, which makes option B correct. Cloud SQL and Spanner are relational databases. Bigtable is a wide-column database. Google does not offer a managed graph database.

Rationale

❌ **C. Wide-column**

Datastore is a document database, which makes option B correct. Cloud SQL and Spanner are relational databases. Bigtable is a wide-column database. Google does not offer a managed graph database.

Rationale

❌ **D. Graph**

Datastore is a document database, which makes option B correct. Cloud SQL and Spanner are relational databases. Bigtable is a wide-column database. Google does not offer a managed graph database.

Question 7

tb.564416.11.014

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

A team of mobile developers is developing a new application. It will require synchronizing data between mobile devices and a backend database. Which database service would you recommend?

⦾ A. BigQuery

🔘 B. Firestore

⦾ C. Spanner

⦾ D. Bigtable

Rationale

❌ **A. BigQuery**

Firestore is a document database that has mobile supporting features, like data synchronization, sooption B is the right answer. BigQuery is for analytics, not mobile or transactional applications. Spanner is a global relational database but does not have mobile-specific features. Bigtable could be used with mobile devices, but it does not have mobile-specific features like synchronization.

Rationale

✅ **B. Firestore**

Firestore is a document database that has mobile supporting features, like data synchronization, sooption B is the right answer. BigQuery is for analytics, not mobile or transactional applications. Spanner is a global relational database but does not have mobile-specific features. Bigtable could be used with mobile devices, but it does not have mobile-specific features like synchronization.

Rationale

❌ **C. Spanner**

Firestore is a document database that has mobile supporting features, like data synchronization, sooption B is the right answer. BigQuery is for analytics, not mobile or transactional applications. Spanner is a global relational database but does not have mobile-specific features. Bigtable could be used with mobile devices, but it does not have mobile-specific features like synchronization.

Rationale

❌ D. Bigtable

Firestore is a document database that has mobile supporting features, like data synchronization, sooption B is the right answer. BigQuery is for analytics, not mobile or transactional applications. Spanner is a global relational database but does not have mobile-specific features. Bigtable could be used with mobile devices, but it does not have mobile-specific features like synchronization.

Question 8

tb.564416.11.004

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: easy

A software developer on your team is asking for your help improving the query performance of a database application. The developer is using a Cloud SQL MySQL, Second-Generation instance. Which options would you recommend?

- ⦿ A. Memorystore and SSD persistent disks
- ◯ B. Memorystore and HDD persistent disks
- ◯ C. Datastore and SSD persistent disks
- ◯ D. Datastore and HDD persistent disks

Rationale

✅ **A. Memorystore and SSD persistent disks**

Option A is correct because Memorystore is a managed Redis cache. The cache can be used to store the results of queries. Follow-on queries that reference the data stored in the cache can read it from the cache, which is much faster than reading from persistent disks. SSDs have significantly lower latency than hard disk drives and should be used for performance-sensitive applications like databases. Options B and D are incorrect because HDD persistent disks do give the best performance with respect to IOPS. Options C and D are incorrect because Datastore is a managed NoSQL database and would not have any impact on SQL query performance.

Rationale

❌ **B. Memorystore and HDD persistent disks**

Option A is correct because Memorystore is a managed Redis cache. The cache can be used to store the results of queries. Follow-on queries that reference the data stored in the cache can read it from the cache, which is much faster than reading from persistent disks. SSDs have significantly lower latency than hard disk drives and should be used for performance-sensitive applications like databases. Options B and D are incorrect because HDD persistent disks do give the best performance with respect to IOPS. Options C and D are incorrect because Datastore is a managed NoSQL database and would not have any impact on SQL query performance.

Rationale

❌ **C. Datastore and SSD persistent disks**

Option A is correct because Memorystore is a managed Redis cache. The cache can be used to store the results of queries. Follow-on queries that reference the data stored in the cache can read it from the cache, which is much faster than reading from persistent disks. SSDs have significantly lower latency than hard disk drives and should be used for performance-sensitive applications like databases. Options B and D are incorrect because HDD persistent disks do give the best performance with respect to IOPS. Options C and D are incorrect because Datastore is a managed NoSQL database and would not have any impact on SQL query performance.

Rationale

❌ **D. Datastore and HDD persistent disks**

Option A is correct because Memorystore is a managed Redis cache. The cache can be used to store the results of queries. Follow-on queries that reference the data stored in the cache can read it from the cache, which is much faster than reading from persistent disks. SSDs have significantly lower latency than hard disk drives and should be used for performance-sensitive applications like databases. Options B and D are incorrect because HDD persistent disks do give the best performance with respect to IOPS. Options C and D are incorrect because Datastore is a managed NoSQL database and would not have any impact on SQL query performance.

Question 9

tb.564416.11.019

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

What features can you configure when running a Second-Generation MySQL database in Cloud SQL?

- ○ A. Machine type only
- ○ B. Maintenance windows and machine type only
- ○ C. Failover replicas only
- ● D. Machine type, maintenance windows, and failover replicas

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Rationale

❌ **A. Machine type only**

With a second-generation instance, you can configure the MySQL version, connectivity, machine type, automatic backups, failover replicas, database flags, maintenance windows, and labels, so option D is correct.

Rationale

❌ **B. Maintenance windows and machine type only**

With a second-generation instance, you can configure the MySQL version, connectivity, machine type, automatic backups, failover replicas, database flags, maintenance windows, and labels, so option D is correct.

Rationale

❌ **C. Failover replicas only**

With a second-generation instance, you can configure the MySQL version, connectivity, machine type, automatic backups, failover replicas, database flags, maintenance windows, and labels, so option D is correct.

Rationale

✅ **D. Machine type, maintenance windows, and failover replicas**

With a second-generation instance, you can configure the MySQL version, connectivity, machine type, automatic backups, failover replicas, database flags, maintenance windows, and labels, so option D is correct.

Question 10

tb.564416.11.016

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

What is the maximum size of a Memorystore cache?

○ A. 100GB

◉ B. 300GB

○ C. 400GB

○ D. 50GB

Rationale

❌ **A. 100GB**

Option B is correct because Memorystore can be configured to use between 1GB and 300GB of memory.

Rationale

✅ **B. 300GB**

Option B is correct because Memorystore can be configured to use between 1GB and 300GB of memory.

Rationale

❌ **C. 400GB**

Option B is correct because Memorystore can be configured to use between 1GB and 300GB of memory.

Rationale

❌ **D. 50GB**

Option B is correct because Memorystore can be configured to use between 1GB and 300GB of memory.

Question 11

tb.564416.12.020

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: hard

An executive in your company emails you asking about creating a recommendation system that will help sell more products. The executive has heard there are some GCP solutions that may be good fits for this problem. What GCP service would you recommend the executive look into?

- ◉ A. Cloud Dataproc, especially Spark and its machine learning library
- ○ B. Cloud Dataproc, especially Hadoop
- ○ C. Cloud Spanner, which is a global relational database that can hold a lot of data
- ○ D. Cloud SQL, because SQL is a powerful query language

Rationale

✅ **A. Cloud Dataproc, especially Spark and its machine learning library**

Dataproc with Spark and its machine learning library are ideal for this use case, so option A is correct. Option B suggests Hadoop, but it is not a good choice for machine learning applications. Option C is incorrect because Spanner is designed as a global relational database with support for transaction processing systems, not analytic and machine learning systems. Option D is incorrect. SQL is a powerful query language, but it does not support the kinds of machine learning algorithms needed to solve the proposed problem.

Rationale

❌ **B. Cloud Dataproc, especially Hadoop**

Dataproc with Spark and its machine learning library are ideal for this use case, so option A is correct. Option B suggests Hadoop, but it is not a good choice for machine learning applications. Option C is incorrect because Spanner is designed as a global relational database with support for transaction processing systems, not analytic and machine learning systems. Option D is incorrect. SQL is a powerful query language, but it does not support the kinds of machine learning algorithms needed to solve the proposed problem.

Rationale

❌ **C. Cloud Spanner, which is a global relational database that can hold a lot of data**

Dataproc with Spark and its machine learning library are ideal for this use case, so option A is correct. Option B suggests Hadoop, but it is not a good choice for machine learning applications. Option C is incorrect because Spanner is designed as a global relational database with

support for transaction processing systems, not analytic and machine learning systems. Option D is incorrect. SQL is a powerful query language, but it does not support the kinds of machine learning algorithms needed to solve the proposed problem.

Rationale

❌ **D. Cloud SQL, because SQL is a powerful query language**

Dataproc with Spark and its machine learning library are ideal for this use case, so option A is correct. Option B suggests Hadoop, but it is not a good choice for machine learning applications. Option C is incorrect because Spanner is designed as a global relational database with support for transaction processing systems, not analytic and machine learning systems. Option D is incorrect. SQL is a powerful query language, but it does not support the kinds of machine learning algorithms needed to solve the proposed problem.

Question 12

tb.564416.12.005

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: medium

What is the correct command-line structure to export data from Datastore?

○ A. `gcloud datastore export '[NAMESPACE]' gs://[BUCKET_NAME}`

○ B. `gcloud datastore export gs://[BUCKET_NAME}`

◉ C. `gcloud datastore export -namespaces=' [NAMESPACE]' gs://[BUCKET_NAME}`

○ D. `gcloud datastore dump -namespaces=' [NAMESPACE]' gs://[BUCKET_NAME}`

Rationale

❌ **A.** `gcloud datastore export '[NAMESPACE]' gs://[BUCKET_NAME}`

Option C is the correct command. It has the correct base command, `gcloud datastore export`, followed by the `-namespaces` parameters and the name of a Cloud Storage bucket to hold the export file. Option A is incorrect because the `-namespaces` parameter name is missing. Option B is incorrect because it is missing a namespace. Option D is incorrect because it uses the command or verb `dump` instead of `export`.

Rationale

❌ **B.** `gcloud datastore export gs://[BUCKET_NAME}`

Option C is the correct command. It has the correct base command, `gcloud datastore export`, followed by the `-namespaces` parameters and the name of a Cloud Storage bucket to hold the export file. Option A is incorrect because the `-namespaces` parameter name is missing. Option B is incorrect because it is missing a namespace. Option D is incorrect because it uses the command or verb `dump` instead of `export`.

Rationale

✅ **C.** `gcloud datastore export -namespaces=' [NAMESPACE]' gs://[BUCKET_NAME}`

Option C is the correct command. It has the correct base command, `gcloud datastore export`, followed by the `-namespaces` parameters and the name of a Cloud Storage bucket to hold the export file. Option A is incorrect because the `-namespaces` parameter name is missing. Option B is incorrect because it is missing a namespace. Option D is incorrect because it uses the command or verb `dump` instead of `export`.

Rationale

❌ **D.** `gcloud datastore dump –namespaces=' [NAMESPACE]' gs://[BUCKET_NAME}`

Option C is the correct command. It has the correct base command, `gcloud datastore export`, followed by the `–namespaces` parameters and the name of a Cloud Storage bucket to hold the export file. Option A is incorrect because the `–namespaces` parameter name is missing. Option B is incorrect because it is missing a namespace. Option D is incorrect because it uses the command or verb `dump` instead of `export`.

Question 13

tb.564416.11.020

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

A colleague is wondering why some storage charges are so high. They explain that they have moved all their storage to nearline and coldline storage. They routinely access most of the object on any given day. What is one possible reason the storage costs are higher than expected?

- ◉ A. Nearline and coldline incur access charges
- ○ B. Transfer charges
- ○ C. Multiregional coldline is more expensive
- ○ D. Regional coldline is more expensive

Rationale

✅ **A. Nearline and coldline incur access charges**

Access charges are used with nearline and coldline storage, which makes option A correct. There is no transfer charge involved. Options C and D do not refer to actual storage classes.

Rationale

❌ **B. Transfer charges**

Access charges are used with nearline and coldline storage, which makes option A correct. There is no transfer charge involved. Options C and D do not refer to actual storage classes.

Rationale

❌ **C. Multiregional coldline is more expensive**

Access charges are used with nearline and coldline storage, which makes option A correct. There is no transfer charge involved. Options C and D do not refer to actual storage classes.

Rationale

❌ **D. Regional coldline is more expensive**

Access charges are used with nearline and coldline storage, which makes option A correct. There is no transfer charge involved. Options C and D do not refer to actual storage classes.

Question 14

tb.564416.11.015

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

A product manager is considering a new set of features for an application that will require additional storage. What features of storage would you suggest the product manager consider?

○ A. Read and write patterns only

○ B. Cost only

○ C. Consistency and cost only

◉ D. Read and write patterns, cost, and consistency

Rationale

❌ **A. Read and write patterns only**

In addition to read and write patterns, cost, and consistency, you should consider transaction support and latency, which makesoption D correct.

Rationale

❌ **B. Cost only**

In addition to read and write patterns, cost, and consistency, you should consider transaction support and latency, which makesoption D correct.

Rationale

❌ **C. Consistency and cost only**

In addition to read and write patterns, cost, and consistency, you should consider transaction support and latency, which makesoption D correct.

Rationale

✅ **D. Read and write patterns, cost, and consistency**

In addition to read and write patterns, cost, and consistency, you should consider transaction support and latency, which makesoption D correct.

Question 15

tb.564416.11.001

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: easy

You are tasked with defining lifecycle configurations on buckets in Cloud Storage. You need to consider all possible options for transitioning from one storage class to another. All of the following transitions are allowed except for one. Which one is that?

○ A. Nearline to coldline

○ B. Regional to nearline

○ C. Multiregional to coldline

◉ D. Regional to multiregional

Rationale

❌ **A. Nearline to coldline**

Once a bucket is created as either regional or multiregional, it cannot be changed to the other, so option D is correct. Nearline to coldline and regional to nearline are both allowed as is multiregional to coldline.

Rationale

❌ **B. Regional to nearline**

Once a bucket is created as either regional or multiregional, it cannot be changed to the other, so option D is correct. Nearline to coldline and regional to nearline are both allowed as is multiregional to coldline.

Rationale

❌ **C. Multiregional to coldline**

Once a bucket is created as either regional or multiregional, it cannot be changed to the other, so option D is correct. Nearline to coldline and regional to nearline are both allowed as is multiregional to coldline.

Rationale

✅ **D. Regional to multiregional**

Once a bucket is created as either regional or multiregional, it cannot be changed to the other, so option D is correct. Nearline to coldline and regional to nearline are both allowed as is multiregional to coldline.

Question 16

tb.564416.11.017

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

Once a bucket has its storage class set to coldline, what are other storage classes it can transition to?

○ A. Regional only

○ B. Nearline only

○ C. Multiregional or regional

◉ D. Coldline storage cannot transition to any other storage class.

Rationale

❌ **A. Regional only**

Once a bucket is set to coldline, it cannot be changed to another storage class; thus, option D is correct. Regional and multiregional can change to nearline and coldline. Nearline buckets can change to coldline.

Rationale

❌ **B. Nearline only**

Once a bucket is set to coldline, it cannot be changed to another storage class; thus, option D is correct. Regional and multiregional can change to nearline and coldline. Nearline buckets can change to coldline.

Rationale

❌ **C. Multiregional or regional**

Once a bucket is set to coldline, it cannot be changed to another storage class; thus, option D is correct. Regional and multiregional can change to nearline and coldline. Nearline buckets can change to coldline.

Rationale

✅ **D. Coldline storage cannot transition to any other storage class.**

Once a bucket is set to coldline, it cannot be changed to another storage class; thus, option D is correct. Regional and multiregional can change to nearline and coldline. Nearline buckets can change to coldline.

Question 17

tb.564416.12.012

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: easy

Your software team is developing a distributed application and wants to send messages from one application to another. Once the consuming application reads a message, it should be deleted. You want your system to be robust to failure, so messages should be available for at least three days before they are discarded. Which GCP service is best designed to support this use case?

○ A. Bigtable

○ B. Dataproc

◉ C. Cloud Pub/Sub

○ D. Cloud Spanner

Rationale

❌ **A. Bigtable**

This use case is well suited to Pub/Sub, so option C is correct. It involves sending messages to the topic, and the subscription model is a good fit. Pub/Sub has a retention period to support the three-day retention period. Option A is incorrect; Bigtable is designed for storing large volumes of data. Dataproc is for processing and analyzing data, not passing it between systems. Cloud Spanner is a global relational database. You could design an application to meet this use case, but it would require substantial development and be costly to run.

Rationale

❌ **B. Dataproc**

This use case is well suited to Pub/Sub, so option C is correct. It involves sending messages to the topic, and the subscription model is a good fit. Pub/Sub has a retention period to support the three-day retention period. Option A is incorrect; Bigtable is designed for storing large volumes of data. Dataproc is for processing and analyzing data, not passing it between systems. Cloud Spanner is a global relational database. You could design an application to meet this use case, but it would require substantial development and be costly to run.

Rationale

✅ **C. Cloud Pub/Sub**

This use case is well suited to Pub/Sub, so option C is correct. It involves sending messages to the topic, and the subscription model is a good fit. Pub/Sub has a retention period to support the three-day retention period. Option A is incorrect; Bigtable is designed for storing large

volumes of data. Dataproc is for processing and analyzing data, not passing it between systems. Cloud Spanner is a global relational database. You could design an application to meet this use case, but it would require substantial development and be costly to run.

Rationale

❌ D. Cloud Spanner

This use case is well suited to Pub/Sub, so option C is correct. It involves sending messages to the topic, and the subscription model is a good fit. Pub/Sub has a retention period to support the three-day retention period. Option A is incorrect; Bigtable is designed for storing large volumes of data. Dataproc is for processing and analyzing data, not passing it between systems. Cloud Spanner is a global relational database. You could design an application to meet this use case, but it would require substantial development and be costly to run.

Question 18
tb.564416.12.011

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: medium

You have created a Cloud Spanner instance and database. According to Google best practices, how often should you update VM packages using `apt-get`?

○ A. Every 24 hours.

○ B. Every 7 days.

○ C. Every 30 days.

◉ D. Never, Cloud Spanner is a managed service.

Rationale

❌ **A. Every 24 hours.**

Option D is correct because there is no need to apply patches to the underlying compute resources because Google manages resources used by Cloud Spanner. Updating packages is a good practice when using virtual machines, for example, with Compute Engine, but it is not necessary with a managed service.

Rationale

❌ **B. Every 7 days.**

Option D is correct because there is no need to apply patches to the underlying compute resources because Google manages resources used by Cloud Spanner. Updating packages is a good practice when using virtual machines, for example, with Compute Engine, but it is not necessary with a managed service.

Rationale

❌ **C. Every 30 days.**

Option D is correct because there is no need to apply patches to the underlying compute resources because Google manages resources used by Cloud Spanner. Updating packages is a good practice when using virtual machines, for example, with Compute Engine, but it is not necessary with a managed service.

Rationale

✅ **D. Never, Cloud Spanner is a managed service.**

Option D is correct because there is no need to apply patches to the underlying compute resources because Google manages resources used by Cloud Spanner. Updating packages is a good practice when using virtual machines, for example, with Compute Engine, but it is not necessary with a managed service.

Question 19

tb.564416.12.004
Lesson Reference: Chapter 12: Deploying Storage in the Cloud
Difficulty: medium
What is the query language used by Datastore?

○ A. SQL

○ B. MDX

● C. GQL

○ D. Dataframes

Rationale

❌ **A. SQL**

Datastore uses a SQL-like query language called GQL, so option C is correct. Option A is incorrect; SQL is not used with this database. Option B is incorrect; MDX is a query language for online analytic processing (OLAP) systems. Option D is incorrect because Dataframes is a data structure used in Spark.

Rationale

❌ **B. MDX**

Datastore uses a SQL-like query language called GQL, so option C is correct. Option A is incorrect; SQL is not used with this database. Option B is incorrect; MDX is a query language for online analytic processing (OLAP) systems. Option D is incorrect because Dataframes is a data structure used in Spark.

Rationale

✅ **C. GQL**

Datastore uses a SQL-like query language called GQL, so option C is correct. Option A is incorrect; SQL is not used with this database. Option B is incorrect; MDX is a query language for online analytic processing (OLAP) systems. Option D is incorrect because Dataframes is a data structure used in Spark.

Rationale

❌ **D. Dataframes**

Datastore uses a SQL-like query language called GQL, so option C is correct. Option A is incorrect; SQL is not used with this database. Option B is incorrect; MDX is a query language for online analytic processing (OLAP) systems. Option D is incorrect because Dataframes is a data structure used in Spark.

Question 20

tb.564416.12.015

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: easy

You need to create a table called `iot-ingest-data` in Bigtable. What command would you use?

- ⦿ A. `cbt createtable iot-ingest-data`
- ○ B. `gcloud bigtable tables create ace-exam-bt-table`
- ○ C. `gcloud bigtable create tables ace-exam-bt-table`
- ○ D. `gcloud create ace-exam-bt-table`

Rationale

✅ **A.** `cbt createtable iot-ingest-data`

You would need to use a `cbt` command, which is the command-line tool for working with Bigtable, so Option A is correct. All other options reference `gcloud` and are therefore incorrect.

Rationale

❌ **B.** `gcloud bigtable tables create ace-exam-bt-table`

You would need to use a `cbt` command, which is the command-line tool for working with Bigtable, so Option A is correct. All other options reference `gcloud` and are therefore incorrect.

Rationale

❌ **C.** `gcloud bigtable create tables ace-exam-bt-table`

You would need to use a `cbt` command, which is the command-line tool for working with Bigtable, so Option A is correct. All other options reference `gcloud` and are therefore incorrect.

Rationale

❌ **D.** `gcloud create ace-exam-bt-table`

You would need to use a `cbt` command, which is the command-line tool for working with Bigtable, so Option A is correct. All other options reference `gcloud` and are therefore incorrect.

Question 21

tb.564416.11.018

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: easy

Before you can start storing data in BigQuery, you must create a logical structure for the data. What is that structure called?

◉ A. data set

○ B. A bucket

○ C. A persistent disk

○ D. An entity

Rationale

✅ **A. data set**

To use BigQuery to store data, you must have a dataset to store it, which makes option A the right answer. Buckets are used by Cloud Storage, not BigQuery. You do not manage persistent disks when using BigQuery. An entity is a data structure in Datastore, not BigQuery.

Rationale

❌ **B. A bucket**

To use BigQuery to store data, you must have a dataset to store it, which makes option A the right answer. Buckets are used by Cloud Storage, not BigQuery. You do not manage persistent disks when using BigQuery. An entity is a data structure in Datastore, not BigQuery.

Rationale

❌ **C. A persistent disk**

To use BigQuery to store data, you must have a dataset to store it, which makes option A the right answer. Buckets are used by Cloud Storage, not BigQuery. You do not manage persistent disks when using BigQuery. An entity is a data structure in Datastore, not BigQuery.

Rationale

❌ **D. An entity**

To use BigQuery to store data, you must have a dataset to store it, which makes option A the right answer. Buckets are used by Cloud Storage, not BigQuery. You do not manage persistent disks when using BigQuery. An entity is a data structure in Datastore, not BigQuery.

Question 22

tb.564416.12.019

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: easy

You want to rename an object stored in a bucket. What command structure would you use?

- ○ A. `gsutil cp gs://[BUCKET_NAME]/[OLD_OBJECT_NAME] gs://[BUCKET_NAME]/[NEW_OBJECT_NAME]`
- ● B. `gsutil mv gs://[BUCKET_NAME]/[OLD_OBJECT_NAME] gs://[BUCKET_NAME]/[NEW_OBJECT_NAME]`
- ● C. `gsutil mv gs://[OLD_OBJECT_NAME] gs://[NEW_OBJECT_NAME]`
- ○ D. `gcloud mv gs://[OLD_OBJECT_NAME] gs://[NEW_OBJECT_NAME]`

Rationale

❌ **A.** `gsutil cp gs://[BUCKET_NAME]/[OLD_OBJECT_NAME] gs://[BUCKET_NAME]/[NEW_OBJECT_NAME]`

The command in option B correctly renames an object from an old name to a new name. Option A is incorrect because it uses a `cp` command instead of `mv`. Option C does not include bucket names, so it is incorrect. Option D uses `gcloud`, but `gsutil` is the command-line tool for working with Cloud Storage.

Rationale

✅ **B.** `gsutil mv gs://[BUCKET_NAME]/[OLD_OBJECT_NAME] gs://[BUCKET_NAME]/[NEW_OBJECT_NAME]`

The command in option B correctly renames an object from an old name to a new name. Option A is incorrect because it uses a `cp` command instead of `mv`. Option C does not include bucket names, so it is incorrect. Option D uses `gcloud`, but `gsutil` is the command-line tool for working with Cloud Storage.

Rationale

❌ **C.** `gsutil mv gs://[OLD_OBJECT_NAME] gs://[NEW_OBJECT_NAME]`

The command in option B correctly renames an object from an old name to a new name. Option A is incorrect because it uses a `cp` command instead of `mv`. Option C does not include bucket names, so it is incorrect. Option D uses `gcloud`, but `gsutil` is the command-line tool for working with Cloud Storage.

Rationale

❌ **D.** `gcloud mv gs://[OLD_OBJECT_NAME] gs://[NEW_OBJECT_NAME]`

The command in option B correctly renames an object from an old name to a new name. Option A is incorrect because it uses a `cp` command instead of `mv`. Option C does not include bucket names, so it is incorrect. Option D uses `gcloud`, but `gsutil` is the command-line tool for working with Cloud Storage.
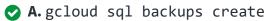
Question 23

tb.564416.12.002

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: medium

Which of the following commands is used to create a backup of a Cloud SQL database?

- ● A. `gcloud sql backups create`
- ○ B. `gsutil sql backups create`
- ○ C. `gcloud sql create backups`
- ○ D. `gcloud sql backups export`

Rationale

✅ **A.** `gcloud sql backups create`

Cloud SQL is controlled using the `gcloud` command; the sequence of terms in `gcloud` commands is `gcloud` followed by the service, in this case `SQL`; followed by a resource, in this case `backups`; and a command or verb, in this case `create`. Option A is the correct answer. Option B is incorrect because `gsutil` is used to work with Cloud Storage, not Cloud SQL. Option C is wrong because the order of terms is incorrect; `backups` comes before `create`. Option D is incorrect because the command or verb should be `create`.

Rationale

❌ **B.** `gsutil sql backups create`

Cloud SQL is controlled using the `gcloud` command; the sequence of terms in `gcloud` commands is `gcloud` followed by the service, in this case `SQL`; followed by a resource, in this case `backups`; and a command or verb, in this case `create`. Option A is the correct answer. Option B is incorrect because `gsutil` is used to work with Cloud Storage, not Cloud SQL. Option C is wrong because the order of terms is incorrect; `backups` comes before `create`. Option D is incorrect because the command or verb should be `create`.

Rationale

❌ **C.** `gcloud sql create backups`

Cloud SQL is controlled using the `gcloud` command; the sequence of terms in `gcloud` commands is `gcloud` followed by the service, in this case `SQL`; followed by a resource, in this case `backups`; and a command or verb, in this case `create`. Option A is the correct answer. Option B is incorrect because `gsutil` is used to work with Cloud Storage, not Cloud SQL. Option C is wrong because the order of terms is incorrect; `backups` comes before `create`. Option D is incorrect because the command or verb should be `create`.

Rationale

❌ **D.** `gcloud sql backups export`

Cloud SQL is controlled using the `gcloud` command; the sequence of terms in `gcloud` commands is `gcloud` followed by the service, in this case `SQL`; followed by a resource, in this case `backups`; and a command or verb, in this case `create`. Option A is the correct answer. Option B is incorrect because `gsutil` is used to work with Cloud Storage, not Cloud SQL. Option C is wrong because the order of terms is incorrect; `backups` comes before `create`. Option D is incorrect because the command or verb should be `create`.

Question 24

tb.564416.11.013

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

You have been tasked with creating a data warehouse for your company. It must support tens of petabytes of data and use SQL for a query language. Which managed database service would you choose?

⦿ A. BigQuery

⦿ B. Bigtable

○ C. Cloud SQL

○ D. SQL Server

Rationale

✅ **A. BigQuery**

BigQuery is a managed service designed for data warehouses and analytics. It uses standard SQL for querying, which makes option A the right answer. Bigtable can support the volume of data described, but it does not use SQL as a query language. Cloud SQL is not the best option to scale to tens of petabytes because of difficulties horizontally scaling relational databases. Cloud Spanners addresses those difficulties. SQL Server is a relational database from Microsoft; it is not a Google Cloud Platform managed database service.

Rationale

❌ **B. Bigtable**

BigQuery is a managed service designed for data warehouses and analytics. It uses standard SQL for querying, which makes option A the right answer. Bigtable can support the volume of data described, but it does not use SQL as a query language. Cloud SQL is not the best option to scale to tens of petabytes because of difficulties horizontally scaling relational databases. Cloud Spanners addresses those difficulties. SQL Server is a relational database from Microsoft; it is not a Google Cloud Platform managed database service.

Rationale

❌ **C. Cloud SQL**

BigQuery is a managed service designed for data warehouses and analytics. It uses standard SQL for querying, which makes option A the right answer. Bigtable can support the volume of data described, but it does not use SQL as a query language. Cloud SQL is not the best option to

scale to tens of petabytes because of difficulties horizontally scaling relational databases. Cloud Spanners addresses those difficulties. SQL Server is a relational database from Microsoft; it is not a Google Cloud Platform managed database service.

Rationale

❌ **D. SQL Server**

BigQuery is a managed service designed for data warehouses and analytics. It uses standard SQL for querying, which makes option A the right answer. Bigtable can support the volume of data described, but it does not use SQL as a query language. Cloud SQL is not the best option to scale to tens of petabytes because of difficulties horizontally scaling relational databases. Cloud Spanners addresses those difficulties. SQL Server is a relational database from Microsoft; it is not a Google Cloud Platform managed database service.

Question 25

tb.564416.12.017

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: easy

Your department has been asked to analyze large batches of data every night. The jobs will run for about three to four hours. You want to shut down resources as soon as the analysis is done, so you decide to write a script to create a Dataproc cluster every night at midnight. What command would you use to create a cluster called `spark-nightly-analysis` in the us-west2-a zone?

- ⦿ A. `bq dataproc clusters create spark-nightly-analysis --zone us-west2-a`
- ⦿ B. `gcloud dataproc clusters create spark-nightly-analysis --zone us-west2-a`
- ◯ C. `gcloud dataproc clusters spark-nightly-analysis --zone us-west2-a`
- ◯ D. None of the above

Rationale

❌ **A.** `bq dataproc clusters create spark-nightly-analysis --zone us-west2-a`

The correct command is `gcloud dataproc clusters create` followed by the name of the cluster and a `--zone` parameter. Option B is correct. Option A is incorrect because `bq` is the command-line tool for BigQuery, not Dataproc. Option C is a `gcloud` command missing a verb or command, so it is incorrect. Option D is wrong because option B is the correct answer.

Rationale

✅ **B.** `gcloud dataproc clusters create spark-nightly-analysis --zone us-west2-a`

The correct command is `gcloud dataproc clusters create` followed by the name of the cluster and a `--zone` parameter. Option B is correct. Option A is incorrect because `bq` is the command-line tool for BigQuery, not Dataproc. Option C is a `gcloud` command missing a verb or command, so it is incorrect. Option D is wrong because option B is the correct answer.

Rationale

❌ **C.** `gcloud dataproc clusters spark-nightly-analysis --zone us-west2-a`

The correct command is `gcloud dataproc clusters create` followed by the name of the cluster and a `--zone` parameter. Option B is correct. Option A is incorrect because `bq` is the command-line tool for BigQuery, not Dataproc. Option C is a `gcloud` command missing a verb or command, so it is incorrect. Option D is wrong because option B is the correct answer.

Rationale

❌ **D. None of the above**

The correct command is `gcloud dataproc clusters create` followed by the name of the cluster and a `--zone` parameter. Option B is correct. Option A is incorrect because `bq` is the command-line tool for BigQuery, not Dataproc. Option C is a `gcloud` command missing a verb or command, so it is incorrect. Option D is wrong because option B is the correct answer.

Question 26

tb.564416.11.008

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

A product manager has asked for your advice on which database services might be options for a new application. Transactions and support for tabular data are important. Ideally, the database would support common query tools. What databases would you recommend the product manager consider?

○ A. BigQuery and Spanner

⦿ B. Cloud SQL and Spanner

○ C. Cloud SQL and Bigtable

○ D. Bigtable and Spanner

Rationale

❌ **A. BigQuery and Spanner**

Both Cloud SQL and Spanner are relational databases and are well suited for transaction processing applications, so option B is right. Option A is incorrect because BigQuery is relational, but it is designed for data warehousing and analytics, not transaction processing. Options C and D are incorrect because Bigtable a wide-column NoSQL database, not a relational database.

Rationale

✅ **B. Cloud SQL and Spanner**

Both Cloud SQL and Spanner are relational databases and are well suited for transaction processing applications, so option B is right. Option A is incorrect because BigQuery is relational, but it is designed for data warehousing and analytics, not transaction processing. Options C and D are incorrect because Bigtable a wide-column NoSQL database, not a relational database.

Rationale

❌ **C. Cloud SQL and Bigtable**

Both Cloud SQL and Spanner are relational databases and are well suited for transaction processing applications, so option B is right. Option A is incorrect because BigQuery is relational, but it is designed for data warehousing and analytics, not transaction processing. Options C and D are incorrect because Bigtable a wide-column NoSQL database, not a relational database.

Rationale

❌ D. Bigtable and Spanner

Both Cloud SQL and Spanner are relational databases and are well suited for transaction processing applications, so option B is right. Option A is incorrect because BigQuery is relational, but it is designed for data warehousing and analytics, not transaction processing. Options C and D are incorrect because Bigtable a wide-column NoSQL database, not a relational database.

Question 27

tb.564416.12.008

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: medium

You are using Cloud Console and want to check on some jobs running in BigQuery. You navigate to the BigQuery part of the console. Which menu item would you click to view jobs?

- ● A. Job History.
- ○ B. Active Jobs.
- ○ C. My Jobs.
- ○ D. You can't view job status in the console; you have to use bq on the command line.

Rationale

✓ **A. Job History.**

Option A is correct; the menu option is Job History. Options B and C are incorrect; there is no Active Jobs or My Jobs option. Job History shows active jobs, completed jobs, and jobs that generated errors. Option D is incorrect; you can get job status in the console.

Rationale

✗ **B. Active Jobs.**

Option A is correct; the menu option is Job History. Options B and C are incorrect; there is no Active Jobs or My Jobs option. Job History shows active jobs, completed jobs, and jobs that generated errors. Option D is incorrect; you can get job status in the console.

Rationale

✗ **C. My Jobs.**

Option A is correct; the menu option is Job History. Options B and C are incorrect; there is no Active Jobs or My Jobs option. Job History shows active jobs, completed jobs, and jobs that generated errors. Option D is incorrect; you can get job status in the console.

Rationale

✗ **D. You can't view job status in the console; you have to use** bq **on the command line.**

Option A is correct; the menu option is Job History. Options B and C are incorrect; there is no Active Jobs or My Jobs option. Job History shows active jobs, completed jobs, and jobs that generated errors. Option D is incorrect; you can get job status in the console.

Question 28

tb.564416.12.016

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: easy

Cloud Dataproc is a managed service for which two big data platforms?

○ A. Spark and Cassandra

◉ B. Spark and Hadoop

○ C. Hadoop and Cassandra

○ D. Spark and Tensorflow

Rationale

❌ **A. Spark and Cassandra**

Cloud Dataproc is a managed service for Spark and Hadoop, so option B is correct. Cassandra is a big data distributed database but is not offered as a managed service by Google, so options A and C are incorrect. Option D is incorrect because Tensorflow is a deep learning machine learning platform not included in Dataproc.

Rationale

✅ **B. Spark and Hadoop**

Cloud Dataproc is a managed service for Spark and Hadoop, so option B is correct. Cassandra is a big data distributed database but is not offered as a managed service by Google, so options A and C are incorrect. Option D is incorrect because Tensorflow is a deep learning machine learning platform not included in Dataproc.

Rationale

❌ **C. Hadoop and Cassandra**

Cloud Dataproc is a managed service for Spark and Hadoop, so option B is correct. Cassandra is a big data distributed database but is not offered as a managed service by Google, so options A and C are incorrect. Option D is incorrect because Tensorflow is a deep learning machine learning platform not included in Dataproc.

Rationale

❌ **D. Spark and Tensorflow**

Cloud Dataproc is a managed service for Spark and Hadoop, so option B is correct. Cassandra is a big data distributed database but is not offered as a managed service by Google, so options A and C are incorrect. Option D is incorrect because Tensorflow is a deep learning machine learning platform not included in Dataproc.

Question 29

tb.564416.11.006

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

All of the following statements about Cloud Storage are true except for one. Which one?

○ A. Cloud Storage buckets can have retention periods.

⦿ B. Lifecycle configurations can be used to change storage class from regional to multiregional.

○ C. Cloud Storage does not provide block-level access to data within files stored in buckets.

○ D. Cloud Storage is designed for high durability.

Rationale

❌ **A. Cloud Storage buckets can have retention periods.**

Lifecycle configurations can change storage class from regional in nearline and coldline. Once a bucket is created as regional or multiregional, it cannot be changed to the other, so option B is the right answer. Option A is true; you can set retention periods when creating a bucket. Option C is true; Cloud Storage does not provide file system like access to internal data blocks. Option D is true because Cloud Storage is highly durable.

Rationale

✅ **B. Lifecycle configurations can be used to change storage class from regional to multiregional.**

Lifecycle configurations can change storage class from regional in nearline and coldline. Once a bucket is created as regional or multiregional, it cannot be changed to the other, so option B is the right answer. Option A is true; you can set retention periods when creating a bucket. Option C is true; Cloud Storage does not provide file system like access to internal data blocks. Option D is true because Cloud Storage is highly durable.

Rationale

❌ **C. Cloud Storage does not provide block-level access to data within files stored in buckets.**

Lifecycle configurations can change storage class from regional in nearline and coldline. Once a bucket is created as regional or multiregional, it cannot be changed to the other, so option B is the right answer. Option A is true; you can set retention periods when creating a bucket. Option C is true; Cloud Storage does not provide file system like access to internal data blocks. Option D is true because Cloud Storage is highly durable.

Rationale

❌ D. Cloud Storage is designed for high durability.

Lifecycle configurations can change storage class from regional in nearline and coldline. Once a bucket is created as regional or multiregional, it cannot be changed to the other, so option B is the right answer. Option A is true; you can set retention periods when creating a bucket. Option C is true; Cloud Storage does not provide file system like access to internal data blocks. Option D is true because Cloud Storage is highly durable.

Question 30

tb.564416.11.007
Lesson Reference: Chapter 11: Planning Storage in the Cloud
Difficulty: easy
When using versioning on a bucket, what is the latest version of the object called?

🔘 A. Live version

⚪ B. Top version

⚪ C. Active version

⚪ D. Safe version

Rationale

✅ **A. Live version**

The most recent version of an object is called the live version, so option A is correct. Options B and C are incorrect; top and active are not terms used to refer to versions. Option D is incorrect because option A is correct.

Rationale

❌ **B. Top version**

The most recent version of an object is called the live version, so option A is correct. Options B and C are incorrect; top and active are not terms used to refer to versions. Option D is incorrect because option A is correct.

Rationale

❌ **C. Active version**

The most recent version of an object is called the live version, so option A is correct. Options B and C are incorrect; top and active are not terms used to refer to versions. Option D is incorrect because option A is correct.

Rationale

❌ **D. Safe version**

The most recent version of an object is called the live version, so option A is correct. Options B and C are incorrect; top and active are not terms used to refer to versions. Option D is incorrect because option A is correct.

Question 31

tb.564416.12.001

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: easy

Cloud SQL is a fully managed relational database service, but database administrators still have to perform some tasks. Which of the following tasks do Cloud SQL users need to perform?

- ⦿ A. Applying security patches
- ◯ B. Performing regularly scheduled backups
- ⦿ C. Creating databases
- ◯ D. Tuning the operating system to optimize Cloud SQL performance

Rationale

❌ **A. Applying security patches**

Creating databases is the responsibility of database administrators or other users of Cloud SQL, so option C is correct. Google applies security patches and performs other maintenance, so option A is incorrect. GCP performs regularly scheduled backups, so option B is incorrect. Database administrators need to schedule backups, but GCP makes sure they are performed on schedule. Cloud SQL users can't SSH into a Cloud SQL server, so they can't tune the operating system. That's not a problem; Google takes care of that.

Rationale

❌ **B. Performing regularly scheduled backups**

Creating databases is the responsibility of database administrators or other users of Cloud SQL, so option C is correct. Google applies security patches and performs other maintenance, so option A is incorrect. GCP performs regularly scheduled backups, so option B is incorrect. Database administrators need to schedule backups, but GCP makes sure they are performed on schedule. Cloud SQL users can't SSH into a Cloud SQL server, so they can't tune the operating system. That's not a problem; Google takes care of that.

Rationale

✅ **C. Creating databases**

Creating databases is the responsibility of database administrators or other users of Cloud SQL, so option C is correct. Google applies security patches and performs other maintenance, so option A is incorrect. GCP performs regularly scheduled backups, so option B is incorrect.

Database administrators need to schedule backups, but GCP makes sure they are performed on schedule. Cloud SQL users can't SSH into a Cloud SQL server, so they can't tune the operating system. That's not a problem; Google takes care of that.

Rationale

❌ **D. Tuning the operating system to optimize Cloud SQL performance**

Creating databases is the responsibility of database administrators or other users of Cloud SQL, so option C is correct. Google applies security patches and performs other maintenance, so option A is incorrect. GCP performs regularly scheduled backups, so option B is incorrect. Database administrators need to schedule backups, but GCP makes sure they are performed on schedule. Cloud SQL users can't SSH into a Cloud SQL server, so they can't tune the operating system. That's not a problem; Google takes care of that.

Question 32

tb.564416.12.014

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: easy

Your company is launching an IoT service and will receive large volumes of streaming data. You have to store this data in Bigtable. You want to explore the Bigtable environment from the command line. What command would you run to ensure you have command-line tools installed?

○ A. `apt-get install bigtable-tools`

○ B. `apt-get install cbt`

◉ C. `gcloud components install cbt`

○ D. `gcloud components install bigtable-tools`

Rationale

❌ **A.** `apt-get install bigtable-tools`

The correct command is `gcloud components install cbt` to install the Bigtable command-line tool, so option C is correct. Options A and B are incorrect; `apt-get` is used to install packages on some Linux systems but is not specific to Google Cloud Platform. Option D is incorrect; there is no such option as `bigtable-tools`.

Rationale

❌ **B.** `apt-get install cbt`

The correct command is `gcloud components install cbt` to install the Bigtable command-line tool, so option C is correct. Options A and B are incorrect; `apt-get` is used to install packages on some Linux systems but is not specific to Google Cloud Platform. Option D is incorrect; there is no such option as `bigtable-tools`.

Rationale

✅ **C.** `gcloud components install cbt`

The correct command is `gcloud components install cbt` to install the Bigtable command-line tool, so option C is correct. Options A and B are incorrect; `apt-get` is used to install packages on some Linux systems but is not specific to Google Cloud Platform. Option D is incorrect; there is no such option as `bigtable-tools`.

Rationale

❌ **D.** `gcloud components install bigtable-tools`

The correct command is `gcloud components install cbt` to install the Bigtable command-line tool, so option C is correct. Options A and B are incorrect; `apt-get` is used to install packages on some Linux systems but is not specific to Google Cloud Platform. Option D is incorrect; there is no such option as `bigtable-tools`.

Question 33

tb.564416.11.005

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

You are creating a set of persistent disks to store data for exploratory data analysis. The disks will be mounted on a virtual machine in the us-west-2a zone. The data is historical data retrieved from Cloud Storage. The data analysts do not need peak performance and are more concerned about cost than performance. The data will be stored in a local relational database. Which type of storage would you recommend?

○ A. SSDs

◉ B. HDDs

○ C. Datastore

○ D. Bigtable

Rationale

❌ **A. SSDs**

HDDs are the better choice for persistent disk for a local database when performance is not the primary concern and you are trying to keep costs down, so option B is correct. Option A is wrong because SSDs are more expensive and the users do not need the lowest latency available. Options C and D are wrong; both of those are other databases that would not be used to store data in a local relational database.

Rationale

✅ **B. HDDs**

HDDs are the better choice for persistent disk for a local database when performance is not the primary concern and you are trying to keep costs down, so option B is correct. Option A is wrong because SSDs are more expensive and the users do not need the lowest latency available. Options C and D are wrong; both of those are other databases that would not be used to store data in a local relational database.

Rationale

❌ **C. Datastore**

HDDs are the better choice for persistent disk for a local database when performance is not the primary concern and you are trying to keep costs down, so option B is correct. Option A is wrong because SSDs are more expensive and the users do not need the lowest latency available. Options C and D are wrong; both of those are other databases that would not be used to store data in a local relational database.

Rationale

❌ D. Bigtable

HDDs are the better choice for persistent disk for a local database when performance is not the primary concern and you are trying to keep costs down, so option B is correct. Option A is wrong because SSDs are more expensive and the users do not need the lowest latency available. Options C and D are wrong; both of those are other databases that would not be used to store data in a local relational database.

Question 34

tb.564416.11.009

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

The Cloud SQL service provides fully managed relational databases. What two types of databases are available in Cloud SQL?

○ A. SQL Server and MySQL

○ B. SQL Server and PostgreSQL

◉ C. PostgreSQL and MySQL

○ D. MySQL and Oracle

Rationale

❌ **A. SQL Server and MySQL**

Both MySQL and PostgreSQL are Cloud SQL options, so option C is correct. Options A and B are incorrect; SQL Server is not a Cloud SQL option. Option D is incorrect because Oracle is not a Cloud SQL option. You could choose to run SQL Server or Oracle on your instances, but you would have to manage them, unlike Cloud SQL managed databases.

Rationale

❌ **B. SQL Server and PostgreSQL**

Both MySQL and PostgreSQL are Cloud SQL options, so option C is correct. Options A and B are incorrect; SQL Server is not a Cloud SQL option. Option D is incorrect because Oracle is not a Cloud SQL option. You could choose to run SQL Server or Oracle on your instances, but you would have to manage them, unlike Cloud SQL managed databases.

Rationale

✅ **C. PostgreSQL and MySQL**

Both MySQL and PostgreSQL are Cloud SQL options, so option C is correct. Options A and B are incorrect; SQL Server is not a Cloud SQL option. Option D is incorrect because Oracle is not a Cloud SQL option. You could choose to run SQL Server or Oracle on your instances, but you would have to manage them, unlike Cloud SQL managed databases.

Rationale

❌ **D. MySQL and Oracle**

Both MySQL and PostgreSQL are Cloud SQL options, so option C is correct. Options A and B are incorrect; SQL Server is not a Cloud SQL option. Option D is incorrect because Oracle is not a Cloud SQL option. You could choose to run SQL Server or Oracle on your instances, but you would have to manage them, unlike Cloud SQL managed databases.

Question 35

tb.564416.12.018

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: easy

You have a number of buckets containing old data that is hardly ever used. You don't want to delete it, but you want to minimize the cost of storing it. You decide to change the storage class to coldline for each of those buckets. What is the command structure that you would use?

○ A. `gcloud rewrite -s [STORAGE_CLASS] gs://[PATH_TO_OBJECT]`

◉ B. `gsutil rewrite -s [STORAGE_CLASS] gs://[PATH_TO_OBJECT]`

○ C. `cbt rewrite -s [STORAGE_CLASS] gs://[PATH_TO_OBJECT]`

○ D. `bq rewrite -s [STORAGE_CLASS] gs://[PATH_TO_OBJECT]`

Rationale

❌ **A.** `gcloud rewrite -s [STORAGE_CLASS] gs://[PATH_TO_OBJECT]`

`gsutil` is the correct command, so option B is correct. Option A is incorrect because `gcloud` commands are not used to manage Cloud Storage. Similarly, options C and D are incorrect because they use commands for Bigtable and BigQuery, respectively.

Rationale

✅ **B.** `gsutil rewrite -s [STORAGE_CLASS] gs://[PATH_TO_OBJECT]`

`gsutil` is the correct command, so option B is correct. Option A is incorrect because `gcloud` commands are not used to manage Cloud Storage. Similarly, options C and D are incorrect because they use commands for Bigtable and BigQuery, respectively.

Rationale

❌ **C.** `cbt rewrite -s [STORAGE_CLASS] gs://[PATH_TO_OBJECT]`

`gsutil` is the correct command, so option B is correct. Option A is incorrect because `gcloud` commands are not used to manage Cloud Storage. Similarly, options C and D are incorrect because they use commands for Bigtable and BigQuery, respectively.

Rationale

❌ **D.** `bq rewrite -s [STORAGE_CLASS] gs://[PATH_TO_OBJECT]`

`gsutil` is the correct command, so option B is correct. Option A is incorrect because `gcloud` commands are not used to manage Cloud Storage. Similarly, options C and D are incorrect because they use commands for Bigtable and BigQuery, respectively.

Question 36

tb.564416.11.011

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: medium

Which of the following are database services that do not require you to specify configuration information for VMs?

○ A. BigQuery only

○ B. Datastore only

○ C. Firebase and Datastore

◉ D. BigQuery, Datastore, and Firebase

Rationale

❌ **A. BigQuery only**

BigQuery, Datastore, and Firebase are all fully managed services that do not require you to specify configuration information for virtual machines, which makes option D correct. Cloud SQL and Bigtable require you to specify some configuration information for virtual machines.

Rationale

❌ **B. Datastore only**

BigQuery, Datastore, and Firebase are all fully managed services that do not require you to specify configuration information for virtual machines, which makes option D correct. Cloud SQL and Bigtable require you to specify some configuration information for virtual machines.

Rationale

❌ **C. Firebase and Datastore**

BigQuery, Datastore, and Firebase are all fully managed services that do not require you to specify configuration information for virtual machines, which makes option D correct. Cloud SQL and Bigtable require you to specify some configuration information for virtual machines.

Rationale

✅ **D. BigQuery, Datastore, and Firebase**

BigQuery, Datastore, and Firebase are all fully managed services that do not require you to specify configuration information for virtual machines, which makes option D correct. Cloud SQL and Bigtable require you to specify some configuration information for virtual machines.

Question 37

tb.564416.12.007

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: medium

You want to get an estimate of the volume of data scanned by BigQuery from the command line. Which option shows the command structure you should use?

A. `gcloud BigQuery query estimate [SQL_QUERY]`

B. `bq --location=[LOCATION] query --use_legacy_sql=false --dry_run [SQL_QUERY]`

C. `gsutil --location=[LOCATION] query --use_legacy_sql=false --dry_run [SQL_QUERY]`

D. `cbt BigQuery query estimate [SQL_QUERY]`

Rationale

❌ **A.** `gcloud BigQuery query estimate [SQL_QUERY]`

Option B shows the correct `bq` command structure, which includes `location` and the `--dry_run` option. This option calculates an estimate without actually running the query. Options A and C are incorrect because they use the wrong command; `gcloud` and `gsutil` are not used with BigQuery. Option D is also wrong. `cbt` is a tool for working with Bigtable, not BigQuery. Be careful not to confuse the two because their names are similar.

Rationale

✅ **B.** `bq --location=[LOCATION] query --use_legacy_sql=false --dry_run [SQL_QUERY]`

Option B shows the correct `bq` command structure, which includes `location` and the `--dry_run` option. This option calculates an estimate without actually running the query. Options A and C are incorrect because they use the wrong command; `gcloud` and `gsutil` are not used with BigQuery. Option D is also wrong. `cbt` is a tool for working with Bigtable, not BigQuery. Be careful not to confuse the two because their names are similar.

Rationale

❌ **C.** `gsutil --location=[LOCATION] query --use_legacy_sql=false --dry_run [SQL_QUERY]`

Option B shows the correct `bq` command structure, which includes `location` and the `--dry_run` option. This option calculates an estimate without actually running the query. Options A and C are incorrect because they use the wrong command; `gcloud` and `gsutil` are not used with

BigQuery. Option D is also wrong. `cbt` is a tool for working with Bigtable, not BigQuery. Be careful not to confuse the two because their names are similar.

Rationale

❌ **D.** `cbt BigQuery query estimate [SQL_QUERY]`

Option B shows the correct `bq` command structure, which includes `location` and the `--dry_run` option. This option calculates an estimate without actually running the query. Options A and C are incorrect because they use the wrong command; `gcloud` and `gsutil` are not used with BigQuery. Option D is also wrong. `cbt` is a tool for working with Bigtable, not BigQuery. Be careful not to confuse the two because their names are similar.

Question 38

tb.564416.11.002

Lesson Reference: Chapter 11: Planning Storage in the Cloud

Difficulty: easy

Your manager has asked for your help in reducing Cloud Storage charges. You know that some of the files stored in Cloud Storage are rarely accessed. What kind of storage would you recommend for those files?

○ A. Nearline

○ B. Regional

◉ C. Coldline

○ D. Multiregional

Rationale

❌ **A. Nearline**

The goal is to reduce cost so you would want to use the least costly storage option. Coldline has the lowest per gigabyte charge at $0.07/GB/month, so option C is correct. Nearline is the next lowest followed by regional. Multiregional has the highest per gigabyte charge. Both nearline and coldline have access charges, but those are not considered in this question.

Rationale

❌ **B. Regional**

The goal is to reduce cost so you would want to use the least costly storage option. Coldline has the lowest per gigabyte charge at $0.07/GB/month, so option C is correct. Nearline is the next lowest followed by regional. Multiregional has the highest per gigabyte charge. Both nearline and coldline have access charges, but those are not considered in this question.

Rationale

✅ **C. Coldline**

The goal is to reduce cost so you would want to use the least costly storage option. Coldline has the lowest per gigabyte charge at $0.07/GB/month, so option C is correct. Nearline is the next lowest followed by regional. Multiregional has the highest per gigabyte charge. Both nearline and coldline have access charges, but those are not considered in this question.

Rationale

❌ D. Multiregional

The goal is to reduce cost so you would want to use the least costly storage option. Coldline has the lowest per gigabyte charge at $0.07/GB/month, so option C is correct. Nearline is the next lowest followed by regional. Multiregional has the highest per gigabyte charge. Both nearline and coldline have access charges, but those are not considered in this question.

Question 39

tb.564416.12.006

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: medium

When you enter a query into the BigQuery query form, BigQuery analyzes the query and displays an estimate of what metric?

○ A. Time required to enter the query

○ B. Cost of the query

◉ C. Amount of data scanned

○ D. Number of bytes passed between servers in the BigQuery cluster

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Rationale

❌ **A. Time required to enter the query**

Option C is correct; BigQuery displays an estimate of the amount of data scanned. This is important because BigQuery charges for data scanned in queries. Option A is incorrect; knowing how long it took you to enter a query is not helpful. Option B is incorrect; you need to use the scanned data estimate with the Pricing Calculator to get an estimate cost. Option D is incorrect; you do not create clusters in BigQuery as you do with Bigtable and Dataproc. Network I/O data is not displayed.

Rationale

❌ **B. Cost of the query**

Option C is correct; BigQuery displays an estimate of the amount of data scanned. This is important because BigQuery charges for data scanned in queries. Option A is incorrect; knowing how long it took you to enter a query is not helpful. Option B is incorrect; you need to use the scanned data estimate with the Pricing Calculator to get an estimate cost. Option D is incorrect; you do not create clusters in BigQuery as you do with Bigtable and Dataproc. Network I/O data is not displayed.

Rationale

✅ **C. Amount of data scanned**

Option C is correct; BigQuery displays an estimate of the amount of data scanned. This is important because BigQuery charges for data scanned in queries. Option A is incorrect; knowing how long it took you to enter a query is not helpful. Option B is incorrect; you need to use the scanned data estimate with the Pricing Calculator to get an estimate cost. Option D is incorrect; you do not create clusters in BigQuery as you do with Bigtable and Dataproc. Network I/O data is not displayed.

Rationale

❌ **D. Number of bytes passed between servers in the BigQuery cluster**

Option C is correct; BigQuery displays an estimate of the amount of data scanned. This is important because BigQuery charges for data scanned in queries. Option A is incorrect; knowing how long it took you to enter a query is not helpful. Option B is incorrect; you need to use the scanned data estimate with the Pricing Calculator to get an estimate cost. Option D is incorrect; you do not create clusters in BigQuery as you do with Bigtable and Dataproc. Network I/O data is not displayed.

Question 40

tb.564416.12.009

Lesson Reference: Chapter 12: Deploying Storage in the Cloud

Difficulty: medium

You want to estimate the cost of running a BigQuery query. What two services within Google Cloud Platform will you need to use?

○ A. BigQuery and Billing

○ B. Billing and Pricing Calculator

⦿ C. BigQuery and Pricing Calculator

○ D. Billing and Pricing Calculator

Rationale

❌ **A. BigQuery and Billing**

BigQuery provides an estimate of the amount of data scanned, and Pricing Calculator gives a cost estimate for scanning that volume of data. Options A, B, and C are incorrect; the Billing service tracks charges incurred. It is not used to estimate future or potential charges.

Rationale

❌ **B. Billing and Pricing Calculator**

BigQuery provides an estimate of the amount of data scanned, and Pricing Calculator gives a cost estimate for scanning that volume of data. Options A, B, and C are incorrect; the Billing service tracks charges incurred. It is not used to estimate future or potential charges.

Rationale

✅ **C. BigQuery and Pricing Calculator**

BigQuery provides an estimate of the amount of data scanned, and Pricing Calculator gives a cost estimate for scanning that volume of data. Options A, B, and C are incorrect; the Billing service tracks charges incurred. It is not used to estimate future or potential charges.

Rationale

❌ **D. Billing and Pricing Calculator**

BigQuery provides an estimate of the amount of data scanned, and Pricing Calculator gives a cost estimate for scanning that volume of data. Options A, B, and C are incorrect; the Billing service tracks charges incurred. It is not used to estimate future or potential charges.