You are developing a new application on a VM that is on your corporate network. The application will use Java Database Connectivity (JDBC) to connect to Cloud SQL for PostgreSQL. Your Cloud SQL instance is configured with IP address 192.168.3.48, and SSL is disabled. You want to ensure that your application can access your database instance without requiring configuration changes to your database. What should you do?

C. Define a connection string using Cloud SQL Auth proxy configured with a service account to point to the internal (private) IP address of your Cloud SQL instance.

Your digital-native business runs its database workloads on Cloud SQL. Your website must be globally accessible 24/7. You need to prepare your Cloud SQL instance for high availability (HA). You want to follow Google-recommended practices. What should you do? (Choose two.)

D. Enable point-in-time recovery.

E. Schedule automated backups.

Your company wants to move to Google Cloud. Your current data center is closing in six months. You are running a large, highly transactional Oracle application footprint on VMWare. You need to design a solution with minimal disruption to the current architecture and provide ease of migration to Google Cloud. What should you do?

A. Migrate applications and Oracle databases to Google Cloud VMware Engine (VMware Engine).

Your customer has a global chat application that uses a multi regional Cloud Spanner instance. The application has recently experienced degraded performance after a new version of the application was launched. Your customer asked you for assistance. During initial troubleshooting, you observed high read latency. What should you do?

C. Use SQL statements to analyze SPANNER_SYS.READ_STATS* tables.

Your company has PostgreSQL databases on-premises and on Amazon Web Services (AWS). You are planning multiple database migrations to Cloud SQL in an effort to reduce costs and downtime. You want to follow Google-recommended practices and use Google native data migration tools. You also want to closely monitor the migrations as part of the cutover strategy. What should you do?

A. Use Database Migration Service to migrate all databases to Cloud SQL.

You are setting up a Bare Metal Solution environment. You need to update the operating system to the latest version. You need to connect the Bare Metal Solution environment to the internet so you can receive software updates. What should you do?

C. Set up a Cloud NAT gateway on the Compute Engine VM.

Your organization is running a MySQL workload in Cloud SQL. Suddenly you see a degradation in database performance. You need to identify the root cause of the performance degradation. What should you do?

B. Use Cloud Monitoring to monitor CPU, memory, and storage utilization metrics.

You work for a large retail and ecommerce company that is starting to extend their business globally. Your company plans to migrate to Google Cloud. You want to use platforms that will scale easily, handle transactions with the least amount of latency, and provide a reliable customer experience. You need a storage layer for sales transactions and current inventory levels. You want to retain the same relational schema that your existing platform uses. What should you do?

B. Deploy Cloud Spanner using a multi-region instance, and place your compute resources close to the default leader region.

You host an application in Google Cloud. The application is located in a single region and uses Cloud SQL for transactional data. Most of your users are located in the same time zone and expect the application to be available 7 days a week, from 6 AM to 10 PM. You want to ensure regular maintenance updates to your Cloud SQL instance without creating downtime for your users. What should you do?

A. Configure a maintenance window during a period when no users will be on the system. Control the order of update by setting non production instances to earlier and production instances to later.

Your team recently released a new version of a highly consumed application to accommodate additional user traffic. Shortly after the release, you received an alert from your production monitoring team that there is consistently high replication lag between your primary instance and the read replicas of your Cloud SQL for MySQL instances. You need to resolve the replication lag. What should you do?

A. Identify and optimize slow running queries, or set parallel replication flags.

Your organization operates in a highly regulated industry. Separation of concerns (SoC) and security principle of least privilege (PoLP) are critical.
The operations team consists of:
Person A is a database administrator. Person B is an analyst who generates metric reports. Application C is responsible for automatic backups. You need to assign roles to team members for Cloud Spanner. Which roles should you assign?

A. roles/spanner.databaseAdmin for Person A roles/spanner.databaseReader for Person B roles/spanner.backupWriter for Application C

You are designing an augmented reality game for iOS and Android devices. You plan to use Cloud Spanner as the primary backend database for game state storage and player authentication. You want to track in-game rewards that players unlock at every stage of the game. During the testing phase, you discovered that costs are much higher than anticipated, but the query response times are within the SLA. You want to follow Google-recommended practices. You need the database to be performant and highly available while you keep costs low. What should you do?

D. Use granular instance sizing in Cloud Spanner and Autoscaler.

You recently launched a new product to the US market. You currently have two Bigtable clusters in one US region to serve all the traffic. Your marketing team is planning an immediate expansion to APAC. You need to roll out the regional expansion while implementing high availability according to Google-recommended practices. What should you do?

D. Maintain a target of 35% CPU utilization by locating: cluster-a in zone us-central1-a cluster-b in zone us-central2-a cluster-c in zone asia-northeast1-b cluster-d in zone asia-east1-b

Your ecommerce website captures user clickstream data to analyze customer traffic patterns in real time and support personalization features on your website. You plan to analyze this data using big data tools. You need a low-latency solution that can store 8 TB of data and can scale to millions of read and write requests per second. What should you do?

A. Write your data into Bigtable and use Dataproc and the Apache Hbase libraries for analysis.

Your company uses Cloud Spanner for a mission-critical inventory management system that is globally available. You recently loaded stock keeping unit (SKU) and product catalog data from a company acquisition and observed hotspots in the Cloud Spanner database. You want to follow Google-recommended schema design practices to avoid performance degradation. What should you do? (Choose two.)

D. Promote high-cardinality attributes in multi-attribute primary keys.

E. Use bit-reverse sequential value as the primary key.

You are managing multiple applications connecting to a database on Cloud SQL for PostgreSQL. You need to be able to monitor database performance to easily identify applications with long-running and resource-intensive queries. What should you do?

B. Use Query Insights for Cloud SQL.

You are building an application that allows users to customize their website and mobile experiences. The application will capture user information and preferences. User profiles have a dynamic schema, and users can add or delete information from their profile. You need to ensure that user changes automatically trigger updates to your downstream BigQuery data warehouse. What should you do?

C. Use Firestore in Native mode, and store user profile data as a document. Update the user profile with preferences specific to that user and use the user identifier to query.

Your application uses Cloud SQL for MySQL. Your users run reports on data that relies on near-real time; however, the additional analytics caused excessive load on the primary database. You created a read replica for the analytics workloads, but now your users are complaining about the lag in data changes and that their reports are still slow. You need to improve the report performance and shorten the lag in data replication without making changes to the current reports. Which two approaches should you implement? (Choose two.)

B. Create additional read replicas, and partition your analytics users to use different read replicas.

C. Disable replication on the read replica, and set the flag for parallel replication on the read replica. Re-enable replication and optimize performance by setting flags on the primary instance.

You are evaluating Cloud SQL for PostgreSQL as a possible destination for your on-premises PostgreSQL instances. Geography is becoming increasingly relevant to customer privacy worldwide. Your solution must support data residency requirements and include a strategy to: configure where data is stored control where the encryption keys are stored govern the access to data What should you do?

D. Use features like customer-managed encryption keys (CMEK), VPC Service Controls, and Identity and Access Management (IAM) policies.

Your customer is running a MySQL database on-premises with read replicas. The nightly incremental backups are expensive and add maintenance overhead. You want to follow Google-recommended practices to migrate the database to Google Cloud, and you need to ensure minimal downtime. What should you do?

D. Create an external replica, and use Cloud SQL to synchronize the data to the replica.

Your team uses thousands of connected IoT devices to collect device maintenance data for your oil and gas customers in real time. You want to design inspection routines, device repair, and replacement schedules based on insights gathered from the data produced by these devices. You need a managed solution that is highly scalable, supports a multi-cloud strategy, and offers low latency for these IoT devices. What should you do?

C. Use MongoD8 Atlas with Charts.

Your application follows a microservices architecture and uses a single large Cloud SQL instance, which is starting to have performance issues as your application grows. in the Cloud Monitoring dashboard, the CPU utilization looks normal You want to follow Google-recommended practices to resolve and prevent these performance issues while avoiding any major refactoring. What should you do?

C. Increase the storage size for the instance.

You need to perform a one-time migration of data from a running Cloud SQL for MySQL instance in the us-central1 region to a new Cloud SQL for MySQL instance in the us-east1 region. You want to follow Google recommended practices to minimize performance impact on the currently running instance. What should you do?

C. Create a SQL dump file in Cloud Storage using a temporary instance, and then use that file to import into a new instance.

You are running a mission-critical application on a Cloud SQL for PostgreSQL database with a multi-zonal setup. The primary and read replica instances are in the same region but in different zones. You need to ensure that you split the application load between both instances. What should you do?

B. Use PgBouncer to set up database connection pooling between the Cloud SQL primary and read replica instances.

Your organization deployed a new version of a critical application that uses Cloud SQL for MySQL with high availability (HA) and binary logging enabled to store transactional information. The latest release of the application had an error that caused massive data corruption in your Cloud SQL for MySQL database. You need to minimize data loss. What should you do?

C. Perform a point-in-time recovery of your Cloud SQL for MySQL database, selecting a date and time before the data was corrupted.

You plan to use Database Migration Service to migrate data from a PostgreSQL on-premises instance to Cloud SQL. You need to identify the prerequisites for creating and automating the task. What should you do? (Choose two.)

C. Ensure that all PostgreSQL tables have a primary key.

E. Ensure that pglogical is installed on the source PostgreSQL database.

You are using Compute Engine on Google Cloud and your data center to manage a set of MySQL databases in a hybrid configuration. You need to create replicas to scale reads and to offload part of the management operation. What should you do?

C. Use Cloud SQL for MySQL external replica.

Your company is shutting down their data center and migrating several MySQL and PostgreSQL databases to Google Cloud. Your database operations team is severely constrained by ongoing production releases and the lack of capacity for additional on-premises backups. You want to ensure that the scheduled migrations happen with minimal downtime and that the Google Cloud databases stay in sync with the on-premises data changes until the applications can cut over. What should you do? (Choose two.)

A. Use Database Migration Service to migrate the databases to Cloud SQL.

C. Use replication from an external server to migrate the databases to Cloud SQL.

Your company is migrating the existing infrastructure for a highly transactional application to Google Cloud. You have several databases in a MySQL database instance and need to decide how to transfer the data to Cloud SQL. You need to minimize the downtime for the migration of your 500 GB instance. What should you do?

B. 1. Create migration job using Database Migration Service. 2. Set the migration job type to Continuous, and allow the databases to complete the full dump phase and start sending data in change data capture (CDC) mode. 3. Wait for the replication delay to minimize, initiate a promotion of the new Cloud SQL instance, and wait for the migration job to complete. 4. Update your application connections to the new instance.

Your company uses the Cloud SQL out-of-disk recommender to analyze the storage utilization trends of production databases over the last 30 days. Your database operations team uses these recommendations to proactively monitor storage utilization and implement corrective actions. You receive a recommendation that the instance is likely to run out of disk space. What should you do to address this storage alert?

C. Manually or automatically increase the storage capacity.

You are managing a mission-critical Cloud SQL for PostgreSQL instance. Your application team is running important transactions on the database when another DBA starts an on-demand backup. You want to verify the status of the backup. What should you do?

B. Perform the gcloud sql operations list command.

You support a consumer inventory application that runs on a multi region instance of Cloud Spanner. A customer opened a support ticket to complain about slow response times. You notice a Cloud Monitoring alert about high CPU utilization. You want to follow Google recommended practices to address the CPU performance issue. What should you do first?

A. Increase the number of processing units.

Your company uses Bigtable for a user-facing application that displays a low-latency real-time dashboard. You need to recommend the optimal storage type for this read-intensive database. What should you do?

A. Recommend solid-state drives (SSD).

Your organization has a critical business app that is running with a Cloud SQL for MySQL backend database. Your company wants to build the most fault-tolerant and highly available solution possible. You need to ensure that the application database can survive a zonal and regional failure with a primary region of us-central1 and the backup region of us-east1. What should you do?

B. 1. Provision a Cloud SQL for MySQL instance in us-central1-a. 2. Create a multiple-zone instance in us-central1-b. 3. Create a read replica in us-east1-b.

You are building an Android game that needs to store data on a Google Cloud serverless database. The database will log user activity, store user preferences, and receive in-game updates. The target audience resides in developing countries that have intermittent internet connectivity. You need to ensure that the game can synchronize game data to the backend database whenever an internet network is available. What should you do?

A. Use Firestore.

You released a popular mobile game and are using a 50 TB Cloud Spanner instance to store game data in a PITR-enabled production environment. When you analyzed the game statistics, you realized that some players are exploiting a loophole to gather more points to get on the leaderboard. Another DBA accidentally ran an emergency bugfix script that corrupted some of the data in the production environment. You need to determine the extent of the data corruption and restore the production environment. What should you do? (Choose two.)

A. If the corruption is significant, use backup and restore, and specify a recovery timestamp.

E. If the corruption is insignificant, perform a stale read and specify a recovery timestamp. Write the results back.

You are starting a large CSV import into a Cloud SQL for MySQL instance that has many open connections. You checked memory and CPU usage, and sufficient resources are available. You want to follow Google-recommended practices to ensure that the import will not time out. What should you do?

A. Close idle connections or restart the instance before beginning the import operation.

You are migrating your data center to Google Cloud. You plan to migrate your applications to Compute Engine and your Oracle databases to Bare Metal Solution for Oracle. You must ensure that the applications in different projects can communicate securely and efficiently with the Oracle databases. What should you do?

A. Set up a Shared VPC, configure multiple service projects, and create firewall rules.

You are running an instance of Cloud Spanner as the backend of your ecommerce website. You learn that the quality assurance (QA) team has doubled the number of their test cases. You need to create a copy of your Cloud Spanner database in a new test environment to accommodate the additional test cases. You want to follow Google-recommended practices. What should you do?

C. Use Dataflow to run the export in Avro format.

You need to redesign the architecture of an application that currently uses Cloud SQL for PostgreSQL. The users of the application complain about slow query response times. You want to enhance your application architecture to offer sub-millisecond query latency. What should you do?

D. Configure Memorystore, and modify your application to offload queries.

You need to migrate existing databases from Microsoft SQL Server 2016 Standard Edition on a single Windows Server 2019 Datacenter Edition to a single Cloud SQL for SQL Server instance. During the discovery phase of your project, you notice that your on-premises server peaks at around 25,000 read IOPS. You need to ensure that your Cloud SQL instance is sized appropriately to maximize read performance. What should you do?

C. Create a SQL Server 2019 Standard on High Memory machine type with 16 vCPUs, 104 GB of RAM, and 4 TB of SSD.

You are managing a small Cloud SQL instance for developers to do testing. The instance is not critical and has a recovery point objective (RPO) of several days. You want to minimize ongoing costs for this instance. What should you do?

C. Turn on automated backup, and turn off transaction log retention.

You manage a meeting booking application that uses Cloud SQL. During an important launch, the Cloud SQL instance went through a maintenance event that resulted in a downtime of more than 5 minutes and adversely affected your production application. You need to immediately address the maintenance issue to prevent any unplanned events in the future. What should you do?

A. Set your production instance's maintenance window to non-business hours.

You are designing a highly available (HA) Cloud SQL for PostgreSQL instance that will be used by 100 databases. Each database contains 80 tables that were migrated from your on-premises environment to Google Cloud. The applications that use these databases are located in multiple regions in the US, and you need to ensure that read and write operations have low latency. What should you do?

A. Deploy 2 Cloud SQL instances in the us-central1 region with HA enabled, and create read replicas in us east1 and us-west1.

You work in the logistics department. Your data analysis team needs daily extracts from Cloud SQL for MySQL to train a machine learning model. The model will be used to optimize next-day routes. You need to export the data in CSV format. You want to follow Google-recommended practices. What should you do?

B. Use Cloud Scheduler to trigger a Cloud Function through Pub/Sub to call the cloudsql.instances.export API.