Answer Sheet

Q1) A large ecommerce company uses Amazon DynamoDB to handle the transactions on its web portal.Traffic patterns throughout the year are usually stable; however, a large event is planned. The companyknows that traffic will increase by up to 10 times the normal load over the 3-day event. When sale pricesare published during the event, traffic will spike rapidly.
How should a Database Specialist ensure DynamoDB can handle the increased traffic?

- Set an AWS Application Auto Scaling policy for the table to handle the increase in traffic
- ✓ Allow burst capacity to handle the additional load
- Ensure the table is always provisioned to meet peak needs
- Preprovision additional capacity for the known peaks and then reduce the capacity after the event

---

Q2) A Database Specialist is migrating an on-premises Microsoft SQL Server application database toAmazon RDS for PostgreSQL using AWS DMS. The application requires minimal downtime when theRDS DB instance goes live.
What change should the Database Specialist make to enable the migration?

- Configure the AWS DMS task to generate full logs to allow for ongoing change data capture (CDC)
- Configure the AWS DMS connections to allow two-way communication to allow for ongoing changedata capture (CDC)
- Configure the AWS DMS replication instance to allow both full load and ongoing change data capture
- ✓ Configure the on-premises application database to act as a source for an AWS DMS full load withongoing change data capture (CDC)

Explanation:-Reference: https://aws.amazon.com/premiumsupport/knowledge-center/rds-import-data/

Q3)

A financial company has allocated an Amazon RDS MariaDB DB instance with large storage capacity toaccommodate migration efforts. Post-migration, the company purged unwanted data from the instance.The company now want to downsize storage to save money. The solution must have the least impact onproduction and near-zero downtime.

Which solution would meet these requirements?

- Create a new database using native backup and restore
- Create a new RDS DB instance with the required storage and move the databases from the oldinstances to the new instance using AWS DMS
- ✓ Create a snapshot of the old databases and restore the snapshot with the required storage
- Create a new read replica and make it the primary by terminating the existing primary

---

Q4)

A large financial services company requires that all data be encrypted in transit. A Developer isattempting to connect to an Amazon RDS DB instance using the company VPC for the first time withcredentials provided by a Database Specialist. Other members of the Development team can connect,but this user is consistently receiving an error indicating a communications link failure. The Developerasked the Database Specialist to reset the password a number of times, but the error persists.

Which step should be taken to troubleshoot this issue?

- Ensure that the connection is using SSL and is addressing the port where the RDS DB instance islistening for encrypted connections
- Ensure that the RDS DB instance has not reached its maximum connections limit
- ✓ Ensure that the RDS DB instance's subnet group includes a public subnet to allow the Developer toconnect
- Ensure that the database option group for the RDS DB instance allows ingress from the Developermachine's IP address

---

Q5)

A company is running Amazon RDS for MySQL for its workloads. There is downtime when AWSoperating system patches are applied during the Amazon RDS-specified maintenance window.

What is the MOST cost-effective action that should be taken to avoid downtime?

- ✓ Enable a read replicas and direct read traffic to it when Amazon RDS is down
- Enable cross-Region read replicas and direct read traffic to then when Amazon RDS is down
- Migrate the workloads from Amazon RDS for MySQL to Amazon DynamoDB
- Enable an Amazon RDS for MySQL Multi-AZ configuration

Q6) A company is about to launch a new product, and test databases must be re-created from productiondata. The company runs its production databases on an Amazon Aurora MySQL DB cluster. A DatabaseSpecialist needs to deploy a solution to create these test databases as quickly as possible with the leastamount of administrative effort.
What should the Database Specialist do to meet these requirements?

- Use database cloning to create clones of the production cluster
- Create logical dumps of the production cluster and restore them into new test clusters
- Restore a snapshot from the production cluster into test clusters
- ✓ Add an additional read replica to the production cluster and use that node for testing

---

Q7) A company is planning to close for several days. A Database Specialist needs to stop all applicationsalong with the DB instances to ensure employees do not have access to the systems during this time. Alldatabases are running on Amazon RDS for MySQL.
The Database Specialist wrote and executed a script to stop all the DB instances. When reviewing thelogs, the Database

Specialist found that Amazon RDS DB instances with read replicas did not stop.
How should the Database Specialist edit the script to fix this issue?

- Stop the read replicas before stopping their source instances
- Delete each read replica before stopping its corresponding source instance
- Stop the source instances before stopping their read replicas
- ✅ Use the AWS CLI to stop each read replica and source instance at the same

---

Q8) A Database Specialist is designing a new database infrastructure for a ride hailing application. Theapplication data includes a ride tracking system that stores GPS coordinates for all rides. Real-timestatistics and metadata lookups must be performed with high throughput and microsecond latency. Thedatabase should be fault tolerant with minimal operational overhead and development effort.
Which solution meets these requirements in the MOST efficient way?

- ✅ Use Amazon DynamoDB as the database and use Amazon API Gateway

Explanation:-Reference: https://aws.amazon.com/solutions/case-studies/lyft/

- Use Amazon Aurora MySQL as the database and use Aurora's buffer cache
- Use Amazon DynamoDB as the database and use DynamoDB Accelerator
- Use Amazon RDS for MySQL as the database and use Amazon ElastiCache

---

Q9) A Database Specialist is planning to create a read replica of an existing Amazon RDS for MySQL Multi-AZ DB instance. When using the AWS Management Console to conduct this task, the DatabaseSpecialist discovers that the source RDS DB instance does not appear in the read replica sourceselection box, so the read replica cannot be created.
What is the most likely reason for this?

- ✅ Automated backups are not enabled on the source DB instance.

Explanation:-Reference: https://aws.amazon.com/rds/features/read-replicas/

- The minor MySQL version in the source DB instance does not support read replicas.
- Enhanced Monitoring is not enabled on the source DB instance.
- The source DB instance has to be converted to Single-AZ first to create a read replica from it.

Q10) A Database Specialist is setting up a new Amazon Aurora DB cluster with one primary instance and three Aurora Replicas for a highly intensive, business-critical application. The Aurora DB cluster has one medium-sized primary instance, one large-sized replica, and two medium sized replicas. The Database Specialist did not assign a promotion tier to the replicas.
In the event of a primary failure, what will occur?

- Aurora will promote the largest-sized Aurora Replica
- Aurora will promote an arbitrary Aurora Replica
- ✅ Aurora will promote an Aurora Replica that is of the same size as the primary instance

Explanation:-Reference: https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/aurora-ug.pdf

- Aurora will not promote an Aurora Replica

Q11) A gaming company has recently acquired a successful iOS game, which is particularly popular during theholiday season. The company has decided to add a leaderboard to the game that uses AmazonDynamoDB. The application load is expected to ramp up over the holiday season.
Which solution will meet these requirements at the lowest cost?

- ✅ DynamoDB with on-demand capacity mode

Explanation:-Reference: https://aws.amazon.com/blogs/database/running-spiky-workloads-and-optimizing-costs-bymore-than-90-using-amazon-dynamodb-on-demand-capacity-mode/?nc1=b_rp

- DynamoDB with DynamoDB Accelerator
- DynamoDB Streams
- DynamoDB with provisioned capacity mode with Auto Scaling

Q12) A Database Specialist is working with a company to launch a new website built on Amazon Aurora withseveral Aurora Replicas. This new website will replace an on-premises website connected to a legacyrelational database. Due to stability issues in the legacy database, the company would like to test theresiliency of Aurora.
Which action can the Database Specialist take to test the resiliency of the Aurora DB cluster?

- Remove the DB cluster endpoint to simulate a master DB instance failure
- ✅ Use Aurora fault injection to crash the master DB instance

Explanation:-Reference: https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/AuroraMySQL.Managing.FaultInjectionQueries.html

- Stop the DB cluster and analyze how the website responds
- Use Aurora Backtrack to crash the DB cluster

Q13) A company has a web-based survey application that uses Amazon DynamoDB. During peak usage, whensurvey responses are being collected, a Database Specialist sees theProvisionedThroughputExceededException error.
What can the Database Specialist do to resolve this error? (Choose two.)

- Change the table capacity mode to on-demand
- ✅ Change the table type to throughput optimized

Explanation:-Reference: https://forums.aws.amazon.com/thread.jspa?threadID=174315

- ✅ Increase the write capacity units for the specific table

Explanation:-Reference: https://forums.aws.amazon.com/thread.jspa?threadID=174315

- Purchase DynamoDB reserved capacity in the affected Region
- Change the table to use Amazon DynamoDB Streams

Q14) A large ecommerce company uses Amazon DynamoDB to handle the transactions on its web portal.Traffic patterns throughout the year are usually stable; however, a large event is planned. The companyknows that traffic will increase by up to 10 times the normal load over the 3-day event. When sale pricesare published during the event, traffic will spike rapidly. How should a Database Specialist ensure DynamoDB can handle the increased traffic?

- Preprovision additional capacity for the known peaks and then reduce the capacity after the event
- Set an AWS Application Auto Scaling policy for the table to handle the increase in traffic
- ✅ Allow burst capacity to handle the additional load
- Ensure the table is always provisioned to meet peak needs

Q15) Which of the following data replication methods is utilized by Amazon RDS read-replica instances?

- ✅ Asynchronous replication

Explanation:-Amazon RDS utilizes asynchronous method to replicate changes in the primary Amazon RDS instance to secondary read replica instances.

- Multi-master replication
- Lazy replication
- Synchronous replication

Q16)

A database specialist wishes to save costs on Amazon RDS instances by stopping them.

Which statement below accurately describes stopping Amazon RDS instances?

- You can stop a DB instance for any duration when it is in a single availability zone.
- ✅ You can stop a DB instance for up to seven days when it is in a Multi-AZ configuration.

Explanation:-it is possible to stop a DB instance for up to seven days. After several days, the DB instance is automatically started. This is required to perform the maintenance updates. Further, it is possible to stop and start a DB instance whether it is configured for a single Availability Zone or for Multi-AZ. One limitation is Amazon RDS for SQL Server. You can't stop an Amazon RDS for SQL Server DB instance in a Multi-AZ configuration. The question does not specify RDS for SQL Server.

- You can stop a DB instance for up to seven days when it is in a single availability zone.
- You can stop a DB instance for any duration when it is in a Multi-AZ configuration

---

Q17) What is the maximum size of an item in a DynamoDB table?

- 40 MB
- ✅ 400 KB

Explanation:-the maximum item size in DynamoDB is 400 KB.

- 40 KB
- 400 MB

Q18)

A database administrator needs to move an Oracle database deployed on EC2 from one region to another.

What steps must the administrator perform to accomplish this?

- Configure a Multi-AZ for the database. Promote a Multi-AZ node to a primary database.
- Create a read-replica of the RDS database in another region. Promote the replica to a primary database.
- ✅ Shut down the EC2, then take the AMI and copy it in another region. Launch a new EC2 instance from the AMI.

Explanation:-to copy an EC2 instance from one region to another, you must first create an image from an existing EC2 instance, perform a copy of the image to a different region, and then create a new EC2 instance from that image. To maintain system integrity, it is recommended to shut down the EC2 instance before creating an AMI.

- It is not possible to move an EC2 instance from one region to another.

Q19) Which statement best describes partition key and sort key designs of DynamoDB indexes?

- LSI can have a different partition key and sort key compared to the base table.
- ✅ GSI can have a different partition key and sort key compared to the base table.

Explanation:-a global secondary index is a DynamoDB index with a partition key and a sort key that can be different from those specified on the base table. They are generally used to perform scan and queries on the data based on different partition key criteria.

- GSI should have the same partition key as the base table.
- LSI must have the same sort key compared to the base table.

Q20) Which of the following is an example of a good DynamoDB hash key?

- Book Author
- ✅ Internationl Standard Book Number (ISBN)

Explanation:-DynamoDB best practice states that a hash key should have high cardinality to avoid hot partitions. ISBN is a high cardinality attribute as it uniquely identifies each book.

- Book Title
- Book Language

Q21) Which of the following data replication methods is utilized by Amazon RDS multi-AZ?

- Lazy replication

✅ Synchronous replication

Explanation:-in a Multi-AZ deployment, the primary Amazon RDS instance is synchronously replicated to a standby replica instance in a different Availability Zone.

- Multi-master replication
- Asynchronous replication

Q22)

A developer is implementing schema changes for an Amazon Aurora database. They wish to perform tests of these schema changes. A development environment in the developer's AWS account is required to perform these tests.

What is the fastest and most effortless method for the developer to create a new Amazon Aurora development environment?

- Create a snapshot of the production database. Copy the snapshot. Create a new Amazon Aurora database from the snapshot.
- ✅ Create a clone of the production database.

Explanation:-Option A is incorrect because read-replicas are only used for read operations on a production database. They cannot be used to perform and test schema changes. Option B is incorrect because this is not an optimal solution. Creating and copying a snapshot, and provisioning a new Aurora cluster can be very time-consuming activity for large production databases. Operationally, this method is also not ideal as it involves many steps. Further, it is not the most cost-efficient solution as it requires storage for snapshot and additional cluster infrastructure. Option C is CORRECT because Amazon Aurora database cloning is a quick and cost-effective method of creating "clones" of an Aurora DB cluster. The clone databases utilize minimal additional space. The clones can be used for performing operations, such as schema change testing, without impacting the source production database. Option D is incorrect because global database clusters have only one primary instance. Any schema changes would impact the production cluster. Reference: https://aws.amazon.com/blogs/aws/amazon-aurora-fast-database-cloning/ https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Aurora.Managing.Clone.html

- Create a read-replica of the production database.
- Configure the production cluster to a global database by adding a cluster in another region

---

Q23)

A development team is experiencing performance issues with their Amazon RDS instance. They wish to measure database load and identify SQL commands with a high CPU load.

What service can the team use to help them solve this issue?

- CloudTrail Insights Events
- CloudWatch Enhanced Monitoring
- Inspector assessment report
- ✅ RDS Performance Insights

Explanation:-Amazon RDS Performance Insights collects key performance metrics of Amazon RDS DB instances and identifies SQL queries that create high database load. It can help in tuning and improving RDS database performance.

Q24)

A .NET application is deployed to IIS running on EC2 instances. The application also uses SQL Server on EC2 instances as a data tier. The development team wants to implement a monitoring solution for the application that would collect and analyze key metrics, pull logs from the IIS and SQL Server, and correlate any errors to aid in identifying the resolution.

What service should the team utilize to satisfy this requirement?

- Inspector assessment report
- ✅ CloudWatch Application Insights

Explanation:-CloudWatch Application Insights for .NET and SQL Server collects metrics and logs of .NET and SQL Server applications across the stack (e.g. IIS server, OS, SQL Server database). It collects performance metrics and helps in troubleshooting by automatically correlating errors and creating visual dashboards.

- CloudTrail Insights Events
- X-Ray Service Map

Q25)

An application development team complains that they are experiencing performance issues with ElastiCache. After investigation, a database specialist determines that the ElastiCache cluster does not have sufficient memory allocated for non-data use.

How can the specialist solve this issue?

- ✅ Create custom parameter group with reserved-memory-percent parameter to 50. Apply the custom parameter group to the cluster.
- Create custom parameter group with reserved-memory parameter set to 50. Apply the custom parameter group to the cluster.
- Using aws elasticache modify-cache-cluster CLI command, set the reserved-memory-percent parameter to 50.
- Using aws elasticache modify-cache-cluster CLI command, set reserved-memory parameter to 50.
