1.What is RDS. What are the database engine options available in RDS?

A) Amazon RDS is a Relational Database Cloud Service.

Amazon RDS minimizes relational database management by automation.

Amazon RDS creates multiple instances for high availability and failovers.

Amazon RDS supports PostgreSQL, MySQL, Maria DB, Oracle, SQL Server, and Amazon Aurora.

2.What is multi-AZ RDS?

A) In an Amazon RDS Multi-AZ deployment, Amazon RDS automatically creates a primary database (DB) instance and synchronously replicates the data to an instance in a different AZ. When it detects a failure, Amazon RDS automatically fails over to a standby instance without manual intervention.

3.What are the types of backups in RDS database?

A) Amazon RDS provides two different methods for backing up and restoring your DB instance(s) automated backups and database snapshots (DB Snapshots). The automated backup feature of Amazon RDS enables point-in-time recovery of your DB instance.

4.Is it possible to stop a RDS instance, how can I do that?

A) Sign in to the AWS Management Console and open the Amazon RDS console at <https://console.aws.amazon.com/rds/>. In the navigation pane, choose Databases, and then choose the DB instance that you want to reboot. For Actions, choose Reboot. The Reboot DB Instance page appears.

5.What is meant by parameter groups and Options group in rds. And what is the use of it?

A) **Parameter group** stores engine configuration values and can be used as a container mapped to one or more instances. If you do not specify a customer-created parameter group than a default parameter group is created containing typical defaults for RDS including engine, storage allocation , compute class.

You can create a customer parameter group using either the AWS interface or AWS CLI . For AWS CLI use the create**-db-parameter-group**

**Option Groups** enables and configure additional features. An option group can specify features, called options, that are available for a particular Amazon RDS DB instance. When you map a DB with an option group, the DB instance will inherit the features.

For example - if you want to enable TDE for RDS SQL Server - add TDE as an option in the Option group.

You can create a customer parameter group using either the AWS interface or AWS CLI. For AWS CLI use the create**-option-group**

6.What is the difference between SQL and NoSQL database. Give an example for both types.

A) SQL: SQL databases are relational, and NoSQL databases are non-relational.

* SQL databases use structured query language (SQL) and have a predefined schema.
* SQL databases are vertically scalable.
* SQL databases are table-based and SQL databases are better for multi-row transactions.

NoSQL:

* While NoSQL databases are horizontally scalable.
* NoSQL databases have dynamic schemas for unstructured data.
* While NoSQL databases are document, key-value, graph, or wide-column stores.
* While NoSQL is better for unstructured data like documents or JSON.

7.Create an RDS MS-SQL instance and connect to the instance using SQL Server Management Studio.

1. Go to RDS in AWS Console.
2. Find & Click Create database. ...
3. We create this using Standard Create Method.
4. On Create database page, Choose Microsoft SQL Server and SQL Server Express Edition.
5. Set up DB instance settings giving DB instance identifier, Master username, and Master Password.

8.Create an Aurora MYSQL instance and connect to the instance using SQL workbench.

A) **Connecting to Amazon Aurora (MySQL) via MySQL workbench**

1. For Hostname, enter the Aurora MySQL Endpoint (make sure to remove spaces/special characters).
2. For Username, enter awssct.
3. It's always a good idea to clear the password vault, so click on the Clear button, then click ok.

9.Create a DynamoDB table and check how the pricing working for DynamoDB.

A) 1: Create an Amazon EC2 key pair.

2: Launch an Amazon EMR cluster.

3: Connect to the Leader node.

4: Load data into HDFS.

5: Copy data to DynamoDB.

6: Query the data in the DynamoDB table.

7: (Optional) clean up.

DynamoDB Streams are charged at $0.02 per 100,000 read operations. Data requested by requesters outside the AWS region where the DynamoDB table is deployed is charged at $0.09 per GB.

10.What are the other Database type option available in AWS other than RDS, DynamoDB. Describe each pf these.

A) Amazon Aurora MySQL-Compatible Edition, Amazon Aurora PostgreSQL-Compatible Edition, MySQL, MariaDB, PostgreSQL, Oracle, and Microsoft SQL Server.

NoSQL database

Amazon DynamoDB is a fully managed, serverless, key-value NoSQL database designed to run high-performance applications at any scale.

11.What is Elastic Cache. Why is it used?

A)  Amazon Elastic ache is a web service that makes it easy to set up, manage, and scale a distributed in-memory data store or cache environment in the cloud. It provides a high-performance, scalable, and cost-effective caching solution.

12.Which engines does Amazon Elastic Cache supports?

A) Amazon ElastiCache supports two major open source in-memory caching engines: Memcached and Redis

ElastiCache users typically select between the two caching engines, depending on the design of the corresponding application.