Answer Sheet

Q1) Which of the following would you use to manage your encryption keys in the AWS Cloud? (Choose two)

- AWS CodeDeploy
- AWS Certificate Manager
- AWS CodeCommit
- ✅ AWS KMS

Explanation:-AWS Key Management Service (KMS) is a managed service that makes it easy for you to create and control the encryption keys used to encrypt your data, and uses FIPS 140-2 validated hardware security modules to protect the security of your keys. AWS Key Management Service is integrated with most other AWS services to help you protect the data you store with these services. AWS Key Management Service is also integrated with AWS CloudTrail to provide you with logs of all key usage to help meet your regulatory and compliance needs.
AWS CloudHSM is a cloud-based hardware security module (HSM) that enables you to easily generate and use your own encryption keys on the AWS Cloud. With CloudHSM, you can manage your own encryption keys using FIPS 140-2 Level 3 validated HSMs. CloudHSM offers you the flexibility to integrate with your applications using industry-standard APIs, such as PKCS#11, Java Cryptography Extensions (JCE), and Microsoft CryptoNG (CNG) libraries.

- ✅ CloudHSM

Explanation:-AWS Key Management Service (KMS) is a managed service that makes it easy for you to create and control the encryption keys used to encrypt your data, and uses FIPS 140-2 validated hardware security modules to protect the security of your keys. AWS Key Management Service is integrated with most other AWS services to help you protect the data you store with these services. AWS Key Management Service is also integrated with AWS CloudTrail to provide you with logs of all key usage to help meet your regulatory and compliance needs.
AWS CloudHSM is a cloud-based hardware security module (HSM) that enables you to easily generate and use your own encryption keys on the AWS Cloud. With CloudHSM, you can manage your own encryption keys using FIPS 140-2 Level 3 validated HSMs. CloudHSM offers you the flexibility to integrate with your applications using industry-standard APIs, such as PKCS#11, Java Cryptography Extensions (JCE), and Microsoft CryptoNG (CNG) libraries.

Q2) Which of the following services gives you access to all AWS auditor-issued reports and certifications?

- ✅ AWS Artifact

Explanation:-AWS Artifact is your go-to, central resource for compliance-related information that matters to you. It provides on-demand access to AWS' security and compliance reports and select online agreements. Reports available in AWS Artifact include AWS Service Organization Control (SOC) reports, Payment Card Industry (PCI) reports, and certifications from accreditation bodies across geographies and compliance verticals that validate the implementation and operating effectiveness of AWS security controls. Agreements available in AWS Artifact include the Business Associate Addendum (BAA) and the Nondisclosure Agreement (NDA).
a comperhenAccess all of AWS' auditor issued reports, certifications, accreditations and other third-party attestations.

- Amazon CloudWatch
- AWS CloudTrail
- AWS Config

Q3) A company has infrastructure hosted in an on-premises data center. They currently have an operations team that takes care of ID management. If they decide to migrate to the AWS cloud, which of the following services would help them perform the same role in AWS?

- Amazon Redshift
- ✅ AWS IAM

Explanation:-AWS Identity and Access Management (IAM) is a web service that helps you securely control access to AWS resources. You use IAM to control who is authenticated (signed in) and authorized (has permissions) to use resources.

- AWS Federation
- AWS X-Ray

Q4) What can you use to assign permissions to an IAM user?

- IAM Group
- ✅ IAM Policy

Explanation:-The policy is a JSON document that consists of:
1- Actions: what actions you will allow. Each AWS service has its own set of actions.
2- Resources: which resources you allow the action on.
3- Effect: what will be the effect when the user requests access—either allow or deny.
4- Conditions – which conditions must be present for the policy to take effect. For example, you might allow access only to the specific S3 buckets if the user is connecting from a specific IP range or has used multi-factor authentication at login.

- IAM Role
- IAM Identity

Q5) What best describes penetration testing?

- Testing your instances to check for the unhealthy ones
- Testing your software for bugs and errors
- ✅ Testing your network to find security vulnerabilities that an attacker could exploit

Explanation:-Penetration testing is the practice of testing a network or web application to find security vulnerabilities that an attacker could exploit.

- Testing your application's response time from different locations

---

Q6) Which of the following strategies helps protect your AWS root account?

- Apply MFA for the root account and use it for all of your work
- Only share your AWS account password or access keys with trusted persons

✅ Don't create an access key unless you need to

Explanation:-Anyone who has root user access keys for your AWS account has unrestricted access to all the resources in your account, including billing information. If you don't already have an access key for your AWS account root user, don't create one unless you absolutely need to. If you do have an access key for your AWS account root user, delete it. If you must keep it, rotate (change) the access key regularly.

⚪ Access the root account only from your personal Mobile Phone

---

Q7) Which of the following services provide real-time auditing for compliance and vulnerabilities? (Choose two)

⚪ Amazon Redshift

⚪ Amazon MQ

✅ AWS Trusted Advisor

Explanation:-Services like AWS Config, Amazon Inspector, and AWS Trusted Advisor continually monitor for compliance or vulnerabilities giving you a clear overview of which IT resources are in compliance, and which are not. With AWS Config rules you will also know if some component was out of compliance even for a brief period of time, making both point-in-time and period-in-time audits very effective.

✅ AWS Config

Explanation:-Services like AWS Config, Amazon Inspector, and AWS Trusted Advisor continually monitor for compliance or vulnerabilities giving you a clear overview of which IT resources are in compliance, and which are not. With AWS Config rules you will also know if some component was out of compliance even for a brief period of time, making both point-in-time and period-in-time audits very effective.

⚪ Amazon Cognito

Q8) What are some key advantages of AWS security? (Choose two)

⚪ All data is encrypted automatically on the server side

⚪ Performed automatically

⚪ Completely free

✅ Helps organizations to meet their compliance requirements

Explanation:-The Benefits of AWS Security include :

1- Keep Your Data Safe: The AWS infrastructure puts strong safeguards in place to help protect your privacy. All data is stored in highly secure AWS data centers.

2- Meet Compliance Requirements: AWS manages dozens of compliance programs in its infrastructure. This means that segments of your compliance have already been completed.

3- Save Money: Cut costs by using AWS data centers. Maintain the highest standard of security without having to manage your own facility.

4- Scale Quickly: Security scales with your AWS Cloud usage. No matter the size of your business, the AWS infrastructure is designed to keep your data safe.

✅ Save money

Explanation:-The Benefits of AWS Security include :

1- Keep Your Data Safe: The AWS infrastructure puts strong safeguards in place to help protect your privacy. All data is stored in highly secure AWS data centers.

2- Meet Compliance Requirements: AWS manages dozens of compliance programs in its infrastructure. This means that segments of your compliance have already been completed.

3- Save Money: Cut costs by using AWS data centers. Maintain the highest standard of security without having to manage your own facility.

4- Scale Quickly: Security scales with your AWS Cloud usage. No matter the size of your business, the AWS infrastructure is designed to keep your data safe.

Q9) Which statement is true in relation to security?

✅ AWS cannot access users' data

Explanation:-AWS has no idea about the user data and cannot read any data even if they wanted to. All data are protected by the customer access keys and secret access keys and the user's encryption methods.

⚪ AWS manages everything related to the operating system

⚪ AWS is responsible for the security of your application

⚪ Server side encryption is the responsibility of AWS

Q10) What are the benefits of AWS Organizations? (Choose two)

⚪ Help organizations achieve their desired business outcomes with AWS

⚪ Help organizations design and travel an accelerated path to successful cloud adoption

✅ Control access to AWS services

Explanation:-AWS Organizations has five main benefits:

1) Centrally manage access polices across multiple AWS accounts.

2) Automate AWS account creation and management.

3) Control access to AWS services.

4) Consolidate billing across multiple AWS accounts.

5) Configure AWS services across multiple accounts.

** Control access to AWS services: AWS Organizations allows you to restrict what services and actions are allowed in your accounts. You can use Service Control Policies (SCPs) to apply permission guardrails on AWS Identity and Access Management (IAM) users and roles. For example, you can apply an SCP that restricts users in accounts in your organization from launching any resources in regions that you do not explicitly allow.

** Consolidate billing across multiple AWS accounts: You can use AWS Organizations to set up a single payment method for all the AWS accounts in your organization through consolidated billing. With consolidated billing, you can see a combined view of charges incurred by all your accounts, as well as take advantage of pricing benefits from aggregated usage, such as volume discounts for Amazon EC2 and Amazon S3.

✅ Consolidate billing across multiple AWS accounts

Explanation:-AWS Organizations has five main benefits:

1) Centrally manage access polices across multiple AWS accounts.

2) Automate AWS account creation and management.

3) Control access to AWS services.

4) Consolidate billing across multiple AWS accounts.

5) Configure AWS services across multiple accounts.

** Control access to AWS services: AWS Organizations allows you to restrict what services and actions are allowed in your accounts. You can use Service Control Policies (SCPs) to apply permission guardrails on AWS Identity and Access Management (IAM) users and roles. For example, you can apply an SCP that restricts users in accounts in your organization from launching any resources in regions that you do not explicitly allow.
** Consolidate billing across multiple AWS accounts: You can use AWS Organizations to set up a single payment method for all the AWS accounts in your organization through consolidated billing. With consolidated billing, you can see a combined view of charges incurred by all your accounts, as well as take advantage of pricing benefits from aggregated usage, such as volume discounts for Amazon EC2 and Amazon S3.
- Manage your organization's payment methods

Q11) Which feature enables users to sign in to their AWS accounts with their existing corporate credentials?

- Access keys
- Amazon Cognito
- ✅ Federation

Explanation:-With Federation, you can use single sign-on (SSO) to access your AWS accounts using credentials from your corporate directory. Federation uses open standards, such as Security Assertion Markup Language 2.0 (SAML), to exchange identity and security information between an identity provider (IdP) and an application.
AWS offers multiple options for federating your identities in AWS:
1- AWS Identity and Access Management (IAM): You can use AWS Identity and Access Management (IAM) to enable users to sign in to their AWS accounts with their existing corporate credentials.
2- AWS Directory Service: AWS Directory Service for Microsoft Active Directory, also known as AWS Microsoft AD, uses secure Windows trusts to enable users to sign in to the AWS Management Console, AWS Command Line Interface (CLI), and Windows applications running on AWS using their existing corporate Microsoft Active Directory credentials.
- IAM Permissions

Q12) Which of the following can an AWS customer use to know more about prohibited uses of the web services offered by AWS?

- AWS CloudTrail
- AWS Artifact
- ✅ AWS Acceptable Use Policy

Explanation:-The AWS Acceptable Use Policy describes prohibited uses of the web services offered by Amazon Web Services, Inc. and its affiliates (the "Services") and the website located at http://aws.amazon.com (the "AWS Site"). The examples described in this Policy are not exhaustive. AWS may modify this Policy at any time by posting a revised version on the AWS Site. By using the Services or accessing the AWS Site, you agree to the latest version of this Policy. If you violate the Policy or authorize or help others to do so, AWS may suspend or terminate your use of the Services.
- AWS Budgets

Q13)

The AWS account administrator of your company has been fired. With the permissions granted to him as an administrator, he was able to create multiple IAM user accounts and access keys. Additionally, you are not sure whether he has access to the AWS root account or not.

What should you do immediately to protect your AWS infrastructure? (Choose two)

- Delete all IAM accounts and recreate others
- Download all the attached policies in a safe place
- ✅ Put IP restriction on all Users' accounts

Explanation:-To protect your AWS infrastructure in this situation you should lock down your root user and all accounts that the administrator had access to.
Here are some ways to do that:
1- Change the user name and the password of the root user account and all of the IAM accounts that the administrator has access to.
2- Rotate (change) all access keys for those accounts.
3- Enable MFA on those accounts.
4- Put IP restriction on all Users' accounts.
- ✅ Change the user name and the password and create MFA for the root account

Explanation:-To protect your AWS infrastructure in this situation you should lock down your root user and all accounts that the administrator had access to.
Here are some ways to do that:
1- Change the user name and the password of the root user account and all of the IAM accounts that the administrator has access to.
2- Rotate (change) all access keys for those accounts.
3- Enable MFA on those accounts.
4- Put IP restriction on all Users' accounts.
- Use the CloudWatch service to check all the API calls that have been made in your account since the administrator was fired

---

Q14) Which of the following requires an access key and a security access key to get programmatic access to AWS resources? (Choose two)

- IAM group
- IAM role
- ✅ AWS account root user

Explanation:-An AWS IAM user might need to make API calls or use the AWS CLI. In that case, you need to create an access key (access key ID and a secret access key) for that user. You can create IAM user access keys with the IAM console, AWS CLI,or AWS API.
To create access keys for your AWS account root user, you must use the AWS Management Console.
- ✅ IAM user

Explanation:-An AWS IAM user might need to make API calls or use the AWS CLI. In that case, you need to create an access key (access key ID and a secret access key) for that user. You can create IAM user access keys with the IAM console, AWS CLI,or AWS API.
To create access keys for your AWS account root user, you must use the AWS Management Console.
- TAM

Q15) How does AWS support customer compliance?

- It's not possible to meet regulatory compliance requirements in the Cloud
- ✅ AWS has achieved a number of common assurance certifications such as ISO 9001 and HIPAA

Explanation:-AWS environments are continuously audited, and its infrastructure and services are approved to operate under several compliance standards and industry certifications across geographies and industries, including PCI DSS, ISO 2700, ISO 9001, and HIPAA. You can use these certifications to validate the implementation and effectiveness of AWS security controls. For example, AWS companies that use AWS products and services to handle credit card information can rely on AWS technology infrastructure as they manage their PCI DSS compliance certification.

- AWS applies the most common Cloud security standards, and is responsible for complying with customers' applicable laws and regulations
- Many AWS services are assessed regularly to comply with local laws and regulations

---

Q16) Which of the following services enables you to easily generate and use your own encryption keys in the AWS Cloud?

- AWS Certificate Manager
- ✅ AWS CloudHSM

Explanation:-AWS CloudHSM is a cloud-based hardware security module (HSM) that enables you to easily generate and use your own encryption keys on the AWS Cloud.

- AWS Shield
- AWS WAF

Q17) What are the services that AWS provide to protect against network and application layer DDoS attacks? (Choose two)

- AWS Systems Manager
- ✅ AWS Web Application Firewall

Explanation:-Amazon CloudFront, AWS Shield, AWS Web Application Firewall (WAF), and Amazon Route 53 work seamlessly together to create a flexible, layered security perimeter against multiple types of attacks including network and application layer DDoS attacks. All of these services are co-resident at the AWS edge location and provide a scalable, reliable, and high-performance security perimeter for your applications and content.
Additional information:
AWS Shield provides always-on DDoS detection and automatic inline mitigations that minimize application downtime and latency, so there is no need to engage AWS Support to benefit from DDoS protection. All AWS customers benefit from the automatic protections of AWS Shield Standard, at no additional charge. AWS Shield Standard defends against most common, frequently occurring network and transport layer DDoS attacks that target your web site or applications.

- Amazon EFS
- AWS Secrets Manager
- ✅ Amazon CloudFront

Explanation:-Amazon CloudFront, AWS Shield, AWS Web Application Firewall (WAF), and Amazon Route 53 work seamlessly together to create a flexible, layered security perimeter against multiple types of attacks including network and application layer DDoS attacks. All of these services are co-resident at the AWS edge location and provide a scalable, reliable, and high-performance security perimeter for your applications and content.
Additional information:
AWS Shield provides always-on DDoS detection and automatic inline mitigations that minimize application downtime and latency, so there is no need to engage AWS Support to benefit from DDoS protection. All AWS customers benefit from the automatic protections of AWS Shield Standard, at no additional charge. AWS Shield Standard defends against most common, frequently occurring network and transport layer DDoS attacks that target your web site or applications.

Q18) Which of the following services is used during the process of encrypting EBS volumes?

- Amazon ECR
- ✅ AWS KMS

Explanation:-Amazon EBS encryption offers a straight-forward encryption solution for your EBS resources that doesn't require you to build, maintain, and secure your own key management infrastructure. You can use the AWS Key Management Service (AWS KMS) to create and control the encryption keys used to encrypt your data. AWS Key Management Service is also integrated with other AWS services including Amazon S3, and Amazon Redshift, to make it simple to encrypt your data with encryption keys that you manage.

- Amazon GuardDuty
- AWS WAF

Q19) What are the main differences between an IAM user and an IAM role? (Choose two)

- A role is uniquely associated with only one person, however an IAM user is intended to be assumable by anyone who needs it
- ✅ An IAM user has permanent credentials associated with it, however a role has temporary credentials associated with it

Explanation:-An IAM role is similar to a user, in that it is an AWS identity with permission policies that determine what the identity can and cannot do in AWS. However, instead of being uniquely associated with one person, a role is intended to be assumable by anyone who needs it. Also, a role does not have standard long-term credentials (password or access keys) associated with it. Instead, if a user assumes a role, temporary security credentials are created dynamically and provided to the user.

- Using IAM users is more cost effective than IAM roles
- An IAM user has temporary credentials associated with it, however a role has permanent credentials associated with it
- ✅ An IAM user is uniquely associated with only one person, however a role is intended to be assumable by anyone who needs it

Explanation:-An IAM role is similar to a user, in that it is an AWS identity with permission policies that determine what the identity can and cannot do in AWS. However, instead of being uniquely associated with one person, a role is intended to be assumable by anyone who needs it. Also, a role does not have standard long-term credentials (password or access keys) associated with it. Instead, if a user assumes a role, temporary security credentials are created dynamically and provided to the user.

Q20) Which of the following security resources are available for free? (Choose two)

- AWS Classroom Training
- ✅ AWS Security Blog

Explanation:-The AWS free security resources include AWS Security Blog, Whitepapers, Developer Documents, Articles and Tutorials, Training,

Security Bulletins, Compliance Resources and Testimonials.

✅ AWS Bulletins

Explanation:-The AWS free security resources include AWS Security Blog, Whitepapers, Developer Documents, Articles and Tutorials, Training, Security Bulletins, Compliance Resources and Testimonials.

- AWS re:Invent
- AWS TAM

Q21)

You are working on two projects that require completely different network configurations.

Which AWS service will allow you to isolate resources and network configurations?

- Amazon CloudFront
- Edge Locations
- Security Groups

✅ Virtual Private Cloud

Explanation:-Amazon Virtual Private Cloud (Amazon VPC) lets you provision a logically isolated section of the AWS Cloud where you can launch AWS resources in a virtual network that you define. You have complete control over your virtual networking environment, including selection of the IP address range, creation of subnets, and configuration of route tables and network gateways.

Q22) Availability Zones within a Region are connected over low-latency links. Which of the following is a benefit of these links?

- Achieve global high availability
- Create private connection to your data center

✅ Make synchronous replication of your data possible

Explanation:-Each AWS Region contains multiple distinct locations, or Availability Zones. Each Availability Zone is engineered to be independent from failures in other Availability Zones. An Availability Zone is a data center, and in some cases, an Availability Zone consists of multiple data centers. Availability Zones within a Region provide inexpensive, low-latency network connectivity to other zones in the same Region. This allows you to replicate data across data centers in a synchronous manner so that failover can be automated and appear transparent to your users.

- Automate the process of provisioning new compute resources

Q23) Which of the following can be described as a global content delivery network (CDN) service?

- AWS Direct Connect
- AWS VPN

✅ Amazon CloudFront

Explanation:-Amazon CloudFront is a global content delivery network (CDN) service that gives businesses and web application developers an easy and cost effective way to distribute content (such as videos, data, applications, and APIs) with low latency and high data transfer speeds. Like other AWS services, Amazon CloudFront is a self-service, pay-per-use offering, requiring no long term commitments or minimum fees. With CloudFront, your files are delivered to end-users using a global network of edge locations. CloudFront is integrated with other AWS services such as AWS Shield for DDoS mitigation, Amazon S3, Elastic Load Balancing or Amazon EC2 as origins for your applications, and Lambda@Edge to run custom code close to your viewers.

- AWS Regions

Q24) What is the AWS service that provides a virtual network dedicated to your AWS account?

- AWS VPN

✅ Amazon VPC

Explanation:-Amazon Virtual Private Cloud (Amazon VPC) allows you to carve out a portion of the AWS Cloud that is dedicated to your AWS account. Amazon VPC enables you to launch AWS resources into a virtual network that you've defined. This virtual network closely resembles a traditional network that you'd operate in your own data center, with the benefits of using the scalable infrastructure of AWS.

- AWS Dedicated Hosts
- AWS Subnets

Q25)

A company is planning to host an educational website on AWS. Their video courses will be streamed all around the world.

Which of the following AWS services will help achieve high transfer speeds?

- Amazon SNS

✅ Amazon CloudFront

Explanation:-Amazon CloudFront is a fast content delivery network (CDN) service that securely delivers data, videos, applications, and APIs to customers globally with low latency, high transfer speeds, all within a developer-friendly environment.

The use cases of Amazon CloudFront include:

1- Accelerate static website content delivery.

CloudFront can speed up the delivery of your static content (for example, images, style sheets, JavaScript, and so on) to viewers across the globe. By using CloudFront, you can take advantage of the AWS backbone network and CloudFront edge servers to give your viewers a fast, safe, and reliable experience when they visit your website.

2- Live & on-demand video streaming.

The Amazon CloudFront CDN offers multiple options for streaming your media – both pre-recorded files and live events – at sustained, high throughput required for 4K delivery to global viewers.

3- Security.

CloudFront integrates seamlessly with AWS Shield for Layer 3/4 DDoS mitigation and AWS WAF for Layer 7 protection.

4- Customizable content delivery with Lambda@Edge.

Lambda@Edge is a feature of Amazon CloudFront that lets you run code closer to users of your application, which improves performance and reduces latency.

- Amazon Kinesis Video Streams
- AWS CloudFormation

Q26) Which service provides DNS in the AWS cloud?

- Amazon CloudFront
- ✅ Route 53

Explanation:-Amazon Route 53 is a global service that provides highly available and scalable Domain Name System (DNS) services, domain name registration, and health-checking web services. It is designed to give developers and businesses an extremely reliable and cost effective way to route end users to Internet applications by translating names like example.com into the numeric IP addresses, such as 192.0.2.1, that computers use to connect to each other.
Route 53 also simplifies the hybrid cloud by providing recursive DNS for your Amazon VPC and on-premises networks over AWS Direct Connect or AWS VPN.

- AWS Config
- Amazon EMR

Q27)

Sarah has deployed an application in the Northern California (us-west-1) region. After examining the application's traffic, she notices that about 30% of the traffic is coming from Asia.

What can she do to reduce latency for the users in Asia?

- ✅ Create a CDN using CloudFront, so that content is cached at Edge Locations close to and in Asia

Explanation:-CloudFront is AWS's content delivery network (CDN) service. Amazon CloudFront employs a global network of edge locations and regional edge caches that cache copies of your content close to your end-users. Amazon CloudFront ensures that end-user requests are served by the closest edge location. As a result, end-user requests travel a short distance, reducing latency and improving the overall performance.

- Replicate the current resources across multiple Availability Zones within the same region
- Migrate the application to a hosting provider in Asia
- Recreate the website content

Q28)

An organization has decided to reserve EC2 compute capacity for three years in order to get more discounts. Their application workloads are likely to change during this time period.

What is the EC2 Reserved Instance (RI) type that will allow them to modify the reservation whenever they need to?

- Standard RIs
- ✅ Convertible RIs

Explanation:-Convertible RIs provide a discount (up to 54% off On-Demand) and the capability to change the attributes of the RI as long as the exchange results in the creation of Reserved Instances of equal or greater value. These attributes include instance family, instance type, platform, scope, and tenancy.

- Scheduled RIs
- Elastic RIs

Q29) What are the Amazon RDS features that can be used to improve the availability of your database? (Choose two)

- ✅ Read Replicas

Explanation:-In a Multi-AZ deployment, Amazon RDS automatically provisions and maintains a synchronous standby replica in a different Availability Zone. The primary DB instance is synchronously replicated across Availability Zones to a standby replica to provide data redundancy, eliminate I/O freezes, and minimize latency spikes during system backups. Running a DB instance with high availability can enhance availability during planned system maintenance, and help protect your databases against DB instance failure and Availability Zone disruption.
Amazon RDS Read Replicas provide enhanced performance and durability for database (DB) instances. This feature makes it easy to elastically scale out beyond the capacity constraints of a single DB instance for read-heavy database workloads. You can create one or more replicas of a given source DB Instance and serve high-volume application read traffic from multiple copies of your data, thereby increasing aggregate read throughput.
Read replicas provide a complementary availability mechanism to Amazon RDS Multi-AZ Deployments. You can promote a read replica if the source DB instance fails. You can also replicate DB instances across AWS Regions as part of your disaster recovery strategy. This functionality complements the synchronous replication, automatic failure detection, and failover provided with Multi-AZ deployments.

- Edge Locations
- ✅ Multi-AZ Deployment

Explanation:-In a Multi-AZ deployment, Amazon RDS automatically provisions and maintains a synchronous standby replica in a different Availability Zone. The primary DB instance is synchronously replicated across Availability Zones to a standby replica to provide data redundancy, eliminate I/O freezes, and minimize latency spikes during system backups. Running a DB instance with high availability can enhance availability during planned system maintenance, and help protect your databases against DB instance failure and Availability Zone disruption.
Amazon RDS Read Replicas provide enhanced performance and durability for database (DB) instances. This feature makes it easy to elastically scale out beyond the capacity constraints of a single DB instance for read-heavy database workloads. You can create one or more replicas of a given source DB Instance and serve high-volume application read traffic from multiple copies of your data, thereby increasing aggregate read throughput.
Read replicas provide a complementary availability mechanism to Amazon RDS Multi-AZ Deployments. You can promote a read replica if the source DB instance fails. You can also replicate DB instances across AWS Regions as part of your disaster recovery strategy. This functionality complements the synchronous replication, automatic failure detection, and failover provided with Multi-AZ deployments.

- AWS Regions
- Automatic patching

Q30) There is a need to import a large amount of structured data into a database service. What is the AWS database service that best achieves this?

✅ Amazon RDS

Explanation:-Since the data is structured, then it is best to use a relational database service such as Amazon RDS.

- Amazon ElastiCache
- Amazon DynamoDB
- Amazon SNS

Q31) What are the benefits of using the Amazon Relational Database Service? (Choose two)

✅ Resizable compute capacity

Explanation:-Amazon Relational Database Service (Amazon RDS) makes it easy to set up, operate, and scale a relational database in the cloud. It provides cost-efficient and resizable Compute (and\or Storage) capacity while automating time-consuming administration tasks such as hardware provisioning, operating system maintenance, database setup, patching and backups. It frees you to focus on your applications so you can give them the fast performance, high availability, security and compatibility they need.

- Complete control over the underlying host
- Supports the document and key-value data structure
- Scales automatically to larger or smaller instance types

✅ Lower administrative burden

Explanation:-Amazon Relational Database Service (Amazon RDS) makes it easy to set up, operate, and scale a relational database in the cloud. It provides cost-efficient and resizable Compute (and\or Storage) capacity while automating time-consuming administration tasks such as hardware provisioning, operating system maintenance, database setup, patching and backups. It frees you to focus on your applications so you can give them the fast performance, high availability, security and compatibility they need.

Q32) What is the AWS service that provides five times the performance of a standard MySQL database?

- Amazon SimpleDB
- Amazon DynamoDB

✅ Amazon Aurora

Explanation:-Amazon Aurora is a fully-managed, MySQL and PostgreSQL-compatible relational database engine. It combines the speed and reliability of high-end commercial databases with the simplicity and cost-effectiveness of open-source databases. It delivers up to five times the throughput of MySQL and up to three times the throughput of PostgreSQL without requiring changes to most of your existing applications.

- Amazon Redshift

Q33)

You work as an on-premises MySQL DBA. The work of database configuration, backups, patching, and DR can be time-consuming and repetitive. Your company has decided to migrate to the AWS Cloud.

Which of the following can help save time on the regular database tasks so you can focus on giving users the fast performance and high availability that they need?

- Amazon CloudWatch

✅ Amazon RDS

Explanation:-Amazon Relational Database Service (Amazon RDS) makes it easy to set up, operate, and scale a relational database in the cloud. It provides cost-efficient, resizable capacity while automating time-consuming administration tasks such as hardware provisioning, operating system maintenance, database setup, patching and backups. It frees you to focus on your applications so you can give them the fast performance, high availability, security and compatibility they need.

- Amazon DynamoDB
- Amazon Redshift

Q34) What is the AWS database service that allows you to upload data structured in key-value format?

- Amazon Aurora

✅ Amazon DynamoDB

Explanation:-Amazon DynamoDB is a NoSQL database service. NoSQL databases are used for non-structured data that are typically stored in JSON-like, key-value documents.

- Amazon Redshift
- Amazon RDS

Q35) Your company has a data store application that requires access to a NoSQL database. Which AWS database offering would best meet this requirement?

- Amazon Aurora
- Amazon Redshift
- Amazon Elastic Block Store

✅ Amazon DynamoDB

Explanation:-Amazon DynamoDB is a fast and flexible NoSQL database service for all applications that need consistent, single-digit millisecond latency at any scale. It is a fully managed cloud database and supports both document and key-value store models. Its flexible data model, reliable performance, and automatic scaling of throughput capacity, makes it a great fit for mobile, web, gaming, ad tech, IoT, and many other applications.

Q36)

A developer is planning to build a two-tier web application that has a MySQL database layer.

Which of the following AWS database services would provide automated backups to his application?

- A MySQL database installed on an EC2 instance

✅ Amazon Aurora

Explanation:-Amazon Aurora is a MySQL and PostgreSQL-compatible relational database built for the cloud. Amazon Aurora combines the performance and availability of traditional enterprise databases with the simplicity and cost-effectiveness of open source databases. It delivers up to five times the throughput of standard MySQL and up to three times the throughput of standard PostgreSQL. Amazon Aurora is designed to be compatible with MySQL and with PostgreSQL, so that existing applications and tools can run without requiring modification. It is available through Amazon Relational Database Service (RDS), freeing you from time-consuming administrative tasks such as provisioning, patching, backup, recovery, failure detection, and repair.

- Amazon DocumentDB
- Amazon DynamoDB

Q37) A company is deploying a new two-tier web application in AWS. Where should the most frequently accessed data be stored so that the application's response time is optimal?

- AWS Storage Gateway
- ✅ Amazon ElastiCache

Explanation:-Amazon ElastiCache is a web service that makes it easy to deploy, operate, and scale an in-memory data store or cache in the cloud. The service improves the performance of web applications by allowing you to retrieve information from fast, managed, in-memory data stores, instead of relying entirely on slower disk-based databases.
The primary purpose of an in-memory data store is to provide ultrafast (submillisecond latency) and inexpensive access to copies of data. Querying a database is always slower and more expensive than locating a copy of that data in a cache. Some database queries are especially expensive to perform. An example is queries that involve joins across multiple tables or queries with intensive calculations. By caching (storing) such query results, you pay the price of the query only once. Then you can quickly retrieve the data multiple times without having to re-execute the query.

- Amazon EBS volume
- AWS OpsWorks

Q38) Which of the following AWS offerings is a MySQL-compatible relational database that can scale capacity automatically based on demand?

- ✅ Amazon Aurora

Explanation:-Amazon Aurora is a MySQL and PostgreSQL compatible relational database built for the cloud, that combines the performance and availability of high-end commercial databases with the simplicity and cost-effectiveness of open source databases. Aurora is up to five times faster than standard MySQL databases and three times faster than standard PostgreSQL databases. It provides the security, availability, and reliability of commercial-grade databases at 1/10th the cost. Aurora is fully managed by Amazon Relational Database Service (RDS), which automates time-consuming administration tasks like hardware provisioning, database setup, patching, and backups.
Amazon Aurora features "Amazon Aurora Serverless" which is an on-demand, auto-scaling configuration for Amazon Aurora (MySQL-compatible and PostgreSQL-compatible editions), where the database will automatically start up, shut down, and scale capacity up or down based on your application's needs.

- Amazon Neptune
- RDS Microsoft SQL Server
- RDS PostgreSQL

Q39) What is the AWS data warehouse service that supports a high level of query performance on large amounts of datasets?

- Amazon DynamoDB
- Amazon Kinesis
- ✅ Amazon Redshift

Explanation:-Amazon Redshift is a fully managed, petabyte-scale data warehouse service in the cloud. It allows you to run complex analytic queries against petabytes of structured data. You can start with just a few hundred gigabytes of data and scale to a petabyte or more. Amazon Redshift manages the work needed to set up, operate, and scale a data warehouse, from provisioning the infrastructure capacity to automating ongoing administrative tasks such as backups, and patching.

- Amazon RDS

Q40) Which of the following are factors in determining the appropriate database technology to use for a specific workload? (Choose two)

- Availability Zones
- Software bugs
- Data sovereignty
- ✅ The number of reads and writes per second

Explanation:-The following questions can help you take decisions on which solutions to include in your architecture:
- Is this a read-heavy, write-heavy, or balanced workload? How many reads and writes per second are you going to need? How will those values change if the number of users increases?
- How much data will you need to store and for how long? How quickly do you foresee this will grow? Is there an upper limit in the foreseeable future? What is the size of each object (average, min, max)? How are these objects going to be accessed?
- What are the requirements in terms of durability of data? Is this data store going to be your "source of truth"?
- What are your latency requirements? How many concurrent users do you need to support?
- What is your data model and how are you going to query the data? Are your queries relational in nature (e.g.,JOINs between multiple tables)? Could you denormalize your schema to create flatter data structures that are easier to scale?
- What kind of functionality do you require? Do you need strong integrity controls or are you looking for more flexibility (e.g.,schema-less data stores)? Do you require sophisticated reporting or search capabilities? Are your developers more familiar with relational databases than NoSQL?

- ✅ The nature of the queries

Explanation:-The following questions can help you take decisions on which solutions to include in your architecture:
- Is this a read-heavy, write-heavy, or balanced workload? How many reads and writes per second are you going to need? How will those values change if the number of users increases?
- How much data will you need to store and for how long? How quickly do you foresee this will grow? Is there an upper limit in the foreseeable future? What is the size of each object (average, min, max)? How are these objects going to be accessed?
- What are the requirements in terms of durability of data? Is this data store going to be your "source of truth"?
- What are your latency requirements? How many concurrent users do you need to support?
- What is your data model and how are you going to query the data? Are your queries relational in nature (e.g.,JOINs between multiple tables)?

Could you denormalize your schema to create flatter data structures that are easier to scale?
- What kind of functionality do you require? Do you need strong integrity controls or are you looking for more flexibility (e.g.,schema-less data stores)? Do you require sophisticated reporting or search capabilities? Are your developers more familiar with relational databases than NoSQL?

Q41) What are the benefits of using DynamoDB? (Choose TWO)

- Supports the most popular NoSQL database engines such as CouchDB and MongoDB
- Provides resizable instances to match the current demand
- Supports both relational and non-relational data models
- ✅ Automatically scales to meet required throughout capacity

Explanation:-Benefits of DynamoDB include:
1- Performance at scale:
DynamoDB supports some of the world's largest scale applications by providing consistent, single-digit millisecond response times at any scale. You can build applications with virtually unlimited throughput and storage.
2- Serverless:
With DynamoDB, there are no servers to provision, patch, or manage and no software to install, maintain, or operate. DynamoDB automatically scales tables up and down to adjust for capacity and maintain performance.
3- Highly available:
Availability and fault tolerance are built in, eliminating the need to architect your applications for these capabilities.

- ✅ Offers extremely low (single-digit millisecond) latency

Explanation:-Benefits of DynamoDB include:
1- Performance at scale:
DynamoDB supports some of the world's largest scale applications by providing consistent, single-digit millisecond response times at any scale. You can build applications with virtually unlimited throughput and storage.
2- Serverless:
With DynamoDB, there are no servers to provision, patch, or manage and no software to install, maintain, or operate. DynamoDB automatically scales tables up and down to adjust for capacity and maintain performance.
3- Highly available:
Availability and fault tolerance are built in, eliminating the need to architect your applications for these capabilities.

Q42) What is the name of the DynamoDB replication capability that provides fast read \ write performance for globally deployed applications?

- AWS Global Accelerator
- DynamoDB DAX
- ✅ Global Tables

Explanation:-DynamoDB global tables are ideal for massively scaled applications with globally dispersed users. Global tables provide automatic replication to AWS Regions world-wide. They enable you to deliver low-latency data access to your users no matter where they are located.

- DynamoDB Point-In-Time Recovery

Q43) A customer is planning to migrate their Microsoft SQL Server databases to AWS. Which AWS Services can the customer use to run their Microsoft SQL Server database on AWS? (Choose TWO)

- ✅ Amazon RDS

Explanation:-Amazon Web Services offers the flexibility to run Microsoft SQL Server as either a self-managed component inside of EC2, or as a managed service via Amazon RDS. Using SQL Server on Amazon EC2 gives customers complete control over the database, just like when it's installed on-premises. Amazon RDS is a fully managed service where AWS manages the maintenance, backups, and patching.

- AWS Lambda
- AWS Fargate
- ✅ Amazon Elastic Compute Cloud

Explanation:-Amazon Web Services offers the flexibility to run Microsoft SQL Server as either a self-managed component inside of EC2, or as a managed service via Amazon RDS. Using SQL Server on Amazon EC2 gives customers complete control over the database, just like when it's installed on-premises. Amazon RDS is a fully managed service where AWS manages the maintenance, backups, and patching.

- AWS Database Migration service (DMS)

Q44) Which of the following are examples of AWS-managed databases? (Choose two)

- MySQL on Amazon EC2
- Microsoft SQL Server on Amazon EC2
- Amazon CloudSearch
- ✅ Amazon RDS for MySQL

Explanation:-AWS-managed databases are a database as a service offering from AWS where AWS manages the underlying hardware, storage, networking, backups, and patching. Users of AWS-managed databases simply connect to the database endpoint, and do not have to concern themselves with any aspects of managing the database. Examples of AWS-managed databases include: Amazon RDS (Amazon Aurora, PostgreSQL, MySQL, MariaDB, Oracle Database, and SQL Server), Amazon DocumentDB, Amazon Redshift, and Amazon DynamoDB.

- ✅ Amazon DocumentDB

Explanation:-AWS-managed databases are a database as a service offering from AWS where AWS manages the underlying hardware, storage, networking, backups, and patching. Users of AWS-managed databases simply connect to the database endpoint, and do not have to concern themselves with any aspects of managing the database. Examples of AWS-managed databases include: Amazon RDS (Amazon Aurora, PostgreSQL, MySQL, MariaDB, Oracle Database, and SQL Server), Amazon DocumentDB, Amazon Redshift, and Amazon DynamoDB.

Q45) Which of the following Amazon RDS features facilitates offloading of database read activity?

- Database Snapshots
- Automated Backups
- Multi-AZ Deployments
- ✅ Read Replicas

Explanation:-You can reduce the load on your source DB Instance by routing read queries from your applications to one or more read replicas. Read replicas allow you to elastically scale out beyond the capacity constraints of a single DB instance for read-heavy database workloads.

Q46)

You are running a financial services web application on AWS. The application uses a MySQL database to store the data.

Which of the following AWS services would improve the performance of your application by allowing you to retrieve information from fast in-memory caches?

- DAX
- ✅ Amazon ElastiCache

Explanation:-Amazon ElastiCache offers fully managed Redis and Memcached. Seamlessly deploy, operate, and scale popular open source compatible in-memory data stores. Build data-intensive apps or improve the performance of your existing apps by retrieving data from high throughput and low latency in-memory data stores. Amazon ElastiCache is a popular choice for Gaming, Ad-Tech, Financial Services, Healthcare, and IoT apps.

The primary purpose of an in-memory data store is to provide ultrafast (submillisecond latency) and inexpensive access to copies of data. Querying a database is always slower and more expensive than locating a copy of that data in a cache. Some database queries are especially expensive to perform. An example is queries that involve joins across multiple tables or queries with intensive calculations. By caching (storing) such query results, you pay the price of the query only once. Then you can quickly retrieve the data multiple times without having to re-execute the query.

- Amazon EFS
- Amazon Neptune

Q47) Which of the following is a feature of Amazon RDS that performs automatic failover when the primary database fails to respond?

- RDS Write Replica
- ✅ RDS Multi-AZ

Explanation:-When you enable Multi-AZ, Amazon Relational Database Service (Amazon RDS) maintains a redundant and consistent standby copy of your data. If you encounter problems with the primary copy, Amazon RDS automatically switches to the standby copy (or to a read replica in the case of Amazon Aurora) to provide continued availability to the data. The two copies are maintained in different Availability Zones (AZs), hence the name “Multi-AZ.” Each AZ runs on its own physically distinct, independent infrastructure, and is engineered to be highly reliable. Having separate Availability Zones greatly reduces the likelihood that both copies will concurrently be affected by most types of disturbances.

- RDS Snapshots
- RDS Single-AZ

Q48) Which of the following AWS services helps migrate your current on-premise databases to AWS?

- AWS Transit Gateway
- ✅ AWS DMS

Explanation:-AWS Database Migration Service helps you migrate databases to AWS quickly and securely. The source database remains fully operational during the migration, minimizing downtime to applications that rely on the database. The AWS Database Migration Service can migrate your data to and from most widely used commercial and open-source databases.

- Amazon S3 Transfer Acceleration
- AWS Directory Service
