Question 1

A web application running on Amazon Elastic Compute Cloud (EC2) instances needs access to an Amazon S3 bucket for storing and retrieving user-generated content. You want to ensure the EC2 instances have the necessary permissions to access the S3 bucket securely. Which steps should you take to achieve this? Choose two answers.

A) **[Correct Answer]** Attach an identity and access management (IAM) role to the EC2 instances with an inline policy allowing access to the specific S3 bucket.
B) Create a custom S3 bucket policy allowing access to the IAM role associated with the EC2 instances.
C) Embed AWS access keys in the application code and use the keys to access the S3 bucket.
D) **[Correct Answer]** Configure the EC2 instances' security groups to allow outbound traffic to the S3 service endpoints.

Explanation

A) By attaching an IAM role to the EC2 instances with an inline policy allowing access to the specific S3 bucket, you grant the instances the necessary permissions without embedding access keys in the code.
B) Creating a custom S3 bucket policy to allow access to the IAM role is not required. IAM roles should be used to grant permissions to AWS resources like EC2 instances. C) Embedding AWS access keys in the application code is a security risk and not recommended. IAM roles provide a more secure way to grant permissions.
D) Configuring the EC2 instances' security groups to allow outbound traffic to the S3 service endpoints is necessary for the instance to communicate with the S3 bucket

Question 2

You are designing the organizational structure for a company in AWS Organizations. The organization must ensure that all AWS accounts comply with specific security policies and share common resources. What is the correct multistep solution to achieve this?
Choose two answers.

A) Create service control policies (SCPs) to define security policies and attach them to individual AWS accounts.
B) Create a single AWS account and use it as a master account for all other AWS accounts.
C) **[Correct Answer]** Create AWS Organizations, create organizational units (OUs) for different teams or business units, and attach SCPs to the OUs.
D) **[Correct Answer]** Use AWS identity and access management (IAM) policies to enforce security policies on each AWS account.

Explanation

A) There are better approaches for enforcing security policies across multiple AWS accounts using SCPs attached to OUs rather than individual AWS accounts.
B) While using a single AWS account as a master account is a step in the right direction, it doesn't provide the granularity of control needed for different teams or business units. C) In AWS Organizations, you create OUs to group AWS accounts based on your organizational structure, and you attach SCPs to these OUs to enforce security policies. This approach allows you to apply policies at different levels within your organization. D) IAM policies control access within individual AWS accounts but provide a different level of centralized control than SCPs within AWS Organizations.

Question 3:
You want to ensure that AWS Config and AWS CloudTrail are allowed for all AWS accounts contained within AWS Organizations. What is the correct solution to achieve this goal?
A) Use AWS Resource Access Manager (RAM) to share these services across accounts.
B) Manually enable these services in each AWS account.
C) Create a service-linked role for each service in every AWS account.
D) **[Correct Answer]** Create a service control policy (SCP) that allows the use of these services and attach it to the organization's root account.

Explanation
A) AWS RAM is used for sharing resources like AWS Transit Gateway or AWS License Manager across accounts, not for enabling services.
B) While it's possible to enable AWS services in each account manually, it can be cumbersome and does not provide centralized control.
C) This is different from the recommended approach. AWS predefines service-linked roles for specific services and are not used for enabling AWS services across accounts. D) The best approach is to create an SCP that allows the use of specific services (AWS Config, AWS CloudTrail) and attach it to the organization's root. This ensures these two services are enabled for all AWS accounts within the organization.

Question 4
In the AWS IAM Identity Center, which of the following best describes the primary purpose of the "Access Advisor"?

A. It provides recommendations for which identity and access management (IAM) policies to attach to users and roles.
B. It allows you to review and edit trust relationships for IAM roles.
C. **[Correct Answer]** It displays the AWS services that an IAM entity (user or role) can access and when those services were last accessed.
D. It offers centralized monitoring of sign-in activities and associated locations.

Explanation

A. The Access Advisor doesn't provide recommendations for IAM policies. Instead, it provides insights into service access patterns.

B. Trust relationships for IAM roles are a separate feature of IAM and are not managed by Access Advisor.

C. The primary function of the IAM Access Advisor is to show which services are accessible to a user or role and when they were last accessed.

D. Monitoring of sign-in activities is a feature of CloudTrail and the IAM dashboard but not the primary function of Access Advisor.

Question 5

In the context of the AWS shared responsibility model, which of the following statements accurately describes AWS's responsibility?

A. AWS is responsible for the security of data stored by customers on AWS services.

B. **[Correct Answer]** AWS is solely responsible for the security of the underlying infrastructure.

C. AWS is responsible for managing the security of customer applications running on AWS.

D. AWS guarantees the security of all third-party software deployed by customers on AWS.

Explanation

A. While AWS provides tools and services to help, the security "in" the cloud (including data) is the responsibility of the customer.

B. In the AWS shared responsibility model, AWS is responsible for the security "of" the cloud, which includes the infrastructure, hardware, software, and facilities that run AWS cloud services.

C. AWS provides a range of security services and features, but the security of customer applications is the customer's responsibility.

D. While AWS provides a platform for deploying third-party software, the customer is responsible for its security.

Question 6

You are designing a multitier web application that will be hosted in a virtual private cloud (VPC) on AWS. You have multiple subnets and need to control traffic flow. Which of the following steps should you take to implement routing effectively? Choose two answers.

A) Create and associate a network access control list (ACL) with each subnet to control inbound and outbound traffic.

B) **[Correct Answer]** Configure a network access translation (NAT) gateway in a public subnet to allow instances in private subnets to access the internet.
C) **[Correct Answer]** Define custom route tables for each subnet, associating them with the appropriate subnets.
D) Enable virtual private cloud (VPC) peering between the subnets to allow direct communication.

Explanation

A) Network ACLs control inbound and outbound traffic at the subnet level, but they don't control routing between subnets.
B) To allow instances in private subnets to access the internet, you need to configure a NAT gateway in a public subnet to facilitate outbound traffic.
C) You should create custom route tables for each subnet to control traffic routing between subnets effectively.
D) VPC peering allows communication between separate VPCs but does not control routing within a single VPC with multiple subnets.

Question 7

You are managing a virtual private cloud (VPC) with multiple route tables. One of your subnets needs to route traffic to an on-premises data center through a Direct Connect connection. What is the correct sequence of steps to achieve this? Choose three answers. A) Create a VPC peering connection with the on-premises VPC.
B) **[Correct Answer]** Create a virtual private network (VPN) connection between the VPC and the on-premises data center.
C) **[Correct Answer]** Configure a VPC peering route to route traffic from the subnet to the on-premises VPC.
D) **[Correct Answer]** Create a custom route table for the subnet and associate it with the subnet.

Explanation

A) VPC peering is used for connecting separate VPCs within AWS, not for routing traffic to an on-premises data center. The correct sequence of steps is to create a VPN connection, configure a custom route table for the subnet, associate it with the subnet, and then add a route in the route table to direct traffic to the on-premises network.
B) To route traffic to an on-premises data center, you typically use a VPN connection, not VPC peering.
C) After creating the VPN connection, you configure a route in the subnet's route table to direct traffic to the on-premises network.
D) To control the routing for a specific subnet, you should create a custom route table and associate it with the subnet.

Question 8

In the context of AWS virtual private cloud (VPC), which of the following statements about network address translation (NAT) gateways is true?

A) **[Correct Answer]** NAT gateways are designed to allow outbound internet traffic from an instance in a private subnet but prevent unsolicited inbound traffic from the internet.
B) NAT gateways allow both inbound and outbound internet traffic to and from instances in a private subnet without any restrictions.
C) NAT gateways can be associated with multiple Elastic IP addresses for high availability.
D) NAT gateways are primarily used to allow inbound internet traffic to instances in a public subnet.

Explanation

A. NAT gateways allow instances in a private subnet to initiate outbound traffic to the internet (for updates, patches, etc.) but ensure that responses to this outbound traffic are directed back to the originating instance.
B. While NAT gateways allow outbound internet traffic from instances in a private subnet, they prevent unsolicited inbound traffic.
C. Each NAT gateway is associated with a single Elastic IP address. You should create NAT gateways in multiple availability zones if you need high availability.
D. NAT gateways are used for instances in private subnets to access the internet."

Question 9

In AWS Secrets Manager, which of the following describes the primary reason to use rotation policies for secrets?

A) To enhance the performance of secret retrieval
B) To automatically back up the secret values
C) **[Correct Answer]** To periodically change secret values, reducing the risk of unauthorized access
D) To ensure secret values are replicated across multiple AWS regions

Explanation

A. Rotation policies do not have an impact on the performance of secret retrieval. The primary purpose of rotating secrets is to enhance security, not performance.
B. While AWS Secrets Manager does provide versioning capabilities, backups are a separate consideration.
C. AWS Secrets Manager supports this by allowing automatic rotations of secrets.

D. AWS Secrets Manager's rotation policies don't handle replication across AWS regions.

Question 10

Which of the following is a key capability of AWS Direct Connect Gateways?

A. Allows virtual private clouds (VPCs) in any region to communicate with each other using only IPv6.
B. **[Correct Answer]** Enables connecting to multiple VPCs in any AWS region using the same Direct Connect connection.
C. Automatically scales the connection to a Direct Connect gateway based on data transfer rates.
D. Provides built-in DDoS protection for all connected VPCs.

Explanation

A. Direct Connect gateway supports both IPv4 and IPv6. It's not limited to IPv6 only.
B. AWS Direct Connect gateway allows you to access VPCs in any public AWS region using the same Direct Connect connection.
C. AWS Direct Connect does not automatically scale based on data transfer rates. You need to provision the appropriate amount of bandwidth.
D. Built-in DDoS protection for all connected VPCs is not a direct feature of Direct Connect gateways.

Question 11

You are tasked with implementing a secure encryption strategy for an application hosted on Amazon Elastic Compute Cloud (EC2) instances. The application handles sensitive customer data, and compliance requirements mandate strong cloud-hosted encryption for application data stored at rest. Which combination of steps should you take to achieve this? Choose two answers.

A) Create a custom encryption algorithm to encrypt the data before storing it on Amazon S3.
B) **[Correct Answer]** Use AWS Key Management Service (KMS) to create a customer master key (CMK) with the "Enable Key Rotation" option enabled.
C) **[Correct Answer]** Configure the EC2 instances to encrypt the data at rest using the AWS managed encryption keys.
D) Implement client-side encryption in the application code to encrypt the data before sending it to the EC2 instance's storage volumes.

Explanation

A) Creating a custom encryption algorithm would not work in this case, as the data is stored on elastic block storage (EBS) volumes attached to the EC2 instances.
B) Enabling key rotation for a CMK is a best practice for enhancing security. AWS KMS allows you to automate the rotation of encryption keys, which helps maintain a high level of security over time. This step ensures that even if a key is compromised, it will be automatically rotated, reducing the risk.
C) Encrypting data at rest using AWS-managed encryption keys is a recommended practice for ensuring data security on Amazon EC2 instances. AWS manages these keys and provides strong encryption without requiring users to manage the keys themselves.
D) While client-side encryption can add an extra layer of security, it's not typically used for encrypting data stored on EC2 instances. Encrypting data before sending it to EC2 instances (client-side encryption in transit) can be a valid practice.

Question 12

You are tasked with securing multiple websites hosted on Amazon Web Services (AWS). Each website is hosted in a different AWS region for redundancy and disaster recovery purposes. You want to use AWS Certificate Manager (ACM) to manage secure sockets layer/transport layer security (SSL/TLS) certificates for these websites. What is the correct approach to achieve this?

A) Create a single ACM certificate in one region and associate it with all websites hosted across different regions.
B) **[Correct Answer]** Create a separate ACM certificate in each region for each website.
C) Create a global ACM certificate and associate it with all websites hosted across different regions.
D) Use a third-party certificate authority store for each website as ACM does not support certificates across regions.

Explanation

A) ACM certificates are regional and cannot be used across different AWS regions.
B) To ensure SSL/TLS certificates for websites hosted in different regions, you should create separate ACM certificates in each region for each website. To secure websites hosted in different AWS regions, you should create separate ACM certificates in each region where your websites are hosted. This ensures that each website has its own certificate managed by ACM in its respective region.
C) ACM certificates are not global; they are regional. You cannot associate a single ACM certificate with resources in different regions.
D) Using a third-party certificate authority store is a valid option for SSL/TLS certificates; however, ACM can be used for importing and storing public certificates and can be used per AWS region.

Question 13

You are tasked with configuring security for an Amazon S3 bucket to ensure the highest level of data protection. Which combination of steps should you take to achieve this? Choose two answers.

A) **[Correct Answer]** Enable server-side encryption with Amazon S3 Managed Keys (SSE-S3) for the bucket.
B) **[Correct Answer]** Implement bucket policies to restrict access to specific IP ranges.
C) Enable bucket versioning and configure cross-region replication.
D) Create a bucket policy that allows public read access to the bucket.

Explanation

A) The correct combination of steps for achieving the highest level of data protection in an S3 bucket is to enable server-side encryption with Amazon S3 Managed Keys (SSE-S3).
B) This step is important to ensure data is encrypted at rest and to implement bucket policies to restrict access to specific IP ranges to control who can access the bucket.
C) While enabling bucket versioning is a valuable feature for data retention and recovery, it doesn't directly enhance data protection or security. Cross-region replication is used for redundancy and disaster recovery but is not primarily a security measure.
D) Allowing public read access to an S3 bucket is a security risk, as it makes the bucket's contents accessible to anyone on the internet. This action goes against the goal of ensuring the highest level of data protection.

Question 14

In Amazon S3, when you want to ensure that data is encrypted as it writes to the disk and that the encryption keys are managed by the AWS Key Management Service (KMS), which encryption type should you choose?

A) S3 Transfer Acceleration
B) S3 Standard-IA
C) Server-side encryption with Amazon S3-Managed Keys (SSE-S3)
D) **[Correct Answer]** Server-side encryption with AWS KMS-Managed Keys (SSE-KMS)

Explanation

A. S3 Transfer Acceleration is a feature that speeds up transferring files to and from S3, but it has nothing to do with encryption. See “Amazon S3 Security.”
B. While S3 Standard-IA is a storage class in S3 designed for infrequently accessed data, it doesn't specify the method of encryption. See “Amazon S3 Security.”
C. This is a method where S3 manages the encryption keys, but it does not use the AWS KMS to manage the keys, making it different from SSE-KMS. See “Amazon S3 Security.”
D. When you choose SSE-KMS for your S3 bucket, Amazon S3 will encrypt the object data with an AWS KMS-managed customer master key (CMK). See “Amazon S3 Security.”

Question 15

In the context of the AWS Well-Architected Framework's Security Pillar, which of the following best describes the primary purpose of implementing security policies?

A) To specify the instance types and sizes that can be launched in an AWS environment
B) To determine the frequency of data backups and the retention period of logs
C) **[Correct Answer]** To define the permissions and controls to safeguard data and system interactions.
D) To outline the AWS regions and availability zones that an application can be deployed to.

Explanation

A. Specifying instance types and sizes is related to resource optimization and cost management rather than security policies.
B. While determining backup frequencies and log retention is essential for data recovery and auditing, it doesn't encompass the broader scope of what security policies aim to address in the Security Pillar.
C. The primary purpose of implementing security policies within the AWS Well-Architected Framework's Security Pillar is to establish permissions, guidelines, and controls that protect data, applications, and the overall system from threats.
D. Outlining deployable regions and availability zones relates more to availability, performance optimization, and regulatory compliance rather than the primary purpose of security policies in the Security Pillar.

Question 16

Which of the following statements best describes the responsibility division between AWS and the customer?

A) **[Correct Answer]** AWS is responsible for the security of the cloud, while the customer is responsible for the security of their data in the cloud.
B) AWS is responsible for both the security of the cloud and the security of customer data in the cloud.
C) The customer is responsible for the security of the cloud, while AWS is responsible for the security of customer data in the cloud.
D) Both AWS and the customer share equal responsibility for the security of the cloud and customer data.

Explanation

A) AWS manages and controls the components from the host operating system and virtualization layer down to the physical security of the facilities in which the services operate. Customers are responsible for managing and securing their data, platforms, and other cloud assets.

B) AWS does not take responsibility for the security of customer data in the cloud. It's the customer's responsibility to secure their data.

C) AWS ensures the security of the cloud infrastructure, not the customer.

D) While AWS and the customer both have responsibilities, they don't share equal responsibility for both the cloud and customer data. Their responsibilities are clearly delineated.

Question 17

Which of the following statements accurately describes the primary function of identity and access management (IAM) groups?

A) IAM groups are used to provide temporary security credentials to AWS services and applications.
B) IAM groups allow AWS resources to be shared with external AWS accounts.
C) **[Correct Answer]** IAM groups are collections of IAM users and provide a way to assign permissions to multiple IAM users at once.
D) IAM groups can be directly assigned resource-based policies for AWS services.

Explanation

A) IAM roles are used to grant temporary security credentials.
B) This answer refers to AWS Resource Access Manager (RAM) or resource sharing in AWS Organizations.
C) IAM users within an IAM group inherit the permissions assigned to the group.
D) You cannot attach resource-based policies directly to groups. Instead, you attach managed policies to a group.

Question 18

When associating an IAM role with an Elastic Compute Cloud (EC2) instance, which statement best describes how the permissions associated with the role are associated with the EC2 instance?

A) The identity and access management (IAM) role generates a permanent access key that is stored on the EC2 instance.
B) The EC2 instance periodically polls the IAM service to download and cache IAM role credentials.
C) **[Correct Answer]** The EC2 instance retrieves temporary security credentials associated with the role through the instance metadata.
D) The IAM role pushes the permissions directly to the EC2 instance when the instance starts.

Explanation
A) IAM roles do not generate permanent access keys.
B) The EC2 instance does not periodically poll the IAM service.
C) EC2 instances associated with an IAM role retrieve temporary security credentials provided by the role from the EC2 instance metadata.
D) IAM roles do not push permissions to the EC2 instance.

Question 19
Using AWS Organizations, how can you prevent certain AWS accounts from using specific AWS services?

A) By creating an identity and access management (IAM) user policy that denies access to specific AWS services and attaching it to all users within those accounts
B) **[Correct Answer]** By configuring service control policies (SCPs) to explicitly deny permissions for those services and attaching them to the relevant organizational units (OUs) where the accounts are located
C) By deploying AWS Config rules that monitor and flag any usage of forbidden services
D) By creating AWS web application firewall (WAF) rules that block requests to these services

Explanation
A) IAM user policies can restrict access for individual users, but they are not tied to AWS Organizations and would need to be set individually for each AWS account.
B) Create an SCP that denies specific services and attach it to the necessary OUs preventing those accounts from accessing the listed services.
C) AWS Config can monitor configurations and resource changes and can notify or flag when specific services are used.
D) AWS WAF is used to protect web applications by filtering and monitoring HTTP/HTTPS traffic.

Question 20
What is the primary usage of guardrails?

A) They are used to deploy AWS resources across multiple accounts.
B) They provide a visual dashboard for monitoring AWS resource usage.
C) They are backup mechanisms to ensure data recovery in case of failures.
D) **[Correct Answer]** They are prepackaged rules that help enforce your organization's policies.

Explanation

A) The deployment of AWS resources across AWS accounts is not a primary function of guardrails.
B) AWS Control Tower provides a dashboard that gives an overview of your AWS environment.
C) AWS services like AWS Backup handle data backup options.
D) Guardrails in AWS Control Tower are prepackaged governance rules for security, compliance, and operations helping organizations ensure that the AWS accounts adhere to the desired best practices and policies.

Question 21

You are tasked with sharing specific AWS resources across select accounts, where the multiple AWS accounts are part of an AWS Organizations deployment. Which of the following statements about AWS Resource Access Manager (RAM) is accurate?

A) AWS RAM allows you to share AWS resources only within your own account.
B) AWS RAM enables you to share AWS resources with the public.
C) AWS RAM mandates that resources shared are automatically available to all accounts in AWS Organizations.
D) **[Correct Answer]** AWS RAM allows you to specify which accounts or organizational units within an AWS organization can access shared resources.

Explanation

A) AWS RAM is specifically designed to share resources across accounts, not just within a single account.
B) AWS RAM does not provide functionality to share AWS resources with the public. Its primary purpose is for sharing resources across AWS accounts or within an AWS organization.
C) While AWS RAM does allow sharing of resources within an AWS organization, it does not mandate that shared resources are automatically available to all accounts. You can selectively share resources with specific accounts or organizational units (OUs).
D) AWS RAM provides fine-grained control to share AWS resources across accounts or within an AWS organization specifying which accounts or OUs can access the shared resources.

Question 22

Which of the following statements are true when creating identity and access management (IAM) access keys for programmatic access to AWS?

A) **[Correct Answer]** Access keys consist of an access key ID and a secret access key.
B) You can retrieve the secret access key for an existing access key pair.
C) AWS recommends using the root user access keys for everyday tasks.
D) **[Correct Answer]** It's possible to have multiple active access keys for a single IAM user.

Explanation

A) When you create an access key, AWS provides both an access key ID and a secret access key.

B) You cannot retrieve the secret access key for an existing IAM access key pair for security reasons. If you lose the secret access key, you must create a new set of access keys.

C) The root user access key has full access to all resources in the AWS account, and it's a security best practice to lock away the root user access key and use IAM users or roles for everyday tasks.

D) An IAM user can have up to two sets of access keys (active or inactive) at a time. This is useful for key rotation.

Question 23

Which of the following statements about service control policies (SCPs) in AWS Organizations are true? Choose two answers.

A) **[Correct Answer]** SCPs allow you to set permission guardrails, defining what actions an organization's member accounts can and cannot perform in AWS. B) SCPs provide a direct mechanism to encrypt data stored in S3 buckets.
C) **[Correct Answer]** SCPs can be applied to the organization root, an organizational unit (OU), or to individual AWS accounts.
D) SCPs can be used to monitor real-time metrics of AWS resources.

Explanation

A) SCPs in AWS Organizations are used to set permission boundaries for member accounts defining which AWS service actions members can perform, essentially acting as a security guardrail.

B) AWS offers other services and mechanisms, such as server-side encryption (SSE), for this purpose.

C) SCPs in AWS Organizations are applied at various levels, including the organization root, organizational unit, or specific AWS accounts, offering flexibility in defining permissions D) SCPs are not monitoring tools.

Question 24

When designing a virtual private cloud (VPC) for high availability in AWS, which two of the following strategies should you consider implementing?

A) Deploy resources in multiple regions.
B) **[Correct Answer]** Use VPC peering to connect two VPCs in the same region.
C) **[Correct Answer]** Deploy resources across multiple availability zones (AZs).
D) Create a single subnet that spans multiple AZs.

Explanation

A) Multi-region deployments can be more about disaster recovery and latency improvements.
B) VPC peering allows you to connect two VPCs, which can enhance the availability by allowing communication between instances in different VPCs without relying on public IPs or VPN connections.
C) Deploying resources across multiple AZs ensures that if one AZ fails, the resources in other AZs remain available, providing high availability.
D) Subnets in AWS are tied to a single AZ. Therefore, it's not possible to create a subnet that spans multiple AZs. Each AZ should have its own distinct set of subnets.

Question 25

Traffic from one of your subnets isn't being routed to the intended external destination. Which of the following could be a possible reason for this behavior related to route table design?

A) **[Correct Answer]** The subnet isn't associated with a custom route table.
B) The route table has too many entries, causing some to be ignored.
C) The route table has a direct peering connection with another virtual private cloud (VPC).
D) The route table contains a default route targeting an EC2 instance.

Explanation

A. Every subnet in a VPC must be associated with a custom route table when external routes outside the VPC are required.
B. While there is a limit on the number of entries you can have in a route table, AWS does not ignore any entries. You would receive an error if the limit was exceeded.
C. Direct peering connections are made between VPCs using VPC peering, not route tables. Route tables contain routes that point to the peering connection.
D. While you can target various AWS resources (like network access translation [NAT] gateways) in a route table, you cannot directly target an Elastic Compute Cloud (EC2) instance.

Question 26

A network access control list (NACL) is applied to an Amazon Elastic Compute Cloud (EC2) instance with the following inbound rules:

Rule#	Type	Protocol	Port Range	Source IP	Allow/Deny
100	HTTP	TCP	80	0.0.0.0/0	ALLOW
200	HTTPS	TCP	443	0.0.0.0/0	ALLOW
*	ALL	ALL	ALL	0.0.0.0/0	DENY

A user reports that they are unable to access the web application hosted on the EC2 instance via HTTP. What could be the potential reason?

A) **[Correct Answer]** The EC2 instance's security group is blocking HTTP traffic.

B) The NACL is misconfigured and blocks all inbound traffic.

C) NACLs do not support HTTP or HTTPS rules.

D) The virtual private cloud's (VPC) route table is not correctly configured.

Explanation

A) Security groups are stateful and act as a firewall for associated Amazon EC2 instances, controlling both allowed inbound and outbound traffic.

B) The NACL is correctly configured to allow HTTP and HTTPS traffic. The default rule (*) denies all other traffic, but it does not block allowed HTTP or HTTPS traffic. C) NACLs do support HTTP and HTTPS rules, as shown in the given table

D) The VPC's route table determines where network traffic is directed. While it is essential for routing traffic, it does not block or allow traffic based on protocols or port numbers like NACLs or security groups.

Question 27

In AWS, when configuring a security group for an Elastic Compute Cloud (EC2) instance, which of the following statements is true?

A) Security groups operate at the network layer (layer 3) and can inspect packet contents.

B) **[Correct Answer]** Security groups are stateful; if an incoming request from an IP is allowed, the response is automatically allowed, regardless of outbound rules. C) By default, all inbound and outbound traffic is allowed in a security group.

D) Security groups can be associated with multiple virtual private clouds (VPCs) but only one subnet within each VPC.

Explanation

A) Security groups operate at the instance level, not at the subnet level. They work at the transport layer (layer 4) and only support “allow” rules.

B) Security groups in AWS are stateful. If you allow an incoming request from a particular IP address or range, the response traffic is automatically allowed, even if there's no outbound rule allowing it.

C) By default, all inbound traffic is denied, and all outbound traffic is allowed in a security group D) Security groups are associated with instances and are VPC-specific. They can't be shared across VPCs.

Question 28

In a virtual private cloud (VPC) with private and public subnets, where an Elastic Compute Cloud (EC2) instance in the private subnet needs to download patches from the internet, but should not be directly accessed from the internet, which of the following options is the most suitable solution?

A) Place the EC2 instance in the public subnet and associate it with an Elastic IP.
B) Set up a network access translation (NAT) gateway in the private subnet.
C) **[Correct Answer]** Set up a NAT gateway in the public subnet and update the route table for the private subnet.
D) Allow outbound traffic from the private subnet to the Internet using a network access control list (NACL).

Explanation

A) This would expose the EC2 instance to the internet, which is against the requirements. The instance should not be directly accessed from the internet.

B) NAT gateways should be placed in the public subnet, not the private subnet. A NAT gateway in a private subnet wouldn't have the necessary routing to the internet.

C) A NAT gateway enables instances in a private subnet to initiate outbound IPv4 traffic to the internet or other AWS services, but it prevents unsolicited inbound traffic from reaching those instances. See

D) While NACLs can allow or deny traffic, they are stateless. Simply allowing outbound traffic does not provide the instance in the private subnet with the capability to access the internet and receive the response back. NAT services are needed to achieve this at AWS.

Question 29

In an AWS virtual private cloud (VPC), you have a requirement to design a subnet strategy for a three-tier application: web, application, and database. The web tier must be publicly accessible, while the application and database tiers must be private. One of the subnets can communicate

directly with the internet despite not having an associated internet gateway. What could be the reason for this behavior?

A) The subnet has an associated virtual private gateway (VGW).
B) The subnet is associated with a network access control list (NACL) that allows all outbound traffic.
C) **[Correct Answer]** The subnet has an associated network access translation (NAT) gateway or NAT instance.
D) The subnet is part of an AWS Direct Connect.

Explanation

A) A VGW is associated with a VPC and is used to connect the VPC to on-premises networks, typically via a virtual private network (VPN) connection. It does not provide direct internet access to subnets.
B) While an NACL that allows all outbound traffic would enable a subnet's resources to initiate connections to the internet, the subnet would still require an internet gateway, NAT gateway, or NAT instance to actually communicate with the internet.
C) A NAT Gateway or NAT instance allows instances in a private subnet to initiate outbound traffic to the internet.
D) AWS Direct Connect links your internal network to an AWS Direct Connect location over a standard Ethernet cable. It doesn't provide direct internet access to individual subnets within a VPC.

Question 30

You decide to launch an Elastic Compute Cloud (EC2) instance in a virtual private cloud (VPC) with an associated IPv6 Classless Inter-Domain Routing (CIDR) block, By default, how is the IPv6 address assigned to the instance?

A) The EC2 instance is automatically assigned a public IPv6 address from Amazon's pool of IPv6 addresses.
B) The EC2 instance is assigned a private IPv6 address from the VPC's IPv6 CIDR block.
C) The EC2 instance does not receive an IPv6 address unless specified during launch.
D) **[Correct Answer]** The EC2 instance is assigned a public IPv6 address from the VPC's IPv6 CIDR block.

Explanation

A) While EC2 instances are automatically assigned a public IPv4 address from Amazon's pool, this is not the case for IPv6 addresses.
B) The IPv6 addresses assigned from the VPC's CIDR block are public, not private.

C) If the VPC has an associated IPv6 CIDR block and the subnet setting "Assign IPv6 addresses to instances" is enabled, the EC2 instance will automatically receive an IPv6 address.
D) When you launch an EC2 instance in a VPC with an associated IPv6 CIDR block, it's automatically assigned a public IPv6 address from the VPC's CIDR block.

Question 31
Which of the following statements about AWS Transit Gateway is most accurate?

A) Transit Gateway allows you to connect up to 5 virtual private clouds (VPCs) and on-premises networks in a hub-and-spoke model.
B) Transit Gateway supports routing between VPCs and virtual private network (VPN) connections but not Direct Connect.
C) Transit Gateway is primarily used to isolate resources within a single VPC.
D) **[Correct Answer]** Transit Gateway simplifies connecting multiple VPCs and on-premises networks through a single gateway.

Explanation
A) Transit Gateway supports connections to thousands of VPCs.
B) Transit Gateway supports routing between VPCs, VPN connections, and AWS Direct Connect.
C) Transit Gateway's primary use case is to connect multiple VPCs and on-premises networks seamlessly.
D) AWS Transit Gateway is a service that allows you to connect multiple Amazon VPCs and on-premises networks through a single gateway, simplifying network architecture.

Question 32
Which statements about AWS web application firewall (WAF) *and* AWS Shield are true?

A) AWS WAF primarily protects against distributed denial-of-service (DDoS) attacks, while AWS Shield provides application-level protection against Structured Query Language (SQL) injection and cross-site scripting (XSS) attacks.
B) **[Correct Answer]** AWS Shield Advanced provides cost protection, 24x7 DDoS response team access, and advanced threat intelligence, while AWS WAF does not offer these features.
C) AWS WAF and AWS Shield both primarily focus on content delivery optimization and do not provide any security features.
D) AWS Shield is a firewall that protects only EC2 instances, while AWS WAF protects the content delivery network.

Explanation

A) AWS WAF protects web applications from common web exploits such as SQL injection and XSS attacks, while AWS Shield provides protection against DDoS attacks.

B) AWS Shield Advanced provides features like cost protection against DDoS-related scaling, access to the DDoS response team, and advanced threat intelligence

C) Both AWS WAF and AWS Shield are security services. AWS WAF provides application-level protection, and AWS Shield provides DDoS protection.

D) AWS Shield provides protection against DDoS attacks, not just for Elastic Compute Cloud (EC2) instances but also for various AWS resources. AWS WAF, on the other hand, is a WAF that protects web applications, not just the content delivery network.

Question 33

In a multi-region deployment, you want to replicate secrets stored in AWS Secrets Manager from the primary region to other regions for high availability. Which of the following is the correct method to achieve this?

A) Manually copy the secret value from the primary region and create a new secret in the secondary region.
B) Use Amazon S3 cross-region replication to replicate the secret.
C) **[Correct Answer]** Use AWS Secrets Manager's built-in replication feature to replicate the secret to other regions.
D) Implement a Lambda function triggered by AWS Config to copy the secret to other regions.

Explanation

A) Manually copying secrets between regions is not efficient or scalable, and it needs to provide automation.

B) Amazon S3 cross-region replication is used to replicate S3 objects across buckets in different regions.

C) AWS Secrets Manager provides a built-in feature that allows you to replicate secrets across regions.

D) While Lambda functions provide extensibility and can be used for various automation tasks, for this purpose, it is not a best practice.

Question 34

Which of the following statements about AWS Cognito are true?

A) **[Correct Answer]** AWS Cognito user pools are user directories used to manage sign-up and sign-in functionality for mobile and web applications.
B) AWS Cognito is primarily used for data warehousing solutions in AWS.

C) **[Correct Answer]** AWS Cognito identity pools allow users to gain temporary AWS credentials to access AWS services.
D) AWS Cognito cannot integrate with external identity providers like Google or Facebook.

Explanation

A) AWS Cognito user pools provide a secure user directory that scales to hundreds of millions of users. It's a fully managed service that connects easily to web or mobile apps through a software development kit (SDK).
B) AWS Cognito is not a data warehousing solution. AWS services like Amazon Redshift provide data warehousing solutions.
C) AWS Cognito identity pools (federated identities) enable you to create unique identities for users and give them secure, temporary, limited-privilege credentials to access your AWS resources.
D) AWS Cognito can integrate with external identity providers through security assertion markup language (SAML) or popular identity providers like Facebook, Google, and Amazon to provide federated authentication for your app.

Question 35

Which of the following statements about AWS GuardDuty is true?

A) AWS GuardDuty requires manual installation of agents on EC2 instances to monitor network traffic.
B) AWS GuardDuty primarily focuses on optimizing AWS costs and resource usage.
C) **[Correct Answer]** AWS GuardDuty uses machine learning to detect unexpected and potentially unauthorized activities automatically.
D) AWS GuardDuty is a service that provides virtual private network (VPN) functionalities between AWS and on-premises data centers.

Explanation

A) AWS GuardDuty does not require any agents to be installed on Elastic Compute Cloud (EC2) instances. It works by analyzing virtual private cloud (VPC) flow logs, CloudTrail event logs, and DNS logs.
B) AWS GuardDuty's primary focus is threat detection, not cost optimization.
C) AWS GuardDuty uses machine learning, anomaly detection, and integrated threat intelligence to identify and prioritize potential threats.
D) AWS GuardDuty is a threat detection service. Services like AWS Site-to-Site VPN provide VPN functionalities.

Question 36

When deploying AWS Macie for the first time in an organization, which of the following steps is essential to start identifying and protecting sensitive data?

A) Manually classifying all existing S3 objects before enabling Macie
B) Setting up AWS CloudTrail logs for Macie to analyze past data events
C) **[Correct Answer]** Assigning an identity and access management (IAM) role with necessary permissions to Macie
D) Configuring AWS WAF rules to filter Macie findings

Explanation

A) AWS CloudTrail logs can provide valuable security and auditing information, but they are not a prerequisite for Macie to analyze and protect sensitive data in S3 buckets.
B) AWS Macie automatically classifies data in S3 once it's enabled. You don't need to manually classify all existing objects beforehand.
C) When deploying AWS Macie, it requires an IAM role with the necessary permissions to access resources and perform operations.
D) AWS Web Application Firewall (WAF) is used to protect web applications by filtering and monitoring HTTP/HTTPS traffic and is unrelated to Macie's functionality of identifying and protecting sensitive data in S3.

Question 37

Which of the following options is true when integrating AWS Direct Connect with a virtual private cloud (VPC)?

A) **[Correct Answer]** AWS Direct Connect bypasses the public internet and uses a dedicated connection directly from your data center to AWS.
B) AWS Direct Connect requires an internet gateway (IGW) in your VPC for connectivity.
C) AWS Direct Connect relies on an elastic load balancer (ELB) to route traffic to your VPC.

Explanation

D) AWS Direct Connect uses a site-to-site VPN connection over the public internet for enhanced security.

A) AWS Direct Connect allows for a dedicated network connection from your premises to AWS bypassing the public internet, providing more reliable, faster, and lower-latency communication between your infrastructure and AWS.

B) AWS Direct Connect does not require an IGW for connectivity.

C) AWS Direct Connect is a network service that provides a dedicated connection to AWS and does not rely on ELB for its functionality.

D) AWS Direct Connect and site-to-site VPN are two separate services.

Question 38

Which of the following AWS services allows you to establish a secure and private tunnel from your network or device to the AWS global network?

A) AWS Direct Connect

B) AWS Transit Gateway

C) **[Correct Answer]** AWS Virtual Private Gateway

D) AWS VPC Peering

Explanation

A) AWS Direct Connect does not establish a virtual private network (VPN); instead, it provides a dedicated network connection from on-premises to AWS.

B) AWS Transit Gateway connects virtual private clouds (VPCs) and on-premises networks through a central hub, but it's not specifically for establishing VPNs. However, it can work with a virtual private gateway (VGW) to facilitate VPN connections.

C) AWS Virtual Private Gateway is used to establish VPN connections between an Amazon VPC and you're on-premises network, providing a secure and private tunnel.

D) AWS VPC Peering is a networking connection between two VPCs that enables routing using each VPC's private IP addresses. It's not used to establish a VPN connection to an on-premises network. See

Question 39

Which of the following statements about the AWS Key Management Service (KMS) is true regarding key rotation?

A) AWS KMS automatically rotates all customer master keys (CMKs) every 24 hours.

B) **[Correct Answer]** When AWS KMS rotates a CMK, the key ID of the original CMK remains unchanged.

Explanation

C) AWS KMS requires manual intervention to rotate CMKs, and it cannot be automated.
D) AWS KMS does not retain previous backing keys when keys are rotated.

A) AWS KMS does not rotate all CMKs automatically every 24 hours. Instead, when you enable automatic key rotation for a CMK, AWS KMS rotates the CMK once a year.
B) When you enable automatic rotation for a CMK, AWS KMS creates new cryptographic material for the CMK every year. However, the key ID, Amazon Resource Name (ARN), and other properties of the CMK remain unchanged.
C) AWS KMS allows you to enable automatic rotation for a CMK, which means the service will handle the rotation process without manual intervention.
D) When AWS KMS rotates keys, it retains all previous backing keys so that decryption of data encrypted under the old key can still take place.

Question 40

Which of the following options is not a valid method for validating domain ownership when requesting a certificate with AWS Certificate Manager (ACM)?

A) Email validation
B) DNS validation
C) **[Correct Answer]** HTTP validation
D) CNAME validation

Explanation

A) Email validation is a method supported by ACM where the domain owner or an authorized representative must approve the certificate request.
B) DNS validation involves adding a CNAME record to the DNS configuration of the domain.
C) ACM does not support HTTP validation for domain ownership. Validation is typically done through DNS or email validation.
D) CNAME validation is part of DNS validation, where ACM provides a CNAME record that you add to your DNS configuration.

Question 41

In AWS API Gateway, what is the primary function of a stage?
(A) It is used for storing API keys.
(B) It represents a snapshot of the API for testing purposes.

Explanation

(C) **[Correct Answer]** It refers to the different deployment environments for an API, such as Development, Testing, or Production.

(D) It is a storage area for user data collected through the API.

Explanation

(A) API keys are managed separately in API Gateway and are not the primary function of a Stage.

(B) While stages can be used for testing, they do not represent a snapshot of the API for testing purposes. They are more about the deployment environment.

(C) In AWS API Gateway, a stage is a named reference to an API deployment used to manage an API's different environments (like Development, Testing, and Production). Each stage can have settings like throttling, caching, logging, and request/response mapping.
(D) A Stage in API Gateway is not used as a storage area for user data. User data handling would be managed by the backend services that the API connects to.

Question 42

What are the two key advantages of a stateless application architecture?
(A) Enhanced data consistency due to centralized state management.
(B) **[Correct Answer]** Easier scalability since any instance can process any request.
(C) **[Correct Answer]** Reduced user authentication and session management complexity.
(D) Lower resource consumption due to persistent connections.

Explanation

(A) Data consistency is challenging in stateless architecture since no central state management exists.
(B) Stateless architectures allow for easier scaling as each request is independent and can be handled by any available server or instance.
(C) Stateless applications typically have reduced user authentication and session management complexity, as they don't rely on previous interactions.
(D) Stateless architectures do not necessarily lead to lower resource consumption due to persistent connections; they may not use persistent connections at all, as each request is independent.

Question 43

What are two features of Amazon SQS FIFO (First-In-First-Out) queues?
(A) **[Correct Answer]** Provides at least one delivery of each message.
(B) **[Correct Answer]** Supports exactly once processing and maintains the order of message delivery.
(C) Offers message deduplication by default for all messages.
(D) Ensures unlimited transactions per second (TPS).

Explanation

(A) SQS FIFO queues provide at least one delivery, ensuring that messages are delivered at least once but may occasionally result in duplicates.
(B) FIFO queues maintain the order in which messages are sent and received and support exactly-once processing, which prevents a message from being processed multiple times. (C) Message deduplication is a feature of SQS FIFO queues, but it requires explicit configuration and is not enabled by default for all messages.

(D) FIFO queues do not offer unlimited TPS; they have a limit on the number of transactions per second to maintain the order of messages.

Question 44

What are two key benefits of using AWS Simple Notification Service (SNS)?

(A) It provides durable storage for large binary files.

(B) **[Correct Answer]** It can scale automatically to handle many messages.

(C) It offers direct VPN connectivity to on-premises environments.

(D) **[Correct Answer]** It allows message filtering to target specific subscribers.

Explanation

(A) SNS is a notification service and does not provide storage for binary files or any other type of data. For durable storage, services like Amazon S3 are used.

(B) AWS SNS is a highly scalable service that can handle many messages and automatically scales with the demand.

(C) SNS does not offer VPN connectivity; it is a messaging and notification service. Services like AWS VPN provide VPN connectivity.

(D) SNS provides message filtering features, enabling publishers to send targeted messages to specific subscribers based on the attributes of the message.

Question 45

What are two benefits of using AWS Step Functions?

(A) **[Correct Answer]** It ensures at least one execution guarantee for each step in a workflow.

(B) It provides automatic scaling for database clusters.

(C) It enables automatic data encryption at rest and in transit.

(D) **[Correct Answer]** It helps manage application states and orchestrates the workflow of serverless applications.

Explanation

(A) AWS Step Functions ensure that each step in the workflow is executed at least once, providing reliability in executing complex workflows.

(B) Step Functions is not designed for database cluster scaling; AWS services like Amazon RDS or Amazon Aurora automatically scale databases.

(C) While AWS provides encryption capabilities for data, Step Functions' primary role is not to encrypt data but to orchestrate workflows. Encryption is typically handled by the specific AWS services used in the workflow.

(D) A significant benefit of AWS Step Functions is its ability to manage application states and orchestrate complex workflows, particularly in serverless applications.

Question 46

What are two key features of Amazon Route 53 in managing traffic patterns?

(A) Automatic scaling of compute resources.

(B) **[Correct Answer]** Health checks are used to monitor the health of resources.

(C) Direct integration with Amazon RDS for database traffic routing.

(D) **[Correct Answer]** DNS routing policies for traffic distribution.

Explanation

(A) Automatic scaling of compute resources is a feature associated with AWS Auto Scaling, not directly with Route 53.

(B) Amazon Route 53 offers health checks, which monitor the health of your resources (such as web servers) and make routing decisions based on these health checks.

(C) Route 53 does not directly integrate with Amazon RDS for database traffic routing; it primarily handles DNS-level traffic routing.

(D) Route 53 uses DNS routing policies to control how traffic is distributed to your application's endpoints, whether in a single AWS region or globally.

Question 47

Which of the following best describes the function of Amazon Route 53's Weighted Routing Policy?

(A) **[Correct Answer]** Routes traffic to multiple resources in proportions determined by assigned weights.

(B) Distributes DNS queries based solely on the user's geographic location. (C) Provides a failover routing policy for disaster recovery scenarios.

(D) Automatically scales traffic distribution based on real-time server load.

Explanation

(A) The Weighted Routing Policy in Amazon Route 53 allows you to assign weights to resource record sets enable traffic routing to multiple resources in specified proportions. (B) Geographic location-based routing is handled by the Geolocation Routing Policy, not the Weighted Routing Policy.

(C) Failover routing policies differ from weighted routing and are specifically designed for disaster recovery scenarios.

(D) Real-time server load-based scaling is not a feature of Route 53's Weighted Routing Policy. This policy focuses on distributing traffic based on predefined weights.

Question 48

What are two key benefits of using AWS Fargate with ECS?

(A) It offers dedicated hardware for compliance-sensitive containerized applications. (B) **[Correct Answer]** It automatically provisions and manages EC2 instances for container deployments.

(C) **[Correct Answer]** It allows you to run containers without managing servers or clusters.

(D) It directly controls the underlying host's operating system.

Explanation

(A) Fargate is a serverless computing engine and does not offer dedicated hardware. For compliance-sensitive applications requiring dedicated hardware, using EC2 instances is more appropriate.

(B) AWS Fargate with ECS removes the need to provision and manage EC2 instances for your containers, as it handles the server and cluster management tasks.

(C) Fargate allows you to run containers without managing the servers or clusters, simplifying the deployment process.

(D) With Fargate, you do not get direct control over the host operating system, as it abstracts the underlying servers and infrastructure.

Question 49

What are the benefits of using AWS Glacier for data storage?

(A) It provides real-time access to data.

(B) **[Correct Answer]** It offers secure, durable, low-cost storage for data archiving and long-term backup.

(C) It is suitable for high-performance database hosting.

(D) It supports instant retrieval of archived data for active database storage.

Explanation

(A) Glacier is not designed for real-time access to data; it is optimized for infrequently accessed data.

(B) AWS Glacier is designed for secure, durable, and extremely low-cost storage, making it suitable for data archiving and long-term backup where data is not frequently accessed. (C) Glacier is used for data archiving and unsuitable for high-performance database hosting, requiring quicker data access.

(D) Glacier does not support instant data retrieval; retrieval times can range from minutes to hours, depending on the selected option.

Question 50

How does Amazon RDS Read Replicas enhance database scalability?

(A) By distributing write operations across multiple database instances.

(B) By providing automatic version updates for the database engine.

(C) **[Correct Answer]** By allowing read traffic to be distributed across multiple database instances,

(D) By encrypting data at rest and in transit.

Explanation

(A) Read Replicas are used for only read operations; read replicas do not distribute write operations.

(B) Automatic version updates are not a feature specific to Read Replicas.

(C) Read Replicas in Amazon RDS allow you to distribute read traffic among multiple instances, enhancing the read scalability of your database environment.

(D) While RDS supports encryption at rest and in transit, this feature is not specific to Read Replicas or their scalability role.

Question

Question 51

What are the benefits of implementing Amazon RDS Multi-AZ with a standby instance?

(A) It provides a globally distributed database for international data replication.

(B) It reduces latency by caching content closer to the user's location.

(C) **[Correct Answer]** It ensures data is synchronously replicated to a standby instance in a different AZ.

(D) It allows for simultaneous read and write capabilities on both primary and standby instances.

Explanation

(A) Multi-AZ deployments are for high availability within a single AWS region, not for global data distribution.

(B) Reduced latency by caching content is not a feature of RDS multi-AZ deployments; caching content is related to services like Amazon CloudFront.

(C) One of the critical benefits of multi-AZ deployments is the synchronous replication of data to a standby instance in a different AZ, enhancing data durability and availability.

(D) In multi-AZ deployments, the standby instance is not used for read or write operations under normal operations; it is a passive copy until a failover occurs.

Question 52

What are two key features of Amazon RDS that support redundancy?

(A) **[Correct Answer]** Multi-AZ deployments for enhanced availability and failover support.

(B) Integrated content delivery network (CDN) capabilities.

(C) **[Correct Answer]** Read replicas to improve read scaling and for disaster recovery.

(D) Built-in firewall protection for network security.

Explanation

(A) Amazon RDS multi-AZ deployments provide enhanced availability and durability, automatically replicating data to a standby instance in a different Availability Zone (AZ) for failover purposes.

(B) Integrated CDN capabilities are not a feature of Amazon RDS; Amazon CloudFront typically handles this.

(C) Read replicas in Amazon RDS improve the scalability of read-heavy database workloads and can also be used for disaster recovery.

(D) While AWS RDS provides network security options, built-in firewall protection is not specific to its redundancy features.

Question

Question 53

In AWS CloudFront, what are the two benefits of using Origin Shield?

(A) **[Correct Answer]** It reduces the load on the origin by collapsing requests across multiple edge locations.

(B) It provides a dedicated physical connection between the CloudFront distribution and the origin.

(C) **[Correct Answer]** It offers additional firewall protection against DDoS attacks.

(D) It enables advanced real-time analytics on content delivery.

Explanation

(A) Origin Shield is a centralized caching layer that can help reduce the load on your origin. This is done by collapsing requests from multiple CloudFront edge locations to a single request to the origin.

(B) Origin Shield does not provide a dedicated physical connection; it's a caching layer—services like AWS Direct Connect handle dedicated connections.

(C) Origin Shield can provide additional protection against DDoS attacks by providing an extra layer between the origin and the edge locations.

(D) While CloudFront provides analytics on content delivery, advanced real-time analytics is not a specific feature of Origin Shield.

Question 54

Which two statements accurately describe the relationship between AWS Regions and network performance?

(A) **[Correct Answer]** Latency is generally lower when connecting two AWS services within the same Region.

(B) Data transfer between regions is always free to ensure optimal network performance.

(C) AWS guarantees the same network performance across all regions.

(D) Regions have no impact on network performance between AWS services.

Explanation

(A) Network latency is generally lower when you connect two AWS services within the same Region due to the proximity of resources and optimized AWS network infrastructure.

(B) Data transfer between regions incurs charges and is not free. The cost is for the data transfer and to ensure optimal network performance and reliability.

(C) Network performance can vary between regions due to distance, network infrastructure, and regional capacity.

(D) The choice of AWS region can significantly impact network performance between AWS services, especially regarding latency and data transfer costs.

Question 55

Which AWS disaster recovery strategy is characterized by having a duplicate environment running in a standby mode and is suitable for critical applications with stringent downtime requirements? (A) Backup and restore

(B) Pilot light

(C) **[Correct Answer]** Warm standby (D) **[Correct Answer]** Multi-site

Explanation

(A) Backup and restore is an essential strategy with longer downtime, as it relies on restoring data from backups and does not involve a standby environment.

(B) Pilot light involves maintaining a minimal version of the environment and does not have a complete duplicate environment running in standby mode.

(C) Warm standby involves a scaled-down but fully operational version of your environment running in AWS, ready to be scaled up in case of a disaster. It's suitable for critical applications where downtime needs to be minimal.

(D) Multi-site involves a duplicate environment running in another region in an active-active configuration, providing near-zero downtime suitable for critical applications.

Question 56

How does immutable infrastructure benefit the deployment process in AWS?

(A) It reduces deployment complexity by allowing in-place upgrades.

(B) **[Correct Answer]** It increases the consistency and reliability of deployments.

(C) It relies on manual intervention for error handling during deployments.

(D) It prioritizes flexibility in changing and updating live servers.

Explanation

(A) Immutable infrastructure does not involve in-place upgrades; it consists of replacing existing servers with new ones for each deployment.

(B) Immutable infrastructure increases deployment consistency and reliability by creating new instances for every change, reducing the chances of environment drift and configuration inconsistencies.

(C) One of the benefits of immutable infrastructure is the reduction of manual intervention, as the process can be automated for consistency and error reduction.

(D) Immutable infrastructure does not prioritize flexibility in changing live servers; instead, it replaces servers for each change to ensure consistency.

Question

Question 57

What is the primary advantage of using AWS CloudFormation in the context of immutable infrastructure?

(A) It facilitates the direct and continuous modification of existing resources.

(B) **[Correct Answer]** It enables the automated creation of resources from a predefined template.

(C) It allows for the dynamic adjustment of database schemas in real time.

(D) It provides a platform for in-place application debugging.

Explanation

(A) Immutable infrastructure avoids direct and continuous modification of existing resources; instead, it involves replacing resources with new ones when changes are needed.

(B) AWS CloudFormation allows for creating and managing a collection of related AWS resources using a template, which is key in implementing immutable infrastructure by defining and deploying infrastructure as code.

(C) CloudFormation is not used for the dynamic adjustment of database schemas; it is more focused on infrastructure provisioning.

(D) CloudFormation is not a tool for in-place application debugging but for infrastructure provisioning and management.

Question 58

What are two key features of AWS Application Load Balancers?

(A) **[Correct Answer]** They provide SSL/TLS termination at the load balancer level.

(B) They support only static IP addresses as targets.

(C) They can route traffic to Amazon RDS databases.

(D) **[Correct Answer]** They offer advanced request routing based on the content of the HTTP headers.

Explanation

(A) ALBs support SSL/TLS termination, which allows the load balancer to handle the encryption/decryption of traffic, offloading this task from the backend servers.

(B) ALBs do not restrict targets to only static IP addresses; they can route traffic to various target types like EC2 instances, microservices, and containers.

(C) ALBs are not designed to route traffic directly to databases like Amazon RDS. They are typically used for routing HTTP/HTTPS traffic to web servers and applications.

(D) A key feature of ALBs is their ability to perform advanced request routing based on the content of the HTTP headers, URL paths, query parameters, etc.

Question 59

What are two key considerations when deploying listener rules in AWS Elastic Load Balancing?

(A) Listener rules can only be configured for Network Load Balancers (NLB).

(B) **[Correct Answer]** Rules determine how the load balancer routes requests to the targets in a target group.

(C) Listener rules encrypt data in transit between the load balancer and the clients.

(D) **[Correct Answer]** They can perform actions based on the content of the request, such as the URL path.

Explanation

(A) Listener rules can be configured for both Application Load Balancers (ALB) and Network Load Balancers (NLB), not just NLBs.

(B) Listener rules in AWS Elastic Load Balancing define how the load balancer routes requests to different target groups based on the request content.

(C) Encrypting data in transit is a function of the load balancer's configuration, such as enabling HTTPS, rather than a function of the listener rules.

(D) Listener rules can be configured to perform actions based on the request's content, such as forwarding requests to different target groups based on the URL path, hostname, or other request parameters.

Question 60

In AWS, what can you do if you reach a service quota limit?

(A) Immediately terminate the AWS account and create a new one.

(B) **[Correct Answer]** Request a service quota increase through the AWS Management Console.

(C) Automatically increase quotas by enabling AWS Auto Scaling.

(D) Purchase reserved instances to increase service quotas.

Explanation

(A) Terminating the AWS account and creating a new one is not a practical or recommended approach to handling service quota limits.

(B) Customers can request an increase for many quotas directly using AWS Service Quotas.

(C) AWS Auto Scaling helps to adjust resources to maintain performance automatically, but it doesn’t automatically increase service quotas.

(D) Purchasing reserved instances can save cost but does not affect most service quotas.

Question 61

Which statement is true regarding AWS Service Quotas?

(A) Service quotas are universally fixed and cannot be changed.

(B) **[Correct Answer]** Quotas can vary by AWS region.

Question

(C) Increasing service quotas can be done without AWS approval.
(D) Service quotas apply only to Amazon EC2 and Amazon S3.

Explanation
(A) Many service quotas can be increased upon request; they are not universally fixed. (B) AWS Service Quotas can vary by region. For example, the number of EC2 instances you can launch in one area might differ, which is essential to consider in multi-region architectures. (C) Most service quota increases require approval from AWS, primarily if they represent significant changes from the default limits.
(D) Service quotas apply to a wide range of AWS services, not just Amazon EC2 and Amazon S3.

Question 62
How do AWS Service Quotas benefit organizations using AWS?
(A) They provide detailed performance metrics for each service.
(B) **[Correct Answer]** Quotas help manage resource usage and control costs.
(C) They eliminate the need for monitoring resource usage.
(D) Service quotas provide automatic scaling for services.

Explanation
(A) Service quotas are not meant to provide performance metrics; they are intended to control the scale and usage of services.
(B) Service quotas help organizations manage and control their AWS resource usage, preventing over-provisioning and unexpected costs.
(C) Despite service quotas, organizations must monitor resource usage to optimize performance and costs effectively.
(D) Service quotas do not provide automatic scaling. While they set limits on resources, scaling services within those limits requires configuration (e.g., Auto Scaling).

Question 63
When troubleshooting with AWS X-Ray, what is the significance of trace data?
(A) Trace data is used to configure security groups and network ACLs.
(B) It contains metrics related to the CPU and memory usage of the application.
(C) **[Correct Answer]** Trace data helps identify the path and performance of a request through the application.
(D) It is used to manage database connections within the application.

Explanation
(A) Trace data is not used for configuring security groups or network ACLs; it is related to application performance and debugging.

(B) Trace data focuses on request paths and application performance rather than on direct metrics like CPU and memory usage.
(C) Trace data in AWS X-Ray provides detailed information about requests as they travel through your application, helping identify performance bottlenecks and the behaviour of different services and resources.

(D) Managing database connections does not directly use trace data in AWS X-Ray. Trace data is more about analyzing request flow and performance.

Question 64

How does AWS X-Ray facilitate troubleshooting performance issues in microservices architecture?

(A) By auto-scaling microservices based on traffic patterns.
(B) **[Correct Answer]** It enables the visualization of how requests flow through microservices.
(C) X-Ray provides a virtual network interface for microservices communication.
(D) It automatically updates microservices to the latest software version.

Explanation

(A) Auto-scaling of microservices is not a feature of AWS X-Ray; container orchestration services like Amazon ECS or Kubernetes typically handle this.
(B) AWS X-Ray facilitates troubleshooting performance issues in microservices architectures by enabling the visualization of request flows. This helps identify which microservices are being used and how they are performing.
(C) AWS X-Ray does not provide a virtual network interface for microservices. It focuses on analyzing and debugging application performance.
(D) Automatic updates of microservices are not a function of AWS X-Ray. This would be managed by a continuous integration and continuous deployment (CI/CD) pipeline.

Question 65

In AWS Application Load Balancers, how do listener rules enhance traffic management?

(A) By allocating static IP addresses to each listener.
(B) Through direct integration with Amazon RDS for database traffic management.
(C) **[Correct Answer]** Allowing host-based routing routes traffic to different domains.
(D) They are used to increase the storage capacity of the target groups.

Explanation

(A) Listener rules in application load balancers do not feature static IP address allocation for listeners. Static IPs are more relevant to Network Load Balancers.
(B) Listener rules do not integrate directly with Amazon RDS for database traffic management; they are used for routing HTTP/HTTPS traffic.
(C) Listener rules in Application Load Balancers allow for host-based routing, enabling traffic routing based on the domain name in the host header of the HTTP request.
(D) Increasing target groups' storage capacity is unrelated to listener rules. Listener rules are for traffic routing, not for storage management.

Question 66

What are two key components of AWS's pricing philosophy? Select all that apply.

(A) [Correct Answer] The pay-as-you-go pricing model allows you to pay only for the resources you consume, with no upfront costs.

(B) Fixed monthly fees for all AWS services, regardless of usage.

(C) [Correct Answer] Volume-based discounts where pricing decreases as you use more resources.

(D) Lifetime subscription fees for uninterrupted service access.

Explanation

(A) AWS's pay-as-you-go pricing model is fundamental, ensuring users only pay for their specific resources, allowing for flexibility and cost-efficiency.

(B) AWS generally does not charge fixed monthly fees for its services. Charges are based on consumption, although some services, such as certain Reserved Instances or support plans, may have monthly pricing components.

(C) AWS offers volume-based discounts, such as with Amazon S3; the more you use, the less you pay per GB. Reserved Instances and Savings Plans also offer discounts based on commitment.

(D) AWS does not offer lifetime subscription fees. Pricing is based on current usage or reserved capacity, with commitments ranging from 1 to 3 years for certain services.

Question 67

Which AWS service pricing includes consideration for the number of requests made? Select all that apply.

(A) Amazon Elastic Compute Cloud (EC2) instance hours.

(B) [Correct Answer] Amazon Simple Storage Service (S3) for storage space and the number of requests.

(C) Amazon Virtual Private Cloud (VPC) peering connections.

(D) [Correct Answer] AWS Lambda is based only on the duration of code execution.

Explanation

(A) EC2 pricing is primarily based on instance types and hours running, though data transfer and other factors may also affect costs, but not the number of requests per se.

(B) Amazon S3 pricing considers the storage space used and the number of GET, PUT, DELETE, and other types of requests, which can affect costs.

(C) Amazon VPC peering connections do not charge based on the number of requests. Data transfer may be charged, but the pricing model is different from request-based pricing.

(D) AWS Lambda charges are based on the number of requests and the duration of code execution, where duration is calculated from when your code begins executing until it returns or terminates.

Question 68

Which AWS tools assist in monitoring and managing AWS costs and usage? Select all that apply.

(A) [Correct Answer] AWS Cost Explorer
(B) Amazon QuickSight
(C) [Correct Answer] AWS Budgets
(D) AWS CloudFormation

Explanation
(A) AWS Cost Explorer is a tool for visualizing, understanding, and managing AWS costs and usage over time. It also allows you to create custom reports that analyze cost and usage data.
(B) Amazon QuickSight is a fast, cloud-powered business intelligence service for building visualizations, performing ad hoc analysis, and quickly getting business insights from your data, not specifically for cost management.
(C) AWS Budgets allows you to set custom cost and usage budgets that alert you when you exceed (or are forecast to exceed) your budgeted amount.
(D) AWS CloudFormation provides a common language for modelling and provisioning AWS and third-party application resources in your cloud environment, not for cost management.

Question 69

What functionality do AWS cost management tools provide? Select all that apply.

(A) Automatic reduction of monthly AWS billing based on usage patterns
(B) [Correct Answer] Detailed reports and analytics on your AWS spending and usage
(C) Physical hardware management for AWS data centers
(D) [Correct Answer] Real-time modification of AWS resources based on cost predictions

Explanation
(A) While AWS cost management tools can help identify savings opportunities, they do not automatically reduce your bill. Users must take action based on the insights provided.
(B) Tools like AWS Cost Explorer provide detailed analytics on your AWS spending and usage patterns, helping you understand where your money is going and identify areas for cost optimization.
(C) Cost management tools do not provide functionality for managing physical hardware for AWS data centers. AWS manages its infrastructure independently.

(D) Real-time resource modification based on cost predictions is not a direct feature of AWS's cost management tools. However, these tools can provide data and forecasts that users can act on manually or through automation.

Question 70
How can AWS Cost Explorer help in cost optimization? Select all that apply.

(A) By providing a dedicated physical connection to AWS to reduce data transfer costs
(B) [Correct Answer] By offering detailed analytics and insights into your AWS spending and usage patterns
(C) [Correct Answer] By automatically adjusting resource allocation based on usage patterns to optimize costs
(D) By offering a flat rate for all AWS services to simplify billing and cost management

Explanation
(A) AWS Direct Connect provides a dedicated network connection to AWS, which can potentially reduce data transfer costs, but this is not a function of AWS Cost Explorer.
(B) AWS Cost Explorer allows you to analyze your spending and usage patterns over time, identify trends, and uncover insights to help you understand your costs and make informed decisions about cost optimization.
(C) While AWS Cost Explorer provides detailed analytics that can help inform decisions on resource allocation, it does not automatically adjust resources; users must take action based on the tool's insights.
(D) AWS does not offer a flat rate for all services; pricing varies by service, usage, and selected pricing options. AWS Cost Explorer helps users understand these costs, but it does not change the pricing model of AWS services.

Question 71

How do AWS-generated ("AWS") tags differ from user-defined ("User") tags for cost allocation? Select all that apply.

(A) [Correct Answer] AWS tags automatically apply to resources, while user-defined tags require manual assignment.
(B) [Correct Answer] User-defined tags can be activated for cost allocation without AWS approval.
(C) AWS tags can encrypt resource data for added security.
(D) Only user-defined tags are visible within the AWS Management Console.

Explanation

(A) AWS-generated tags are automatically applied by AWS to resources, providing system-generated metadata such as the AWS service name or the identity of the resource creator. In contrast, user-defined tags are created and applied by the user.
(B) The user can activate user-defined tags for cost allocation through the AWS Billing and Cost Management console without needing special approval from AWS.
(C) Tags, whether AWS generated or user defined, identify and categorize resources for billing and management purposes and do not provide encryption or directly enhance security.
(D) AWS-generated and user-defined tags are visible within the AWS Management Console, allowing users to view and manage the tags they have applied to their resources.

Question 72

Which AWS block storage options are suitable for high-performance database workloads? Select all that apply.

(A) [Correct Answer] Elastic Block Store (EBS) Provisioned IOPS SSD
(B) Amazon Elastic File System (EFS)
(C) Amazon Simple Storage Service (S3)
(D) [Correct Answer] Elastic Block Store (EBS) General Purpose SSD

Explanation
(A) EBS Provisioned IOPS SSD (io1/io2) volumes are designed for I/O-intensive workloads, particularly databases, offering high performance with provisional IOPS.
(B) EFS is a file storage service for use with AWS cloud services and on-premises resources, but it needs to be optimized explicitly for databases' high-performance block storage needs.
(C) Amazon S3 is an object storage service that is ideal for storing and retrieving any data but unsuitable for high-performance databases' block storage requirements.
(D) EBS General Purpose SSD (gp2/gp3) volumes balance price and performance, suitable for various transactional workloads, including databases.

Question 73
What are the key benefits of using Amazon Elastic Block Store (EBS) snapshots? Select all that apply.

(A) They serve as a real-time mirror of your EBS volume for high availability.
(B) [Correct Answer] Snapshots can be used to instantiate multiple new volumes, enabling faster data duplication.
(C) Snapshots allow unlimited data transfer between AWS regions at no cost.

(D) [Correct Answer] They enable point-in-time backups of volumes, which can be used for disaster recovery.

Explanation
(A) Real-time mirroring for high availability is more accurately achieved through configuring EBS volumes in a RAID configuration, not snapshots.
(B) EBS snapshots allow you to create a point-in-time copy of your volume, which can then be used to instantiate new volumes, aiding in data duplication and scaling.
(C) While snapshots can be copied between regions, data transfer costs do apply; it is not unlimited or free.
(D) Snapshots provide point-in-time backups of your EBS volumes, which is crucial in disaster recovery strategies.

Question 74
What are the key benefits of using AWS Storage Gateway in a hybrid cloud storage architecture? Select all that apply.

(A) It reduces the latency of internet connections.
(B) [Correct Answer] It automates data backup and archiving to AWS cloud storage.
(C) [Correct Answer] It replaces the need for local storage hardware.
(D) It directly increases the bandwidth of on-premises to AWS connections.

Explanation
(A) AWS Storage Gateway does not directly reduce the latency of internet connections, but it helps optimize data transfer to AWS to mitigate latency issues.
(B) AWS Storage Gateway automates data backup and archiving to the AWS cloud, simplifying data protection and business continuity strategies by integrating with existing backup applications.
(C) While it doesn't entirely replace the need for local storage hardware, AWS Storage Gateway can significantly reduce the requirement for on-premises storage by leveraging the AWS cloud for scalable, secure storage.
(D) Increasing the bandwidth of on-premises to AWS connections is not a direct benefit of AWS Storage Gateway. Bandwidth is determined by the network infrastructure and not by the storage service.

Question 75
Which features are integral to managing data lifecycle policies in hybrid cloud storage scenarios with AWS? Select all that apply.

(A) Amazon CloudFront distributions
(B) [Correct Answer] Amazon Simple Storage Service (S3) lifecycle policies
(C) [Correct Answer] AWS Direct Connect
(D) Amazon RDS automated backups

Explanation
(A) Amazon CloudFront distributions are used for content delivery optimization and are not directly involved in data lifecycle management within a hybrid cloud storage context.
(B) Amazon S3 lifecycle policies are crucial for managing data's lifecycle within hybrid cloud storage scenarios. They enable the automatic data transition to more cost-effective storage classes or the scheduled deletion of data.
(C) AWS Direct Connect can contribute to hybrid cloud storage by providing a dedicated network connection from on-premises to AWS, facilitating efficient data transfer for lifecycle management.
(D) Amazon RDS automated backups are specific to relational database service backups and not directly applicable to managing data lifecycle policies in a hybrid cloud storage scenario.

Question 76
What factors can influence the overall cost when using Amazon Elastic Compute Cloud (EC2)? Select all that apply.
(A) The size of the EC2 instance only
(B) [Correct Answer] The choice between On-Demand, Reserved, and Spot Instances
(C) [Correct Answer] The physical location of the AWS data center hosting the EC2 instance
(D) The programming language used for the application running on the EC2 instance

Explanation
(A) While the size (or type) of the EC2 instance affects cost, it is not the only factor. Other elements like purchasing options, additional storage, and data transfer also play critical roles.
(B) The cost of running EC2 instances can significantly vary based on the purchasing option: On-demand instances offer flexibility without commitment, Reserved Instances provide a discounted rate for a commitment period, and Spot Instances offer the opportunity for cost savings with the trade-off of instance availability.
(C) The cost of EC2 instances varies by region, reflecting the operational costs and demand in different geographic locations.
(D) The programming language used for applications running on EC2 instances does not directly influence the cost of the EC2 service.

Question 77
Which AWS pricing options allow for cost savings when compared to On-Demand Instances? Select all that apply.

(A) [Correct Answer] Dedicated Hosts
(B) [Correct Answer] Spot Instances
(C) AWS Lambda
(D) Amazon LightSail

Explanation
(A) Dedicated Hosts can offer cost savings, especially for customers with server-bound software licenses that do not allow multitenant virtualization.
(B) Spot Instances allow users to purchase spare AWS computing capacity at significant discounts compared to On-Demand pricing. This provides cost savings in exchange for the possibility that AWS may terminate these instances with little notice.
(C) AWS Lambda pricing is based on the number of requests and the execution duration of your code, which is not directly comparable to Elastic Compute Cloud's (EC2's) instance-based pricing models.
(D) Amazon LightSail provides simple virtual private servers with a bundled pricing model, which includes computing, storage, and data transfer.

Question 78
What are the benefits of using AWS Savings Plans over On-Demand pricing?

(A) [Correct Answer] They offer lower prices in exchange for committing to a certain level of usage (measured in dollars per hour) over 1 or 3 years.
(B) They provide unlimited usage of AWS services for a flat monthly fee.
(C) Savings Plans can be applied to any AWS service without restrictions.
(D) They include automatic scaling to meet the demand of your applications without additional cost.

Explanation
(A) AWS Savings Plans provide a significant discount off On-Demand prices in exchange for committing to consistent usage (measured in dollars per hour) for 1 or 3 years. This allows for flexibility in the computing services used while offering cost savings.
(B) AWS does not offer an unlimited usage service for a flat monthly fee. Savings Plans offer discounts based on a commitment to a certain usage level.
(C) Savings Plans are primarily available for Amazon Elastic Compute Cloud (EC2), AWS Lambda, and some other computing services, but only for some AWS services.
(D) While AWS provides autoscaling capabilities to meet application demand, this feature is not unique to Savings Plans, and additional usage beyond the committed amount is billed at On-Demand rates.

Question 79
How do AWS Spot Instances work in terms of pricing and availability?

(A) Spot Instances prices are fixed and higher than On-Demand Instances to guarantee availability.
(B) [Correct Answer] They allow you to bid on unused Elastic Compute Cloud (EC2) capacity and run those instances if your bid exceeds the current spot price.
(C) Spot Instances are automatically free as part of the AWS Free Tier.
(D) They offer a fixed discount rate off the On-Demand price, regardless of market demand.

Explanation
(A) Spot Instance prices are not fixed; they fluctuate based on supply and demand for spare capacity. They are typically lower than On-Demand prices.
(B) Spot Instances allow you to purchase unused Elastic Compute Cloud (EC2) computing capacity at reduced rates. The price varies based on supply and demand, and instances can be interrupted by AWS with 2 minutes of notification when AWS needs the capacity back, making them suitable for flexible, fault-tolerant workloads.
(C) Spot Instances are not automatically free; they are priced based on current market conditions and can offer significant savings over On-Demand pricing.
(D) The discount rate for Spot Instances is not fixed; it varies depending on the current spot market price, which is influenced by supply and demand.

Question 80
What benefits do Amazon Elastic Compute Cloud (EC2) Reserved Instances provide over On-Demand Instances? Select all that apply.

(A) Reserved Instances offer a dynamic pricing model based on market demand.
(B) Reserved Instances allow users to switch between different instance types without additional costs.
(C) [Correct Answer] They provide a significant discount compared to On-Demand Instance pricing for a committed usage period.
(D) [Correct Answer] They offer the flexibility to use the reserved capacity whenever needed without upfront payment.

Explanation
(A) Reserved Instances pricing is fixed based on the term length and payment option selected at the time of purchase, not dynamic based on market demand. This choice more closely describes the pricing model of Spot Instances.
(B) While AWS offers some flexibility with Reserved Instances through instance size flexibility within the same instance family for certain Reserved Instances, users cannot switch between different instances without incurring additional costs or making a separate reservation.

(C) One of the primary benefits of Reserved Instances is the significant cost savings compared to On-Demand pricing. These savings are in exchange for committing to use the instance for a 1-year or 3-year term.
(D) Reserved Instances require either an upfront payment, partial upfront, or no upfront payment but still commit the user to paying for the instance over the entire term. The flexibility comes in how much is paid upfront, not in the ability to use the reserved capacity "whenever needed" without any upfront commitment.

Question 81
Which instance type is ideal for applications with burstable performance requirements?

(A) B1 instances
(B) [Correct Answer] T3 instances
(C) P3 instances
(D) F1 instances

Explanation
(A) AWS does not have a B1 instance type. Yet.
(B) T3 instances are designed to provide a baseline level of CPU performance that can burst higher when needed, making them ideal for applications with variable CPU usage.
(C) P3 instances are optimized for machine learning and high-performance computing with powerful GPU capabilities, not for burstable performance requirements.
(D) F1 instances are compute instances equipped with field-programmable gate arrays (FPGAs) for applications that benefit from custom hardware acceleration, not for burstable performance.

Question 82
Which strategies can reduce costs while ensuring high availability and fault tolerance of AWS-based applications? Select all that apply.

(A) [Correct Answer] Utilizing multi-AZ deployments for critical database services
(B) Concentrating all resources in a single Availability Zone to reduce networking costs
(C) [Correct Answer] Implementing Amazon Aurora Serverless to adjust database capacity automatically
(D) Exclusively using On-Demand Instances for all workloads

Explanation
(A) Multi-AZ deployments can ensure high availability and fault tolerance for database services by automatically replicating databases in multiple locations, which, despite potential higher costs, are crucial for critical applications.

(B) Concentrating resources in a single Availability Zone increases the risk of downtime and data loss in the event of a failure, potentially leading to higher costs in the long run.
(C) Amazon Aurora Serverless adjusts the database's compute capacity automatically based on actual usage, offering cost savings versus overprovisioning for peak capacity at all times.
(D) While On-Demand Instances offer flexibility, they are typically more expensive than Reserved Instances or Spot Instances, which can provide cost savings for suitable workloads.

Question 83
Which practices should be considered when optimizing compute strategies for cost efficiency in AWS? Select all that apply.
(A) [Correct Answer] Utilizing Reserved Instances for predictable workloads
(B) Deploying all instances in a single Availability Zone to minimize latency
(C) [Correct Answer] Implementing Auto Scaling to adjust resources based on demand
(D) Consistently using On-Demand Instances for all workloads to avoid long-term commitments

Explanation
(A) Reserved Instances offer significant cost savings over On-Demand pricing for workloads with predictable usage patterns. They provide a discounted hourly rate in exchange for a commitment to use for a 1- or 3-year term.

(B) Deploying all instances in a single Availability Zone does not optimize for cost efficiency and risks higher downtime and potential data loss in the event of a zone failure. It's generally recommended to distribute instances across multiple zones for high availability.
(C) Auto Scaling helps efficiently manage resource utilization by automatically adjusting the number of instances in response to real-time demand, ensuring that you pay only for the compute resources you need.
(D) Using On-Demand Instances exclusively can lead to higher costs than leveraging Reserved Instances for stable workloads or Spot Instances for flexible, noncritical tasks.

Question 84
When optimizing the costs of a dynamic website hosted on AWS, which of the following strategies are effective? Select all that apply.

(A) [Correct Answer] Using Amazon Simple Storage Service (S3) to host static assets like images, videos, and stylesheets.
(B) Keeping all website components, including dynamic content, on Elastic Compute Cloud (EC2) instances without autoscaling.
(C) [Correct Answer] Implementing Amazon CloudFront to cache and deliver content.
(D) Utilizing a single, large Amazon Relational Database Service (RDS) instance for all database needs regardless of load.

Explanation
(A) Offloading static assets to Amazon S3 can significantly reduce costs compared to serving these files directly from EC2 instances, thanks to S3's lower storage and delivery costs.
(B) Not implementing autoscaling with EC2 instances can lead to overprovisioning (and thus overpaying) during low-traffic periods or performance issues during spikes in traffic, making this an ineffective cost-optimization strategy.
(C) Amazon CloudFront can cache static and dynamic content at edge locations closer to users, reducing the load on origin resources and improving user experience. This could lower compute costs due to decreased server load.
(D) Using a single, large RDS instance without considering load can lead to overprovisioning and higher costs. It's more cost-effective to scale based on demand, or Amazon Aurora's Serverless option for databases with variable workloads should be considered.

Question 85
What AWS services or features can directly contribute to reducing the operational costs of running a dynamic website? Select all that apply.

(A) [Correct Answer] Elastic Load Balancing to distribute incoming traffic across multiple Elastic Compute Cloud (EC2) instances
(B) Always choosing the latest generation of Elastic Compute Cloud (EC2) instances for better performance
(C) [Correct Answer] Utilizing AWS Lambda to execute backend code in response to web application events
(D) Manually scaling Elastic Compute Cloud (EC2) instances daily based on expected traffic

Explanation
(A) Elastic Load Balancing efficiently distributes incoming application or network traffic across multiple targets, such as Amazon EC2 instances, improving resource utilization efficiency and potentially lowering costs by avoiding over-provisioning.
(B) While the latest generation of EC2 instances may offer better performance, choosing the newest generation without considering your application's specific needs and load might not directly reduce cost.
(C) AWS Lambda allows you to run code without provisioning or managing servers and charges only for the compute time you consume, making it an effective way to reduce operational costs for dynamic content execution.
(D) Manually scaling EC2 instances is less effective and prone to error than autoscaling, automatically adjusting the number of cases based on actual demand, ensuring you pay only for what you need.

Question 86
Which strategies can ensure high availability and fault tolerance of AWS-based applications? Select all that apply.

(A) [Correct Answer] Utilizing multi-AZ deployments for critical application services
(B) Concentrating all resources in a single Availability Zone to reduce operating costs
(C) [Correct Answer**]** Implementing Savings Plans that match application compute monthly needs
(D) Exclusively using On-Demand Instances for all workloads

Explanation
(A) Multi-AZ deployments can ensure high availability and fault tolerance for database services by automatically replicating databases in multiple locations, which, despite potential higher costs, are crucial for critical applications.
(B) Concentrating resources in a single Availability Zone increases the risk of downtime and data loss in the event of a failure, potentially leading to higher costs in the long run.
(C) Savings Plans for compute can be purchased based on actual usage, offering cost savings versus overprovisioning for peak capacity at all times.
(D) While On-Demand Instances offer flexibility, they are typically more expensive than Reserved Instances or Spot Instances, which can provide cost savings for suitable workloads.

Question 87
Which factors are critical when considering database capacity planning for AWS Relational Database Service (RDS)? Select all that apply.

(A) The database interface
(B) [Correct Answer] The expected read and write throughput
(C) [Correct Answer] Storage requirements and growth projections
(D) The preferred programming language for application development

Explanation
(A) The database interface is irrelevant to capacity planning, focusing on performance and resource requirements.
(B) Evaluating the expected read and write throughput is essential in database capacity planning to ensure the database can handle the anticipated load.
(C) Storage needs and how they may grow over time must be considered in capacity planning to avoid running out of space and to optimize costs.
(D) While the choice of programming language can affect application design and performance, it's not a direct factor in database capacity planning.

Question 88
What are key considerations when planning capacity for Amazon DynamoDB? Select all that apply.

(A) The geographic location of the nearest AWS data center
(B) [Correct Answer] Provisioned read and write capacity units or enabling DynamoDB Auto Scaling
(C) The brand of hardware used in the AWS data center
(D) [Correct Answer] Consistency model requirements (eventual consistency vs. strong consistency)

Explanation
(A) While geographic location can affect latency, it's not a direct factor in DynamoDB's capacity planning.
(B) Choosing between provisioned capacity units and enabling DynamoDB Auto Scaling is vital for managing performance and cost efficiency.
(C) The specific hardware used in AWS data centers is managed by AWS and transparent to users; it does not directly impact capacity planning decisions.
(D) The choice between eventual consistency and strong consistency affects read performance and throughput, which are essential for capacity planning.

Question 89
Which strategies help in managing database capacity effectively? Select all that apply.

(A) [Correct Answer] Deploying databases in multiple regions to reduce latency
(B) [Correct Answer] Regularly reviewing access patterns and adjusting capacity accordingly
(C) Using a single large instance to host all databases
(D) Setting all databases to the highest available storage tier

Explanation
(A) Deploying databases in multiple regions can help reduce latency for global applications, indirectly affecting capacity planning by optimizing performance.
(B) Regularly reviewing database access patterns and adjusting capacity manually or via Auto Scaling ensures databases are scaled appropriately for current needs.
(C) Using a single large instance for all databases is ineffective as it creates a single point of failure and may not optimize costs.
(D) Automatically setting all databases to the highest storage tier would be inefficient and costly, considering actual performance and storage needs.

Question 90
Which AWS services or features directly support database capacity planning through scalability? Select all that apply.

(A) [Correct Answer] Amazon Relational Database Service (RDS) Read Replicas
(B) AWS Shield
(C) Amazon Simple Storage Service (S3) lifecycle policies
(D) [Correct Answer] Amazon DynamoDB Global Tables

Explanation
(A) RDS Read Replicas allow you to scale out beyond the capacity constraints of a single DB Instance for read-heavy database workloads.
(B) AWS Shield protects against DDoS attacks, which, while important for security, doesn't directly support capacity planning.
(C) Amazon S3 lifecycle policies help manage objects to reduce costs by transitioning them to cheaper storage classes or deleting them, but they do not relate to database capacity planning.
(D) DynamoDB Global Tables provide a fully managed, multi-region, and multi-master database that can scale capacity across regions.

Question 91
How does monitoring with Amazon CloudWatch aid in database capacity planning? Select all that apply.

(A) [Correct Answer] By tracking daily and monthly database production load by utilizing performance metrics.
(B) [Correct Answer] By offering detailed metrics on database performance and usage patterns.
(C) CloudWatch directly reduces database storage costs by compressing data.
(D) It enables automatic code deployments to database instances.

Explanation
(A) [Correct] Monitoring database performance is relevant to short- and long-term database capacity planning.
(B) [Correct] CloudWatch offers metrics and alarms to monitor database performance, usage, and operational health, aiding in effective capacity planning.
(C) CloudWatch does not reduce storage costs by compressing data; it is a monitoring service that provides data and actionable insights but does not directly alter database storage.
(D) While CloudWatch can trigger actions based on alarms, it does not directly enable automatic code deployments to database instances; this is more aligned with services like AWS CodeDeploy.

Question 92
What pricing models are available for AWS CloudFront, Amazon's content delivery network (CDN) service? Select all that apply.

(A) A flat-rate pricing model regardless of data transfer and requests.
(B) [Correct Answer] Pricing is based on the total volume of data transferred out and the number of requests.
(C) Pricing is based on the country where the content is being delivered.
(D) [Correct Answer] Region-specific pricing based on where content is delivered to end-users.

Explanation
(A) CloudFront does not offer a flat-rate pricing model. Charges are incurred based on usage, including data transfer and requests.
(B) AWS CloudFront's pricing includes charges for the volume of data transferred from the CDN to end-users and the number of HTTP/HTTPS requests made.
(C) The destination location does not affect CloudFront's pricing. Pricing is based on data transfer and requests.
(D) CloudFront pricing varies by the region from which the content is delivered, reflecting the cost of providing data in different parts of the world.

Question 93
How does AWS Direct Connect impact network service costs? Select all that apply.

(A) [Correct Answer] It reduces overall data transfer costs by establishing a dedicated network connection to AWS.
(B) It provides a fixed monthly cost for all AWS services accessed via the connection.
(C) [Correct Answer] Monthly port fees are charged based on the port speed chosen for the Direct Connect connection.
(D) It increases data transfer costs due to the high availability and redundancy features.

Explanation
(A) Direct Connect provides a dedicated network connection, which can reduce data transfer costs to and from AWS in many scenarios.
(B) Direct Connect affects data transfer costs but does not provide a fixed monthly cost for all AWS services.
(C) AWS Direct Connect charges monthly port fees, which depend on the connection speed.
(D) Direct Connect may have additional costs, such as port fees, but it's generally used to reduce data transfer costs rather than increase them.

Question 94

What factors contribute to the cost of using AWS Elastic Load Balancing (ELB)? Select all that apply.

(A) [Correct Answer] The total number of active connections to the load balancer
(B) [Correct Answer] Data processed by the load balancer
(C) The theme of the AWS Management Console when managing ELB
(D) The total number of load balancer rules configured

Explanation
(A) For certain load balancers, costs are associated with the number of active connections or the connection rate.
(B) ELB costs include charges for the amount of data processed by the load balancer, which can vary based on the type of load balancer (Application, Network, or Classic).
(C) The theme or appearance of the AWS Management Console does not impact the costs of using AWS services.
(D) While the number of rules might affect the complexity of managing a load balancer, they do not directly influence ELB costs.

Question 95
Which statements are true regarding the cost implications of using Amazon CloudFront? Select all that apply.

(A) Costs are incurred based on the total CloudFront distribution configurations.
(B) [Correct Answer] Charges are based on the data transferred from CloudFront to viewers.
(C) [Correct Answer] The geographical location where content is delivered can influence costs.
(D) Viewing the CloudFront metrics dashboard incurs additional costs.

Explanation
(A) There are no charges for the number of distribution configurations within CloudFront.
(B) CloudFront pricing includes the data transfer out to the end users, with costs varying based on the volume of data.
(C) The cost of using CloudFront can vary depending on viewers' geographical locations due to differing data transfer rates across regions.
(D) There are no additional charges for accessing metrics or viewing dashboards in the AWS Management Console, including CloudFront metrics.

Question 96
Regarding AWS data transfer costs, which scenarios are billed by AWS? Select all that apply.

(A) Data transfer between Elastic Compute Cloud (EC2) instances in the same Availability Zone using private IP addresses
(B) [Correct Answer] Data transfer from an Elastic Compute Cloud (EC2) instance to the Internet
(C) [Correct Answer] Data transfer between services within the same AWS region
(D) Uploading data to Amazon Simple Storage Service (S3) from the Internet

Explanation
(A) Data transfer between EC2 instances in the same Availability Zone using private IP addresses is generally free of charge.
(B) Data transfer from an EC2 instance to the Internet incurs charges based on the total amount of data transferred.
(C) While some transfers within the same AWS region are free, others, especially across different services, may incur charges depending on the specific service usage.
(D) Uploading data to Amazon S3 from the Internet is typically free, with costs associated primarily with data storage and retrieval.

Question 97
Which scenarios incur data transfer costs between Amazon Simple Storage Service (S3) and Amazon Elastic Compute Cloud (EC2)? Select all that apply.

(A) [Correct Answer] Data transfer from S3 to EC2 instances within the same Availability Zone (AZ) using a public IP address
(B) [Correct Answer] Data transfer from an S3 to EC2 instance in a different region
(C) Uploading data from your local computer to S3
(D) Accessing public S3 buckets from the Internet

Explanation
(A) Data transfers from S3 to EC2 instances within the same AZ do not generally incur additional charges unless accessed via a public or Elastic IP address, in which case EC2-to-EC2 data transfer charges in the same AZ may apply.
(B) Data transfer from an S3 to EC2 instance in a different region incurs charges because it involves cross-region data movement.
(C) Uploading data to S3 from your local computer is not charged for the data transfer in.
(D) Accessing public S3 buckets from the Internet does not incur data transfer costs, but request charges may apply.

Question 98
For AWS data transfer pricing, which of the following is true? Select all that apply.

(A) Data transfer between services within the same region is always free.
(B) [Correct Answer] Data transfer from AWS to the Internet is subject to charges after the first GB.
(C) All inbound data transfer to AWS services is charged.
(D) [Correct Answer] AWS service and region data transfer costs vary.

Explanation
(A) While many intraregional service-to-service data transfers are free, there are exceptions, and charges can apply under certain conditions, such as when using public IP addresses or crossing Virtual Private Cloud (VPC) peering connections.
(B) AWS charges for data transfer to the Internet, with the first GB per month typically free and varying rates applied after that based on total volume.
(C) All inbound data transfer to AWS services from the Internet is generally not charged.
(D) Data transfer costs vary by the AWS service involved and the region, reflecting the operational costs and pricing strategies in different geographies.

Question 99
In which cases would AWS not charge for data transfer between Availability Zones? Select all that apply.

(A) Data transfer between Elastic Compute Cloud (EC2) instances in different Availability Zones within the same Virtual Private Cloud (VPC)
(B) Data transfer from Elastic Compute Cloud (EC2) instances to Amazon Relational Database Service (RDS) instances in the same Virtual Private Cloud (VPC) but different Availability Zones
(C) [Correct Answer] Importing data into AWS from an external data center
(D) [Correct Answer] Replicating data across regions for disaster recovery

Explanation
(A) AWS charges for data transfer between EC2 instances in different Availability Zones, even within the same VPC.
(B) Similarly, data transfer from EC2 to RDS instances in different Availability Zones incurs charges, which is considered cross-AZ traffic.
(C) Importing data into AWS, including from an external data center, typically does not incur data transfer charges (inbound data transfer is generally free), but specific services may have associated costs for data ingestion or requests.
(D) Replicating data across regions would incur data transfer charges as this involves interregional data movement, which is chargeable.

Question 100

What are the cost implications for AWS data transfer related to Amazon Virtual Private Cloud (VPC)? Select all that apply.

(A) [Correct Answer] Data transfer within a VPC in the same Availability Zone using private IP addresses is free.
(B) [Correct Answer] Data transfer charges are applied when using VPC peering connections, even within the same region.
(C) Assigning Elastic IP addresses to resources within a VPC incurs extra data transfer fees.
(D) VPC endpoints incur additional data transfer costs within the same Availability Zone.

Explanation
(A) Data transfer within the same VPC and Availability Zone using private IP addresses does not incur additional charges, promoting efficient network architecture designs.
(B) While VPC peering allows for private networking between VPCs, data transfer across peering connections is chargeable, even within the same AWS region.
(C) Assigning an Elastic IP address to a resource does not directly incur data transfer fees, but data transfer involving resources with Elastic IPs can be subject to charges, primarily due to internet traffic.
(D) VPC endpoints facilitate private connections between VPC and AWS services without data transfer charges solely for endpoints; however, the AWS service might have associated data transfer costs.

Question 101
Under what circumstances does AWS charge to transfer data from Amazon Elastic Block Store (EBS)? Select all that apply.

(A) Data transfer from an EBS volume to an Elastic Compute Cloud (EC2) instance in the same Availability Zone
(B) [Correct Answer] Data transfer from an EBS volume to the Internet
(C) Snapshot creation and storage within the same AWS region
(D) [Correct Answer] Replicating EBS volume snapshots to another AWS region

Explanation
(A) Data transfer between an EBS volume and an EC2 instance within the same Availability Zone does not incur additional charges.
(B) Data transfer from an EBS volume to the Internet is chargeable, involving outbound data movement from AWS to the public Internet.
(C) Creating snapshots of EBS volumes and storing them within the same region does not involve data transfer fees, though the snapshots incur storage costs.
(D) Replicating EBS snapshots to another region incurs charges due to the data transfer when moving snapshot data across regions.

Question 102
What pricing considerations should be considered when using Amazon Elastic Compute Cloud (EC2) instances? Select all that apply.

(A)Fixed monthly subscription fee regardless of instance types.
(B)[Correct Answer] Price varies based on the instance type and the chosen pricing model.
(C)Data transfer rates with the same AWS region.
(D)[Correct Answer] The cost associated with the instance type and the AWS region where the instance is deployed.

Explanation
(A) Amazon EC2 does not operate on a fixed monthly subscription model; it's primarily usage based, with several flexible pricing options.
(B) EC2 pricing highly depends on the instance type (which describes the hardware specs of the instance) and the pricing model. On-demand Instances have a higher hourly rate than Reserved Instances, which require a commitment but offer a significant discount. Spot Instances offer the highest potential savings but can be interrupted.
(C) Data transfer between EC2 instances is typically free with the same AWS region. However, there are costs associated with data transfer across regions or to the Internet.
(D) Prices for EC2 instances also vary by AWS region due to differences, operational costs, and geographical area.

Question 103
Which factors influence the cost of Amazon Simple Storage Service (S3)? Select all that apply.

(A) The version of the S3 API being used
(B) [Correct Answer] The amount of data stored, number of requests, and data transfer out of S3
(C) Whether or not the objects are encrypted
(D) [Correct Answer] Geographical location of the S3 bucket and access management features

Explanation

(A) The version of the S3 API used does not affect pricing.
(B) The primary cost factors for S3 include the amount of data stored (priced per GB), the number and type of requests (e.g., GET, PUT), and data transfer out of S3 to the Internet or other AWS regions.
(C) All objects are encrypted by default and encryption does not impact the cost.

(D) Costs vary by the S3 bucket's geographical location due to differing operational costs and demand. While access management features themselves do not directly affect cost, enabling features like S3 Object Lock may decrease storage costs due to the retention of objects.

Question 104
What are the two pricing components for Amazon Relational Database Service (RDS)? Select all that apply.

(A) [Correct Answer] Hours of operation and storage capacity used by the database deployment
(B)The programming language used to develop the database application
(C) The number of tables within the database
(D) [Correct Answer] Data transfer out of the RDS instance to the Internet

Explanation
(A) Pricing for Amazon RDS primarily consists of the compute capacity (charged per hour the instance runs) and the allocated storage capacity (GB per month), including any additional backup storage or provisioned IOPS.
(B) The programming language used to develop the database application does not affect RDS pricing.
(C) The number of tables with the database is not a direct pricing component of Amazon RDS.
(D) Data transfer out of RDS to the Internet is a common pricing factor across many AWS services, including RDS, where it's charged per GB transferred outbound.

Question 105
When considering AWS Lambda pricing, what are two key factors? Select all that apply.

(A)The programming language used to create the Lambda function
(B) [Correct Answer] The number of requests and the duration of code execution
(C)The operating system chosen for the Lambda function
(D) [Correct Answer] Allocated memory and the number of executions

Explanation
(A) The programming language used to create the Lambda function does not impact pricing.
(B) AWS Lambda pricing is based on the number of requests for your functions and the duration, which is the time it takes for your code to execute.
(C) AWS Lambda functions are serverless, meaning users do not need to choose an operating system; AWS abstracts the underlying infrastructure away.
(D) The cost also depends on the amount of memory allocated to the function and the total number of times the function is executed.

Question 106
Which features are included in the AWS Cost and Usage Report? Select all that apply.

(A) Recommendations for which Netflix shows to watch based on AWS service usage
(B) Integration with AWS Shield for advanced threat protection analysis
(C) [Correct Answer] Comprehensive data about your AWS costs and usage
(D) [Correct Answer] Detailed formation about Reserved Instances (RIs) and Savings Plans utilization and coverage

Explanation
(A) Recommendations for Netflix shows are unrelated to AWS cost management tools and are not a feature of AWS services.
(B) While AWS Shield provides advanced threat protection, it is not integrated into the AWS Cost and Usage Report, which focuses on cost and usage data.
(C) The AWS Cost and Usage Report provides comprehensive data regarding your costs and usage across all AWS services, enabling detailed analysis for cost optimization.
(D) The report includes detailed information on RIs and Savings Plans, helping you understand utilization and coverage, which is critical for cost optimization.

Question 107
How do AWS Budgets and AWS Cost Explorer complement each other's cost management? Select all that apply.

(A)AWS Budgets automatically creates budgets based on AWS Cost Explorer forecasts.
(B) [Correct Answer] AWS Cost Explorer and AWS Budgets allow the creation of custom reports at daily, weekly, and monthly intervals.
(C)AWS Budgets can deploy new resources automatically as dictated by the analysis provided by AWS Cost Explorer.
(D) [Correct Answer] AWS Cost Explorer and AWS Budgets can send alerts.

Explanation
(A) AWS Budgets do not automatically create budgets based on forecasts from AWS Cost Explorer. Budget adjustments need to be made manually.
(B) AWS Cost Explorer and AWS Budgets are complementary tools. Cost Explorer offers the analytics and insights needed to understand spending and usage trends, while Budgets allows users to set spending limits based on that data and receive alerts if spending exceeds those limits.
(C) AWS Budgets cannot deploy resources automatically. It is designed to monitor and alert people about costs and usage against predefined budgets.

(D) Both cost services also enable you to avoid surprise costs by setting alerts that notify you of potential overspending or when you hit your set limit:

Question 108
What AWS features allow you to set custom cost and usage budgets that alert you when you exceed your thresholds? Select all that apply.

(A) [Correct Answer] AWS Budgets
(B)AWS Cost Explorer
(C) [Correct Answer] Amazon Simple Notification Service (SNS)
(D)Amazon Elastic Compute Cloud (EC2) Reserved Instances

Explanation
(A) AWS Budgets allows you to set custom cost and usage budgets and alerts you via email or Amazon SNS notification when you exceed your predefined thresholds.
(B) AWS Cost Explorer is a tool for visualizing your AWS spending and usage patterns over time, but it does not allow you to set budgets or receive alerts.
(C) Amazon SNS can be integrated with AWS Budgets to send alerts when a budget threshold is exceeded.
(D) Amazon EC2 Reserved Instances provide a significant discount compared to On-Demand pricing in exchange for a commitment to use a specified amount of compute resources over a 1- or 3-year term. This feature does not allow you to set budgets or alerts.

Question 109
Which of the following statements about AWS cost allocation tags are true? Select all that apply.

(A) [Correct Answer] Tags must be activated before being used for cost allocation purposes.
(B) Tags applied to AWS resources automatically integrate with Amazon QuickSight for analytics.
(C) Once a tag is activated, it immediately applies retroactively to all historical usage.
(D) [Correct Answer] User-defined tags you create to organize your resources can also be used for cost allocation once activated.

Explanation
(A) Cost allocation tags must first be activated in the AWS Billing and Cost Management console for use in AWS billing and cost management reports. This will minimize loads while implementing cost management best practices for AWS storage solutions.
(B) While AWS cost allocation tags help with cost management, they do not automatically integrate with Amazon QuickSight.

(C) Activating a tag for cost allocation does not retroactively apply it to historical usage. It only applies to usage and costs that occur after the tag has been activated.
(D) User-defined (or custom) tags can be activated for cost allocation, allowing users to organize resources and manage costs according to their categorization schemes. This will enable users to minimize load while implementing cost management best practices for AWS storage solutions.

Question 110
How do EC2 instance storage volumes compare to Amazon Elastic Block Store volumes? Select all that apply.

(A) [Correct Answer] EC2 instance storage volumes provide temporary block-level storage physically attached to the host computer.
(B) EC2 instance storage volumes can be detached and reattached to different instances.
(C) EBS volumes offer lower latency and higher throughput than Instance Store volumes.
(D) [Correct Answer] EBS volumes are designed for data that must persist beyond the life of a single EC2 instance storage volume.

Explanation
(A) EC2 instance storage volumes offer temporary storage that is physically attached to the host machine, providing high IOPS and low latency for workloads that require temporary storage
(B) EC2 instance storage volumes cannot be detached or reattached; they are ephemeral and exist only for the lifespan of the instance they are attached to
(C) In many cases, EC2 instance storage volumes offer higher performance in terms of IOPS and throughput than EBS, especially for temporary data and cache,
(D) EBS volumes provide persistent block storage that lasts beyond the lifecycle of any individual EC2 instance, suitable for long-term and critical data storage

Question 111
Which AWS services are designed to facilitate hybrid storage options, allowing seamless integration between on-premises environments and the AWS cloud? Select all that apply.

(A) [Correct Answer] AWS Storage Gateway
(B) Amazon Simple Storage Service (S3) Glacier
(C) AWS Snowball
(D) [Correct Answer] Amazon FSx for Windows File Server

Explanation

(A) AWS Storage Gateway is a hybrid cloud storage service that enables on-premises environments to use AWS cloud storage seamlessly. It provides different gateways (file, volume, and tape) for various use cases, such as backups, archiving, and disaster recovery.
(B) Amazon S3 Glacier is a secure, durable, low-cost data archiving and long-term backup storage service. While it's an important part of AWS's storage services, it's not explicitly designed for hybrid storage scenarios.
(C) AWS Snowball is a data transport solution that uses secure devices to transfer large amounts of data to and from the AWS cloud. It's not a hybrid storage service.
(D) Amazon FSx for Windows File Server provides fully managed Microsoft Windows file servers, facilitating hybrid storage solutions by offering a native Windows file system that integrates with on-premises Windows environments.

Question 112
Which Elastic Compute Cloud (EC2) instance types are optimized for memory-intensive applications? Select all that apply.
(A) [Correct Answer] R5 instances
(B) T3 instances
(C) M5 instances
(D) [Correct Answer] X1 instances

Explanation
(A) R5 instances are memory-optimized and designed to handle large databases, memory databases, and real-time big data analytics.
(B) T3 instances are general-purpose instances designed for various applications and are not explicitly optimized for memory-intensive tasks.
(C) M5 instances are also general purpose, offering a balance of computing, memory, and networking resources for various workloads.
(D) X1 instances are also memory-optimized and well suited for high-performance databases, memory databases (like SAP HANA), and big data processing engines (like Apache Spark or Presto).

Question 113
What are key considerations when choosing between Amazon Elastic Compute Cloud (EC2) and AWS Lambda for application deployment? Select all that apply.

(A) [Correct Answer] AWS Lambda automatically manages the computing fleet, offering a serverless execution model.
(B) [Correct Answer] Amazon EC2 requires manual scaling and management of instances.
(C) Amazon EC2 offers a serverless execution model, eliminating the need to manage servers.
(D) AWS Lambda requires the purchase of Reserved Instances to optimize costs.

Explanation
(A) AWS Lambda provides a serverless computing service where you can run code without provisioning or managing servers. It automatically scales compute capacity.
(B) Amazon EC2 gives you full control over your compute instances, including the need for manual setup, scaling, and management, offering more flexibility at the cost of complexity.
(C) Amazon EC2 instances are not serverless; contrary to AWS Lambda, they require manual provisioning, configuration, and scaling.
(D) AWS Lambda does not use Reserved Instances. Its price is based on the number of requests and the duration of code execution, making it cost-effective for workloads with varied usage patterns without upfront costs.

Question 114
At AWS, how can the application load be distributed more efficiently across multiple compute resources? Select all that apply.

(A) By using Amazon Simple Storage Service (S3) to host static web content
(B) [Correct Answer] Employing Elastic Load Balancing to distribute traffic
(C) [Correct Answer] Implementing Amazon CloudFront for global content delivery
(D) Using Amazon Glacier for data archiving

Explanation
(A) Amazon S3 stores static content and does not directly distribute application load across compute resources. WS.
(B) Elastic Load Balancing automatically distributes coming application traffic across multiple targets, such as Amazon Elastic Compute Cloud (EC2) instances, containers, and IP addresses, enhancing your application's availability and fault tolerance. WS.
(C) Amazon CloudFront, a content delivery network (CDN) service, efficiently distributes content globally with low latency and high data transfer speeds complementing the distribution of application load.
(D) Amazon Glacier is a secure, durable, and low-cost storage service for data archiving and long-term backup that does not involve distributing application load. WS.

Question 115
Which AWS services or features enable efficient container management and scaling? Select all that apply.

(A) [Correct Answer] Amazon Elastic Compute Cloud (EC2) Spot Instances
(B) [Correct Answer] Amazon Elastic Container Service (ECS) with Fargate launch type
(C) Amazon Relational Database Service (RDS)

(D) AWS CloudFormation

Explanation
(A) Amazon EC2 Spot Instances can run containerized workloads at a lower cost, making them ideal for stateless, fault-tolerant applications that can withstand disruptions.
(B) Amazon ECS with the Fargate launch type allows for serverless container management, enabling you to run containers without managing servers or clusters, optimizing compute resources, and scaling efficiently.
(C) Amazon RDS is a managed relational database service with no direct role in content management or scaling.
(D) AWS CloudFormation is an infrastructure-as-code service that automates the deployment of AWS resources and cloud container services, but it is not specifically a service for container management or scaling.

Question 116
For a dynamic website on AWS, which cost optimization measures can help manage database-related expenses? Select all that apply.

(A) [Correct Answer] Using Amazon DynamoDB with autoscaling enabled for its database tables
(B) Provisioning an oversized Amazon Relational Database Service (RDS) instance to ensure availability
(C) [Correct Answer] Leveraging Amazon Relational Database Service (RDS) Reserved Instances for predictable workload databases
(D) Storing all website data in Amazon Simple Storage Service (S3), regardless of its nature

Explanation
(A) Amazon DynamoDB, with autoscaling enabled for its tables, adjusts capacity automatically to optimize performance and minimize costs without manual intervention, making it cost-effective for varied workloads.
(B) Provisioning an oversized RDS instance can lead to unnecessary costs due to paying for unused resources. Scaling based on demand is more cost-effective.
(C) For workloads with predictable patterns, Amazon RDS Reserved Instances provide a significant discount compared to On-Demand Instance pricing, thus optimizing costs over the long term.
(D) While Amazon S3 is cost-effective for storing static assets, it's designed for only some types of website data and not dynamic content that requires database functionalities like query and real-time data processing.

Question 117
Which database features should be considered when planning for high availability and disaster recovery? Select all that apply.

(A) Amazon DynamoDB Accelerator (DAX)
(B) [Correct Answer] Multi-AZ Amazon Relational Database Service (RDS) deployments
(C) Elastic IP addresses for Amazon Elastic Compute Cloud (EC2) instances hosting databases
(D) [Correct Answer] Cross-Region Amazon Relational Database Service (RDS) Read Replicas

Explanation
(A) DAX is a memory cache for DynamoDB that improves read performance but is not directly related to high availability or disaster recovery.
(B) Multi-AZ deployments for RDS provide high availability and failover support for DB Instances, which is crucial for disaster recovery.
(C) Elastic IP addresses provide a static IP for EC2 instances, but they're more relevant to network design than database capacity planning or disaster recovery.
(D) Cross-Region Amazon RDS Read Replicas enhance data durability and availability and enable disaster recovery by replicating data to another region.

Question 118
Which practices are recommended for cost-effective database capacity planning on AWS? Select all that apply.

(A) Always using On-Demand Instances for databases to ensure capacity meets demand
(B) [Correct Answer] Leveraging Reserved Instances or Savings Plans for predictable workloads
(C) Implementing manual scaling policies exclusively to control costs
(D) [Correct Answer] Utilizing Amazon Aurora Serverless for unpredictable workloads

Explanation
(A) Relying solely on On-Demand Instances can be more costly than using Reserved Instances, Savings Plans, or serverless options for predictable workloads.
(B) Reserved Instances or Savings Plans can provide significant cost savings compared to On-Demand pricing for predictable database workloads.
(C) While manual scaling offers control, it can be less efficient and cost-effective than Auto Scaling or serverless solutions.
(D) Amazon Aurora Serverless automatically adjusts database capacity based on application needs, making it cost-effective for unpredictable workloads.

Question 119
What factors influence the cost of Amazon Virtual Private Cloud (VPC)? Select all that apply.

(A)The number of subnets created with a VPC
(B) [Correct Answer] Data transfer charges for traffic from the VPC to the Internet
(C)The number of route tables created within a VPC
(D) [Correct Answer] VPN connection hourly charges when using AWS Site-to-Site VPN

Explanation
(A) No costs are associated with creating multiple subnets within a VPC.
(B) Data transfer out of the VPC, especially to the Internet, and charges are based on the total amount of data transferred.
(C) Creating route tables within a VPC is free.
(D) AWS Site-to-Site VPN connections have hourly charges, which depend on the connection's usage.

Question 120
Which costs are associated with Amazon Route 53? Select all that apply.

(A) [Correct Answer] The number of Domain Name System (DNS) queries received by your hosted zones
(B) [Correct Answer] The cost of domain registration through Route 53
(C) The size of Domain Name System (DNS) records stored with Route 53 hosted zones
(D) Viewing Route 53 dashboards with the AWS Management Console

Explanation
(A) Route 53 charges for the number of DNS queries it answers for your hosted zones.
(B) When registering a domain with Route 53, an annual registration fee varies by top-level domain.
(C) The size of DNS records does not directly influence Route 53 pricing.
(D) Viewing the Route 53 dashboard or any part of the AWS Management Console is free.

Question 121
When are you charged for data transfer with AWS? Select all that apply.

(A) Data transfer between Elastic Compute Cloud (EC2) instances in the same Availability Zone using private IP addresses
(B) [Correct Answer] Data transfer between Elastic Compute Cloud (EC2) instances and Simple Storage Service (S3) with the same AWS region

(C) [Correct Answer] Data transfer from an Elastic Compute Cloud (EC2) instance in one AWS region to a Simple Storage Service (S3) bucket in another AWS region
(D) Data transfer to AWS from the Internet

Explanation
(A) Data transfer between EC2 instances in the same Availability Zone using private IP addresses is free of charge.
(B) Data transfer between EC2 instances and S3 with the same AWS region is generally free when accessed through private IP addresses. However, request operations to S3 might incur charges.
(C) Data transfer across AWS regions is charged from an EC2 instance in one region to an S3 bucket in another region, as this involves cross-region data movement.
(D) Data transfer to AWS from the Internet is typically free of charge.

Question 122
What are two key features of the Amazon Elastic File System (EFS)?

(A) EFS supports block-level storage.
(B) **[Correct Answer]** Automatically scales with increasing or decreasing file system demands.
(C) EFS offers a fixed storage capacity.
(D) **[Correct Answer]** Provides scalable, elastic file storage for AWS cloud services and on-premises resources.

Explanation
(A) Amazon EFS supports file-level storage, not block-level storage, which is provided by Amazon EBS.
(B) Amazon EFS is designed to automatically scale without needing to provision storage in advance, which is one of its primary features.
(C) EFS does not offer fixed storage capacity; instead, it scales automatically as files are added and removed.
(D) EFS provides easy-to-use, scalable file storage with AWS cloud services and on-premises resources.

Question 123
Which two of the following statements are true regarding Amazon EFS performance modes?

(A) **[Correct Answer]** General Purpose performance mode is optimized for latency-sensitive use cases.

(B) **[Correct Answer]** Max I/O performance mode should only be selected when running highly parallelized workloads tolerating high latencies.
(C) EFS does not support changing performance modes after creation.
(D) File-based storage does not support multiple EC2 instances.

Explanation
(A) Amazon EFS's General Purpose performance mode is designed for latency-sensitive scenarios in which a limited number of processes primarily access files.
(B) Changing performance modes from General Purpose to Max I/O requires careful planning.
(C) Performance modes can be changed from General Purpose to Max I/O and vice versa.
(D) Amazon EFS is designed to support file-based storage that multiple EC2 instances can access concurrently, making it suitable for scalable, distributed applications.

Question 124
When deploying Amazon S3 Glacier Vault Lock, what are two correct statements?

(A) Vault Lock allows real-time configuration changes to the vault's policy.
(B) Once locked, the Vault Lock policy can be easily modified for compliance needs.
(C) **[Correct Answer]** Vault Lock enforces compliance controls by locking the vault policy for a specified duration.
(D) **[Correct Answer]** Vault Lock supports the WORM (Write Once Read Many) model to prevent data alteration.

Explanation
(A) Once a Vault Lock policy is locked, it does not allow for real-time configuration changes; it becomes immutable.
(B) After a Vault Lock policy is locked, it cannot be easily modified; this ensures the integrity and compliance of the data retention policies.
(C) Vault Lock enforces compliance controls by allowing you to lock your vault's policy for a specified duration, preventing unauthorized changes.
(D) Amazon S3 Glacier Vault Lock supports the WORM model, preventing data alteration and deletion and ensuring immutability.

Question 125
Which two features are specific to Amazon FSx for Windows File Server?

(A) **[Correct Answer]** Native support for the SMB protocol
(B) Automatic scaling of storage and throughput performance
(C) Built-in support for Apache Hadoop data processing
(D) **[Correct Answer]** Integration with AWS Directory Service for Microsoft Active Directory

Explanation
(A) Amazon FSx for Windows File Server provides native support for the Server Message Block (SMB) protocol, commonly used in Windows-based file systems.
(B) While Amazon FSx allows for provisioning of storage capacity and throughput performance, it does not automatically scale these resources. Scaling requires manual intervention or automation through scripts/API calls.
(C) Built-in support for Apache Hadoop data processing is a feature of Amazon EMR, not FSx for Windows File Server.
(D) FSx for Windows File Server integrates seamlessly with AWS Directory Service for Microsoft Active Directory, allowing you to enforce directory-based security and permissions.

Question 126
When deploying Amazon FSx for Windows File Server, which two options must be configured for backup and recovery?

(A) **[Correct Answer]** Daily automatic backups with a retention period
(B) Cross-region replication for real-time data redundancy
(C) User-driven snapshots at predetermined intervals
(D) **[Correct Answer]** AWS Backup integration for managing backups across AWS services

Explanation
(A) Amazon FSx for Windows File Server enables you to configure daily automatic backups and set a retention period for these backups.
(B) While cross-region replication is an important strategy for achieving higher levels of data redundancy, Amazon FSx for Windows File Server only natively supports real-time cross-region replication.
(C) User-driven snapshots at predetermined intervals are not a native feature of FSx for Windows File Server. The service relies on scheduled automatic backups rather than user-initiated snapshots.
(D) FSx for Windows File Server can be integrated with AWS Backup, which offers a centralized solution for managing backups across various AWS services.

Question 127
In the context of AWS Storage Gateway, what are two correct uses of the File Gateway configuration?

(A) To enhance computational power for high-performance computing tasks
(B) **[Correct Answer]**To store virtual machine images for rapid on-premises deployment
(C) **[Correct Answer]** To seamlessly integrate on-premises file systems with Amazon S3

(D) To create an encrypted tunnel for web traffic

Explanation
(A) File Gateway is used for storage solutions and does not enhance computational power for computing tasks.
(B) While not its primary use case, File Gateway can be used to store virtual machine images on Amazon S3 via on-premises file systems, aiding in rapid deployment and archival.
(C) The primary function of File Gateway is to seamlessly integrate on-premises file systems with Amazon S3, enabling file storage in the AWS cloud with local caching.
(D) Creating an encrypted tunnel for web traffic is not a function of File Gateway; this would be more relevant to services like AWS VPN.

Question 128
Which two types of storage interfaces does AWS Storage Gateway provide?

(A) **[Correct Answer]** File Gateway for integrating file-based environments
(B) A dedicated EBS Gateway for direct EBS volume mounting
(C) **[Correct Answer]** Tape Gateway for backup and archival solutions
(D) DynamoDB Gateway for NoSQL database integration

Explanation
(A) File Gateway is a configuration of AWS Storage Gateway that provides a seamless way to connect on-premises file-based storage to Amazon S3.
(B) There is no specific dedicated EBS Gateway configuration for AWS Storage Gateway; EBS is used independently of Storage Gateway.
(C) Tape Gateway is another configuration of AWS Storage Gateway that offers a virtual tape library (VTL) interface for cost-effective backup and archival solutions in the AWS cloud.
(D) DynamoDB Gateway is not a storage interface in AWS Storage Gateway. DynamoDB is a standalone NoSQL database service.

Question 129
Which two factors should be considered when deploying Amazon FSx for Windows File Server high-performance and scalable file storage?

(A) It employs a Linux-based file system compatible with Windows file-sharing protocols.
(B) **[Correct Answer]** It supports SSD storage for high-performance computing, databases, and data warehousing workloads.
(C) It disables automatic backups by default and requires manual configuration for each deployment.

(D) **[Correct Answer]** It integrates with Microsoft Active Directory for authentication and authorization.

Explanation
(A) Amazon FSx for Windows File Server uses a Windows-based file system, not Linux-based, and is fully compatible with Windows file-sharing protocols.
(B) Amazon FSx for Windows File Server offers SSD storage options suitable for high-performance computing, databases, and data warehousing scenarios.
(C) Automatic backups are a feature of Amazon FSx for Windows File Server, and they are enabled by default, providing daily and on-demand backups.
(D) Integration with Microsoft Active Directory is a key feature, allowing seamless authentication and authorization for users accessing the file system from Windows environments.

Question 130
For applications requiring consistent and high-performance block storage, which EBS feature should be utilized?

(A) Encryption with AWS KMS
(B) Throughput Optimized HDD (st1) for transactional workloads
(C) **[Correct Answer]** Provisioned IOPS SSD (io1 or io2) volumes
(D) Elastic IP addresses are assigned to instances with attached EBS volumes

Explanation
(A) While encryption adds security to block storage, it does not directly impact the performance of IOPS and throughput.
(B) Throughput Optimized HDD (st1) volumes are designed for throughput-intensive workloads, not transactional workloads requiring consistent, high IOPS.
(C) For high-performance block storage, especially for transactional workloads, Provisioned IOPS SSD (io1 or io2) volumes are ideal as they provide high IOPS and throughput.
(D) Elastic IP addresses are related to networking and provide a static IP for instances. They do not directly impact the performance of attached EBS volumes in terms of block storage capabilities.

Question 131
What are two key factors to consider that enhance the performance of Amazon EBS volumes?

(A) Increase the number of Direct Connect links.
(B) **[Correct Answer]** Use EBS-optimized instances.

(C) Enable Termination Protection on EC2 instances.
(D) **[Correct Answer]** Select the correct EBS volume type based on IOPS requirements.

Explanation
(A) Increasing the number of AWS Direct Connect links affects network connectivity to AWS but does not directly impact the performance of EBS volumes.
(B) EBS-optimized instances provide dedicated bandwidth for EBS volumes, which can significantly improve performance, especially for IO-intensive applications.
(C) Enabling Termination Protection on EC2 instances helps prevent accidental terminations but does not enhance the performance of attached EBS volumes.
(D) Choosing the right EBS volume type (e.g., General Purpose SSD, Provisioned IOPS SSD) based on your IOPS and throughput requirements is crucial for meeting your performance needs.

Question 132
Which of the following are valid triggers for an AWS Lambda function? Please select all that apply.

(A) Amazon EC2 instance state change
(B) **[Correct Answer]** Amazon S3 bucket object creation event
(C) **[Correct Answer]** Amazon DynamoDB table data modification
(D) Establishment of the Amazon VPC peering connection

Explanation
(A) While CloudWatch can monitor EC2 state changes, they are not direct triggers for Lambda functions.
(B) Lambda functions can be triggered by events such as creating a new object in an S3 bucket, making this a valid trigger.
(C) Data modification in a DynamoDB table can trigger a Lambda function, allowing for real-time processing of database changes.
(D) Establishing a VPC peering connection does not directly trigger Lambda functions.

Question 133
Which of the following statements regarding concurrency and scaling are true in AWS Lambda? Please select all that apply.

(A) **[Correct Answer]** Lambda functions automatically scale horizontally by creating multiple instances based on the number of incoming requests.
(B) Each Lambda function is limited to a single instance, thereby serially processing incoming events.

(C) **[Correct Answer]** Concurrency limits can be set at the function level to control the number of instances.
(D) Lambda functions scale vertically by adding more CPU power based on the workload.

Explanation
(A) AWS Lambda functions automatically scale horizontally, not vertically, by running multiple instances in parallel as needed to handle incoming requests.
(B) Lambda functions are not limited to a single instance; they can scale horizontally to process multiple events in parallel.
(C) AWS allows you to set concurrency limits for each Lambda function, limiting the number of instances running simultaneously.
(D) Lambda functions do not scale vertically; they scale horizontally by adding more instances rather than more CPU power to a single instance.

Question 134
What are the benefits of integrating AWS Fargate with Amazon Elastic Container Service (ECS)? Please select all that apply.

(A) Enables automatic configuration of virtual machines for containers
(B) **[Correct Answer]** Provides a serverless compute engine to run containers without managing servers or clusters
(C) Offers direct control over the placement and scaling of virtual machines
(D) **[Correct Answer]** Reduces running container costs by automatically purchasing Reserved Instances

Explanation
(A) Fargate abstracts the concept of virtual machines (or servers) entirely from the user, so there is no automatic configuration of virtual machines.
(B) Integrating AWS Fargate with ECS provides a serverless environment to run containers, meaning users do not need to provision or manage servers or clusters, significantly simplifying deployment and management.
(C) With AWS Fargate, users do not directly control virtual machines' placement and scaling, as Fargate abstracts the underlying infrastructure.
(D) Fargate pricing is based on the actual usage of CPU and memory resources, not on purchasing Reserved Instances, a concept related to EC2 rather than Fargate.

Question 135
What are two valid scenarios for utilizing EC2 Auto Scaling cool-down periods?

(A) **[Correct Answer]** To prevent Auto Scaling actions immediately after another scaling activity

(B) To decrease the data transfer rates between EC2 instances and EBS volumes
(C) **[Correct Answer]** Allowing instances to be fully configured with applications before another scaling event occurs
(D) To ensure AWS Lambda functions are invoked between scaling activities

Explanation
(A) The cool-down period prevents additional scaling actions immediately after a recent scaling activity, stabilizing the system.
(B) Cool-down periods are used to stabilize Auto Scaling groups, not for managing data transfer rates between EC2 instances and EBS volumes.
(C) During the cool-down period, newly launched instances can have time to fully start and configure any applications before the Auto Scaling group launches or terminates additional instances.
(D) While AWS Lambda can interact with EC2 Auto Scaling, cool-down periods are not specifically used to ensure Lambda function invocation between scaling activities.

Question 136
Which two AWS services are most appropriate for building a serverless data processing architecture?
[A] **[Correct Answer]** AWS Lambda
[B] Amazon EC2 Auto Scaling
[C] **[Correct Answer]** Amazon Kinesis
[D] Amazon VPC

Explanation
(A) AWS Lambda is a serverless compute service that allows you to run code without provisioning or managing servers. This makes it ideal for building serverless architectures, particularly for event-driven data processing.
(B) While Amazon EC2 Auto Scaling is important for managing EC2 instances and scaling compute resources, it is not inherently serverless as it requires managing server instances.
(C) Amazon Kinesis enables real-time streaming data processing and is commonly used in serverless architectures to ingest and process large data records.
(D) Amazon VPC (Virtual Private Cloud) is used for networking and does not directly support serverless data processing architectures, though it's often used to secure Lambda functions or other resources.

Question 137
When defining an AWS ECS task execution Identity and Access Management (IAM) role, what are two correct policies or permissions that should be included for standard operations?

[A] **[Correct Answer]** Permission to pull container images from Amazon Elastic Container Registry
[B] Permission to directly modify the Amazon EC2 instance types
[C] **[Correct Answer]** Permission to send logs to Amazon CloudWatch Logs
[D] Permission to increase the default service quota limits

Explanation
(A) An ECS task execution role needs permission to pull container images from ECR and use them in tasks. This is essential for task executions that use images stored in ECR.
(B) Modifying EC2 instance types is not a standard operation performed by an ECS task; infrastructure management roles or processes typically manage it.
(C) The ECS task execution role also needs permission to send logs to Amazon CloudWatch Logs for monitoring and troubleshooting purposes.
(D) Increasing default service quota limits is not part of standard ECS task operations and typically requires a different level of permissions associated with service management, not task execution.

Question 138
What are two essential elements that need to be defined in an ECS task definition?

[A] The VPC ID where the task should be launched
[B] **[Correct Answer]** The Docker networking mode to be used by the containers in the task
[C] The instance type for the task
[D] **[Correct Answer]** The container definitions, including image and memory requirements

Explanation
(A) The VPC ID where the task should be launched is typically specified at the service level or when running a task outside the definition.
(B) Determining the Docker networking mode in an ECS task definition is crucial as it determines how networking is handled for containers within the task.
(C) The instance type needs to be defined in the ECS task definition since tasks can run on various underlying EC2 instances or Fargate, where you don't specify instance types directly.

(D) The core part of an ECS task definition includes container definitions, where you specify details such as the container image to use, CPU and memory requirements, and environment variables.

Question 139

What are two key components of Amazon Elastic Kubernetes Service (EKS)?

[A] **[Correct Answer]** Node Groups
[B] Dedicated Hosts
[C] **[Correct Answer]** Clusters
[D] Virtual Private Gateways

Explanation

(A) In Amazon EKS, Node Groups are a crucial component. They represent groups of worker nodes within the Kubernetes environment, managed as a single entity.
(B) Dedicated Hosts are an EC2 feature that provides physical servers with EC2 instance capacity dedicated to your use. They are not specific to Amazon EKS.
(C) Clusters are central to Amazon EKS; they consist of the Kubernetes control plane and worker nodes running in your account. The control plane consists of at least two instances across different Availability Zones for high availability.
(D) Virtual Private Gateways are associated with Amazon Virtual Private Cloud (VPC) to create a secure connection between your VPC and the customer's network. They are not a direct component of Amazon EKS.

Question 140

Which two statements accurately differentiate between relational and nonrelational databases in AWS?

(A) **[Correct Answer]** Relational databases support structured query language (SQL) and ensure ACID (Atomicity, Consistency, Isolation, Durability) properties.
(B) **[Correct Answer]** Nonrelational databases are optimized for fast data retrieval by key and support flexible schemas.
(C) Relational databases are inherently more secure than nonrelational databases due to their structure.
(D) Nonrelational databases require a fixed schema and do not allow changes once the database is created.

Explanation

(A) Relational databases use SQL for querying and maintaining ACID properties, ensuring reliable transactions and data integrity.

(B) Nonrelational databases (NoSQL) typically offer fast retrieval using a key-value mechanism and allow for flexible schemas, adapting to various types of unstructured or semi structured data.
(C) A database's inherent security is not determined by whether it is relational or nonrelational; both types can implement robust security measures.
(D) One of the key features of nonrelational databases is their schema flexibility, unlike relational databases that require a predefined schema.

Question 141
In the context of AWS services, which two characteristics are correctly associated with Amazon RDS (Relational Database Service) compared to Amazon DynamoDB?

(A) Amazon RDS automatically scales horizontally to handle massive amounts of data and traffic.
(B) **[Correct Answer]** Amazon RDS provides managed relational database service environments, supporting engines like MySQL, PostgreSQL, and Oracle.
(C) Amazon DynamoDB supports complex transactions and joins natively, similar to traditional SQL databases.
(D) **[Correct Answer]** Amazon DynamoDB is a managed NoSQL database service optimized for high performance at any scale.

Explanation
(A) Amazon RDS primarily scales vertically (by changing instance sizes) rather than horizontally. Autoscaling in RDS refers to storage autoscaling, not horizontal scaling of the database instances.
(B) Amazon RDS is a managed service that simplifies the setup, operation, and scaling of a relational database in the cloud, supporting various database engines.
(C) Amazon DynamoDB, a NoSQL database, does not support complex transactions and joins as traditional SQL databases do.
(D) Amazon DynamoDB is a fast and flexible NoSQL database service for all applications that need consistent, single-digit millisecond latency at any scale.

Question 142
Which two services or features support AWS global database solutions for high availability and disaster recovery?

(A) **[Correct Answer]** Amazon DynamoDB Global Tables
(B) AWS Local Zones for database deployment
(C) **[Correct Answer]** Amazon RDS multi-region deployments
(D) Amazon ElastiCache cross-region replication

Explanation
(A) Amazon DynamoDB Global Tables provide a fully managed, multi-region database solution, which automatically replicates data across your choice of AWS regions
(B) AWS Local Zones are extensions of AWS regions designed to bring AWS services closer to end users. AWS Local Zones reduce latency but are not used for global database solutions
(C) Amazon RDS Aurora multi-region deployments enhance availability and durability for database instances for global multi-regions
(D) Amazon ElastiCache provides caching solutions to improve application performance but does not explicitly offer cross-region replication for global database management

Question 143
When migrating an on-premises database to AWS, which two database engines are suitable for online transaction processing (OLTP) workloads?

(A) **[Correct Answer]** Amazon Aurora
(B) Amazon Redshift
(C) **[Correct Answer]** Amazon DynamoDB
(D) Amazon Neptune

Explanation
(A) Amazon Aurora is a high-performance, MySQL- and PostgreSQL-compatible relational database engine optimized for OLTP workloads with high transaction rates.
(B) Amazon Redshift is a data warehousing service optimized for online analytical processing (OLAP), not OLTP.
(C) Amazon DynamoDB is a NoSQL database service suited for workloads with high-velocity data requirements typically seen in OLTP scenarios.
(D) Amazon Neptune is a graph database service not used for OLTP workloads.

Question 144
In database migration to AWS, which two database services are appropriate for a use case requiring high throughput and low-latency data access for real-time analytics?

(A) Amazon RDS
(B) **[Correct Answer]** Amazon Redshift
(C) Amazon DocumentDB
(D) **[Correct Answer]** Amazon ElastiCache

Explanation

(A) Amazon RDS is a relational database service for OLTP workloads and might not meet the high-throughput and low-latency requirements typical for real-time analytics.
(B) Amazon Redshift is designed for high-performance analytics and OLAP workloads, making it suitable for use cases requiring fast data access for real-time analytics.
(C) Amazon DocumentDB is a NoSQL document database service optimized for storing, querying, and indexing JSON data but is not specifically designed for real-time analytics.
(D) Amazon ElastiCache can improve web application performance by retrieving data from fast, managed, in-memory caches suitable for low-latency data access scenarios.

Question 145
Which of the following are valid use cases for implementing RDS Read Replicas? Please select all that apply.

(A) **[Correct Answer]** To serve high-volume read traffic from a database
(B) To maintain a live database backup for disaster recovery
(C) **[Correct Answer]** To offload real-time analytical processing from the primary database
(D) To directly increase the write capacity of the primary database

Explanation
(A) RDS Read Replicas are ideal for handling high-volume read traffic, allowing the primary database to handle write operations more efficiently by offloading read queries.
(B) While Read Replicas can aid in improving data availability, they are only considered a partial solution for disaster recovery.
(C) Offloading analytical processing to Read Replicas can help reduce the load on the primary database, allowing it to perform better for transactional processing.
(D) Read Replicas are used to increase read capacity and do not directly increase the write capacity of the primary database.

Question 146
Which two strategies should be considered when optimizing Amazon RDS for intensive write operations?

(A) **[Correct Answer]** Enable multi-AZ deployments for synchronous data replication.
(B) **[Correct Answer]** Use provisioned IOPS (PIOPS) storage for predictable performance.
(C) Decrease the backup retention period to improve write performance.
(D) Implement AWS Lambda functions to preprocess data before writing to RDS.

Explanation
(A) While enabling multi-AZ deployments is primarily used to achieve high availability, synchronous replication can also ensure data integrity during intensive write operations, though it's more about durability than write optimization.

(B) PIOPS storage is effective for intensive write operations, providing consistent and fast I/O performance.
(C) Decreasing the backup retention period may reduce overhead but not improve write performance directly.
(D) AWS Lambda can preprocess data, which doesn't inherently optimize the RDS instance for write operations. The impact depends on the application logic.

Question 147
In the context of Amazon RDS, which two actions are recommended to optimize data access patterns for high-read traffic scenarios?

(A) Increase the size of the RDS instance to improve the read capacity.
(B) **[Correct Answer]** Implement Read Replicas to distribute the read traffic.
(C) Store frequently accessed data in Amazon S3 instead of RDS.
(D) **[Correct Answer]** Use ElastiCache before RDS to cache common queries.

Explanation

(A) While increasing the size of the RDS instance can improve overall performance, it could be more cost-effective and targeted than implementing Read Replicas or caching for managing high read traffic.
(B) Implementing Read Replicas allows you to offload read traffic from the primary database to replicas, effectively handling high read traffic scenarios.
(C) While Amazon S3 is a good solution for storing large amounts of static data, it's not directly related to optimizing read traffic for RDS.
(D) Utilizing ElastiCache to cache common queries can significantly reduce the load on the RDS instance by serving frequent queries from the cache, improving read performance.

Question 148
Which two statements correctly describe the capabilities of Amazon RDS Proxy in a high-load environment?

(A) Amazon RDS Proxy can reduce database load by caching query results.
(B) **[Correct Answer]** Maintaining persistent connections enables seamless database failover.
(C) It automatically scales compute resources for the connected database instance.
(D) **[Correct Answer]** Amazon RDS Proxy improves application scalability by pooling and sharing database connections.

Explanation

(A) Amazon RDS Proxy does not cache query results. Its primary function is connection pooling and management.
(B) Amazon RDS Proxy helps maintain persistent connections to the database, which is particularly useful during database failover as it provides a seamless application transition.
(C) While Amazon RDS Proxy helps manage connections and can indirectly support better performance under high loads, it does not automatically scale the compute resources of the connected database instance.
(D) One of Amazon RDS Proxy's primary benefits is its connection pooling capability, which allows it to improve application scalability by sharing database connections among multiple application instances.

Question 149
Which two scenarios are ideal use cases for implementing Amazon ElastiCache?

(A) Storing infrequently accessed archival data
(B) **[Correct Answer]** Accelerating the performance of read-heavy database workloads
(C) Running deep learning model inferences
(D) **[Correct Answer]** Caching frequently accessed application session data

Explanation
(A) ElastiCache is not suitable for storing infrequently accessed archival data. AWS services like Amazon S3 or Glacier are more appropriate for archival storage due to their durability and cost-effectiveness.
(B) Amazon ElastiCache significantly improves the speed and performance of read-heavy database workloads by allowing frequently queried data to be stored in memory for rapid access.
(C) Running deep learning model inferences differs from a typical use case for ElastiCache. AWS offers other services like Amazon SageMaker for machine learning models and inferences.
(D) ElastiCache is commonly used to cache frequently accessed session data for web applications, which helps reduce database load and improve application performance.

Question 150
When a data lake is being created on AWS, which AWS Lake Formation facilitates two actions?

(A) Automated scaling of compute resources for data processing applications
(B) **[Correct Answer]** Enforcing data access policies across a data lake
(C) Deploying machine learning models directly into production
(D) **[Correct Answer]** Simplifying the data ingestion, cataloging, and cleaning processes

Explanation
(A) While AWS provides services for automated scaling like Auto Scaling, AWS Lake Formation itself does not directly scale compute resources for data processing applications.
(B) AWS Lake Formation enforces data access policies, ensuring only authorized users can access specific datasets in the data lake.
(C) Deploying machine learning models is a function typically associated with Amazon SageMaker.
(D) AWS Lake Formation simplifies data lake management by streamlining data ingestion, cataloging, and preparation tasks.

Question 151
Which two use cases listed below are most suitable for AWS Lake Formation?

(A) Real-time transaction processing for banking systems
(B) **[Correct Answer]** Building, securing, and managing a data lake
(C) Direct real-time messaging for instant communication apps
(D) **[Correct Answer]** Cataloging data and providing controlled user access

Explanation
A) Real-time transaction processing is typically handled by services designed for high transaction rates, such as Amazon Aurora or DynamoDB, not AWS Lake Formation.
(B) AWS Lake Formation is explicitly designed to create, secure, and manage data lakes, making this a primary use case.
(C) Services such as Amazon SQS or SNS are better suited for direct real-time messaging than Lake Formation, which focuses more on data storage and analytics.
(D) AWS Lake Formation helps catalog data from integrated sources and manage permissions, ensuring controlled access to data within the data lake.

Question 152
Which two options regarding the transformation process when working with AWS Glue extraction, transformation, and loading (ETL) jobs are correct?

(A) AWS Glue ETL jobs can only process data stored in Amazon RDS.
(B) **[Correct Answer]** AWS Glue can automatically generate ETL code to transform data.
(C) ETL scripts in AWS Glue can only be written in Scala.
(D) **[Correct Answer]** AWS Glue supports batch and streaming ETL jobs.

Explanation

(A) AWS Glue ETL jobs can process data stored in various sources, including Amazon RDS, S3, DynamoDB, and other supported sources.
(B) AWS Glue can generate ETL scripts automatically, helping you transform your data with minimal manual coding. It does this by recognizing patterns and structures in the data.
(C) In AWS Glue, ETL scripts can be written in Python and Scala, offering flexibility in programming language choice.
(D) AWS Glue supports the execution of both batch and streaming ETL jobs, enabling real-time and traditional batch data processing.

Question 153
Which two statements accurately describe the features of AWS Glue Crawlers?

(A) **[Correct Answer]** Crawlers can automatically infer data schemas from semi structured data sources.
(B) Crawlers can modify data within the source data stores during the crawling process.
(C) **[Correct Answer]** AWS Glue Crawlers can be scheduled to run at specific intervals.
(D) AWS Glue Crawlers are limited to processing only CSV file formats.

Explanation
(A) AWS Glue Crawlers automatically scan various data stores to infer schemas and populate the Glue Data Catalog with table definitions and metadata, even from semi structured data sources.
(B) Crawlers are designed to read and analyze data source structures; they do not modify the data within the source data stores during the crawling process.
(C) Glue Crawlers can be scheduled to run at specified intervals, ensuring the Glue Data Catalog remains updated with the latest schema changes from the data sources.
(D) AWS Glue Crawlers can process various file formats, including CSV. This includes JSON, Parquet, XML, and others.

Question 154
Which of statementsgarding Amazon Kinesis Data Firehose? C are truehoose all that apply.

(A) **[Correct Answer]** It automatically scales to match the volume and throughput of incoming data.
(B) Manual intervention is required to manage throughput scaling.
(C) Kinesis Data Firehose directly stores data without needing an external storage service.
(D) **[Correct Answer]** Supports data transformation and loading the data into destinations like Amazon S3 and Amazon Redshift.

Explanation

(A) Amazon Kinesis Data Firehose is designed to automatically scale without any administrative intervention to match the volume and throughput of incoming data streams.
(B) One of the benefits of Kinesis Data Firehose is that it automatically manages the scaling of throughput, so no manual intervention is required.
(C) Kinesis Data Firehose does not store data; it is a fully managed service that automatically loads streaming data into data lakes, data stores, and analytics services.
(D) Kinesis Data Firehose allows for data transformation before loading the data into destinations like Amazon S3, Amazon Redshift, or Amazon Elasticsearch Service.

Question 155
Regarding Amazon Kinesis Data Analytics, which two statements correctly describe its functionalities?

(A) It creates data warehouses for historical data analysis.
(B) **[Correct Answer]** It enables SQL querying of real-time data streams.
(C) Data is processed in batches, similar to traditional database systems.
(D) **[Correct Answer]** It integrates with AI and machine learning (ML) services for real-time analytics.

Explanation
(A) Kinesis Data Analytics is designed for real-time analysis of streaming data, not for creating data warehouses, a role typically served by Amazon Redshift.
(B) Amazon Kinesis Data Analytics allows users to process and analyze streaming data in real-time using standard SQL, making it easy to query and gain insights from the data as it arrives.
(C) Unlike traditional database systems that process data in batches, Kinesis Data Analytics is designed for real-time data processing and analysis.
(D) Kinesis Data Analytics can integrate with AWS AI and ML services to enhance real-time analytics, allowing for more advanced data processing and insights.

Question 156
What are two key features of Amazon Athena in the context of querying a data lake catalog?

(A) Athena is a managed NoSQL database service designed to perform big data analytics.
(B) **[Correct Answer]** Athena allows users to run SQL queries directly against data stored in Amazon S3.
(C) Athena automatically optimizes data lakes for machine learning algorithms.
(D) **[Correct Answer]** Athena enables serverless querying using standard SQL.

Explanation
(A) Athena is not a NoSQL database service; it is an interactive query service that makes it easy to analyze data in Amazon S3 using standard SQL.
(B) Amazon Athena is designed to allow users to run SQL queries directly on the data stored in Amazon S3.
(C) While Athena can query data used for machine learning, it does not automatically optimize data lakes for machine learning algorithms.
(D) Athena is a serverless service, meaning that users can run SQL queries without managing underlying server infrastructure.

Question 157
Which two features are true regarding Amazon QuickSight?

(A) It allows direct SQL server transactions on datasets.
(B) **[Correct Answer]** It supports machine learning (ML)–powered forecasts and insights for your dashboards.
(C) It requires an on-premises server for data processing and visualization.
(D) **[Correct Answer]** It provides serverless business intelligence and data visualization.

Explanation
(A) Amazon QuickSight allows you to perform SQL-like operations to prepare data, but it does not handle direct SQL server transactions as it's a business intelligence tool, not a database management system.
(B) Amazon QuickSight incorporates ML-powered features that offer insights and forecasts based on your data, enabling advanced analytics within your dashboards without requiring custom ML models.
(C) Amazon QuickSight is a fully managed service that operates in the cloud. It does not require an on-premises server to process and visualize data.
(D) QuickSight is a serverless business intelligence service that allows users to easily create and publish interactive data visualizations without managing infrastructure.

Question 158
Which two scenarios best illustrate typical use cases for implementing a data lake on AWS?

(A) **[Correct Answer]** Storing infrequently accessed log files for compliance and auditing purposes.
(B) Running high-frequency trading platforms requiring ultra-low latency access to data.
(C) **[Correct Answer]** Aggregating and analyzing diverse datasets from various sources for business intelligence.

(D) Hosting dynamic web applications with real-time user interaction and data processing.

Explanation
(A) Data lakes are ideal for storing large volumes of data that are not accessed frequently, such as log files for compliance and auditing, due to their scalability and cost-effectiveness in handling large datasets.
(B) High-frequency trading platforms, which require ultra-low latency access to data, typically depend on highly optimized databases and in-memory data stores rather than data lakes, optimized for storage efficiency and scalability rather than minimal latency.
(C) One primary use case for data lakes is aggregating and analyzing data from various sources, making them perfect for business intelligence and analytics applications requiring diverse datasets processing.
(D) Dynamic web applications with real-time user interaction are typically hosted by services designed for web hosting and real-time data processing, such as Amazon EC2, Amazon RDS, or serverless architectures like AWS Lambda, rather than by using a data lake.

Question 159
In the context of AWS Glue, which of the following statements are true regarding Glue Jobs? Choose all that apply.

(A) **[Correct Answer]** AWS Glue Jobs automatically scales compute resources based on the workload.
(B) Glue Jobs can only process data stored in Amazon RDS.
(C) **[Correct Answer]** They enable data extraction, transformation, and loading (ETL) processes in a serverless environment.
(D) Glue Jobs require manual provisioning of the underlying infrastructure.

Explanation
(A) AWS Glue Jobs are serverless; therefore, they automatically allocate the necessary compute resources to transform, clean, and normalize data, scaling based on the job size.
(B) AWS Glue Jobs can process data from various AWS data stores, including Amazon RDS, S3, DynamoDB, and more. (C) AWS Glue is a serverless ETL service that makes it easy for customers to prepare and load their data for analytics. Glue Jobs are specifically designed to facilitate these ETL processes. (D) AWS Glue is a managed service; thus, users do not need to provision the underlying infrastructure manually as it operates in a serverless environment.

Question 160
What features distinguish AWS Glue from other AWS services? Choose all that apply.

(A) **[Correct Answer]** It provides a serverless environment in which extraction, transformation, and loading (ETL) jobs can be run without provisioning resources.
(B) It acts as a virtual private cloud to manage networking for AWS services.
(C) It allows for continuous integration and continuous deployment of code.
(D) **[Correct Answer]** It integrates machine learning capabilities to predict extraction, transformation, and loading (ETL) job runtimes.

Explanation
(A) AWS Glue is serverless, meaning it abstracts the underlying infrastructure, allowing you to run ETL jobs without provisioning or managing servers.
(B) AWS Glue is not a networking service and does not provide virtual private cloud functionalities; that's the role of Amazon VPC.
(C) Continuous integration and deployment are related to software development processes and are more commonly handled by services like AWS CodePipeline and AWS CodeBuild, not AWS Glue.
(D) AWS Glue offers features like job bookmarking and machine learning–based job runtime predictions, distinguishing it from other data processing services.

Question 161
When considering using Amazon EFS, what are two important aspects of its security features?

(A) **[Correct Answer]** Supports Virtual Private Cloud (VPC)–based isolation
(B) Uses Identity and Access Management (IAM) roles for file-level security
(C) **[Correct Answer]** Encrypts data at rest and in transit
(D) Provides dedicated physical security guards

Explanation
(A) Amazon EFS can be used from VPCs to isolate the file system from other networks.
(B) While IAM roles are crucial for AWS services, Amazon EFS uses POSIX permissions for file-level security, not IAM roles directly.
(C) Amazon EFS offers data encryption at rest and in transit, enhancing the security of sensitive data.
(D) Physical security guards are not relevant to the digital and network security measures provided by AWS.

Question 162
In the context of using S3 storage, what are two considerations for optimizing performance when uploading large files?

(A) Using S3 Intelligent-Tiering automatically moves files to the fastest storage class.
(B) **[Correct Answer]** Splitting large files into smaller parts using S3 Multipart upload.
(C) Increasing the size of the S3 bucket to accommodate larger files.
(D) **[Correct Answer]** Implementing Amazon S3 Glacier to access large files immediately.

Explanation
(A) S3 Intelligent-Tiering is for cost optimization, automatically moving objects between different storage classes based on access patterns, not for performance optimization during upload.
(B) For large files, S3 Multipart upload allows you to upload parts of the file in parallel, significantly increasing the upload speed.
(C) S3 buckets do not have a size limit, so increasing their size is not applicable.
(D) Amazon S3 Glacier is a storage class designed for data archiving and long-term backup at low costs, not for immediate access to large files; its retrieval times range from minutes to hours.

Question 163
Which of the following features should be utilized to improve the security of S3 objects? Please select all that apply.

(A) **[Correct Answer]** Enabling S3 Versioning on the bucket
(B) Configuring S3 Transfer Acceleration
(C) **[Correct Answer]** Applying S3 bucket policies and IAM policies
(D) Utilizing AWS DataSync for S3 object synchronization

Explanation
(A) Amazon S3 Versioning keeps multiple variants of an object in the same bucket, allowing you to recover from unintended user actions and application failures.
(C) Amazon S3 bucket and IAM policies are essential for defining who can access the S3 objects and what actions they can perform.
(B) Amazon S3 Transfer Acceleration is used to speed up the transfer of files to S3, not to improve security.
(D) AWS DataSync moves large amounts of data online between on-premises storage and AWS services, but it does not directly improve the security of S3 objects. .

Question 164
When integrating Amazon S3 with S3 Glacier, what are two important considerations?

(A) **[Correct Answer]** Lifecycle policies can automatically transition objects from Amazon S3 to Amazon S3 Glacier.

(B) Data stored in S3 can be directly queried using SQL with no retrieval time.
(C) Encryption is optional for data stored in S3 Glacier.
(D) **[Correct Answer]** Objects moved to the S3 Glacier remain accessible through the S3 interface.

Explanation
(A) Lifecycle policies in Amazon S3 can be set up to automatically transition older objects to S3 Glacier for cost savings and efficient data management.
(B) S3 supports querying data directly using SQL with S3 Select, but this is not applicable for data stored in S3 Glacier without prior retrieval.
(C) Encryption is automatically applied to all data stored in S3 Glacier; it's not optional but a built-in feature for data security.
(D) Even when objects are archived to S3 Glacier, they remain listed and accessible through the Amazon S3 interface, albeit with Glacier's retrieval times and processes.

Question 165
Which two statements correctly describe the encryption features of Amazon FSx for Windows File Server?
(A) Supports encryption of data at rest using AWS-owned keys only
(B) **[Correct Answer]** Allows data encryption in transit with SMB protocol encryption
(C) **[Correct Answer]** Encrypts data at rest using customer-managed keys in AWS Key Management Service (KMS)
(D) Encrypts data in transit exclusively through AWS VPN connections

Explanation
(A) While AWS-owned keys can be used, FSx for Windows File Server also supports customer-managed keys for encryption at rest, providing more flexibility.
(B) Amazon FSx for Windows File Server supports data encryption in transit using SMB protocol encryption, enhancing security when accessing files over the network.
(C) FSx for Windows File Server supports data encryption at rest using keys managed through AWS Key Management Service (KMS), offering users control and management of encryption keys.
(D) Encryption for data in transit does not require AWS VPN connections specifically; it can be achieved through SMB protocol encryption provided by FSx for Windows File Server.

Question 166
In the context of AWS Storage Gateway, what are two correct uses of the File Gateway configuration?
(A) To enhance computational power for high-performance computing tasks
(B) **[Correct Answer]** To store virtual machine images for rapid on-premises deployment
(C) **[Correct Answer]** To seamlessly integrate on-premises file systems with Amazon S3
(D) To create an encrypted tunnel for web traffic

Explanation

(A) File Gateway is used for storage solutions and does not enhance computational power for computing tasks.
(B) While not its primary use case, File Gateway can be used to store virtual machine images on Amazon S3 via on-premises file systems, aiding in rapid deployment and archival.
(C) The primary function of File Gateway is to seamlessly integrate on-premises file systems with Amazon S3, enabling file storage in the AWS cloud with local caching.
(D) The File Gateway transfers files, not tunnelling encrypted web traffic.

Question 167

Which of the following are valid statements about the Tape Gateway configuration of AWS Storage Gateway? Select two.

(A) It allows direct query execution on stored tapes using SQL.
(B) **[Correct Answer]** It provides a virtual tape infrastructure that backs up data to Amazon S3 and Glacier.
(C) It accelerates website content delivery using cached tape data.
(D) **[Correct Answer]** It simulates a physical tape library within a virtualized environment.

Explanation

(A) Tape Gateway does not have the capability to execute SQL queries on stored tapes; it is designed for backup and archival.
(B) Tape Gateway offers a virtual tape library (VTL) that seamlessly backs up and archives data in AWS S3 and S3 Glacier, enabling cost-effective storage and easy retrieval.
(C) Accelerating website content delivery is not a function of Tape Gateway; this would be related to AWS services like Amazon CloudFront, not a tape-based backup service.
(D) Tape Gateway emulates a physical tape library within the AWS cloud, allowing seamless integration with existing backup applications and workflows.

Question 168

Which two features are critical when evaluating the performance and scalability of AWS Elastic File System (EFS)?

(A) Supports vertical scaling by increasing the size of individual files within the file system.
(B) **[Correct Answer]** Automatically scales with increasing or decreasing demand without manual intervention.
(C) Requires manual provisioning of storage capacity and throughput based on anticipated workload.

(D) **[Correct Answer]** Offers lifecycle management policies to transition files to lower-cost storage classes automatically.

Explanation
(A) EFS supports automatic scaling and does not require vertical scaling; by increasing the size of individual files, the overall storage capacity scales.
(B) AWS EFS is designed to scale automatically with changing storage demands, ensuring consistent performance without manual scaling efforts.
(C) AWS EFS does not require manual storage capacity or throughput provision, as it is designed to scale automatically.
(D) EFS provides lifecycle management policies that allow files to be moved to the EFS Infrequent Access (IA) storage class automatically, helping reduce costs while maintaining accessibility.

Question 169
What are two key factors to consider in enhancing the performance of Amazon EBS volumes?
(A) Increase the number of Direct Connect links.
(B) **[Correct Answer]** Use EBS-optimized instances.
(C) Enable Termination Protection on EC2 instances.
(D) **[Correct Answer]** Select the correct EBS volume type based on IOPS requirements.

Explanation
(A) Increasing the number of AWS Direct Connect links affects network connectivity to AWS but does not directly impact the performance of EBS volumes.
(B) EBS-optimized instances provide dedicated bandwidth for EBS volumes, which can significantly improve performance, especially for IO-intensive applications.
(C) Enabling Termination Protection on EC2 instances helps prevent accidental terminations but does not enhance the performance of attached EBS volumes.
(D) Choosing the right EBS volume type (e.g., General Purpose SSD, Provisioned IOPS SSD) based on your IOPS and throughput requirements is crucial for meeting your performance needs.

Question 170
In the context of Amazon EBS, which two factors would directly influence the throughput performance of an application?

(A) The choice between IPv4 and IPv6 in the VPC
(B) **[Correct Answer]** The type of EBS volume (e.g., gp2, io1, st1)
(C) The geographical location of the user accessing the application
(D) **[Correct Answer]** A burst balance is available for general-purpose SSD (gp2) volumes.

Explanation
(A) The choice between IPv4 and IPv6 addresses in the VPC does not directly influence the throughput performance of EBS volumes.
(B) The type of EBS volume significantly impacts the throughput performance, with different volume types offering different throughput rates.
(C) While geographical location might affect user latency, it does not directly influence the throughput performance of EBS volumes, which is determined by volume type and configuration.
(D) The burst balance for gp2 volumes determines the ability of a volume to burst above the baseline performance level and can directly impact application throughput.

Question 171
Regarding AWS Lambda execution environment and performance, which of the following statements are correct? Please select all that apply.

(A) The Lambda execution environment persists indefinitely, allowing for the reuse of global variables across executions.
(B) **[Correct Answer]** Lambda functions can retain state between executions in temporary storage.
(C) **[Correct Answer]** Lambda environments are immediately destroyed after the function's execution.
(D) AWS Lambda can reuse the execution context for subsequent invocations to improve performance.

Explanation
(A) The Lambda execution environment does not persist indefinitely; it can be reused for subsequent invocations, but it's not permanent and can be recycled by AWS.
(B) While each Lambda execution is stateless, AWS Lambda can retain state between executions in temporary storage.
(C) While Lambda environments can be destroyed after execution, they are not immediately destroyed; AWS may keep the environment alive to reuse for subsequent invocations.
(D) AWS Lambda may reuse the execution context (container) for subsequent invocations of the same function, which can lead to performance improvements as initialization tasks (like establishing database connections) may not need to be repeated.

Question 172
What are two key features of AWS Fargate in terms of container orchestration?
(A) **[Correct Answer]** Automatic scaling based on the memory and CPU utilization of containers
(B) Requires manual allocation and management of servers for container deployment
(C) **[Correct Answer]** Eliminates the need to manage servers or clusters for running containers
(D) Supports automatic patching of the host operating system

Explanation
(A) AWS Fargate allows for automatically scaling containerized applications based on defined metrics such as memory and CPU utilization, enhancing resource efficiency and application performance.
(B) Unlike traditional container orchestration services, Fargate eliminates the need for manual server allocation and management, which is one of its main features.
(C) One of AWS Fargate's primary advantages is that it abstracts server and cluster management away from the user, allowing them to focus solely on deploying and managing their containers.
(D) While AWS is responsible for the underlying infrastructure, Fargate does not support automatic patching of the host operating system because the user does not require or allow host management.

Question 173
Which features are associated with deploying containers using AWS Fargate? Please select all that apply.

(A) Mandatory manual patching of the container operating system
(B) **[Correct Answer]** Integration with AWS Identity and Access Management (IAM) for resource-level permissions
(C) Requirement to select specific instance types for container deployment
(D) **[Correct Answer]** Compatibility with Amazon ECS and Amazon EKS for orchestrating containers

Explanation
(A) One of the benefits of AWS Fargate is that AWS manages the underlying infrastructure, including the operating system, eliminating the need for user manual patching.
(B) AWS Fargate integrates with AWS IAM, allowing users to set resource-level permissions for tasks and services, enhancing security and governance.
(C) AWS Fargate’s defining feature is that it abstracts away the underlying servers, so users do not need to select specific instance types for their container deployments.
(D) Fargate can be used with both Amazon ECS and Amazon EKS, providing a serverless platform to run containers using either service for orchestration.

Question 174
Which two factors can trigger an EC2 Auto Scaling event?

(A) A change in the Reserved Instances allocation
(B) **[Correct Answer]** A scheduled scaling action defined by the user
(C) Modification in the EBS volume attached to the instances
(D) **[Correct Answer]** CPU utilization reaching a defined threshold

Explanation
(A) Changes in Reserved Instances allocation impact billing and capacity reservation but do not directly trigger Auto Scaling events.
(B) Scheduled scaling actions allow users to increase or decrease the number of instances at specific times, which can trigger an Auto Scaling event.
(C) Modifications in the EBS volume size or settings do not automatically trigger an Auto-Scaling event.
(D) CPU utilization reaching a defined threshold is a standard metric that triggers an EC2 Auto Scaling event, ensuring performance remains consistent as demand changes.

Question 175
When running containerized applications at AWS, which AWS services support Docker deployments? Please select all that apply.

(A) **[Correct Answer]** AWS Fargate with ECS
(B) **[Correct Answer]** AWS ECS using task statements
(C) EKS with support for Kubernetes deployments
(D) Dedicated single-tenant physical servers used for regulatory compliance

Explanation
(A) AWS Fargate is a fully managed container service that removes the need to manage servers or clusters when running Docker deployments.
(B) AWS ECS supports Docker deployments using task statements detailing the required compute, containers, and storage options.
(C) Amazon EKS (Elastic Kubernetes Service) provides orchestrated container service with full Kubernetes compatibility.

(D) Dedicated single-tenant physical servers refer to Amazon EC2 Dedicated Hosts or Instances and are not used for containerized applications.

Question 176

Which of the below scenarios are matched with the most appropriate AWS compute solutions? Choose all that apply.

(A) **[Correct Answer]** EC2 Auto Scale for high-throughput websites with variable traffic patterns
(B) **[Correct Answer]** EC2 Spot Instances for temporary development and testing environments
(C) Machine learning model training and inference using custom EC2 instance deployments
(D) Running legacy applications requiring specific OS configurations using on-demand EC2 instances

Explanation
(A) Amazon EC2 with Auto Scaling and Amazon EC2 Spot Instances can efficiently handle high-throughput websites with variable traffic, optimizing costs and scalability.
(B) Due to their scalability and pricing model, AWS Elastic Beanstalk or Amazon EC2 Spot Instances provide cost-effective solutions for temporary development and testing environments.
(C) AWS SageMaker would be a more suitable choice for machine learning model training and inference than using EC2 computing services.
(D) Amazon EC2 Dedicated Hosts or EC2 instances are more appropriate for running legacy applications requiring specific OS configurations.

Question 177
What are the two primary benefits of using multi-region architectures for databases when designing global applications in AWS?

(A) Reduced cost compared to single-region deployments
(B) Increased write latency for global user bases
(C) **[Correct Answer]** Improved disaster recovery capabilities
(D) **[Correct Answer]** Simplified schema management across different regions

Explanation
(A) Typically, deploying resources in multiple regions leads to higher costs than single-region deployments due to data transfer and additional resource costs.
(B) Multi-region deployments improve global read latencies by allowing data to be read from the user's local region.
(C) Multi-region architectures enhance disaster recovery capabilities by distributing the data across different geographical locations.
(D) While global databases require considerations for schema consistency, multi-region deployments can actually complicate schema management rather than simplify it due to the need for synchronization across regions.

Question 178
When migrating a Microsoft SQL Server database to AWS, which two targets are recommended for fully managed database services?

(A) **[Correct Answer]** Amazon RDS for SQL Server
(B) Amazon EC2 running MongoDB
(C) Amazon DynamoDB
(D) **[Correct Answer]** Amazon RDS for PostgreSQL

Explanation
(A) Amazon RDS for SQL Server makes it easy to set up, operate, and scale SQL Server deployments in the cloud, providing a straightforward migration path for SQL Server databases.
(B) Amazon EC2 running MongoDB would be an option for migrating NoSQL databases, not for SQL Server–based relational databases.
(C) Amazon DynamoDB is a NoSQL database service unsuitable for direct migration from a SQL Server database, which is a relational database system.
(D) While Amazon RDS for PostgreSQL is not a direct match for SQL Server, organizations sometimes migrate to PostgreSQL as an alternative to SQL Server due to licensing costs or other considerations. However, this requires conversion since they are different relational database management system (RDBMS) platforms.

Question 179
Which two AWS services are best suited for migrating heterogeneous databases into AWS, ensuring minimal downtime and continuous data replication?

(A) **[Correct Answer]** AWS Database Migration Service (DMS)
(B) **[Correct Answer]** AWS Schema Conversion Tool (SCT)
(C) AWS Data Pipeline
(D) Amazon Kinesis Data Firehose

Explanation
(A) AWS DMS supports live migration and continuous data replication, which are essential for minimizing downtime during the migration of heterogeneous databases.
(B) AWS SCT helps convert the source database schema and code to a format compatible with the target database, vital in heterogeneous migrations.
(C) AWS Data Pipeline is a web service for processing and moving data between different AWS services but is not specialized for database migration.
(D) Amazon Kinesis Data Firehose is used for capturing, transforming, and loading streaming data into data lakes, data stores, and analytics services but is not a tool for database migration.

Question 180
In the context of AWS RDS, which scenarios best justify the deployment of Read Replicas? Please select all that apply.

(A) When there is a need to implement automatic failover in the database
(B) **[Correct Answer]** To reduce latency for global users by providing geographically closer database endpoints
(C) For encrypting database instances for enhanced security
(D) **[Correct Answer]** Conducting schema changes and indexing operations on production databases

Explanation
(A) Automatic failover is a feature of multi-AZ deployments, not Read Replicas. Read Replicas do not support automatic failover to the primary database.
(B) Deploying Read Replicas in different geographical regions can reduce latency for users accessing the database worldwide.
(C) Encryption at rest and in transit can be applied to both primary databases and Read Replicas, but deploying Read Replicas is not justified solely to enhance security.
(D) While it could be better to perform schema changes and indexing on Read Replicas, they can be used to test the impact of such changes before being applied to the primary database.

Question 181
Regarding Amazon DynamoDB, which two features contribute to its ability to handle large-scale, high-traffic applications?

(A) Support for SQL-based queries to ensure compatibility with traditional database models
(B) **[Correct Answer]** Automatic partitioning and scaling to accommodate varying data throughput levels
(C) Integration with AWS Elastic Beanstalk for application deployment and scaling
(D) **[Correct Answer]** Global tables for multi-region, fully replicated data access

Explanation
(A) DynamoDB does not support traditional SQL-based queries; instead, it uses its own API for data operations.
(B) Amazon DynamoDB automatically partitions and scales data across multiple physical resources to handle large amounts of data and traffic, ensuring high performance and scalability.
(C) While AWS Elastic Beanstalk can deploy and scale applications, DynamoDB's ability to handle large-scale applications is separate from DynamoDB's ability to handle large-scale applications.

(D) DynamoDB Global Tables provide fully replicated, multi-region data access, crucial for high-availability, global applications.

Question 182
Which two factors should be considered when using Amazon ElastiCache in your AWS infrastructure?

(A) A need for a fully managed relational database
(B) **[Correct Answer]** Requirement for reducing the latency of database queries in a web application
(C) Necessity of long-term data storage solutions
(D) **[Correct Answer]** Demand for improving the speed of read-heavy operations by caching results

Explanation
(A) Amazon ElastiCache does not provide fully managed relational database services; that's the role of Amazon RDS or Amazon Aurora.
(B) Amazon ElastiCache can significantly reduce the latency of database queries by caching the results of frequently accessed queries, which is especially beneficial for web applications with high read demands.
(C) Long-term data storage solutions are not a use case for Amazon ElastiCache. Services like Amazon S3 or Amazon Glacier are designed for long-term data storage.
(D) Improving the speed of read-heavy operations by caching results is a primary use case for ElastiCache, as it allows for faster data retrieval than querying a backend database.

Question 183
What are two key benefits of integrating AWS Lake Formation with existing AWS services?

(A) Direct control over physical data center locations
(B) **[Correct Answer]** Enhanced security and fine-grained access control to data stored in the data lake
(C) Ability to bypass internet service providers for data transfer
(D) **[Correct Answer]** Integration with AWS analytics services like Amazon Redshift and Amazon Athena for complex queries

Explanation
(A) Control over physical data center locations is determined by AWS region selection and is not a direct benefit of using Lake Formation
(B) Lake Formation enhances security by providing fine-grained access control to data stored in the data lake, which is crucial for maintaining data integrity and compliance

(C) Bypassing internet service providers for data transfer is unrelated to Lake Formation; this concept is more aligned with services like AWS Direct Connect
(D) It integrates seamlessly with AWS analytics and machine learning services like Amazon Redshift and Amazon Athena, allowing users to perform complex data analysis and queries efficiently

Question 184
What are two valid functions of the Glue Data Catalog in AWS Glue?

(A) **[Correct Answer]** Acts as a central repository for metadata storage
(B) Serves as an automated compute scaling service
(C) **[Correct Answer]** Provides a unified view of all your data across AWS data stores
(D) Directly manages the lifecycle of S3 objects

Explanation
(A) The AWS Glue Data Catalog is a central metadata repository. This metadata can be used for extraction, transformation, and loading (ETL) operations and data discovery
(B) Automated compute scaling is not a function of the Glue Data Catalog. This is more relevant to services like AWS Auto Scaling or the Glue job execution environment
(C) The Glue Data Catalog provides a unified metadata repository across various services, making data discovery, querying, and transformation more manageable across AWS data stores
(D) The Glue Data Catalog does not directly manage S3 object lifecycles. This task is handled through S3 lifecycle policies

Question 185
What are the two key characteristics of Amazon Kinesis Data Streams?

(A) Each data stream can store data indefinitely without any time limit.
(B) **[Correct Answer]** Data records are accessible for a default of 24 hours, which can be extended up to 365 days.
(C) It is primarily used for batch processing of big data.
(D) **[Correct Answer]** It supports real-time processing of streaming data.

Explanation
(A) Kinesis Data Streams do not store data indefinitely; the maximum retention period is 365 days
(B) Amazon Kinesis Data Streams allows data records to be accessible for a default period of 24 hours, which can be extended up to 365 days for long-term analysis or compliance needs.

(C) Kinesis Data Streams is designed for real-time, not batch, streaming data processing. Batch processing is more associated with services like AWS Batch or Amazon EMR
(D) One of the primary functions of Kinesis Data Streams is to support real-time processing and analysis of streaming data, allowing immediate insights and reactions