Anthony reveals the first swag giveaway winners in the latest episode of the Monthly Update! See it here! (https://www.youtube.com/watch?v=Kq-EPA-QsGg)

AWS Solutions Architect Associate (SAAC01) - Final Practice Exam

2 hours 15 minutes | 60 Questions | 2.25 Minutes per Question | Intermediate (/search?type=Practice Exam Challenge&difficulty=Intermediate&categories=AWS)

Go Back Start Challenge

Question List

Show All Answers

34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

52%

Go Back

Great Start!

You did not pass this challenge on this attempt.

Expectations Report Card

Design Resilient Architectures	58.33%
Define Performant Architectures	66.67%
Specify Secure Applications and Architectures	41.67%
Design Cost-Optimized Architectures	41.67%
Define Operationally-Excellent Architectures	16.67%

Exam Breakdown

Design Resilient Architectures

1. You are running an application on an EC2 instance in `us-east-1a`. `us-east-1a` fails – what options do you have to recover the application running on the EC2 instance?

A The EC2 instance will recover using EC2-Recover automatically.

B If available, use a snapshot of the EBS volume to make a new volume AND then create a new EC2 instance.

C Create a new EC2 instance in `us-east-1b` and attach the EBS volume.

D Copy a snapshot of the EBS volume from `us-east-1a` to `us-east-1b`, recreate the EBS volume, and then create a new EC2 instance.

Correct Answer: B

Why is this correct?

This is the only recovery option assuming AZ 1a doesn't return.

INCORRECT

2. An application you are auditing runs from 10 EC2 instances. It needs to store logs on a file system that can be accessed from all the EC2 instances, and those logs need to be accessible from a central location where they can be searched from the AWS console.
What two AWS products should you suggest?

A CloudWatch Logs and EFS

B EBS and CloudTrail

C Instance store volumes and CloudWatch Logs

D CloudWatch Logs and S3

Your Answer: D

Why is this incorrect?

S3 cannot be natively mounted as a file system inside EC2 — it's also not recommended for this type of scenario as it's an object store, not a block file system.

Correct Answer: A

Why is this correct?

The Elastic File System (EFS) provides shared storage for EC2 instances and should be used when storage needs to be accessible from more than one EC2 instance. CloudWatch Logs can be used to ingest the application logs so they are accessible from the AWS console.
https://aws.amazon.com/efs/when-to-choose-efs/ (https://aws.amazon.com/efs/when-to-choose-efs/)

INCORRECT

3. You need to design a VPC that is resilient to AZ failure from an internet access perspective. The VPC is in a four-AZ region. How many internet gateways are required to ensure multiple AZ failures won't disrupt internet connectivity?

A Zero — internet access is provided by a NAT gateway

B Four

C One

D Two

Your Answer: B

Why is this incorrect?

An IGW is resilient by design, and only one needs to be attached to a VPC in order to provide ***all*** subnets in ***all*** AZs with resilient internet connectivity. You cannot assign more than one IGW to a VPC.

Correct Answer: C

Why is this correct?

An IGW is resilient by design, and only one needs to be attached to a VPC in order to provide ***all*** subnets in ***all*** AZs with resilient internet connectivity. You cannot assign more than one IGW to a VPC.

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4. You have been given a requirement for a new deployment in AWS. The deployment needs to operate from two AZs with one application tier and the option to launch public and private EC2 instances. From the options available, which meets the requirement with the least amount of infrastructure?

A One VPC and four subnets

B Two VPCs and two subnets

C One VPC and two subnets

D One VPC and one subnet

Correct Answer: C

Why is this correct?

This solution can operate from two AZs (because of the two subnets). Each of the subnets can launch public or private instances if they are configured as public subnets.

---

5. You have a Multi-AZ RDS instance. Its primary Availability Zone is `us-east-1a` , and the secondary is `us-east-1b` . Which of the following events will cause a failover from the primary to secondary instance?

A RDS OS patching in `us-east-1b`

B Storage failure in `us-east-1b`

C Failure of `us-east-1a`

D Storage failure in `us-east-1a`

E Performance alarms in `us-east-1a`

Correct Answer: C

Why is this correct?

Failure of the primary AZ will cause an automatic failover to the standby instance.
https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html
(https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html)

Correct Answer: D

Why is this correct?

Storage failure of the primary instance will cause a failover.
https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html
(https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html)

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6. Why does stopping and starting an instance usually fix a system status check error?

A Stopping and starting an instance reboots the operating system.

B Stopping and starting an instance causes the instance to be provisioned on different AWS hardware.

C None of these options are correct.

D Stopping and starting an instance causes the instance to use the latest version of the AMI it was provisioned with.

Correct Answer: B

Why is this correct?

Unless you have dedicated tenancy enabled, stopping and starting an instance will generally cause it to be launched onto different AWS host hardware.

---

7. Which of the following statements is ***correct*** about networking high availability in AWS?

A A virtual private gateway is HA by design.

B A NAT gateway is highly available by design.

C An IGW should be created in each AZ that a VPC uses to ensure full HA.

D A NAT gateway should be added to each AZ a VPC uses for full HA.

Correct Answer: A

Why is this correct?

A VGW is HA by design in two AZs, so it can tolerate the failure of one.
https://docs.aws.amazon.com/vpn/latest/s2svpn/VPC_VPN.html
(https://docs.aws.amazon.com/vpn/latest/s2svpn/VPC_VPN.html)

Correct Answer: D

Why is this correct?

A NAT gateway should be created in one subnet in each AZ to be highly available.
https://docs.aws.amazon.com/vpc/latest/userguide/vpc-nat-gateway.html
(https://docs.aws.amazon.com/vpc/latest/userguide/vpc-nat-gateway.html)

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8. You are architecting a web application that runs on EC2 instances. The application is stateless and stores its session state within DynamoDB. You want to ensure the application can scale as quickly as possible to increasing and decreasing demand in a cost-effective way.
What options should you suggest?

A Vertical scaling

B Horizontal scaling

C Small instances

D Large instances

Correct Answer: B

Why is this correct?

This method of scaling involves adding or removing instances, SCALE-OUT and SCALE-IN, and is one part of elastic scaling.

Correct Answer: C

Why is this correct?

Smaller instances ensure capacity can be added and removed in smaller gradients. Additionally, smaller instances tend to have fewer capacity issues or restrictions.

INCORRECT

9. Over 1,000,000 objects are stored in an S3 bucket using Standard-IA in the `us-east-1` region. You need to ensure the data will be secure even if an AZ fails entirely. What changes should you make?

A Change the storage class to Standard.

B No changes are required.

C Configure CRR.

D Change the storage class to One Zone-IA.

Your Answer: C

Why is this incorrect?

Cross-region replication provides region resilience by replicating S3 objects to another region. This isn't required in this case.

Correct Answer: B

Why is this correct?

S3 Standard-IA is replicated across multiple AZs in a region — no changes are required to ensure the data is secure against an AZ failure.

https://aws.amazon.com/s3/storage-classes/ (https://aws.amazon.com/s3/storage-classes/)

INCORRECT

10. You have been asked to provide a recommendation on the most resilient database solution available within AWS. The business requirements are that it is optimized for structured, relational data. They require multiple Availability Zones and ***very*** low latency between mirrors. Initially, two Availability Zones are required, but the selected solution needs to be able to cope with three or more.
Which product would you recommend?

A Aurora

B DynamoDB

C RDS

D Athena

Your Answer: C

Why is this incorrect?

Except for Aurora, database engines can run in a maximum of two Availability Zones. Additionally, they don't utilize shared storage, so they suffer from the latency associated with replication.

Correct Answer: A

Why is this correct?

Aurora supports more than two AZ replicas and uses a shared storage platform. It's the most suitable candidate.

---

11. Which of the following services will fail if an entire AWS region fails (assuming the resource was in that region)?

A IAM

B Route 53

C DynamoDB

D S3

E EC2

Correct Answer: C

Why is this correct?

If a region fails where a table is located, access to that table will also fail.

Correct Answer: D

Why is this correct?

If a region fails where an S3 bucket is located, access to that bucket will also fail.

Correct Answer: E

Why is this correct?

If a region fails where an EC2 instance is located, access to that instance will also fail.

INCORRECT

12. You have been asked to ensure the Lambda component of an AWS deployment is resilient across 3+ AZs. What modifications are required (if any) to meet this requirement?

A None.

B Ensure the Lambda scaling settings are updated with subnets in three or more AZs.

C Create a Lambda subnet group, ensure it has the subnets in 3+ AZs, and associate it with the Lambda function.

D Ensure the Lambda environment has an associated internet gateway.

Your Answer: C

Why is this incorrect?

This is not a valid technical solution. By default, Lambda is a public service and doesn't use subnets.

Correct Answer: A

Why is this correct?

Lambda is HA and scalable by design, so no changes are required.

Define Performant Architectures

13. A large fleet of IoT devices is sending data to a Kinesis stream but experiencing an error of `ProvisionedThroughputExceededException` . How should you resolve the issue?

A Create an additional Kinesis stream and load balance the IoT devices.

B Adjust the partition key of the Kinesis data records.

C Increase the number of shards in the stream.

D Increase the size of the Kinesis shards.

Correct Answer: C

Why is this correct?

Increasing the number of shards is the recommended way to improve the performance of a Kinesis stream.
https://docs.aws.amazon.com/streams/latest/dev/service-sizes-and-limits.html
(https://docs.aws.amazon.com/streams/latest/dev/service-sizes-and-limits.html)

14. You are reviewing a video transcoding platform for a client. The client is unable to use Elastic Transcoder due to feature requirements. The system currently uses a fleet of EC2 instances created by a launch template and Auto Scaling group. Instances are using the ***C*** family. Videos to be transcoded are entered into an SQS queue, and the size of the Auto Scaling group is controlled by messages in the queue. Any failed jobs are retried a number of times before being canceled.
What options does the client have to reduce costs without negatively impacting performance over time?

A Move from C type to X type instances.

B Move from C type to T3 type instances.

C Use spot instances.

D Enable enhanced networking on all EC2 instances.

Correct Answer: C

Why is this correct?

Spot instances will significantly reduce the ongoing cost of the solution. Even assuming some jobs will fail because of terminating spot instances, the Auto Scaling group will grow to compensate and the solution will still be lower cost.

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15. A consultancy client is running a high-throughput application on-premises that stores data onto S3. The host running the software is experiencing high CPU usage and seems unable to keep up with demand while encrypting the data on-host before transit. The system requires that no data be stored in a plaintext form and has to be encrypted in transit. What potential fixes should you recommend that meet the requirements and have the least admin overhead?

A Use S3 transfer acceleration.

B Use client-side encryption.

C Use SSE-C.

D Use SSE-S3.

Correct Answer: D

Why is this correct?

This solution will show improvements — S3 will handle the encryption process and the encryption keys. Data will be stored in encrypted form and, assuming HTTPS is used, encrypted in transit.

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16. Which Route 53 routing policy type should you use to ensure clients are connected to servers that offer the best potential performance?

A Weighted routing policy

B Simple

C Geolocation routing policy

D Latency routing policy

Correct Answer: D

Why is this correct?

Latency routing attempts to resolve requests to a record that offers the lowest latency, so this will likely translate to the best performance.
https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/routing-policy.html (https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/routing-policy.html)

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17. You are running an application on an EC2 instance that is extremely sensitive to variations in network performance, specifically the variation in ping times and latency. The application also devours CPU cycles when this network jitter happens, so you need to implement a solution that removes any risk of network performance degradation. What option works in this scenario?

A Ensure the VPC is running in dedicated tenancy mode.

B Ensure the instance has enhanced networking.

C Ensure you are using an X1 instance.

D Ensure the instance is EBS optimized.

Correct Answer: B

Why is this correct?

Enhanced networking (https://aws.amazon.com/premiumsupport/knowledge-center/enable-configure-enhanced-networking/ (https://aws.amazon.com/premiumsupport/knowledge-center/enable-configure-enhanced-networking/)) allows high-performance networking by bypassing the need for CPU involvement in virtualizing a network interface. This increases packets per second and decreases the variability in network performance.

INCORRECT

18. You are attempting to resolve the cause of DB performance issues on an application that uses Aurora. Which of the following are ***not*** options for reviewing or fixing performance concerns with Aurora? (Choose two.)

A If the performance is read related, add replicas.

B Log in to the aurora leader node via SSH and review OS performance metrics.

C Review CloudWatch metrics for CPU and MEM and adjust the instance sizes as required.

D Reboot all Aurora nodes.

E Storage performance is based on size — increase the size of the Aurora cluster volume.

Your Answer: D

Why is this incorrect?

This won't fix any underlying issues but will potentially resolve issues in the short term.

Correct Answer: B

Why is this correct?

Aurora has no leader node — this is not a valid solution.

Correct Answer: E

Why is this correct?

Aurora cluster storage is not allocated in the same way RDS is. Available space can scale to the maximum allowed 64 TiB.
https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Aurora.Overview.StorageReliability.html
(https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Aurora.Overview.StorageReliability.html)

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19. You are working for a large global biotech firm. Your global offices upload huge data sets regularly to a `us-east-1` -hosted S3 bucket. Which AWS service will provide all remote offices with improved transfer rates and reliability to S3?

A Direct Connect

B Enhanced networking

C DAX

D S3 transfer acceleration

Correct Answer: D

Why is this correct?

S3 transfer acceleration offers local S3 endpoints and routing back to the source bucket over the global AWS network backbone and can increase performance for all global offices.
https://docs.aws.amazon.com/AmazonS3/latest/dev/transfer-acceleration.html
(https://docs.aws.amazon.com/AmazonS3/latest/dev/transfer-acceleration.html)

INCORRECT

20. A large regional voting application is running on an EC2 instance and has been performing badly. The application vendor has tried to assist but mentioned that for usage at this level, the application needs around 40,000 IOPS. The EC2 instance is currently running using GP volumes. When the voting has concluded, the volume needs to be detached and used on a bespoke analytics application. Which type of storage should you suggest?

A Change to io1.

B Leave on GP2 and increase the IOPS level.

C Change to sc1.

D Change to instance store.

Your Answer: B

Why is this incorrect?

GP2 cannot go beyond 16,000 IOPS. Additionally, IOPS cannot be controlled independently from size.
https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html
(https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html)

Correct Answer: A

Why is this correct?

io1 can reach a max performance of 64,000 IOPS and is the best option for these extreme levels.
https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html
(https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html)

INCORRECT

21. You are reviewing poor performance on a voting application running on DynamoDB. The table used to store votes has been allocated 5,000 WCU, but with three candidates you are achieving slightly over half of the expected write throughput to the table. Votes are written with a PK of candidate name and sort key of date and time. What could be a possible reason for the substandard performance?

A The partition key structure is the issue.

B DynamoDB cannot support 5,000 writes per second — buffer the writes or use DAX to improve write performance.

C The sort key structure is the issue.

D You are trying to do strongly consistent writes, which need 2x the WCU.

Your Answer: D

Why is this incorrect?

A write is neither consistent or not — a write is a write. This is not correct.

Correct Answer: A

Why is this correct?

Each occurrence of a PK value (candidate1, candidate 2) is stored to one partition. A partition can support a max of 1,000 WCU. The small range of possible PK values is the reason for the low performance.

---

22. You have been asked to provide a recommendation for a database platform that meets the following requirements:

- Able to work with relational data
- Resilience across 3+ Availability Zones in supported regions
- Read scaling using group addressable replicas

What product should you suggest?

A RDS - PostgreSQL

B RDS - MySQL

C Aurora

D DynamoDB

Correct Answer: C

Why is this correct?

Aurora is the best solution. Replicas can be added in 3+ AZs and can be addressed as a group via a reader endpoint DNS address.

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23. A data scientist is trying to upload a 500 GB object to S3. The scientist is in N. Virginia and the S3 bucket is located in the `us-east-1` region. Previous smaller uploads have been running slowly, achieving ~2 Mbps on a 1 Gbps internet connection. What options can you suggest to speed up the data transfer of this larger file?

A S3 transfer acceleration

B SSE-S3

C S3 CRR

D Multipart upload

Correct Answer: D

Why is this correct?

Multipart upload allows multiple transfers to occur at the same time, improving reliability for larger files but also improving speed.
https://docs.aws.amazon.com/AmazonS3/latest/dev/mpuoverview.html
(https://docs.aws.amazon.com/AmazonS3/latest/dev/mpuoverview.html)

INCORRECT

24. A popular online store is experiencing performance issues with its AWS hosted website during busy periods. The platform uses three EC2 instances during normal usage periods, and users are complaining about slow response times during regular peak periods. Management has indicated that during peak periods the system load increases quickly.
Which of the following suggestions should you make to resolve the problem?

A Configure a schedule scaling policy within the launch template, and ensure this is configured with an appropriate system metric for scaling, such as NetworkOut.

B Manually adjust the desired capacity to 10x the normal load during the busy periods.

C Configure a scheduled scaling policy to increase the desired capacity during periods of peak demand.

D Ensure that Auto Scaling groups and a launch configuration are used, and enable a load-based scaling policy to add instances when the system load increases.

Your Answer: D

Why is this incorrect?

This is a potential answer, but the question mentions that load increases quickly — a normal scaling policy might not be able to keep up with the increases quickly enough.
https://docs.aws.amazon.com/autoscaling/ec2/userguide/AutoScalingGroup.html
(https://docs.aws.amazon.com/autoscaling/ec2/userguide/AutoScalingGroup.html)

Correct Answer: C

Why is this correct?

Using scheduled policies will ensure the system is scaled appropriately for peak periods. Because it's a scheduled policy, you don't have to rely on potentially slow load-based scaling.
https://docs.aws.amazon.com/autoscaling/ec2/userguide/AutoScalingGroup.html
(https://docs.aws.amazon.com/autoscaling/ec2/userguide/AutoScalingGroup.html)

Specify Secure Applications and Architectures

INCORRECT

25. You are running a WordPress instance in a non-default VPC's public subnet. As part of A/B testing, you have deployed another instance in the same subnet, using the same security group, same AMI, and an instance of the same family. After provisioning the instance, you cannot access it. Which of the following issues ***could*** be the problem?

A Create an Elastic IP, and assign it to the new instance.

B Make sure the public IP is configured on the instance's OS.

C Add a route for the new instance.

D Configure the NAT gateway to route traffic to the new instance.

Your Answer: C

Why is this incorrect?

Routes are added on a route table for a subnet. The fact that the original instance works suggests this is not a possible solution.

Correct Answer: A

Why is this correct?

The instance could have been launched without a public IP. The quickest way to test and fix this is to allocate an Elastic IP.

INCORRECT

26. You are running a web application in your on-premises data center. The application currently has three web servers that receive traffic using round-robin DNS. As part of the move to AWS, you have been asked to design a solution that uses a load balancer to accept traffic, distributing it to web servers that are not

accessible from the internet. Additionally, a database instance should only be accessible from the web servers and should not be in the same subnets. You have been asked to make the solution highly available using three AZs. How many subnets will you require?

A Three

B Nine

C Six

D One

Your Answer: C

Why is this incorrect?

Choosing six would suggest you either think the load balancer and web servers are in the same tier or that the web servers and databases are. Each needs its own tier. The load balancers need to be publicly accessible — the web servers don't. The database servers also need to be private but in different subnets.

Correct Answer: B

Why is this correct?

Three tiers are required: load balancer, web/app servers, and database servers. Each AZ needs its own subnet for that tier — 3 x 3 = 9.

INCORRECT

27. You have been asked to perform a security review for a client. They have a fleet of EC2 instances created by an Auto Scaling group and SQS queue to process jobs stored in DynamoDB. Currently, they retrieve access keys from an S3 bucket to gain access to other AWS resources. Recently, the bucket was exploited and the keys were leaked. The business has asked for a best-practice alternative solution for this architecture.
What should you suggest?

A Configure an S3 bucket policy only allowing access to the Auto Scaling group instances.

B Add access keys to the Auto Scaling group configuration for delivery via the instance metadata.

C Create a new launch template, IAM role, and instance profile.

D Remove the access keys from the S3 bucket.

E Leave the access keys stored in S3.

Your Answer: A

Why is this incorrect?

This isn't a viable technical solution. A bucket policy can only reference identities — it cannot allow access for an Auto Scaling group.

Correct Answer: C

Why is this correct?

Why is this correct?

An IAM role and instance profile can be used to deliver temporary credentials to EC2 instances securely. By configuring this in the launch template, it can be applied to all EC2 instances created by the Auto Scaling group.
https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/iam-roles-for-amazon-ec2.html
(https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/iam-roles-for-amazon-ec2.html)

Correct Answer: D

Why is this correct?

This resolves the immediate issue causing the credential leak.

INCORRECT

28. You are designing an AWS systems implementation for a medical imaging company that performs X-rays, ultrasounds, and other scans across multiple national premises. You have suggested AWS Simple Storage Service (S3) to store the images. You have been asked to implement appropriate encryption where AWS handles the encryption and decryption process, but the customer manages the encryption keys (which are ***never*** stored within AWS).
What technology should you suggest?

A SSE-KMS

B SSE-Symmetrical

C SSE-C

D SSE-S3

Your Answer: D

Why is this incorrect?

This is server-side encryption — the keys would reside with AWS.
https://docs.aws.amazon.com/AmazonS3/latest/dev/UsingEncryption.html
(https://docs.aws.amazon.com/AmazonS3/latest/dev/UsingEncryption.html)

Correct Answer: C

Why is this correct?

Using SSE-C, you provide AWS with plaintext data and an encryption key. AWS performs the encryption but doesn't store or manage the keys. This is the only option that meets the customer's requirements.
https://docs.aws.amazon.com/AmazonS3/latest/dev/ServerSideEncryptionCustomerKeys.html
(https://docs.aws.amazon.com/AmazonS3/latest/dev/ServerSideEncryptionCustomerKeys.html)

INCORRECT

29. One of your environments utilizes DynamoDB as a database. You need to ensure it can only be accessed by a select number of people using specific IP addresses. What design changes do you suggest?

A Create a security group, add ***allow*** rules for the IPs who need access, and attach the security group to DynamoDB

B Using the AWS console or CLI, edit the table(s) requiring the restrictions, set the default security to **Deny**, and add the IPs they'll be accessing the table from.

C Configure an IAM group (for each level of access), and add the people who need access. Give those groups access

to the DynamoDB operations they need, but add a ***condition*** to the policy so it has to match the specific IP address.

D Create an isolated VPC that is not connected to the internet, provision a private DynamoDB instance in the VPC, and allow those "select people" to connect to the VPC using a VPN.

Your Answer: D

Why is this incorrect?

DynamoDB is a service that utilizes public endpoints. It cannot be created as a "private" instance in the VPC.

Correct Answer: C

Why is this correct?

This is the best solution. By default, nobody has access to the DynamoDB tables unless they're granted access. Grants can be allowed via IAM users, who have policies with conditions matching specific IP addresses.

INCORRECT

30. You have been asked to advise a junior colleague how to explicitly ***deny*** traffic from an EC2 instance to a specific remote internet FQDN. What advice would you give?

A Use a security group attached to the instance, and explicitly ***deny*** traffic to the FQDN.

B Use a security group attached to the VPC, and explicitly ***deny*** traffic to the FQDN.

C Use a NACL on the subnet that the EC2 instance is on, and ***deny*** traffic from the EC2 instance to the FQDN.

D Implement a proxy service in the VPC, adjust route tables, and use the proxy server to ***deny*** access to the remote hostname.

Your Answer: C

Why is this incorrect?

A NACL is incapable of blocking traffic to a hostname, even an FQDN.

Correct Answer: D

Why is this correct?

This is the only valid option. AWS has no products capable of handling this type of denying traffic to an FQDN.

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31. If an EC2 instance uses an instance role, key rotation is automatic and handled by __.

A A script containing a valid IAM username and password stored on the EC2 instance.

B ssh-keygen on the EC2 instance

C The EC2 service

D IAM/STS

Correct Answer: D

Why is this correct?

Instance role key rotation is handled by IAM/STS.
https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/iam-roles-for-amazon-ec2.html
(https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/iam-roles-for-amazon-ec2.html)

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32. You have been asked to suggest the most secure way to connect two AWS VPCs, and the solution should use the least amount of additional infrastructure as possible. What should you suggest?

A VPC peering

B OpenVPN

C AWS Organizations

D Direct Connect

Correct Answer: A

Why is this correct?

VPC peering allows two VPCs to be connected from a networking perspective. It requires no additional hardware or instances to support it.
https://docs.aws.amazon.com/vpc/latest/userguide/vpc-peering.html
(https://docs.aws.amazon.com/vpc/latest/userguide/vpc-peering.html)

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33. You operate a commercial stock images website with millions of images. Watermarked preview images are available via an EC2 instance application. Full-resolution versions are stored on an EBS volume. The EBS volume is attached to the EC2 instance and delivered by the application. You have been asked to find a cheaper solution that can scale. Which option is the most suitable?

A Move the images to S3, and enable SFTP read support.

B Add a storage-optimized EBS volume to the EC2 instance.

C Move the images to S3, and use pre-signed URLs.

D Move the images to S3, and add ***read*** permissions for ***everyone***.

Correct Answer: C

Why is this correct?

S3 is more economical for large-scale object storage. Using pre-signed URLs allows the application to provide access rights to private objects to be downloaded.
https://docs.aws.amazon.com/AmazonS3/latest/dev/PresignedUrlUploadObject.html
(https://docs.aws.amazon.com/AmazonS3/latest/dev/PresignedUrlUploadObject.html)

INCORRECT

34. Multiple directors in your company have opened AWS accounts. The Chief Security Officer has expressed a concern that accounts may be using unapproved AWS services and wants your advice. What action would you take?

A Create a new account. Contact AWS Support and have them move all IAM users into the new account.

B Create a Lambda function to delete the IAM users in each account.

C Create a CloudTrail trail to monitor the API calls in each account.

D Create an organization with AWS Organizations, and have each account join your organization. Then apply service control policies to the child accounts.

Your Answer: C

Why is this incorrect?

A trail in your account won't have permissions to monitor the other accounts. To do this, you would have to set up a bucket in your account, enable access for each of the rogue accounts, and have the rogue accounts create trails that deliver logs to your bucket.

Correct Answer: D

Why is this correct?

Service control policies will override IAM policies that use unauthorized services.

---

35. A financial organization stores auditing data in AWS and a requirement has emerged that data needs to be stored for five years before it can be deleted. More than that, the data needs to be stored in such a way that nobody with access to the AWS account can circumvent the data storage restriction. Which of the following options should you suggest?

A Store the data in Glacier, and use the Vault Lock feature to prevent deletion.

B Store the data in S3, and use a bucket policy to prevent any deletions.

C Store the data in EFS, and set the file system to read-only.

D Store the data in S3, and apply an IAM policy to all users preventing any data modification or deletion.

Correct Answer: A

Why is this correct?

This is the recommended solution. Vault Lock is designed for this very purpose: a WORM (write once, read many) architecture.
https://docs.aws.amazon.com/amazonglacier/latest/dev/vault-lock.html
(https://docs.aws.amazon.com/amazonglacier/latest/dev/vault-lock.html)

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36. You are architecting a solution for a mobile application your developers are creating. You need to allow logins to the application and for those logins to access AWS resources. The application will start with 3,000 users but could reach 1,000,000 within 12 months. What resource access method should you suggest?

A The application should use the AWS APIs to create an IAM user for every application user. Use long-term credentials to access resources.

B Create an IAM role that trusts an external IDP. Provide this role with permissions for the AWS services.

C The application should use the AWS APIs to create an IAM user for every application user. Use short-term credentials to access resources.

D Configure the AWS services using resource policies to accept incoming connections from identities using Facebook, Twitter, or Google credentials. Use Google IdP to verify these credentials.

Correct Answer: B

Why is this correct?

Web identity federation is the best architecture to use where an external IDP is trusted to assume an IAM role.
https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/WIF.html
(https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/WIF.html)

Design Cost-Optimized Architectures

INCORRECT

37. You manage an application that is in-use within your employer. The environment currently uses the same infrastructure for dev and production environments: three large On-Demand EC2 instances, running behind an Application Load Balancer with an RDS MySQL Multi-AZ deployment. You have been asked for suggestions to cost-optimize the solution while not negatively impacting production availability or performance.
What should you suggest?

A Purchase instance reservations for PROD.

B Remove Multi-AZ from PROD.

C Use Spot instances for PROD.

D Remove Multi-AZ from DEV.

E Purchase instance reservations for DEV.

Your Answer: E

Why is this incorrect?

The dev environment might not have 24/7/365 availability requirements, so while this will reduce costs, it might be better to simply switch off dev when not in use.

Correct Answer: A

Why is this correct?

For any instances that need to be available consistently, instance reservation makes sense.
https://aws.amazon.com/ec2/pricing/reserved-instances/ (https://aws.amazon.com/ec2/pricing/reserved-instances/)

Correct Answer: D

Why is this correct?

This is a potential way to reduce costs. Multi-AZ is generally not worth the additional costs for dev environments.

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38. You have an EC2 instance that currently runs about 100 Python-based admin scripts for a business' IT team. The scripts interact with other AWS services using an instance role. The scripts run hourly and take around two to three minutes to run. The business has asked for your suggestions on cost-optimization for this scenario. The instance has been running for one year and has two years of a reserved instance term left.
What options should you suggest?

A Run the scripts from Elastic Beanstalk environments within the same application.

B Sell the remaining term of the instance reservation and stop the instance.

C Migrate the scripts to a Chef recipe and use AWS OpsWorks.

D Migrate the scripts to use individual Lambda functions.

E Terminate the EC2 instance to avoid costs.

Correct Answer: B

Why is this correct?

This will remove most of the cost of the EC2 instance, and storage will still have costs, but it's the best solution available.

Correct Answer: D

Why is this correct?

Lambda charges only for the execution time, and since the scripts have low runtimes, this is the most economical option. Since IAM roles are used for the instance, the permissions can be migrated easily to Lambda execution roles.

INCORRECT

39. Your business needs a small database for storing simple names, addresses, and ID picture information for 1,000 employees. The usage will be low, queries will occur every day, and the business wants the most suitable low-cost solution available within AWS.
Which database would you suggest?

A Aurora

B DynamoDB

C Redshift

D ElastiCache

Your Answer: D

Why is this incorrect?

ElastiCache is a key-value in-memory cache and is not a suitable technology to use in this case.

Correct Answer: B

Why is this correct?

DynamoDB is a perfect solution for this. The data requirements are simple, and DynamoDB has little to no base costs when not being used.

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40. You are designing the storage needs for a movie processing application. Large videos are uploaded to your website and stored on S3. AWS Elastic Transcoder processes these master copies into multiple formats and stores them on S3. The master copies can be used directly up to a year, sometimes less. There are over 20 size and bit rate variations for each master movie file. Ninety percent of your website users only use two of these size variants. Storage costs are increasing rapidly, and you have been asked to optimize the running costs. Which option should you suggest?

A Store the master video files on Glacier immediately and all resized versions on S3 Standard.

B Store the master video files on Glacier immediately and all resized versions on S3 One Zone-IA.

C Store the master video files on S3 Standard-IA, and migrate them to Glacier after 12 months. Store the popular resized versions on S3 Standard and the less popular resized versions on S3 One Zone-IA.

D Store the master video files on S3 One Zone-IA and migrate them to Glacier after 12 months. Store the resized versions on S3 Standard-IA.

Correct Answer: C

Why is this correct?

Storing source data on Standard IA is a good choice. It means they still have the level of resilience needed but cost less to store. Then once they're older, migrating them to Glacier will provide a significant cost reduction. Resized versions can, in theory, be stored on One Zone to save costs, but the popular versions that will be regularly accessed should remain on Standard.

INCORRECT

41. A client's application runs on 15 EC2 instances all using an EBS volume for the operating system. Each has a 1 TB attached io1 EBS volume for data storage. The application needs to be able to read or write 2,500 times per second on the data volume. The client believes the platform running costs are more than they need to be.
What should you tell the client?

A Change the volume type to GP2.

B Change the volume type to st1.

C Change the volume type to sc1.

D Ensure the io1 is set to 2,500. This is the most cost-effective way of delivering 2,500 reads or writes per second.

Your Answer: C

Why is this incorrect?

sc1 is designed for cold storage and isn't suitable for the required performance levels.
https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html (https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html)

Correct Answer: A

Why is this correct?

GP2 provides 3 IOPS per GB stored, which is enough for this scenario given the 1 TB size of the volumes.
https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html (https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html)

INCORRECT

42. You are consulting for a manufacturing company who use a set of EC2 instances to automate the production of products. The EC2 instances run software that runs through a workflow, executing various different AWS services, storing and retrieving data, and ensuring orders flow through a set of steps: A->B->C->D->E. The steps include some human interaction and can take weeks to complete.
What might be a cost effective alternative?

A Migrate the flows to one or more state machines.

B Continue using EC2; the long-running workflows require compute to run 24/7/365.

C Use a Lambda function to coordinate the tasks.

D Use a Lambda function, but ensure the timeout is set to 1 year.

Your Answer: C

Why is this incorrect?

Lambda has a max timeout (runtime) of 15 minutes, making it unsuitable for this task directly.
https://docs.aws.amazon.com/lambda/latest/dg/limits.html (https://docs.aws.amazon.com/lambda/latest/dg/limits.html)

Correct Answer: A

Why is this correct?

State machines are used by Step Functions. This product is serverless and can orchestrate long-running workflows involving other AWS services and human interaction.
https://docs.aws.amazon.com/step-functions/latest/dg/welcome.html (https://docs.aws.amazon.com/step-functions/latest/dg/welcome.html)

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43. A medical imaging company generates around 300 GB of important data on a weekly basis and stores this on S3. They need to ensure they are using resources in the most cost-effective way possible. Data is stored in S3 Standard and tends to be accessed frequently in real-time in the first 30 days after the scan takes place and then rarely if ever after that. The company needs to keep data for seven years for regulatory reasons.
What option could you suggest?

A Upload the data to S3-Standard and use lifecycle rules.

B Use Standard-IA.

C Use S3 Onezone-IA.

D Upload the data directly to Glacier.

Correct Answer: A

Why is this correct?

Lifecycle rules can be used to transition objects between storage classes after a certain period. This would allow initial real-time access and then transition to Glacier for low-cost ongoing storage.
https://docs.aws.amazon.com/AmazonS3/latest/dev/object-lifecycle-mgmt.html (https://docs.aws.amazon.com/AmazonS3/latest/dev/object-lifecycle-mgmt.html)

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44. You are reviewing a high volume transactional application. The application consumes a large portion of the business' AWS bill, and most of the costs seem to be associated with SQS costs. The operations team has advised you that they have noticed 65% of the application's calls to SQS are during periods when the work queue is empty. How can you reduce the application costs with the information provided?

A Modify the queue from standard to FIFO.

B Use long polling.

C Reduce the queue shards.

D Use short polling.

Correct Answer: B

Why is this correct?

This could potentially reduce costs by reducing the number of SQS API calls and ensuring as many as possible return results.
https://aws.amazon.com/sqs/faqs/ (https://aws.amazon.com/sqs/faqs/)

INCORRECT

45. A customer is deploying large amounts of infrastructure using CloudFormation. The platform uses three AWS regions and 100 EC2 instances. The business' AWS costs have increased, and there is concern that using the CloudFormation service itself is the cause.
How would using CloudFormation service be billed in this scenario? (Not including the resources it creates).

A There is no cost for CloudFormation.

B CloudFormation has an on-demand cost while infrastructure is being deployed — billed by the second with a 60-second minimum.

C The cost for CloudFormation is based on the number of resources the template creates.

D There is a per-stack cost for CloudFormation.

Your Answer: D

Why is this incorrect?

Untrue. There is no cost for CloudFormation — the cost increases are based only on the infrastructure deployed. https://aws.amazon.com/cloudformation/faqs/ (https://aws.amazon.com/cloudformation/faqs/)

Correct Answer: A

Why is this correct?

There is no cost for CloudFormation — the cost increases are based only on the infrastructure deployed. https://aws.amazon.com/cloudformation/faqs/ (https://aws.amazon.com/cloudformation/faqs/)

INCORRECT

46. You operate two EC2 instances that are currently running inside an Auto Scaling group. The instances serve high-resolution mapping images for a group of resource companies. The Auto Scaling group can scale OUT or IN to meet the demand on these instances. For 70% of the day, the number of instances is two, and for two to three hours per day, the load is zero, but the business cannot tolerate ***any*** delay or outages to the data.
What option could you suggest to improve the cost-effectiveness of this solution?

A Change the Auto Scaling group options to 1:1:1 and don't allow any changes.

B Use io1 storage.

C Move the mapping data to instance store volumes.

D Use S3.

Your Answer: A

Why is this incorrect?

This will lock the Auto Scaling group on one EC2 instance, which isn't enough for a nominal load.

Correct Answer: D

Why is this correct?

S3 can be used as an effective host for static content. By enabling the static web hosting function or using pre-signed URLs, the data can be made available for access with no consistent compute costs.
https://docs.aws.amazon.com/AmazonS3/latest/dev/ShareObjectPreSignedURL.html
(https://docs.aws.amazon.com/AmazonS3/latest/dev/ShareObjectPreSignedURL.html)

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47. Which of the following suggestions could help reduce DynamoDB running costs?

A Utilize indexes.

B Filter the attributes read from a table.

C Use `Scan` rather than `Query` operations.

D Increase RCU.

Correct Answer: A

Why is this correct?

Indexes allow you to define alternative partition and/or sort keys, which can allow you to use `Query` rather than `Scan` operations. Additionally, you can choose which attributes are projected into the indexes, meaning you will read less data for each ITEM retrieved.
https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/LSI.html (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/LSI.html)
https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/GSI.html (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/GSI.html)

INCORRECT

48. A client has asked for your suggestions on a cost-optimization exercise. They have a set of financial processes that occur daily at 6 a.m. local time in every country of operation. The processes last four hours and occur daily, 24/7/365. The processes cannot be interrupted — this would require 100% of the work to be completed again.
What billing model would offer the best price, given the information you have?

A Use Reserved instances on a two-year term.

B Use On-Demand instances.

C Use Spot instances.

D Use Scheduled reservations.

Your Answer: B

Why is this incorrect?

On-Demand would work but wouldn't offer any cost reductions.

Correct Answer: D

Why is this correct?

Scheduled reservations make the most sense in this situation. The processing occurs regularly, at the same time for the same duration. Scheduled reservations are not subject to interruption and offer a good level of cost savings.
https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-scheduled-instances.html (https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-scheduled-instances.html)

Define Operationally-Excellent Architectures

INCORRECT

49. Which of the following statements are true about instance store volumes?

A Data stored on instance store volumes will ***always*** be lost when an instance stops and starts.

B Data stored on instance store volumes will ***always*** be lost when an instance restarts.

C Data stored on instance store volumes ***can sometimes*** be lost when an instance stops and starts.

D Data stored on instance store volumes ***can*** be lost when an instance restarts.

Your Answer: B

Why is this incorrect?

An instant restart by default doesn't move the instance between EC2 hosts and so normally the data on instance store volumes will persist. It is ***not*** always lost.

Correct Answer: A

Why is this correct?

If an instance is stopped and started, it will move hosts, so it's correct to say the data on volumes will ***always*** be lost when stopping and starting.

Correct Answer: D

Why is this correct?

Data can be lost if the cause of the restart was an underlying hardware failure.

---

50. You've been asked to host a Docker container within your AWS environment using the least amount of effort or overhead. What is the most appropriate product to use for this task?

A Lambda

B EC2

C ECS

D OpsWorks

Correct Answer: C

Why is this correct?

ECS (Elastic Container Service) should be the preference when it comes to hosting Docker inside AWS. The Fargate deployment method further minimizes the overhead of running Docker in AWS.
https://docs.aws.amazon.com/AmazonECS/latest/developerguide/docker-basics.html (https://docs.aws.amazon.com/AmazonECS/latest/developerguide/docker-basics.html)
https://docs.aws.amazon.com/AmazonECS/latest/developerguide/AWS_Fargate.html (https://docs.aws.amazon.com/AmazonECS/latest/developerguide/AWS_Fargate.html)

INCORRECT

51. You have created a S3 bucket in the `us-east-1` region called youramazingcatpictures123 and a bucket in the `ap-southeast-2` region called backupmycats123. You are attempting to configure cross-region replication (CRR) between the buckets, but the configuration is generating an error.
Which of the options below could be a potential reason?

A The source bucket has no objects inside it to replicate.

B Cross-region replication isn't supported between two S3 buckets — only S3 -> Glacier.

C The source bucket uses SSE-S3.

D Versioning is not enabled.

Your Answer: B

Why is this incorrect?

Cross-region replication is ***only*** supported between two S3 buckets.
https://docs.aws.amazon.com/AmazonS3/latest/dev/crr.html
(https://docs.aws.amazon.com/AmazonS3/latest/dev/crr.html)

Correct Answer: D

Why is this correct?

To support replication, both the source and destination buckets must have versioning enabled.
https://docs.aws.amazon.com/AmazonS3/latest/dev/crr.html
(https://docs.aws.amazon.com/AmazonS3/latest/dev/crr.html)

INCORRECT

52. You have been asked to create a scalable deployment for a new business application. The application uses Java and requires lots of supporting libraries and frameworks. The total time for the installation is 25 minutes. If the business needs the application to scale in an elastic way, rapidly reacting to changes in system load, what method should you suggest for installing, deploying, and scaling the application?

A Use a launch template to add the application installation commands.

B Install the application on an EC2 instance and create an AMI.

C Install the application directly using instance metadata.

D Add the application installation commands to an Auto Scaling group.

Your Answer: D

Why is this incorrect?

This isn't valid. An Auto Scaling group doesn't store ***what*** the instance is — it cannot have installation commands added to it. The launch configuration/launch template stores this, and it's used by the Auto Scaling group.

Correct Answer: B

Why is this correct?

This is an example of an `AMI Pre-bake` architecture, which would work. The 25-minute installation would be done once, with the results stored in an AMI — and this could be used with a launch configuration/launch template and an Auto Scaling group to scale the application.
https://aws.amazon.com/answers/configuration-management/aws-ami-design/
(https://aws.amazon.com/answers/configuration-management/aws-ami-design/)

INCORRECT

53. You have created a CloudFront distribution to improve the performance of your global stock images website. Private images are distributed using CloudFront signed URLs, and the distribution is configured to be private. You recently found a group of users accessing images directly from the S3 origin without paying. How can you resolve this?

A Remove the DNS name on the S3 bucket.

B Add an OAI to CloudFront and the bucket policy.

C Apply a bucket policy to the bucket, blocking all access.

D Apply an object-level restriction to each object in the origin using the ARN of the CloudFront distribution.

Your Answer: C

Why is this incorrect?

This can be done, but this would block ***all*** accesses, including CloudFront.

Correct Answer: B

Why is this correct?

This is the recommended approach. An OAI is a virtual identity that can be associated with a CloudFront distribution and then used in a bucket policy.
https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/private-content-restricting-access-to-s3.html (https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/private-content-restricting-access-to-s3.html)

INCORRECT

54. You are reviewing and improving an application that uses a relational database and is currently hosted on a single-AZ RDS MySQL database. The application database pattern is 20% writes and 80% reads and is showing signs of read slowdown. You need to make changes to allow the application to scale more effectively.
What change could you implement to improve read performance with as little change as possible?

A Modify the RDS instance and enable Multi-AZ.

B Modify the application to use DynamoDB in relational mode and enable Auto Scaling.

C Migrate the database to Aurora and add replicas.

D Add read replicas to the RDS cluster.

Your Answer: D

Why is this incorrect?

Read replicas might help, but they aren't part of a cluster architecture and cannot be addressed as a pool. There is a large management overhead to be able to connect to them collectively from an application.

Correct Answer: C

Why is this correct?

Aurora is MySQL compatible, and the migration path from RDS MySQL is well documented and low risk. Aurora replicas can be used to scale reads across the cluster.
https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Aurora.Replication.html (https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Aurora.Replication.html)

INCORRECT

55. You are working on a migration project from a large enterprise's on-premises location into AWS. One of the client's systems stores files on a local file system that is shared to the business's local Microsoft Windows 10 workstations. You need to migrate the data into AWS without outage and ensure the files can be accessed both using SMB and over HTTPS.
What option should you suggest?

A Storage Gateway volume gateway

B Store the files directly on S3 using the S3 connector.

C Storage Gateway file gateway

D Migrate the application and server onto an EC2 instance and share the files using SMB.

Your Answer: B

Why is this incorrect?

This solution is invalid — it doesn't offer access via SMB and, in this context, an S3 connector is invalid.

Correct Answer: C

Why is this correct?

Using a file gateway would mean files could be migrated onto the gateway, presented via SMB, and accessible directly from S3 as objects.
https://docs.aws.amazon.com/storagegateway/latest/userguide/WhatIsStorageGateway.html (https://docs.aws.amazon.com/storagegateway/latest/userguide/WhatIsStorageGateway.html)

INCORRECT

56. You have inherited a VPC that has a CIDR of 10.0.0.0/16. You need to design a subnet layout that allows for four Availability Zones to be used.
Which option below is valid for this criteria? Pick the one that uses the least number of subnets to decrease management overhead.

A Create four subnets — 10.0.0.0/24, 10.0.1.0/24, 10.0.2.0/24, and 10.0.3.0/24 — and put each one in its own Availability Zone.

B Create two subnets, 10.0.0.0/24 and 10.0.1.0/24, and set each subnet in an HA configuration. Set each subnet to use two of the four Availability Zones.

C Create four subnets, all using the 10.0.0.0/16 range, and put each subnet into its own Availability Zone.

D Create a single subnet, 10.0.0.0/16, that spans all four Availability Zones.

Your Answer: B

Why is this incorrect?

Subnets **cannot** span Availability Zones. While this uses fewer subnets, it's not a valid configuration.
https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Subnets.html (https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Subnets.html)

Correct Answer: A

Why is this correct?

Four subnets are the minimum possible number to utilize all four Availability Zones, and the addresses cannot overlap, so this is valid.
https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Subnets.html (https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Subnets.html)

INCORRECT

57. You have an order processing system where you are printing high-quality pictures onto glass panels. The ordering system currently uses a custom application running on an EC2 instance to design the order, an SQS queue to hold the orders, and a fleet of EC2 instances inside an Auto Scaling group to control the printing machines. There is a growing issue with duplicate orders. How could you resolve this using AWS services?

A Ensure you are using a standard SQS queue, ensuring once-only delivery.

B Change the architecture to use a state machine.

C Change the standard SQS queue to a FIFO queue, ensuring once-only delivery.

D Adjust the visibility timeout value on the SQS queue.

Your Answer: C

Why is this incorrect?

FIFO does add exactly-once processing, but this doesn't fix the situation where a message is read from the queue, the processing crashes or times out, and another EC2 instance starts the job again.
https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/FIFO-queues.html#FIFO-queues-exactly-once-processing (https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/FIFO-queues.html#FIFO-queues-exactly-once-processing)

Correct Answer: B

Why is this correct?

State machines are part of Step Functions, which would allow you to create an order flow with fixed steps and controls. It functions in much the same way as the legacy SWF (Simple Workflow Service), but Step Functions is serverless.
https://docs.aws.amazon.com/step-functions/latest/dg/welcome.html (https://docs.aws.amazon.com/step-functions/latest/dg/welcome.html)

INCORRECT

58. You are consulting for a client who is migrating their entire infrastructure into AWS. The client's engineers are used to managing infrastructure as code and have been using both Puppet and Chef to manage infrastructure on-premises. Which AWS product should you suggest they explore to manage infrastructure within AWS?

A Ansible

B Elastic Beanstalk

C OpsWorks

D CloudFormation

Your Answer: D

Why is this incorrect?

CloudFormation is an Infrastructure as Code (IaC) product, but if the engineers have used Chef or Puppet, it is not an ideal option.

Correct Answer: C

Why is this correct?

OpsWorks is an AWS infrastructure management platform that supports Chef and Puppet.
https://aws.amazon.com/opsworks/ (https://aws.amazon.com/opsworks/)

INCORRECT

59. You run a single instance application on an EC2 instance in AWS. Your architecture teams are looking to make changes and convert the application to operate on multiple servers. The app runs on Linux and currently accesses millions of flat file data files in the `/data/...` folder structure. This database is stored on an EBS volume attached to the EC2 instance. How can this be moved to work on multiple servers, with as little application changes as possible? What product would you suggest?

A Use EBS to mount the existing volume on all the new instances.

B S3

C EFS

D EMR and HDFS

Your Answer: B

Why is this incorrect?

S3 can't natively be mounted as a file system, at least not without unreliable add-ons. The application may be able to be migrated to use object storage, but this would need changes.

Correct Answer: C

Why is this correct?

EFS is a network file system and could be utilized to provide access to the database files for all instances. It can also be mounted locally on Linux systems.
https://docs.aws.amazon.com/efs/latest/ug/mounting-fs.html (https://docs.aws.amazon.com/efs/latest/ug/mounting-fs.html)

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60. A client has asked your advice. They have a huge amount of CSV data currently stored on an on-premises file store. They need to keep the data stored for five years and have an occasional need to perform queries on the data using SQL. The need isn't commercial — it's for freedom of information reasons, so the client would like to do it with as little investment as possible. The query volume is unknown and ad hoc.
What should you suggest?

A Create an EMR cluster, load the CSV files onto HDFS, and query when required.

B Load the CSV files onto S3, define tables, and use Athena to query when required.

C Create an Aurora cluster, load the CSV files into the cluster, and have staff query the cluster when required.

D Create a large EBS volume, create an EC2 instance and attach the volume, load the CSV files into the volume, and allow staff to query the files when required.

Correct Answer: B

Why is this correct?

This is the best option. Athena is ideally suited to ad-hoc queries, and only data processed carries a cost, so it would be perfect for occasional use.
