AWS Solution Architect Professional Certification Example Questions

1) A company has many AWS accounts that individual business groups own. One of the accounts was recently compromised. The attacker launched a large number of instances, resulting in a high bill for that account. The company addressed the security breach, but a solutions architect needs to develop a solution to prevent excessive spending in all accounts. Each business group wants to retain full control of its AWS account. Which solution should the solutions architect recommend to meet these requirements?

A) Use AWS Organizations. Add each AWS account to the management account. Create an SCP that uses the ec2:instanceType condition key to prevent the launch of high-cost instance types in each account.

B) Attach a new customer-managed IAM policy to an IAM group in each account. Configure the policy to use the ec2:instanceType condition key to prevent the launch of high-cost instance types. Place all the existing IAM users in each group.

C) Turn on billing alerts for each AWS account. Create Amazon CloudWatch alarms that send an Amazon Simple Notification Service (Amazon SNS) notification to the account administrator whenever the account exceeds a designated spending threshold.

D) Turn on AWS Cost Explorer in each account. Review the Cost Explorer reports for each account on a regular basis to ensure that spending does not exceed the desired amount.

2) A company has multiple AWS accounts in an organization in AWS Organizations. The company has integrated its on-premises Active Directory with AWS Single Sign-On (AWS SSO) to grant Active Directory users least privilege permissions to manage infrastructure across all the accounts. A solutions architect must integrate a third-party monitoring solution that requires read-only access across all AWS accounts. The monitoring solution will run in its own AWS account. What should the solutions architect do to provide the monitoring solution with the required permissions?

A) Create a user in an AWS SSO directory. Assign a read-only permissions set to the user. Assign all AWS accounts that need monitoring to the user. Provide the third-party monitoring solution with the user name and password.

B) Create an IAM role in the organization's management account. Allow the AWS account of the third-party monitoring solution to assume the role.

C) Invite the AWS account of the third-party monitoring solution to join the organization. Enable all features.

D) Create an AWS CloudFormation template that defines a new IAM role for the third-party monitoring solution. Specify the AWS account of the third-party monitoring solution in the trust policy. Create the IAM role across all linked AWS accounts by using a stack set.

3) A team is building an HTML form that is hosted in a public Amazon S3 bucket. The form uses JavaScript to post data to an Amazon API Gateway API endpoint. The API endpoint is integrated with AWS Lambda functions. The team has tested each method in the API Gateway console and has received valid responses. Which combination of steps must the team complete so that the form can successfully post to the API endpoint and receive a valid response? (Select two choices)

A) Configure the S3 bucket to allow cross-origin resource sharing (CORS).

B) Host the form on Amazon EC2 rather than on Amazon S3.

C) Request a quota increase for API Gateway.

D) Enable cross-origin resource sharing (CORS) in API Gateway. E) Configure the S3 bucket for web hosting.

4) A company runs a serverless mobile app that uses Amazon API Gateway, AWS Lambda functions, Amazon Cognito, and Amazon DynamoDB. During large surges in traffic, users report intermittent system failures. The API Gateway API endpoint is returning HTTP status code 502 (Bad Gateway) errors to valid requests. Which solution will resolve this issue?

A) Increase the concurrency quota for the Lambda functions. Configure Amazon CloudWatch to send notification alerts when the ConcurrentExecutions metric approaches the quota.

B) Configure notification alerts for the quota of transactions per second on the API Gateway API endpoint. Create a Lambda function that will increase the quota when the quota is reached.

C) Shard users to Amazon Cognito user pools in multiple AWS Regions to reduce user authentication latency.

D) Use DynamoDB strongly consistent reads to ensure that the client application always receives the most recent data.

5) A company is launching a new web service on an Amazon Elastic Container Service (Amazon ECS) cluster. The cluster consists of 100 Amazon EC2 instances. Company policy requires the security group on the cluster instances to block all inbound traffic except HTTPS (port 443). Which solution will meet these requirements?

A) Change the SSH port to 2222 on the cluster instances by using a user data script. Log in to each instance by using SSH over port 2222.

B) Change the SSH port to 2222 on the cluster instances by using a user data script. Use AWS Trusted Advisor to remotely manage the cluster instances over port 2222.

C) Launch the cluster instances with no SSH key pairs. Use AWS Systems Manager Run Command to remotely manage the cluster instances.

D) Launch the cluster instances with no SSH key pairs. Use AWS Trusted Advisor to remotely manage the cluster instances.

6) A company has two AWS accounts: one account for production workloads and one account for development workloads. A development team and an operations team create and manage these workloads. The company needs a security strategy that meets the following requirements:
• Developers need to create and delete development application infrastructure.
• Operators need to create and delete development and production application infrastructure.
• Developers must have no access to production infrastructure.
• All users must have a single set of AWS credentials.
Which strategy will meet these requirements?

A) In the production account:
   • Create an operations IAM group that can create and delete application infrastructure.
   • Create an IAM user for each operator. Assign these users to the operations group.
 In the development account:
   • Create a development IAM group that can create and delete application infrastructure.
   • Create an IAM user for each operator and developer. Assign these users to the development group.

B) In the production account:
   • Create an operations IAM group that can create and delete application infrastructure.
 In the development account:
   • Create a development IAM group that can create and delete application infrastructure.
   • Create an IAM user for each developer. Assign these users to the development group.
   • Create an IAM user for each operator. Assign these users to the development group and to the operations group in the production account.

C) In the development account:
   • Create a shared IAM role that can create and delete application infrastructure in the production account.
   • Create a development IAM group that can create and delete application infrastructure.
   • Create an operations IAM group that can assume the shared role.
   • Create an IAM user for each developer. Assign these users to the development group.

• Create an IAM user for each operator. Assign these users to the development group and to the operations group.

D) In the production account:
　• Create a shared IAM role that can create and delete application infrastructure.
　• Add the development account to the trust policy for the shared role. In the development account:
　• Create a development IAM group that can create and delete application infrastructure.
　• Create an operations IAM group that can assume the shared role in the production account.
　• Create an IAM user for each developer. Assign these users to the development group.
　• Create an IAM user for each operator. Assign these users to the development group and to the operations group.

7)　A solutions architect needs to reduce costs for a big data application. The application environment consists of hundreds of devices that send events to Amazon Kinesis Data Streams. The device ID is used as the partition key, so each device gets a separate shard. Each device sends between 50 KB and 450 KB of data each second. An AWS Lambda function polls the shards, processes the data, and stores the result in Amazon S3. Every hour, another Lambda function runs an Amazon Athena query against the result data to identify outliers. This Lambda function places the outliers in an Amazon Simple Queue Service (Amazon SQS) queue. An Amazon EC2 Auto Scaling group of two EC2 instances monitors the queue and runs a 30- second process to address the outliers. The devices submit an average of 10 outlying values every hour. Which combination of changes to the application will MOST reduce costs? (Select two choices)

A) Change the Auto Scaling group launch configuration to use smaller instance types in the same instance family.

B) Replace the Auto Scaling group with a Lambda function that is invoked when messages arrive in the queue.

C) Reconfigure the devices and data stream to set a ratio of 10 devices to 1 data stream shard.

D) Reconfigure the devices and data stream to set a ratio of 2 devices to 1 data stream shard.

E) Change the desired capacity of the Auto Scaling group to a single EC2 instance.

8) A company operates an ecommerce application on Amazon EC2 instances behind an Application Load Balancer. The instances run in an Amazon EC2 Auto Scaling group across multiple Availability Zones. After an order is successfully processed, the application immediately posts order data to a third-party affiliate's external tracking system that pays sales commissions for order referrals. During a successful marketing promotion, the number of EC2 instances increased from 2 to 20. The application continued to work correctly during this time. However, the increased request rate overwhelmed the third-party affiliate and resulted in failed requests. Which combination of architectural changes should a solutions architect make to ensure that the entire process functions correctly under load? (Select two choices)

A) Move the code that calls the affiliate to a new AWS Lambda function. Modify the application to invoke the Lambda function asynchronously.

B) Move the code that calls the affiliate to a new AWS Lambda function. Modify the application to place the order data in an Amazon Simple Queue Service (Amazon SQS) queue. Invoke the Lambda function from the queue.

C) Increase the timeout of the new AWS Lambda function.

D) Decrease the reserved concurrency of the new AWS Lambda function.

E) Increase the memory of the new AWS Lambda function.

9) A company has built an online ticketing web application on AWS. The application is hosted on AWS App Runner and uses images that are stored in an Amazon Elastic Container Registry (Amazon ECR) repository. The application stores data in an Amazon Aurora MySQL DB cluster. The company has set up a domain name in Amazon Route 53. The company needs to deploy the application across two AWS Regions in an active-active configuration. Which combination of steps will meet these requirements with the LEAST change to the architecture? (Select three choices)

A) Set up Cross-Region Replication to the second Region for the ECR images.

B) Create a VPC endpoint from the ECR repository in the second Region.

C) Edit the App Runner configuration by adding a second deployment target to the second Region.

D) Deploy App Runner to the second Region. Set up Route 53 latency-based routing.

E) Change the database by using Amazon DynamoDB global tables in the two desired Regions.

F) Use an Aurora global database with write forwarding enabled in the second Region.

10) A company has deployed a multi-tier web application in the AWS Cloud. The application consists of the following tiers:

• A Windows-based web tier that is hosted on Amazon EC2 instances with Elastic IP addresses

• A Linux-based application tier that is hosted on EC2 instances that run behind an Application Load Balancer (ALB) that uses path-based routing

• A MySQL database that runs on a Linux EC2 instance

All the EC2 instances are using Intel-based x86 CPUs. A solutions architect needs to modernize the infrastructure to achieve better performance. The solution must minimize the operational overhead of the application. Which combination of actions should the solutions architect take to meet these requirements? (Select two choices)

A) Run the MySQL database on multiple EC2 instances.

B) Place the web tier instances behind an ALB.

C) Migrate the MySQL database to Amazon Aurora Serverless.

D) Migrate all EC2 instance types to Graviton2.

E) Replace the ALB for the application tier instances with a company-managed load balancer.

Answers

1) C
2) D
3) D-E
4) A
5) C
6) D
7) B-D
8) B-D
9) A-D-F
10) B-C