1. Welcome to AWS Academy Cloud Architecting

- Overview of AWS services and infrastructure.

- The role of a cloud architect.

- AWS Well-Architected Framework: operational excellence, security, reliability, performance efficiency, and cost optimization.

MCQ Example:

- Q: What are the five pillars of the AWS Well-Architected Framework?

  - A) Scalability, Performance, Security, Cost, and Usability.

  - B) Operational Excellence, Security, Reliability, Performance Efficiency, and Cost Optimization. (Correct)

2. Introducing Cloud Architecting

- Cloud Architecting helps design reliable, cost-efficient systems on AWS.

- Focus on building for failure and scalability.

- Key services: Amazon EC2, AWS Lambda, Elastic Load Balancing (ELB), and Auto Scaling.

MCQ Example:

- Q: Which AWS service can be used for automatically distributing incoming application traffic across multiple targets?

  - A) Amazon CloudFront.

  - B) Elastic Load Balancing. (Correct)

3. Securing Access

- AWS Identity and Access Management (IAM) controls user permissions and access.

- Use least privilege principle for security.

- Multifactor authentication (MFA) and IAM roles.

MCQ Example:

- Q: Which AWS service is primarily used to manage users, groups, and permissions?
  - A) Amazon EC2.
  - B) IAM. (Correct)

4. Adding a Storage Layer with Amazon S3

- Amazon S3 provides object storage with high durability and scalability.
- S3 storage classes: Standard, Standard-IA, Glacier.
- Use lifecycle policies to manage storage costs.

MCQ Example:

- Q: Which S3 storage class is the most cost-effective option for data that is infrequently accessed but requires rapid access when needed?
  - A) S3 Glacier.
  - B) S3 Standard-IA. (Correct)

5. Adding a Compute Layer Using Amazon EC2

- EC2 allows you to launch virtual servers with scalable compute capacity.
- EC2 instance types (General purpose, Compute optimized, Memory optimized).
- Elastic Block Store (EBS) provides persistent block storage.

MCQ Example:

- Q: Which EC2 feature allows automatic scaling based on demand?
  - A) Elastic Beanstalk.

- B) Auto Scaling. (Correct)

6. Adding a Database Layer

- Amazon RDS (Relational Database Service) and Amazon DynamoDB (NoSQL).
- RDS supports multiple database engines (MySQL, PostgreSQL, MariaDB, etc.).
- DynamoDB is fully managed and scales automatically.

MCQ Example:

- Q: What is the best AWS service for a managed relational database?
  - A) Amazon S3.
  - B) Amazon RDS. (Correct)

7. Creating a Networking Environment

- Virtual Private Cloud (VPC) is used to isolate and secure resources.
- Subnets (public and private) and route tables.
- Internet Gateway (IGW) for enabling internet access to a VPC.

MCQ Example:

- Q: Which service allows you to create a logically isolated network in AWS?
  - A) Elastic Beanstalk.
  - B) Virtual Private Cloud (VPC). (Correct)

8. Connecting Networks

- Virtual Private Network (VPN) and AWS Direct Connect for secure connections between on-premises data centers and AWS.
- Route 53 is used for DNS services.

- VPC Peering for connecting VPCs.

MCQ Example:

- Q: What service is used to connect a VPC to an on-premises network?

  - A) Route 53.

  - B) AWS Direct Connect. (Correct)

9. Securing User, Application, and Data Access

- Encryption options for data at rest (AWS KMS) and in transit (SSL/TLS).

- AWS WAF (Web Application Firewall) for protecting applications from common web exploits.

- AWS Shield for DDoS protection.

MCQ Example:

- Q: Which service provides protection against DDoS attacks for applications?

  - A) AWS WAF.

  - B) AWS Shield. (Correct)

General MCQ Questions for Revision:

1. Q: Which AWS service is used to automatically distribute traffic across multiple instances?

- A) Amazon Route 53

- B) Elastic Load Balancing (Correct)

2. Q: What is the default data storage encryption in AWS?

- A) Server-side encryption using AES-256 (Correct)
- B) Server-side encryption using RSA-2048

3. Q: What service is best for running event-driven, serverless functions?
   - A) AWS Lambda (Correct)
   - B) Amazon EC2

4. Q: Which AWS service provides highly scalable object storage?
   - A) Amazon S3 (Correct)
   - B) Amazon DynamoDB