**Howard University**

**School of Engineering &Architecture**

**Department of Electrical Engineering & Computer Science**

**Large Scale Programming**

**Fall 2024**

**Mock AWS Certified Cloud Practitioner Examination**

65 questions | 1 hour 30 minutes | 70% correct required to pass

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Note: Some of the question ask for 1, 2 or three answers. Please take note.

You are not allowed to use the internet or discuss with others.

Completed exams should be e-mailed to [bwoolfolk@whiteboardfederal.com](mailto:bwoolfolk@whiteboardfederal.com)

By 7:45 PM. Any exams received after will not be accepted.

YOU ARE NOT ALLOWED TO USE THE INTERNET TO ASSIST ON THIS EXAM.

1. A solutions architect is finalizing the architecture for a distributed database that will run across multiple Amazon EC2 instances. Data will be replicated across all instances so the loss of an instance will not cause loss of data. The database requires block storage with low latency and throughput that supports up to several million transactions per second per server.

Which storage solution should the solutions architect use?

1. Amazon EBS
2. Amazon S3
3. Amazon EFS
4. Amazon EC2 instance store
5. Which of the following AWS services offers Lifecycle configuration for cost-optimal storage?
   1. Amazon Simple Storage Service (S3)
   2. Amazon EC2 Instance Store
   3. Amazon Storage Gateway
   4. Amazon Elastic Block Storage (EBS)
6. What is the primary purpose of AWS Identity and Access Management (IAM)?
   1. To manage AWS resources
   2. To store data in the cloud
   3. To monitor network traffic
   4. To create virtual machines
7. A company wants to migrate a legacy web application from an on-premises data center to AWS. The web application consists of a web tier, an application tier, and a MySQL database. The company does not want to manage instances or clusters.

Which combination of services should a solutions architect include in the overall architecture? (Select TWO.)

1. Amazon Dynamo DB
2. Amazon Kinesis Data Streams
3. AWS Fargate
4. Amazon EC2 Spot Instances
5. Amazon RDS for MySQL
6. A solutions architect is optimizing a website for real-time streaming and on-demand videos. The website’s users are located around the world and the solutions architect needs to optimize the performance for both the real-time and on-demand streaming.

Which service should the solutions architect choose?

1. AWS Global Accelerator
2. Amazon Route 53
3. Amazon CloudFront
4. Amazon S3 Transfer Acceleration
5. A Silicon Valley based healthcare startup stores anonymized patient health data on Amazon S3. The CTO further wants to ensure that any sensitive data on S3 is discovered and identified to prevent any sensitive data leaks. As a Cloud Practitioner, which AWS service would you recommend addressing this use-case?
   1. Amazon Polly
   2. AWS Glue
   3. Amazon Macie
   4. AWS Secrets Manager
6. Which Amazon Route 53 routing policy would you use to route traffic to a single resource such as a web server for your website?
   1. Simple routing
   2. Latency-based routing
   3. Failover routing
   4. Weighted routing
7. Which of the following is best-suited for load-balancing HTTP and HTTPS traffic?
   1. Network Load Balancer
   2. AWS Auto Scaling
   3. System Load Balancer
   4. Application Load Balancer
8. A digital media company wants to convert English language subtitles into Spanish language subtitles. As a Cloud Practitioner, which AWS service would you recommend for this use-case?
   1. Amazon Rekognition
   2. Amazon Translate
   3. Amazon Transcribe
   4. Amazon Polly
9. A company is deploying a new web application that will run on Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones. The application requires a shared storage solution that offers strong consistency as the content will be regularly updated.

Which solution requires the LEAST amount of effort?

1. Create a volume gateway using AWS Storage Gateway to host the data and mount it to the Auto Scaling group
2. Create an Amazon S3 bucket to store the web content and use Amazon CloudFront to deliver the content
3. Create an Amazon Elastic File System (Amazon EFS) file system and mount it on the individual Amazon EC2 instances
4. Create a shared Amazon Block Store (Amazon EBS) volume and mount it on the individual Amazon EC2 instances
5. A social media company wants to have the MOST cost-optimal strategy for deploying Amazon Elastic Compute Cloud (Amazon EC2) instances. As a Cloud Practitioner, which of the following options would you recommend? (Select two)
   1. Use Spot Instances to ad-hoc jobs that can be interrupted
   2. Use Reserved Instances (RI) to ad-hoc jobs that can be interrupted
   3. Use On-Demand Instances to ad-hoc jobs that can be interrupted
   4. Use On-Demand Instances to run applications with a predictable usage over the next one year
   5. Use Reserved Instances (RI) to run applications with a predictable usage over the next one year.
6. What is AWS CloudTrail used for?
   1. Monitoring EC2 instances
   2. Auditing and logging AWS account activity
   3. Managing DNS records
   4. Creating virtual private networks
7. A media company uploads its media (audio and video) files to a centralized Amazon Simple Storage Service (Amazon S3) bucket from geographically dispersed locations. Which of the following solutions can the company use to optimize transfer speeds?
   1. AWS Direct Connect
   2. Amazon CloudFront
   3. AWS Global Accelerator
   4. Amazon S3 Transfer Accelerator (S3TA)
8. An organization is migrating data to the AWS cloud. An on-premises application uses Network File System shares and must access the data without code changes. The data is critical and is accessed frequently.

Which storage solution should a Solutions Architect recommend to maximize

availability and durability?

1. Amazon Elastic File System
2. Amazon Simple Storage Service
3. Amazon Elastic Block Store
4. AWS Storage Gateway – File Gateway
5. Which AWS service allows you to manage encryption keys?
6. AWS WAF
7. AWS KMS
8. Amazon S3
9. AWS CloudTrail
10. Which storage option is best suited for a low-latency, high-performance database?
11. Amazon S3
12. Amazon EBS
13. Amazon Glacier
14. AWS Snowball
15. Your web application experiences unpredictable traffic spikes. Which Elastic Load Balancer feature ensures that incoming traffic is evenly distributed across all instances?

a) Sticky Sessions

b) Health Checks

c) Auto Scaling

d) Load Balancing Algorithms

1. Which AWS service can you use to host a serverless backend for a web application?

a) Amazon EC2

b) AWS Lambda

c) Amazon RDS

d) Amazon EBS

1. A financial services company wants to ensure that all customer data uploaded on its data lake on Amazon Simple Storage Service (Amazon S3) always stays private. Which of the following is the MOST efficient solution to address this compliance requirement?
   1. Trigger a lambda function every time an object is uploaded on Amazon S3. The lambda function should change the object settings to make sure it stays private
   2. Use Amazon S3 Block Public Access to ensure that all Amazon S3 resources stay private
   3. Use Amazon CloudWatch to ensure that all Amazon S3 resources stay private
   4. Set up a high-level advisory committee to review the privacy settings of each object uploaded into Amazon S3
2. Which AWS service will you use to provision the same AWS infrastructure across multiple AWS accounts and regions?
   1. AWS Systems Manager
   2. AWS Cloud Formation
   3. AWS CodeDeploy
   4. AWS OpsWorks
3. Which of the following is the MOST cost-effective Amazon Elastic Compute Cloud (Amazon EC2) instance purchasing option for short-term, spiky and critical workloads on AWS Cloud?
   1. Dedicated Host
   2. Reserved Instance
   3. On-Demand Instance
   4. Spot Instance
4. A solutions architect has created a new AWS account and must secure AWS account root user access.

Which combination of actions will accomplish this? (Select TWO.)

1. Store root user access keys in an encrypted Amazon S3 bucket
2. Add the root user to a group containing administrative permissions
3. Ensure the root user uses a strong password
4. Enable multi-factor authentication for the root user
5. Delete the root user account
6. A High-Performance Computing (HPC) application will be migrated to AWS. The application requires low network latency and high throughput between nodes and will be deployed in a single AZ.

How should the application be deployed for best inter-node performance?

1. In a partition placement group
2. In a cluster placement group
3. Behind a Network Load Balancer (NLB)
4. In a spread placement group
5. The DevOps team at an IT company wants to centrally manage its servers on AWS Cloud as well as on-premise data center so that it can collect software inventory, run commands, configure and patch servers at scale. As a Cloud Practitioner, which AWS service would you recommend for this use-case?
   1. AWS Config
   2. AWS OpsWorks
   3. AWS Cloud Formation
   4. AWS Systems Manager
6. A website runs on Amazon EC2 instances behind an Application Load Balancer (ALB). The website has a mix of dynamic and static content. Customers around the world are reporting performance issues with the website.

Which set of actions will improve website performance for users worldwide?

1. Create an Amazon CloudFront distribution and configure the ALB as an origin. Then update the Amazon Route 53 record to point to the CloudFront distribution
2. Migrate the website to an Amazon S3 bucket in the Regions closest to the users. Then create an Amazon Route 53 geolocation record to point to the S3 buckets
3. Create a latency-based Amazon Route 53 record for the ALB. Then launch new EC2 instances with larger instance sizes and register the instances with the ALB
4. Launch new EC2 instances hosting the same web application in different Regions closer to the users. Use an AWS Transit Gateway to connect customers to the closest region
   * 1. A startup runs its proprietary application on docker containers. As a Cloud Practitioner, which AWS service would you recommend so that the startup can run containers and still have access to the underlying servers?
5. AWS Fargate
6. Amazon Elastic Container Registry (Amazon ECR)
7. AWS Lambda
8. Amazon Elastic Container Service (Amazon ECS)
   * 1. As a Cloud Practitioner, which Amazon Simple Storage Service (Amazon S3) storage class would you recommend for data archival?
9. Amazon S3 Glacier Flexible Retrieval
10. Amazon S3 Standard
11. Amazon S3 Intelligent-Tiering
12. Amazon S3 One Zone-Infrequent Access (S3 One Zone-IA)
    * 1. Which of the following is the best way to protect your data from accidental deletion on Amazon S3?
13. Amazon S3 Transfer Acceleration (Amazon S3TA)
14. Amazon S3 lifecycle configuration
15. Amazon S3 storage classes
16. Amazon S3 Versioning
17. A company runs an application on a fleet of EC2 instances. The company wants to automate the traditional maintenance job of running timely assessments and checking for OS vulnerabilities. As a Cloud Practitioner, which service will you suggest for this use case?
    1. Amazon Inspector
    2. Amazon GuardDuty
    3. Amazon Macie
    4. AWS Shield
18. Which AWS service will help you deploy application code automatically to an Amazon Elastic Compute Cloud (Amazon EC2) instance?
    * 1. AWS Elastic Beanstalk
      2. AWS CodeDeploy
      3. AWS CodeBuild
      4. AWS CloudFoundation
19. Which of the following AWS services offer block-level storage? (Select two)
    1. Instance Store
    2. Amazon Elastic Container Service (Amazon ECS)
    3. Amazon Elastic File System (Amazon EFS)
    4. Amazon Elastic Block Store (Amazon EBS)
20. Which of the following are components of an AWS Site-to-Site VPN? (Select two)
    1. Customer gateway
    2. Internet gateway
    3. Network Address Translation gateway (NAT gateway)
    4. AWS storage gateway
    5. Virtual private gateway (VGW)
21. Which of the following is correct regarding the AWS Shield Advanced pricing?
    1. AWS Shield Advanced offers protection against higher fees that could result from a DDoS attack
    2. AWS Shield Advanced is a free service for all AWS Support plans
    3. AWS Shield Advanced is a free service for AWS Business Support plan
    4. AWS Shield Advanced is a free service for AWS Enterprise Support plan
22. Amazon Elastic Compute Cloud (Amazon EC2) Spot instances are a best-fit for which of the following scenarios?
    1. To run batch processes for critical loads
    2. To run scheduled jobs (jobs that run at the same time every day)
    3. To install cost-effective Amazon RDS database
    4. To run any containerized workload with Amazon Elastic Container Service (ECS) that can be interrupted.
23. A multi-national company has its business-critical data stored on a fleet of Amazon Elastic Compute Cloud (Amazon EC2) instances, in various countries, configured in region-specific compliance rules. To demonstrate compliance, the company needs to submit historical configurations on a regular basis. Which AWS service is best suited for this requirement?
24. Amazon Macie
25. AWS Config
26. Amazon GuardDuty
27. AWS CloudTrail
28. An IT company has a hybrid cloud architecture and it wants to centralize the server logs for its Amazon Elastic Compute Cloud (Amazon EC2) instances and on-premises servers. Which of the following is the MOST effective for this use-case?
29. Use AWS Lambda to send log data from Amazon Elastic Compute Cloud (Amazon EC2) instance as well as on-premises servers to Amazon CloudWatch Logs
30. Use Amazon CloudWatch Logs for both the Amazon Elastic Compute Cloud (Amazon EC2) instance and the on-premises servers
31. Use AWS CloudTrail for the Amazon Elastic Compute Cloud (Amazon EC2) instance and Amazon CloudWatch Logs for the on-premises servers
32. Use Amazon CloudWatch Logs for the Amazon Elastic Compute Cloud (Amazon EC2) instance and AWS CloudTrail for the on-premises servers
33. Which of the following is a container service of AWS?
    1. Amazon SageMaker
    2. AWS Fargate
    3. AWS Elastic Beanstalk
    4. Amazon Simple Notification Service (Amazon SNS)
34. Which AWS service can help you analyze your infrastructure to identify unattached or underutilized Amazon EBS Elastic Volumes?
    1. AWS Trusted Advisor
    2. Amazon Inspector
    3. AWS Config
    4. Amazon CloudWatch
35. Which of the following are the serverless computing services offered by AWS ? (Select two)
36. AWS Fargate
37. AWS Lambda
38. Amazon Lightsail
39. AWS Elastic Beanstalk
40. What is the primary benefit of deploying an Amazon Relational Database Service (Amazon RDS) database in a Read Replica configuration?
41. Read Replica improves database scalability
42. Read Replica protects the database from a regional failure
43. Read Replica reduces database usage costs
44. Read Replica enhances database availability
45. A startup wants to provision an EC2 instance for the lowest possible cost for a long-term duration but needs to make sure that the instance would never be interrupted. As a Cloud Practitioner, which of the following options would you recommend?
46. EC2 On-Demand Instance
47. EC2 Dedicated Host
48. EC2 Spot Instance
49. EC2 Reserved Instance (RI)
50. An IT company wants to run a log backup process every Monday at 2 AM. The usual runtime of the process is 5 minutes. As a Cloud Practitioner, which AWS services would you recommend to build a serverless solution for this use-case? (Select two)
51. Amazon Elastic Compute Cloud (Amazon EC2)
52. AWS Systems Manager
53. AWS Step Function
54. Amazon Eventbridge
55. AWS Lambda
56. Which AWS Route 53 routing policy would you use to route traffic to multiple resources and also choose how much traffic is routed to each resource?
57. Failover routing
58. latency-based routing
59. Simple routing
60. Weighted routing
61. Which entity ensures that your application on Amazon Elastic Compute Cloud (Amazon EC2) always has the right amount of capacity to handle the current traffic demand?
62. Multi-AZ deployment
63. Amazon EC2 Auto Scaling
64. Application Load Balancer
65. Network Load Balancer
66. Which AWS service would you choose for a data processing project that needs a schema-less database?
    1. Amazon Relational Database Service (Amazon RDS)
    2. Amazon RedShift
    3. Amazon Aurora
    4. Amazon Dynamo DB
67. Which AWS service can be used to set up billing alarms to monitor estimated charges on your AWS account?
68. AWS Organizations
69. AWS CloudTrail
70. AWS Cost Explorer
71. Amazon CloudWatch
72. Which of the following are the best practices when using AWS Organizations? (Select TWO)
73. Never use tags for billing
74. Do not use AWS Organizations to automate AWS account creation
75. Restrict account privileges using Service Control Policies (SCP)
76. Create AWS accounts per department
77. Disable AWS CloudTrail on several accounts
78. A photo sharing web application wants to store thumbnails of user-uploaded images on Amazon Simple Storage Service (Amazon S3). The thumbnails are rarely used but need to be immediately accessible from the web application. The thumbnails can be regenerated easily if they are lost. Which is the most cost-effective way to store these thumbnails on Amazon Simple Storage Service (Amazon S3)?
79. Use Amazon S3 Glacier Flexible Retrieval to store the thumbnails
80. Use Amazon S3 Standard to store the thumbnails
81. Use Amazon S3 Standard-Infrequent Access (S3 Standard-IA) to store the thumbnails
82. Use Amazon S3 One Zone-Infrequent Access (S3 One Zone-IA) to store the thumbnails
83. The DevOps team at an e-commerce company is trying to debug performance issues for its serverless application built using a microservices architecture. As a Cloud Practitioner, which AWS service would you recommend addressing this use-case?
84. AWS Trusted Advisor
85. Amazon Pinpoint
86. AWS CloudFormation
87. AWS X-Ray
88. An organization maintains a separate Virtual Private Cloud (VPC) for each of its business units. Two units need to privately share data. Which is the most optimal way of privately sharing data between the two VPCs?
89. AWS Site-to-Site VPN
90. VPC Endpoint
91. VPC peering connection
92. AWS Direct Connect
93. Which of the following is a recommended way to provide programmatic access to AWS resources?
94. Create a new IAM user and share the username and password
95. Use Access Key ID and Secret Access Key to access AWS resources programmatically
96. Use AWS Multi-Factor Authentication (AWS MFA) to access AWS resources programmatically
97. Use IAM user group to access AWS resources programmatically
98. A company wants to have control over creating and using its own keys for encryption on AWS services. Which of the following can be used for this use-case?
99. AWS Secrets Manager
100. AWS managed
101. AWS owned key
102. Customer managed key (CMK)
103. A startup wants to host a static website with low costs and global availability. Which AWS services can they use?
104. Amazon EC2 and Amazon CloudFront
105. Amazon S3 and Amazon CloudFront
106. Amazon Lightsail and AWS Lambda
107. Amazon EBS and AWS Direct Connect
108. Which of the following services allows you to track API requests made to your AWS account for auditing purposes?
109. Amazon CloudWatch
110. AWS Config
111. AWS CloudTrail
112. AWS Trusted Advisor
113. Which AWS services can be used to run containerized applications? (select two)
114. Amazon EC2
115. AWS Lambda
116. Amazon ECS
117. Amazon EKS
118. Which AWS services are suitable for building a decoupled application architecture?
119. Amazon SNS
120. Amazon SQS
121. AWS Lambda
122. AWS Elastic Beanstalk
123. Amazon CloudWatch
124. The engineering team at an IT company wants to monitor the CPU utilization for its fleet of Amazon Elastic Compute Cloud (Amazon EC2) instances and send an email to the administrator if the utilization exceeds 80%. As a Cloud Practitioner, which AWS services would you recommend to build this solution? (Select two)
125. AWS Lambda
126. Amazon Simple Queue Service (SQS)
127. Amazon Simple Notification Service (SNS)
128. AWS CloudTrail
129. Amazon CloudWatch
130. An online gaming company wants to block users from certain geographies from accessing its content. Which AWS service can be used to accomplish this task?
131. Security group
132. AWS Web Application Firewall (AWS WAF)
133. Amazon CloudWatch
134. AWS Shield
135. A data analytics company stores its data on Amazon Simple Storage Service (Amazon S3) and wants to do SQL based analysis on this data with minimum effort. As a Cloud Practitioner, which of the following AWS services will you suggest for this use case?
136. Amazon DynamoDB
137. Amazon Redshift
138. Amazon Athena
139. Amazon Aurora
140. Which of the following AWS services is essential for implementing security of resources in AWS Cloud?
141. AWS Shield
142. AWS Identity and Access Management (IAM)
143. Amazon CloudWatch
144. AWS Web Application Firewall (AWS WAF)
145. A company wants a fully managed, flexible, and scalable file storage system, with low latency access, for its Windows-based applications. Which AWS service is the right choice for the company?
146. Amazon Elastic File System (Amazon EFS)
147. **Amazon FSx for Windows File Server**
148. Amazon FSx for Lustre
149. Amazon Elastic Block Storage (Amazon EBS)
150. What are the different gateway types supported by AWS Storage Gateway service?
151. Tape Gateway, File Gateway and Block Gateway
152. Object Gateway, File Gateway and Block Gateway
153. Tape Gateway, Object Gateway and Volume Gateway
154. **Tape Gateway, File Gateway and Volume Gateway**
155. Which of the following statements are true regarding Amazon Simple Storage Service (Amazon S3) (Select two)?
156. You can install databases on Amazon Simple Storage Service (Amazon S3)
157. Amazon Simple Storage Service (Amazon S3) is a fully managed, elastic file storage system service used as a backup
158. **Amazon Simple Storage Service (Amazon S3) stores data in a flat non-hierarchical structure**
159. Amazon Simple Storage Service (Amazon S3) is a block storage service designed for a broad range of workloads
160. **Amazon Simple Storage Service (Amazon S3) is a key-value based object storage service**
161. Which of the following is the best practice for application architecture on AWS Cloud?
162. Build monolithic applications
163. Build tightly coupled components
164. **Use synchronous communication between components**
165. Build loosely coupled components
166. Which of the following statements are CORRECT regarding the AWS VPC service? (Select two)
167. A Security Group can have both allow and deny rules
168. A Network Address Translation instance (NAT instance) is managed by AWS
169. **A Security Group can have allow rules only**
170. **A Network Address Translation gateway (NAT gateway) is managed by AWS**
171. A network access control list (network ACL) can have allow rules only