Mock Interview Guide

AWS-LAMBDA

Instructions for Interviewer:

- You are playing the role of **interviewer**. Use this guide as a script.
- Ask each question one at a time. Follow the steps: **Definition → Details → Scenario → Follow-up.**
- If the interviewee struggles, use the **hint**.
- The goal is to keep it conversational and practical. Help the interviewee think and express their learning.
- **colors assigned:** Questions Answers Hint

Freshers - Level

AWS - LAMBDA

(10 Easy Interview Questions)

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1. "What is AWS Lambda?"

Expected Answer: Lambda is a serverless compute service that runs code in response to events, without provisioning or managing servers.

Hint: No servers, just run code.

2. "Which languages does AWS Lambda support?"

Expected Answer: Python, Node.js, Java, Go, .NET, Ruby, and custom runtimes.

Hint: Most major languages are supported.

3. "What is the default timeout for a Lambda function?"

Expected Answer: 3 seconds (can be increased up to 15 minutes).

Hint: Short runtime by default.

4. "Where is your Lambda code stored?"

Expected Answer: It's stored in AWS, typically uploaded via ZIP or through the console, or pulled from S3 or ECR (for containers).

Hint: Upload directly or link to source.

5. "What is an event source in Lambda?"

Expected Answer: An AWS service or app that triggers the Lambda function, like S3, API Gateway, or CloudWatch.

Hint: Something happens → Lambda runs.

6. "Can Lambda connect to RDS or DynamoDB?"

Expected Answer: Yes, it can connect to both using appropriate SDKs and permissions.

Hint: Use IAM and VPC when needed.

7. “What are Lambda layers?”

Expected Answer: Lambda layers let you package libraries and dependencies separately from your main function code.

Hint: Reusable components.

8. “What is a cold start in Lambda?”

Expected Answer: It’s the initial delay when AWS provisions and starts a new Lambda container.

Hint: Happens when no instance is already warm.

9. “How do you manage environment variables in Lambda?”

Expected Answer: Set them in the Lambda console or via CLI; can be encrypted using KMS.

Hint: Config without hardcoding.

10. “What is the pricing model of Lambda?”

Expected Answer: Pay per request and execution time (GB-seconds). First 1M requests/month are free.

Hint: You pay for usage, not idle time.

SCENARIO-BASED INTERVIEW QUESTIONS

1. **Your Lambda function fails with a timeout error. What should you check?**

   Expected Answer: Review execution time vs. timeout setting, optimize the function code, or increase the timeout.

   Hint: Code takes too long — raise the limit or speed it up.

2. **A Lambda function triggered by S3 doesn’t run. What could be wrong?**

   Expected Answer: Check if the trigger is correctly set and if the Lambda has permissions to access S3.

   Hint: IAM role + event configuration.

3. **You need to use a Python library in Lambda that's not built-in. What should you do?**

   Expected Answer: Bundle it with your code or use a Lambda layer.

   Hint: Package it yourself or layer it.

4. **Your function can’t connect to RDS. What’s the issue?**

   Expected Answer: It might be missing VPC configuration or security group rules.

   Hint: Private resources need VPC access.

5. **You deployed a new version but logs still show old behavior. Why?**

Expected Answer: Alias or versioning might be pointing to an old version.

Hint: Check the alias/version deployed.

PROJECT-BASED INTERVIEW QUESTIONS

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1. **Build a Lambda function triggered by S3 file uploads to process the file.**

Expected Answer:

- **Set S3 event trigger**
- **Parse file content**
- **Log results or store in DB**

Hint: Event → function → process.

2. **Create a Lambda that sends an email when a user signs up.**

Expected Answer:

- **Trigger from Cognito or custom event**
- **Use SES or SNS to send the email**

Hint: Event → email action.

3. Build a simple REST API using Lambda and API Gateway.

Expected Answer:

- **Define routes in API Gateway**
- **Link to different Lambda functions**
- **Handle HTTP methods**

Hint: API → Lambda integration.

4. Use Lambda to clean up old files in S3 every day.

Expected Answer:

- **Scheduled trigger (EventBridge/CloudWatch)**
- **Scan and delete old files in S3**

Hint: Automate cleanup with cron-like scheduling.

Medium - Level

AWS - LAMBDA

(Interview Questions- 1 to 2 Years Experience)

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1. **“What is the maximum execution time for a Lambda function?”**

   Expected Answer: 15 minutes (900 seconds).

   Hint: Keep functions short and efficient.

2. **“How does concurrency work in Lambda?”**

   Expected Answer: Each event gets its own instance; Lambda scales automatically but has concurrency limits.

   Hint: Parallel execution per request.

3. **“What is reserved concurrency?”**

   Expected Answer: Reserved concurrency ensures a set number of concurrent executions for a function, preventing overuse.

Hint: Guarantee or limit usage.

4. **“How do you version a Lambda function?”**

Expected Answer: You publish a version; versions are immutable. Use aliases to manage live traffic.

Hint: Version + alias = release control.

5. **“How do you secure a Lambda function?”**

Expected Answer: Use least-privilege IAM roles, VPC, KMS for secrets, and access controls.

Hint: Always follow least privilege.

6. **“What’s the difference between synchronous and asynchronous invocations?”**

Expected Answer: Sync waits for a result (e.g., API Gateway); async queues the event and returns immediately (e.g., S3, SNS).

Hint: One waits, one doesn’t.

7. **“How do you handle Lambda function errors?”**

Expected Answer: Use try/catch in code, DLQs for async errors, and monitoring via CloudWatch Logs.

Hint: Log it, retry it, alert it.

8. **“What’s the benefit of Lambda with EventBridge?”**

Expected Answer: Automate event-driven flows across AWS without custom polling.

Hint: Event-driven automation.

9. **“Can Lambda run Docker containers?”**

Expected Answer: Yes, Lambda now supports container images (up to 10 GB) via ECR.

Hint: Package more dependencies with containers.

10. **“What’s the role of context object in Lambda?”**

Expected Answer: It provides info like function name, memory, request ID, and timeout remaining.

Hint: Runtime metadata access.

SCENARIO-BASED INTERVIEW QUESTIONS

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1. **Your Lambda is failing due to memory errors. How do you fix it?**

   Expected Answer: Increase memory allocation or optimize code for memory use.

   Hint: More memory → more CPU too.

2. **You want to control the amount of traffic to a Lambda function. What do you use?**

   Expected Answer: Use reserved or provisioned concurrency to limit invocation rate.

   Hint: Concurrency controls throttle load.

3. **A Lambda function occasionally fails due to external API limits. What's your strategy?**

   Expected Answer: Add retry logic, rate limiting, and circuit breakers.

   Hint: Handle failure gracefully.

4. **You have multiple versions of a function in production. How do you roll back safely?**

   Expected Answer: Use aliases to shift traffic back to the older version.

   Hint: Aliases allow version control.

5. **You're asked to track how long each Lambda takes. How?**

   Expected Answer: Use CloudWatch metrics or custom logging with timestamps.

   Hint: Logs and built-in metrics both help.

PROJECT-BASED INTERVIEW QUESTIONS

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1. **Design a Lambda function that processes Kinesis stream data.**

   Expected Answer:

- **Kinesis trigger**
- **Batch records, process, and store in DB**
- **Handle retries and checkpointing**

   Hint: Streaming → batch → process.

2. Build a Lambda that integrates with Slack to post messages.

Expected Answer:

- **API Gateway to receive input**
- **Lambda formats and sends to Slack webhook**

Hint: Event → API → Lambda → Slack.

3. Create a Lambda function for scheduled backups to S3.

Expected Answer:

- **Trigger using EventBridge**
- **Copy data to S3 (or snapshot)**

Hint: Use cron expression.

4. Build a serverless image resize service using Lambda.

Expected Answer:

- **S3 upload triggers Lambda**
- **Lambda resizes and saves output**

Hint: Upload → Resize → Save.

Hard - Level

AWS - LAMBDA

(Interview Questions - 3+ Years Experience)

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1. **“What is provisioned concurrency in Lambda?”**

   Expected Answer: It pre-warms Lambda instances to avoid cold starts and guarantees consistent performance.

   Hint: Pay to stay warm.

2. **“How do you optimize cold starts?”**

   Expected Answer: Use provisioned concurrency, reduce dependencies, keep package size small, and prefer lighter runtimes.

   Hint: Speed up initial execution.

3. **“How do you monitor Lambda performance?”**

   Expected Answer: Use CloudWatch metrics, custom metrics, X-Ray for tracing, and alarms.

   Hint: Metrics + Tracing = Observability.

4. **“What are the deployment strategies for Lambda?”**

Expected Answer: All-at-once, canary, linear, and rolling updates using aliases and CodeDeploy.

Hint: Controlled rollouts prevent disasters.

5. **“Explain Lambda's integration with Step Functions.”**

Expected Answer: Lambda can be used as tasks in workflows, enabling coordination of multiple steps.

Hint: Orchestrate complex flows.

6. **“What’s the max package size in Lambda?”**

Expected Answer: 50 MB for direct upload, 250 MB unzipped, or 10 GB using container images.

Hint: Bigger images need ECR.

7. **“How do you handle large payloads in Lambda?”**

Expected Answer: Use S3 to store payload and pass the reference, or increase limits via API Gateway.

Hint: Store big, process small.

8. **“What happens when you hit Lambda concurrency limits?”**

Expected Answer: New invocations are throttled (sync fails, async retries later); monitor and increase limit if needed.

Hint: Throttling = too much traffic.

9. **“How do you implement observability in large Lambda systems?”**

   Expected Answer: Use structured logging, X-Ray tracing, log correlation IDs, dashboards, and alerts.

   Hint: Connect logs + traces + metrics.

10. **“Explain the role of Dead Letter Queues (DLQs).”**

    Expected Answer: DLQs store failed asynchronous Lambda events for debugging or retry.

    Hint: Catch failures you’d otherwise lose.

SCENARIO-BASED INTERVIEW QUESTIONS

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1. **You experience frequent cold starts during peak hours. What’s your approach?**

   Expected Answer: Use provisioned concurrency and optimize code/runtime size.

   Hint: Pre-warm your function.

2. **Lambda execution time suddenly increased. How do you investigate?**

Expected Answer: Review logs, identify code bottlenecks, or check external dependency latency.

Hint: Find what's slowing it down.

3. **A function is triggered twice for the same event. What could be the cause?**

Expected Answer: Retry behavior in async triggers or duplicate event delivery (e.g., S3).

Hint: Ensure idempotency in logic.

4. **You need to route traffic 10% to v2 and 90% to v1. How?**

Expected Answer: Use Lambda aliases and weighted traffic shifting.

Hint: Gradual rollout via alias config.

5. **Function fails with "out of memory" errors occasionally. What would you do?**

Expected Answer: Increase memory allocation or optimize memory usage; monitor metrics.

Hint: More memory = more CPU too.

PROJECT-BASED INTERVIEW QUESTIONS

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1. **Build an event-driven serverless architecture for order processing.**

Expected Answer:

- **API Gateway → Lambda → SQS → other Lambdas**
- **Use DLQs, CloudWatch, and X-Ray**

Hint: Decouple stages via queues.

2. **Create a Lambda-based CI/CD pipeline using GitHub and CodePipeline.**

Expected Answer:

- **GitHub → CodePipeline → Lambda for tests/deploy**
- **Notify via SNS or Slack**

Hint: Automate deployments with Lambda steps.

3. **Migrate a monolithic cron job into parallel Lambda functions.**

Expected Answer:

- **Split job into independent steps**

- **Trigger each with EventBridge or Step Functions**

Hint: Divide and orchestrate.

4. Use Lambda to sync data between two AWS accounts.

Expected Answer:

- **Use cross-account roles**
- **Lambda pulls/pushes data using SDK**

Hint: Secure cross-account data flow.