🔷 Day 74 – AWS + Web3: Building Decentralized Applications with Cloud

Section 1: Basics of AWS + Web3

Q1. What is Web3 in simple terms?
Answer: Web3 = decentralized internet powered by blockchain, smart contracts, and crypto.
💡 Tip: Contrast with Web2 (centralized servers).

Q2. How does AWS fit into Web3?
Answer: AWS provides scalable infra (compute, storage, APIs) to support DApps & blockchain workloads.
💡 Tip: AWS = infra, blockchain = logic.

Q3. What is Amazon Managed Blockchain?
Answer: A fully managed service to run Ethereum & Hyperledger Fabric networks.
💡 Tip: Removes node setup & scaling headaches.

Section 2: Blockchain on AWS

Q4. Why run blockchain on AWS instead of on-prem?
Answer: Faster setup, elastic scaling, managed nodes, global infra.
💡 Tip: Interviews love "scalability + reliability" answers.

Q5. What is the difference between Hyperledger Fabric & Ethereum on AWS?
Answer: Fabric = permissioned enterprise blockchain; Ethereum = public blockchain.
💡 Tip: Mention "enterprise vs public use cases".

Q6. How do you connect a DApp to AWS Blockchain nodes?
Answer: Use Ethereum JSON-RPC APIs exposed via AWS Managed

Blockchain.
💡 Tip: Common with Web3.js / Ethers.js.

Section 3: Storage in AWS + Web3

Q7. Why use AWS S3 in Web3?
Answer: For storing off-chain data like images, NFTs, large files.
💡 Tip: On-chain storage = expensive, so off-chain is common.

Q8. How does AWS integrate with IPFS?
Answer: Store files in IPFS, back them up in S3, or use gateways.
💡 Tip: Hybrid approach ensures reliability.

Q9. What is the role of AWS ElastiCache in Web3 apps?
Answer: Cache blockchain queries & metadata for faster DApp performance.
💡 Tip: Especially useful for NFT marketplaces.

Section 4: Smart Contracts + AWS Backends

Q10. How do you interact with Ethereum smart contracts using AWS?
Answer: Use Web3.js/Ethers.js inside AWS Lambda or EC2.
💡 Tip: Lambda = lightweight contract interactions.

Q11. How does API Gateway help Web3 apps?
Answer: Exposes REST/GraphQL endpoints for smart contract interaction.
💡 Tip: Provides security + throttling.

Q12. Why use DynamoDB in Web3 apps?
Answer: Store user profiles, wallet addresses, off-chain events.
💡 Tip: Blockchain = immutable, DynamoDB = flexible.

Section 5: Identity & Security

Q13. How can AWS Cognito integrate with Web3 wallets?
Answer: Combine wallet-based login (Metamask) with Cognito for hybrid auth.
💡 Tip: Best of Web2 + Web3 login.

Q14. How do you secure API calls in Web3 apps on AWS?
Answer: Use API Gateway keys + IAM roles + JWTs.
💡 Tip: Security = shared responsibility.

Q15. What's the role of KMS (Key Management Service) in Web3?
Answer: Store & manage private keys securely.
💡 Tip: Never hardcode private keys in code.

Section 6: Event-Driven Web3 on AWS

Q16. How can blockchain events trigger AWS services?
Answer: Ethereum emits events → Lambda listens → stores in DynamoDB.
💡 Tip: Great for real-time notifications.

Q17. What is AWS EventBridge in Web3?
Answer: Event bus to handle smart contract triggers & integrate with apps.
💡 Tip: Used for async processing.

Q18. How do you handle NFT minting at scale with AWS?
Answer: Use Lambda + S3 for images + Blockchain node for minting.
💡 Tip: Decouple minting & media storage.

Section 7: Analytics & Monitoring

Q19. How do you analyze blockchain transactions using AWS?
Answer: Store in DynamoDB/Redshift, query with Athena, visualize in

QuickSight.
💡 Tip: Data pipelines = Glue + Kinesis.

Q20. What is AWS OpenSearch used for in Web3?
Answer: Index blockchain events for fast search & filtering.
💡 Tip: Example → NFT marketplace search.

Q21. How do you monitor blockchain apps on AWS?
Answer: CloudWatch + X-Ray to track smart contract calls & backend latency.
💡 Tip: Interviewers love observability answers.

Section 8: Real-World Scenarios

Q22. How to design a decentralized marketplace on AWS?
Answer: S3 for NFTs, DynamoDB for metadata, Managed Blockchain for ownership, CloudFront for delivery.
💡 Tip: Mention cost optimization with caching.

Q23. How to handle millions of wallet logins on AWS?
Answer: Cognito + DynamoDB + Auto Scaling API Gateway.
💡 Tip: Always bring scalability into answers.

Q24. How to combine AWS & Web3 for DeFi apps?
Answer: Smart contracts for logic, Lambda for APIs, RDS for off-chain accounting.
💡 Tip: Use KMS for secure key handling.

Q25. How to use AWS for NFT marketplaces?
Answer: S3 + CloudFront for assets, Rekognition for moderation, Managed Blockchain for ownership.
💡 Tip: Great real-world project answer.

Section 9: Hybrid & Multi-Cloud Web3

Q26. Can AWS + Web3 apps run multi-cloud?
Answer: Yes, hybrid setups use AWS for backend + IPFS/Polygon for blockchain.
💡 Tip: Hybrid = best of centralized + decentralized.

Q27. What is the challenge of combining AWS with Web3?
Answer: Decentralization vs centralization conflict. AWS = centralized infra.
💡 Tip: Address with hybrid + redundancy.

Q28. How do you ensure Web3 apps on AWS are highly available?
Answer: Multi-AZ EC2 + Auto Scaling + Blockchain node redundancy.
💡 Tip: Resilience = key for Web3 apps.

Section 10: Future & Best Practices

Q29. What is the future of AWS + Web3?
Answer: Hybrid dApps → blockchain for trust + AWS for scale.
💡 Tip: Interviewers like forward-looking answers.

Q30. What best practices should you follow in AWS Web3 apps?
Answer: Secure keys, minimize on-chain storage, scale APIs, use caching.
💡 Tip: Always balance decentralization + performance.