🔷 Day 76 – AWS + Web3: Hands-On Use Cases (30 Q&As)

Section 1: NFTs on AWS

Q1. How do you store NFT images on AWS?
Answer: Store images in **S3** with versioning enabled and deliver via **CloudFront** for global low-latency access.
💡 **Tip:** Always store metadata (name, description, traits) separately in **DynamoDB** or JSON files.

Q2. How do you mint NFTs with AWS?
Answer: Use **AWS Lambda** with **Ethers.js/Web3.js** to interact with smart contracts, then store metadata in DynamoDB.
💡 **Tip:** Decouple media storage (S3) from contract logic for scalability.

Q3. Why use Rekognition for NFTs?
Answer: Amazon Rekognition can detect fake, duplicate, or harmful content in NFT uploads.
💡 **Tip:** This prevents scams and improves marketplace trust.

Section 2: Gaming + Metaverse

Q4. How can AWS host Web3 gaming assets?
Answer: Store 3D models/textures in **S3**, deliver with **CloudFront**, and track ownership on **Managed Blockchain**.
💡 **Tip:** Use caching to reduce asset delivery costs.

Q5. How do you scale multiplayer Web3 games?
Answer: Use **GameLift** for multiplayer infra and blockchain nodes for asset ownership verification.
💡 **Tip:** Combine off-chain game logic with on-chain economy.

Q6. How do wallets integrate in AWS-based games?
Answer: Use **Cognito** for Web2 auth and integrate with **Metamask** or WalletConnect for Web3 login.
💡 **Tip:** Hybrid login boosts adoption.

Section 3: DeFi on AWS

Q7. How to build a DeFi lending app on AWS?
Answer: Smart contracts handle loans, **DynamoDB** stores user activity, **KMS** secures keys.
💡 **Tip:** Always separate on-chain finance logic from off-chain analytics.

Q8. How does AWS Glue help DeFi?
Answer: AWS Glue processes blockchain transaction logs into structured data for analytics.
💡 **Tip:** Use with **Redshift** for performance insights.

Q9. How can Lambda help in yield farming automation?
Answer: Lambda triggers staking/unstaking at intervals by calling smart contracts.
💡 **Tip:** Event-driven automation reduces human error.

Section 4: DAOs on AWS

Q10. How to host DAO dashboards?
Answer: Use **AppSync (GraphQL)** + **DynamoDB** for DAO votes & proposals + Managed Blockchain for consensus.
💡 **Tip:** GraphQL simplifies data queries for users.

Q11. Can AWS Comprehend help DAOs?
Answer: Yes, analyze governance proposals and community discussions with **NLP sentiment analysis**.
💡 **Tip:** Helps DAOs make data-driven decisions.

Q12. How to store DAO votes off-chain?
Answer: Store signed wallet addresses + votes in **DynamoDB** for faster lookups.
💡 **Tip:** Off-chain storage reduces blockchain gas costs.

Section 5: Storage & Off-Chain Data

Q13. Why combine S3 with IPFS for NFTs?
Answer: IPFS ensures decentralization; **S3** ensures uptime and reliable backup.
💡 **Tip:** Hybrid storage = performance + trust.

Q14. How does Glacier help Web3 apps?
Answer: Archive old NFT/media data in **Glacier** for low cost.
💡 **Tip:** Store only frequently accessed data in S3.

Q15. How to handle huge blockchain logs?
Answer: Stream logs using **Kinesis**, store in **S3**, query with **Athena** or **Redshift**.
💡 **Tip:** Don't store raw logs in DynamoDB—use pipelines.

Section 6: Event-Driven Workflows

Q16. How to notify users of NFT mint success?
Answer: Smart contract event → **Lambda** → send **SNS notification** (email/SMS).
💡 **Tip:** Event-driven flows make apps real-time.

Q17. How to automate DAO rewards?
Answer: EventBridge listens to DAO events → Lambda calculates → DynamoDB updates rewards.
💡 **Tip:** Serverless = low maintenance cost.

Q18. How to scale event processing?
Answer: Use **SQS** + Lambda concurrency.
💡 **Tip:** Avoid overloading blockchain nodes with requests.

Section 7: Security

Q19. How do you secure private keys in AWS?
Answer: Store in **AWS KMS** or **CloudHSM**, never in plain code.
💡 **Tip:** Rotate keys regularly.

Q20. How to protect NFT APIs?
Answer: Use **API Gateway** + Cognito + throttling + WAF.
💡 **Tip:** Prevents abuse from bots.

Q21. How does Shield help Web3 apps?
Answer: AWS Shield protects against DDoS attacks.
💡 **Tip:** Must-have for NFT drops and marketplace launches.

Section 8: Monitoring & Analytics

Q22. How to track NFT sales analytics?
Answer: Store events in DynamoDB, query with Athena, visualize in QuickSight.
💡 **Tip:** This helps marketplaces optimize pricing.

Q23. How to monitor wallet logins?
Answer: Track Cognito + CloudWatch logs.
💡 **Tip:** Detect unusual login spikes (possible attacks).

Q24. How to debug contract calls?
Answer: Use **X-Ray** to trace Lambda → RPC node latency.
💡 **Tip:** Trace bottlenecks before scaling infra.

Section 9: Hybrid Architectures

Q25. Can AWS host both Web2 + Web3 apps?
Answer: Yes. Web2 APIs run in EC2/Lambda, Web3 contracts run via Managed Blockchain.
💡 **Tip:** This helps businesses gradually move to Web3.

Q26. Why hybrid IPFS + AWS is powerful?
Answer: IPFS ensures decentralization, AWS ensures uptime.
💡 **Tip:** Always back up critical assets in S3.

Q27. How to integrate Polygon with AWS?
Answer: Use **Lambda** + Polygon RPC endpoints.
💡 **Tip:** Useful for scaling beyond Ethereum gas fees.

Section 10: Future & Best Practices

Q28. What's a good AWS + Web3 project idea?
Answer: NFT marketplace, DAO dashboard, DeFi lending platform, or Web3 gaming app.
💡 **Tip:** Showcase hybrid skills in projects for interviews.

Q29. What's the biggest AWS + Web3 challenge?
Answer: Balancing decentralization with centralized AWS infra.
💡 **Tip:** Always mention this trade-off in interviews.

Q30. What's the golden rule?
Answer: On-chain = **trust**, Off-chain = **scale & performance**.
💡 **Tip:** This single line wins interview points.