🔷 Day 72 – Cloud Cost Optimization & Billing (30 Q&As)

Section 1: Cloud Economics Basics

Q1. What's the difference between CapEx and OpEx in cloud?
Answer: CapEx = upfront hardware investment. OpEx = pay-as-you-go cloud services. Cloud shifts IT spend from CapEx → OpEx.
💡 Tip: Always mention **flexibility & scalability**.

Q2. Why is cloud often cheaper than on-prem?
Answer: No upfront cost, elastic scaling, and usage-based pricing. You pay only for what you use.
💡 Tip: Add **TCO (Total Cost of Ownership)**.

Q3. What are the main factors in cloud cost?
Answer: Compute (instances), storage, networking, managed services, and data transfer.
💡 Tip: Interviewers like when you mention **hidden costs = data transfer**.

Section 2: Compute Optimization

Q4. How do you reduce EC2 costs?
Answer: Use right-sizing, Auto Scaling, Spot Instances, and Reserved Instances.
💡 Tip: Spot = 70–90% cheaper, great for flexible workloads.

Q5. When should you use Reserved Instances?
Answer: For steady, predictable workloads (1–3 year commitment).
💡 Tip: Savings Plans are more flexible than RIs.

Q6. What's the role of Auto Scaling in cost optimization?
Answer: It scales instances up/down with demand, avoiding over-

provisioning.
💡 Tip: Saves cost by matching real usage.

Section 3: Storage Optimization

Q7. How to optimize S3 storage costs?
Answer: Use lifecycle policies to move old data to IA or Glacier. Enable versioning + intelligent tiering.
💡 Tip: Glacier is cheapest for long-term archival.

Q8. Difference between EBS, EFS, and S3 in cost?
Answer: EBS = block, higher cost; EFS = elastic file, pay per GB; S3 = object, cheapest.
💡 Tip: Choose storage by **access pattern**.

Q9. How do you save cost in RDS storage?
Answer: Use storage autoscaling, snapshots, and reserved RDS instances.
💡 Tip: Also consider Aurora Serverless.

Section 4: Networking & Data Transfer

Q10. Why are data transfer costs important?
Answer: Data leaving AWS (egress) costs money, ingress is free. Cross-region traffic is costly.
💡 Tip: Minimize cross-AZ/region traffic.

Q11. How to reduce data transfer costs?
Answer: Use CloudFront CDN, VPC endpoints, and keep traffic within same region/AZ.
💡 Tip: Cache at edge = huge savings.

Q12. How to optimize hybrid connectivity costs?
Answer: Use Direct Connect for high-volume data instead of VPN.
💡 Tip: Stable + cheaper per GB at scale.

Section 5: Monitoring & Billing Tools

Q13. How do you track cloud spending?
Answer: Use AWS Cost Explorer, Budgets, and Cost & Usage Reports.
💡 Tip: Set alerts when budgets exceed threshold.

Q14. What is AWS Trusted Advisor?
Answer: A tool that recommends cost optimization, security, and performance improvements.
💡 Tip: Mention cost-saving checks.

Q15. How to enable chargeback for different teams?
Answer: Use resource tagging + AWS Cost Allocation Tags.
💡 Tip: Common in enterprises with many teams.

Section 6: Serverless & Containers

Q16. How do Lambda functions save cost?
Answer: Pay only per execution and duration, no idle server costs.
💡 Tip: Best for unpredictable workloads.

Q17. How do containers reduce cost?
Answer: Higher density on same EC2, fewer idle resources. Fargate = pay per task.
💡 Tip: Mention Kubernetes/EKS scaling.

Q18. How does API Gateway pricing work?
Answer: Pay per API request. Use caching to reduce calls and costs.
💡 Tip: Cache reduces repeated DB hits.

Section 7: Database Cost Optimization

Q19. How to save DynamoDB costs?
Answer: Use On-Demand for unpredictable workloads, Provisioned + Auto Scaling for steady workloads.
💡 Tip: Use DAX (cache) to cut read costs.

Q20. How to save cost in RDS?
Answer: Right-size DB, stop non-prod DBs, use reserved RDS.
💡 Tip: Aurora Serverless scales on demand.

Q21. When to use Aurora Serverless?
Answer: For intermittent or unpredictable workloads where full-time DB is expensive.
💡 Tip: Pay per request + compute time.

Section 8: Governance & Best Practices

Q22. What's the Well-Architected Cost Pillar?
Answer: One of AWS's 5 pillars, focuses on avoiding unneeded resources, scaling with demand, and optimizing cost.
💡 Tip: Mention Well-Architected Framework in interviews.

Q23. How do you enforce cost controls org-wide?
Answer: Use AWS Organizations, SCPs, Budgets, and Guardrails.
💡 Tip: Central governance = reduced waste.

Q24. What is rightsizing in cost optimization?
Answer: Continuously monitoring and adjusting instance size to match workload.
💡 Tip: Common in cost optimization interviews.

Section 9: Real-World Scenarios

Q25. How do you optimize cost for dev/test environments?
Answer: Schedule EC2/RDS to stop during off-hours. Use Spot

Instances for testing.
💡 Tip: Non-prod doesn't need 24/7 uptime.

Q26. How do you reduce analytics costs in AWS?
Answer: Use S3 + Athena (pay per query) instead of running full clusters.
💡 Tip: Great for ad-hoc queries.

Q27. How do you optimize cost for video streaming apps?
Answer: Store in S3, distribute with CloudFront, transcode with MediaConvert on demand.
💡 Tip: Avoid serving video from EC2.

Section 10: Advanced Tips

Q28. How to avoid over-provisioned resources?
Answer: Monitor utilization with CloudWatch and use Auto Scaling to match load.
💡 Tip: Over-provisioning is the #1 cost driver.

Q29. How do you prevent cloud bill shocks?
Answer: Set up Billing Alarms + Budgets. Enable consolidated billing for discounts.
💡 Tip: Always show proactive cost awareness.

Q30. How do you continuously optimize costs?
Answer: Review Cost Explorer + Trusted Advisor monthly, use automation (like Lambda to stop idle resources).
💡 Tip: Cost optimization = ongoing process.