**Section 1: Basic Conceptual Questions (20 Questions)**

**1. What does EC2 stand for in AWS?**  
A. Elastic Compute Cloud  
B. Elastic Cloud Computing  
C. Enhanced Cloud Computing  
D. Efficient Compute Cloud  
**Correct Answer:** A

**2. Which of the following is NOT a type of AWS S3 storage class?**  
A. Standard  
B. Intelligent-Tiering  
C. Glacier Deep Archive  
D. On-Premises Storage  
**Correct Answer:** D

**3. What is the primary function of AWS IAM?**  
A. Provide storage solutions  
B. Manage user access and permissions  
C. Monitor application performance  
D. Enable virtual machine scalability  
**Correct Answer:** B

**4. AWS CloudFront is primarily used for:**  
A. Scaling applications automatically  
B. Content delivery and caching  
C. Storing backups  
D. Balancing server loads  
**Correct Answer:** B

**5. Which of the following accurately describes an AMI in AWS?**  
A. A database for managing cloud storage  
B. A template for creating virtual machines  
C. A monitoring tool for cloud performance  
D. A networking protocol  
**Correct Answer:** B

**6. How does AWS S3 achieve high availability?**  
A. By storing data across multiple servers in one region  
B. By using edge locations exclusively  
C. Through replication across Availability Zones  
D. By utilizing high-speed storage devices  
**Correct Answer:** C

**7. What is an example of a dynamic scaling plan in AWS?**  
A. Adding instances on a fixed schedule  
B. Automatically increasing resources based on traffic  
C. Removing resources manually when not in use  
D. Creating additional storage manually  
**Correct Answer:** B

**8. Which algorithm is NOT typically used in AWS Load Balancing?**  
A. Round Robin  
B. Least Connections  
C. Random Distribution  
D. Weighted Least Connections  
**Correct Answer:** C

**9. Snapshots in AWS are best described as:**  
A. Full backups of a running EC2 instance  
B. Incremental backups of a storage volume  
C. Logs of network activity  
D. Temporary compute resources  
**Correct Answer:** B

**10. What is the maximum size of a single file that can be uploaded to AWS S3?**  
A. 5 GB  
B. 10 GB  
C. 100 GB  
D. 5 TB  
**Correct Answer:** D

**11. What is the main advantage of using AMI to launch an EC2 instance?**  
A. Reduces latency in content delivery  
B. Preconfigures the instance with an OS and applications  
C. Automatically scales resources during high traffic  
D. Stores encrypted data for compliance  
**Correct Answer:** B

**12. AWS IAM policies are written in which format?**  
A. JSON  
B. YAML  
C. XML  
D. Plain Text  
**Correct Answer:** A

**13. Which of the following AWS services is most suitable for storing and retrieving backup data infrequently accessed?**  
A. AWS CloudFront  
B. AWS S3 Glacier  
C. AWS EC2  
D. AWS IAM  
**Correct Answer:** B

**14. What is the purpose of Reserved Instances in AWS EC2?**  
A. To provide on-demand compute power  
B. To reduce cost for predictable workloads  
C. To create temporary storage  
D. To ensure high availability  
**Correct Answer:** B

**15. Which AWS service allows secure distribution of content globally?**  
A. AWS Elastic Beanstalk  
B. AWS CloudFront  
C. AWS RDS  
D. AWS S3  
**Correct Answer:** B

**16. How many Availability Zones does AWS typically offer per region?**  
A. One  
B. Two or more  
C. Three  
D. Five or more  
**Correct Answer:** B

**17. Which of the following best defines horizontal scaling?**  
A. Increasing the power of existing resources  
B. Decreasing storage in a region  
C. Adding more instances to handle traffic  
D. Shifting workload to on-premises servers  
**Correct Answer:** C

**18. AWS S3 supports which of the following object storage types?**  
A. File  
B. Block  
C. Object  
D. Cache  
**Correct Answer:** C

**19. Load Balancers in AWS distribute traffic across:**  
A. Different regions  
B. EC2 instances in one or more AZs  
C. Storage volumes in S3  
D. All IAM users  
**Correct Answer:** B

**20. The benefits of AWS CloudFront include all EXCEPT:**  
A. Improved application scalability  
B. Reduced content delivery latency  
C. Fully automated server provisioning  
D. Increased website performance  
**Correct Answer:** C

**Section 2: Analytical Questions (10 Questions)**

**21. You observe that your web application is facing slow performance during peak traffic hours. Which AWS service can help improve application response times?**  
A. AWS EC2  
B. AWS S3  
C. AWS CloudFront  
D. AWS IAM  
**Correct Answer:** C

**22. An organization needs to give temporary access to an S3 bucket for an external user. Which IAM feature should they use?**  
A. Role  
B. Group  
C. Policy  
D. Access Key  
**Correct Answer:** A

**23. If an EC2 instance is terminated, what happens to the data stored on an attached EBS volume with default settings?**  
A. It is automatically backed up.  
B. It is retained for 24 hours.  
C. It is deleted unless marked for retention.  
D. It remains in a read-only state.  
**Correct Answer:** C

**24. A company plans to distribute video content globally. Which AWS service is most suitable for this task?**  
A. AWS S3 Glacier  
B. AWS EC2 Auto Scaling  
C. AWS CloudFront  
D. AWS IAM  
**Correct Answer:** C

**25. Which scaling plan is best for a steady and predictable workload?**  
A. Manual Scaling  
B. Scheduled Scaling  
C. Dynamic Scaling  
D. Reactive Scaling  
**Correct Answer:** B

**26. What happens when a load balancer detects an unhealthy EC2 instance?**  
A. It redirects traffic to healthy instances.  
B. It stops the instance automatically.  
C. It reboots the instance.  
D. It notifies the user to replace the instance.  
**Correct Answer:** A

**27. How does AWS S3 Intelligent-Tiering reduce costs?**  
A. By compressing stored files  
B. By automating the movement of data between storage classes  
C. By using dedicated servers  
D. By enforcing limits on file sizes  
**Correct Answer:** B

**28. A policy attached to an IAM group will affect:**  
A. Only individual users in the group  
B. All users in the group  
C. No one unless applied manually  
D. Only users with Admin roles  
**Correct Answer:** B

**29. Which feature ensures automatic scaling based on traffic patterns?**  
A. Elastic Load Balancer  
B. CloudFront Edge Locations  
C. Auto Scaling Groups  
D. IAM Policies  
**Correct Answer:** C

**30. Why are edge locations critical for CloudFront's operation?**  
A. They store all database files.  
B. They deliver content to users with low latency.  
C. They act as main servers for EC2 instances.  
D. They handle billing operations for AWS.  
**Correct Answer:** B

**31. Your team needs to host a website with frequently changing content and high traffic. Which combination of AWS services is ideal?**  
A. S3 with CloudFront  
B. EC2 with Auto Scaling and Load Balancing  
C. IAM with S3 Glacier  
D. EC2 with Reserved Instances  
**Correct Answer:** B

**32. A developer needs to back up a 1 TB dataset stored on an EBS volume. What is the most cost-effective way to create a backup?**  
A. Create a new volume and copy the data  
B. Take a snapshot of the EBS volume  
C. Store the data in S3 Glacier  
D. Replicate the data to another region  
**Correct Answer:** B

**33. Which IAM feature allows secure delegation of access to AWS resources for applications running on EC2 instances?**  
A. Access Keys  
B. Roles  
C. Policies  
D. Groups  
**Correct Answer:** B

**34. A content delivery service needs to ensure users globally receive the fastest response times. What feature of CloudFront should be utilized?**  
A. Edge Locations  
B. Auto Scaling  
C. Elastic IPs  
D. Route Tables  
**Correct Answer:** A

**35. If a web application hosted on EC2 needs to handle seasonal spikes, which AWS feature ensures cost efficiency during low-traffic periods?**  
A. Reserved Instances  
B. Dynamic Scaling  
C. Elastic Load Balancer  
D. Manual Scaling  
**Correct Answer:** B

**36. A policy in IAM denies access to an S3 bucket for a specific group of users. What type of policy is this?**  
A. Inline Policy  
B. Managed Policy  
C. Explicit Deny Policy  
D. Conditional Policy  
**Correct Answer:** C

**37. How can snapshots help when scaling an EC2 instance?**  
A. They replicate the instance for additional traffic.  
B. They save the instance state for quick restoration.  
C. They automate resource scaling.  
D. They allow storing temporary data during scaling.  
**Correct Answer:** B

**38. What happens when you delete an AMI in AWS?**  
A. All associated snapshots are also deleted.  
B. The EC2 instances using the AMI are terminated.  
C. The associated snapshots remain available.  
D. The AMI data is archived in Glacier.  
**Correct Answer:** C

**39. Your organization wants to store logs that need to be retained for years at the lowest cost. Which AWS service should you use?**  
A. S3 Standard  
B. S3 Glacier Deep Archive  
C. EBS Snapshots  
D. CloudFront  
**Correct Answer:** B

**40. Which of the following actions requires an explicit IAM policy statement?**  
A. Accessing publicly shared S3 objects  
B. Accessing CloudFront resources  
C. Accessing EC2 instances within the same account  
D. Accessing S3 buckets across AWS accounts  
**Correct Answer:** D

**Section 4: Advanced Analytical Questions (20 Questions)**

**41. How does AWS Auto Scaling ensure cost-effectiveness during periods of low activity?**  
A. By shutting down all resources  
B. By reducing the number of running instances  
C. By limiting user access to resources  
D. By increasing server capacity  
**Correct Answer:** B

**42. Which of the following metrics would be most useful for triggering dynamic scaling in EC2?**  
A. Number of IAM users  
B. CPU utilization percentage  
C. Availability Zone count  
D. CloudFront edge location traffic  
**Correct Answer:** B

**43. What is a key benefit of AWS CloudFront's caching mechanism?**  
A. It reduces EC2 instance load.  
B. It eliminates the need for S3 storage.  
C. It prevents DDoS attacks entirely.  
D. It automatically backs up data.  
**Correct Answer:** A

**44. If you want to implement granular access control to resources in AWS, which IAM feature should you use?**  
A. Roles  
B. Groups  
C. Inline Policies  
D. Managed Policies  
**Correct Answer:** C

**45. Your application needs to provide read-only access to a specific S3 bucket for a temporary contractor. Which IAM option would best suit this use case?**  
A. Create a role with limited permissions.  
B. Add the contractor to the Administrator group.  
C. Share the root user credentials.  
D. Create a full-access policy.  
**Correct Answer:** A

**46. What is the main advantage of using CloudFront with AWS S3?**  
A. Cost reduction for large datasets  
B. Enhanced security for EC2 instances  
C. Improved content delivery speed  
D. Simplified instance management  
**Correct Answer:** C

**47. What is the significance of the "least connections" algorithm in AWS Load Balancing?**  
A. Routes traffic to the server with the highest availability  
B. Ensures traffic is distributed equally  
C. Sends requests to the server with the fewest active connections  
D. Balances traffic based on request size  
**Correct Answer:** C

**48. How does AWS IAM enhance security in an organization?**  
A. By replicating data across multiple regions  
B. By enabling encryption of all AWS resources  
C. By enforcing identity and resource-based permissions  
D. By increasing application response times  
**Correct Answer:** C

**49. What should you consider before choosing a Reserved Instance plan in EC2?**  
A. Expected application workload consistency  
B. Number of edge locations  
C. Storage needs of S3 buckets  
D. Security requirements  
**Correct Answer:** A

**50. What is the role of "policies" in AWS IAM?**  
A. Manage EC2 instance types  
B. Define permissions for AWS resources  
C. Enable scaling configurations  
D. Cache frequently accessed data  
**Correct Answer:** B

**Section 5: Advanced Analytical and Application Questions (30 Questions)**

**51. You want to deploy a global application with low latency for users worldwide. Which AWS service combination best supports this requirement?**  
A. EC2 with Elastic Load Balancing  
B. S3 with Versioning enabled  
C. CloudFront with edge locations  
D. Auto Scaling with Reserved Instances  
**Correct Answer:** C

**52. What happens when you create an IAM policy with an "Allow" rule but no resource is specified?**  
A. The policy is invalid and won't apply.  
B. The policy applies to all resources in the account.  
C. The policy grants full access to the root user.  
D. The policy applies only to S3 and EC2 by default.  
**Correct Answer:** A

**53. How does S3 Standard differ from S3 Intelligent-Tiering?**  
A. Intelligent-Tiering automatically moves data between access tiers.  
B. Standard is less durable than Intelligent-Tiering.  
C. Intelligent-Tiering does not support versioning.  
D. Standard offers lower latency for high-access data.  
**Correct Answer:** A

**54. Which scaling type in AWS Auto Scaling allows scheduled increases in instance count during peak hours?**  
A. Predictive Scaling  
B. Dynamic Scaling  
C. Scheduled Scaling  
D. Manual Scaling  
**Correct Answer:** C

**55. How does AWS Elastic Load Balancer improve application availability?**  
A. By reducing resource costs  
B. By distributing incoming traffic across multiple instances  
C. By storing backups in multiple regions  
D. By managing IAM user access  
**Correct Answer:** B

**56. A web application uses EC2 instances to serve traffic. How can you ensure traffic is evenly distributed during traffic surges?**  
A. Increase instance size  
B. Use an Auto Scaling group with Elastic Load Balancer  
C. Enable read replicas in the database  
D. Store traffic logs in CloudFront  
**Correct Answer:** B

**57. Which feature of IAM allows access to services for a specific time frame only?**  
A. Temporary Security Credentials  
B. Access Keys  
C. Inline Policies  
D. Role Switching  
**Correct Answer:** A

**58. If you want to restrict an IAM user to specific IP addresses, which feature should you use?**  
A. Resource Policies  
B. Condition Keys  
C. Managed Policies  
D. Inline Policies  
**Correct Answer:** B

**59. What is the primary purpose of snapshots in AWS EC2?**  
A. Replicate data to another region  
B. Backup data from EBS volumes  
C. Increase the storage capacity of EC2 instances  
D. Enable faster data processing  
**Correct Answer:** B

**60. When should you use a Custom AMI over a pre-configured AWS AMI?**  
A. To meet specific application configurations and requirements  
B. To reduce costs for on-demand EC2 instances  
C. To enable default encryption on all S3 buckets  
D. To deploy serverless applications  
**Correct Answer:** A

**Section 6: Scenario-Based Questions**

**61. Your team uses S3 to store sensitive files. How can you ensure data is encrypted in transit?**  
A. Enable server-side encryption.  
B. Use HTTPS for all S3 requests.  
C. Apply an IAM policy denying HTTP access.  
D. Use CloudFront to manage requests.  
**Correct Answer:** B

**62. A company wants to minimize latency for its global users while using S3. What solution should you recommend?**  
A. Enable S3 Transfer Acceleration  
B. Use EBS Snapshots for replication  
C. Enable bucket versioning  
D. Deploy EC2 instances in multiple regions  
**Correct Answer:** A

**63. If a Load Balancer is configured to use the "round-robin" algorithm, how does it route traffic?**  
A. Based on server health  
B. Alternates requests to each server sequentially  
C. Based on server response time  
D. Routes traffic randomly  
**Correct Answer:** B

**64. How does CloudFront optimize the delivery of static content?**  
A. By replicating data across multiple Availability Zones  
B. By caching data at edge locations close to users  
C. By integrating with IAM for data encryption  
D. By automatically scaling resources  
**Correct Answer:** B

**65. Your organization is concerned about accidental deletion of important S3 objects. What feature can mitigate this risk?**  
A. Bucket Replication  
B. Object Lock with Governance Mode  
C. Cross-Region Replication  
D. Server-Side Encryption  
**Correct Answer:** B

**Section 7: Practical Application and Analysis**

**66. Which AWS service should you use to analyze large-scale log data for insights?**  
A. CloudFront  
B. Elastic Load Balancer  
C. CloudWatch Logs Insights  
D. IAM Policies  
**Correct Answer:** C

**67. Your application requires consistent throughput for traffic spikes. Which load balancing algorithm should you use?**  
A. Least Connections  
B. Weighted Round-Robin  
C. Random  
D. First Come, First Serve  
**Correct Answer:** B

**68. How can an IAM user securely manage API calls to AWS services?**  
A. By using an access key and secret key  
B. By logging in to the AWS Console  
C. By using CloudFront Edge Locations  
D. By creating snapshots of EC2 instances  
**Correct Answer:** A

**69. If you need to block access to an EC2 instance for a specific IP, what should you use?**  
A. IAM Role  
B. Security Group Rule  
C. CloudFront Policy  
D. Auto Scaling Group  
**Correct Answer:** B

**70. A team deploys a website using S3. How can they ensure it is accessible only via CloudFront?**  
A. Enable bucket logging  
B. Configure an origin access identity (OAI)  
C. Enable Transfer Acceleration  
D. Use an EBS volume  
**Correct Answer:** B

**Section 8: Final Scenario-Based and Advanced Concept Questions**

**71. A company needs to grant temporary access to a user for uploading files to an S3 bucket. What is the best solution?**  
A. Create a permanent IAM user with access to the bucket  
B. Use an S3 Access Control List (ACL)  
C. Generate a pre-signed URL for the bucket  
D. Attach an inline policy to the bucket  
**Correct Answer:** C

**72. How does AWS CloudFront enhance the security of content delivery?**  
A. By encrypting all files stored in S3  
B. By using signed URLs and signed cookies for access control  
C. By limiting access to only EC2 instances  
D. By disabling logging for content requests  
**Correct Answer:** B

**73. Which scaling type is triggered automatically based on predefined metrics like CPU utilization?**  
A. Manual Scaling  
B. Scheduled Scaling  
C. Predictive Scaling  
D. Dynamic Scaling  
**Correct Answer:** D

**74. What is a key benefit of using IAM roles over IAM users for EC2 instances?**  
A. Roles provide permanent credentials.  
B. Roles eliminate the need to store access keys on instances.  
C. Roles offer cross-region replication capabilities.  
D. Roles are cheaper than IAM users.  
**Correct Answer:** B

**75. An application needs to host static content with fast delivery. Which AWS service is best suited for this use case?**  
A. EC2 with EBS  
B. CloudFront with S3  
C. RDS with read replicas  
D. Elastic Load Balancer with Auto Scaling  
**Correct Answer:** B

**76. Which of the following is a key difference between Snapshots and AMIs?**  
A. Snapshots are backups of entire EC2 instances; AMIs are volume backups.  
B. Snapshots are used to create AMIs, not vice versa.  
C. AMIs are encrypted by default, while Snapshots are not.  
D. Snapshots are only used for S3 storage.  
**Correct Answer:** B

**77. Which load balancing algorithm directs traffic to the instance with the fewest active connections?**  
A. Round-Robin  
B. Least Connections  
C. Weighted Round-Robin  
D. Random  
**Correct Answer:** B

**78. A developer wants to enable detailed monitoring for an EC2 instance. Which service should they use?**  
A. CloudFront  
B. CloudTrail  
C. CloudWatch  
D. Elastic Load Balancer  
**Correct Answer:** C

**79. Which feature of AWS IAM allows grouping multiple permissions for easier management?**  
A. Inline Policies  
B. Groups  
C. Roles  
D. Access Keys  
**Correct Answer:** B

**80. How does S3 Versioning help in data management?**  
A. By encrypting data during transit  
B. By storing all modifications to objects  
C. By enabling faster data transfer across regions  
D. By replicating data to multiple buckets  
**Correct Answer:** B