**1. What is Cloud Computing?**

**Answer:** Cloud computing is the delivery of various services over the internet, including storage, databases, servers, networking, software, and more. It allows companies to access resources on-demand without investing in physical hardware.

**2. What is AWS (Amazon Web Services)?**

**Answer:** AWS is a cloud computing platform offered by Amazon, providing over 200 fully-featured services like compute power, storage, databases, machine learning, and more. It helps businesses scale and grow without investing in on-premises infrastructure.

**3. What are the main services provided by AWS?**

**Answer:**

* **Compute**: EC2 (Elastic Compute Cloud), Lambda
* **Storage**: S3 (Simple Storage Service), EBS (Elastic Block Store)
* **Networking**: VPC (Virtual Private Cloud), Route 53, CloudFront
* **Databases**: RDS (Relational Database Service), DynamoDB
* **Machine Learning**: SageMaker
* **Security**: IAM (Identity and Access Management), AWS Shield

**4. What is EC2 in AWS?**

**Answer:** EC2 (Elastic Compute Cloud) is a service that provides scalable virtual servers, allowing users to rent virtual machines to run their applications. You can choose different configurations based on your needs (CPU, RAM, storage, OS).

**5. What is Amazon S3?**

**Answer:** Amazon S3 (Simple Storage Service) is an object storage service that offers scalable storage for data like files, images, videos, and backups. It is highly durable, available, and can store an unlimited amount of data.

**6. What is Elastic Load Balancing (ELB)?**

**Answer:** Elastic Load Balancing automatically distributes incoming traffic across multiple EC2 instances, improving fault tolerance and application availability. It supports load balancing for HTTP/HTTPS and TCP traffic.

**7. What is a VPC (Virtual Private Cloud)?**

**Answer:** A VPC is a virtual network that allows users to launch AWS resources in an isolated section of the cloud. It provides control over networking settings such as IP addresses, subnets, and security settings.

**8. What are Security Groups in AWS?**

**Answer:** Security Groups act as virtual firewalls that control inbound and outbound traffic for AWS resources like EC2 instances. They allow or block traffic based on defined rules (e.g., based on IP addresses, ports).

**9. What is IAM (Identity and Access Management)?**

**Answer:** IAM is a service that enables you to manage access to AWS resources securely. It allows you to create and manage users, roles, and policies to control who can access which resources and what actions they can perform.

**10. What is Amazon RDS?**

**Answer:** Amazon RDS (Relational Database Service) is a managed database service that supports multiple database engines like MySQL, PostgreSQL, SQL Server, and Oracle. It simplifies database management tasks such as backups, patching, and scaling.

**11. What is AWS Lambda?**

**Answer:** AWS Lambda is a serverless computing service that lets you run code without provisioning or managing servers. You only pay for the compute time consumed, and Lambda automatically scales based on demand.

**12. What is CloudFront?**

**Answer:** CloudFront is AWS's content delivery network (CDN) service that delivers content, such as web pages, videos, and APIs, to users around the world with low latency by caching it at edge locations.

**13. What are the benefits of using AWS?**

**Answer:**

* **Scalability**: Easily scale up or down based on demand.
* **Cost-effective**: Pay-as-you-go pricing model.
* **Global reach**: Multiple data centers across regions.
* **Security**: Strong security measures, encryption, and compliance.
* **Reliability**: Built-in redundancy and high availability.

**14. What is Auto Scaling in AWS?**

**Answer:** Auto Scaling allows you to automatically increase or decrease the number of EC2 instances in response to changing application demand. It helps ensure that you have the right number of instances running to handle the load while minimizing costs.

**15. What is an AWS Availability Zone?**

**Answer:** An Availability Zone is a distinct data center location within a region. Each region consists of multiple Availability Zones, which are physically isolated but connected via low-latency networks. This setup provides high availability and fault tolerance.

**16. What is the difference between stopping and terminating an EC2 instance?**

**Answer:**

* **Stopping**: The instance is shut down, but its data (e.g., EBS volumes) remains intact, and you can restart it later.
* **Terminating**: The instance and its associated storage are deleted, and the instance cannot be recovered.

**17. What is AWS CloudWatch?**

**Answer:** AWS CloudWatch is a monitoring service that collects and tracks metrics, logs, and events from AWS resources and applications. It helps you monitor performance, set alarms, and take automated actions when necessary.

**18. What is an AWS Region?**

**Answer:** A region is a geographic area where AWS has multiple data centers (Availability Zones). AWS offers services in various regions worldwide, allowing users to deploy applications closer to their users for better performance.

**19. What is the difference between S3 and EBS in AWS?**

**Answer:**

* **S3**: Object storage service for storing and retrieving any amount of data at scale. It’s best for static files like images and backups.
* **EBS**: Block storage service used as persistent storage for EC2 instances. It is ideal for use cases that require low-latency and quick access to data, like databases.

**20. What are the pricing models in AWS?**

**Answer:**

* **On-Demand**: Pay for the compute or storage resources as you use them, with no long-term commitments.
* **Reserved Instances**: Commit to using an EC2 instance for 1 or 3 years in exchange for a lower rate.
* **Spot Instances**: Purchase unused EC2 capacity at a discounted rate, but these instances can be terminated by AWS when capacity is needed elsewhere.

**21. What is AWS CloudFormation?**

**Answer:** AWS CloudFormation is a service that allows you to define and provision AWS infrastructure using code (in JSON or YAML). It automates the creation and management of AWS resources, enabling you to deploy them in a repeatable and consistent way.

**22. What is Elastic Beanstalk?**

**Answer:** AWS Elastic Beanstalk is a Platform-as-a-Service (PaaS) that allows developers to deploy and manage applications quickly. You just upload your code, and Elastic Beanstalk automatically handles the deployment, capacity provisioning, load balancing, and monitoring.

**23. What are AWS Access Keys?**

**Answer:** AWS Access Keys consist of an **Access Key ID** and a **Secret Access Key**, which are used to authenticate API requests. They provide programmatic access to AWS resources.

**24. What is Amazon Route 53?**

**Answer:** Amazon Route 53 is a scalable domain name system (DNS) web service that translates domain names into IP addresses. It also acts as a DNS routing service and can route end-user requests to endpoints based on various routing policies (e.g., latency-based, geolocation).

**25. What is Elastic Block Store (EBS)?**

**Answer:** EBS is a persistent block storage service for EC2 instances. It provides storage volumes that can be attached to EC2 instances and used like physical hard drives, making it suitable for databases, applications, and OS storage.