AWS (Amazon Web Services)

- **Introduction:-**

1. What is cloud Computing ?
   Instead of doing computing on local machine, we do computing on remote location that is called cloud computing

2. Deployment Model in Cloud ?
   It works as your virtual computing environment with a choice of deployment model depending on how much data you want to store and who has access to the Infrastructure.
   Types :- 1) Public Cloud
   2) Private Cloud
   3) Hybrid Cloud
   4) Community Cloud
   5) Multi - Cloud
   I) Public Cloud - The service which are accessed by everyone like AWS, Azure,GCP
   -Public Cloud may be less secure or its open to everyone
   II) Private Cloud - The service which is accessed within the organisation
   III) Hybrid Cloud - Hybrid is combination of public and private cloud
   IV) Community Cloud - It is same as private cloud but can be accessible from new organisation
   V) Multi- Cloud - You can mix and match the best features of cloud provides services to suit the demands of your apps, workload and business by choosing different cloud providers

3. Service Model in cloud ?
   Cloud Computing Services offers shared resources such as services, database, and networks via the internet
   SAAS Software as a service
   IAAS Infrastructure as a service
   PAAS Platform as a service
   AAAS Anytime as a service
   FAAS Function as a service

4. Architecture of cloud computing ?

5. What are services ?
   A system or Organization that provides the public with something that it needs , the job that an organisation does

6. What are resources in cloud computing ?
   Resources are storages, database, networking, AI, software application, or the services which are provided by AWS.

7. What is Region and Why do we use region ?
   Region - Region is place where AWS has infratruce
   To locate your cloud resources, reduce latency and cost faster data transfer speed.

8. What is the Availability zone?
   Availability zone means a data centre
   Ex :- AWS Region Mumbai - AP-south -1
   AZ's 1)AP - south -1a
   2)AP - south - 1b
   3)AP - south - 1c
   (Note- AZ's can communicate with each other by default)

9. AWS Global Infrastructure count ?

10. What is Client ?
    Who request for resources is client

11. What is a firewall ?
    Fire wall tracks all traffic and stops unauthorised access to network allow and deny

12. What is Elasticity ?
    Elasticity refers to how fast your application can scale up or down based on demand
    It's also Horizontal Scaling

13. What is Scalability ?
    Scalability refers to how the system can handle much load.

14. What is Elastic Beanstalk ?
    Deploy and manage applications in the AWS Cloud without worrying about the infrastructure

15. What is High Availability ?
    High Availability means application can operate at a high level, continuously, without intervention, for a given time period.
    The ability of a system or application to remain operational and accessible with minimal downtime

16. What is a Database server ?
    A database server is a server that runs a database application and provides database services to other programs or computers.
    A database server consists of two parts: the hardware and the software.

17. What is an Application Server ?
    An application server is a software program that runs on a server and provides services to other applications or clients.

18. What is a Load Balancer ?
    A load balancer in AWS is a service that automatically distributes incoming traffic across multiple targets, such as EC2 instances, containers, and IP addresses, in one or more Availability Zones
    Types of Load Balancer
    Application Load Balancers
    Network Load Balancers
    Gateway Load Balancers
    Classic Load Balancers

19. What is a Web Server ?
    A web server is a software component that delivers static data like images, files, and text in response to client requests.

20. What is Edge Location ?
    Location where Cache copies of your content are stored for faster access from any location.

● IAM(Identity And Access Management)

-IAM is used to create users and groups
-IAM is used to give policies roles
-IAM is a Global Service
- There are two types of access 1) Console Access (ID,Pass)
                                2) Programmatic Access (Key)

1. How many Resources do we have in IAM ?
   Users ,Group, Policies, Roles, Provide Identity

2. Deployment Model in IAM ?

3. Identities in IAM ?

4. What is an IAM User ?
   IAM User is the user by root user in AWS

5. What are the IAM Groups ?
   IAM Groups are created by IAM

6. What is the IAM Role ?
   An IAM role is an AWS identity that you can create in your account that has specific permissions . It is similar to an IAM user, in that it is an AWS identity with permission policies that determine what the identity can and cannot do in AWS

7. What are the IAM Policies ?
8. Where do we attach Identity Based Policies ?
9. Where do we attach Resource Based Policies ?

10. Can we be able to create Policy via json code ?
    Yes, you we create policies programmatically using JSON code

11. If one user has created it by default, which permission has been assigned to that user ?

12. What is Dominator Policy ?
    Dominator Policies IAM user have Admin Access (full access, all permission)

13. What is ARN ? What are the fields in ARN ?
    ARN (Amazon Resource Name) It is string that uniquely identifies an aws resources such IAM user name, region, account id resource type, etc

14. How many types of ARN Partition ?
    aws - AWS Regions
    aws-cn - China Regions
    aws-us-gov - AWS GovCloud (US) Regions

15. What are Tags ?
    The tags are label use for organising your resources
    It is use to manage, identify, organise, search for, and filter resources

● S3 (Amazon Simple Storage Service)

- S3 is Storage Service that store data and objects in buckets
- S3 is a Global Service

1. What is a Bucket ?
   Bucket is a container of objects , Bucket is a Repository , through bucket we can host website

2. Difference between Block storage & Object Storage ?

3. Difference between static website & dynamic website ?

Static Website	Dynamic Website
1) In Static Website, pages will remain same until someone changes its manually	1) In Dynamic Website ,content of pages are different for different visitors
2) Static web pages are simple	2) Dynamic web pages are complicated
3) In Static Information are change rarely	3) In Dynamic Information is changed frequently
4) Static web pages takes less time for loading	4) Dynamic web pages take more time to load

4. What are the naming rules ?
   - Bucket names must be between 3 (min) and 63 (max) characters long
   - Bucket names can consist only of lowercase letters, numbers, dots (.), and hyphens (-)
   - Bucket names must begin and end with a letter or number.

5. What is the major resource of S3 Bucket ?
6. Why do we need to host static websites instead of dynamic websites ?

7. What is versioning & Why do we need versioning ?
   Versioning - versioning is a feature that allows you to keep multiple variants of an object in the same bucket
   Versioning feature is to preserve, retrieve, and restore every version of every object stored in your buckets. With versioning, you can recover more easily

8. What are the objects and types of objects that we are uploading into the S3 Bucket ?
9. Why is MFA Delete important in S3 Bucket object level ?

10. What is S3 Multipart upload ?
    S3 Multipart upload is a mechanism that allows you to upload large objects to Amazon S3 in parts. It is recommended to use multipart upload when the size of your object is greater than 100 MB

11. What are the storage classes in Amazon S3 ? **(IMP)**
    S3 Standard
    S3 Intelligent-Tiering
    S3 Standard-Infrequent Access (S3 Standard-IA)
    S3 One Zone-Infrequent Access (S3 One Zone-IA)
    S3 Glacier Instant Retrieval
    S3 Glacier Flexible Retrieval (formerly S3 Glacier)
    S3 Glacier Deep Archive (S3 Glacier Deep Archive)

12. What is ACL ?
    ACL stands for Access Control List. It is a security mechanism that allows you to control access to your AWS resources.

13. Why do we need ACL ?
    ACLs are used to manage access to buckets and objects.
    Each bucket and object has an ACL attached to it as a sub-resource.
    It defines which AWS accounts or groups are granted access and the type of access
    In other words, ACLs monitor and filter traffic moving in and out of a network

14. What is a Life cycle policy ? Why do we need to use the life cycle rule ?
15. How can we make our bucket public ?
16. How can we give public access to our bucket ?
17. Aws pricing factor of the S3 Service.
18. How can we make our object public ?
19. How can we configure the static website logs in s3 ?

20. What is CORS ?
    Cross-Origin Resource Sharing (CORS) is a mechanism that allows restricted resources on a web page to be accessed from another domain outside the domain from which the first resource was served

21. What is S3 Inventory ?
22. What does it mean by Requester pays ?
23. What is the secondary word to Transfer acceleration ?Why do we need to use this transfer acceleration ?

● AWS Cloud Trail

1. What is a cloud trail ?
   CloudTrail provides visibility into user activity by recording actions taken on your account.
   CloudTrail records important information about each action, including who made the request, the services used, the actions performed, parameters for the actions, and the response elements returned by the AWS service.

2. Why do we use trails, what is the exact purpose of enabling the trail in cloud production accounts ?
   We use Cloud Trail see user activity by recording action taken on your account
   Enabling CloudTrail in your cloud production accounts can help you keep an ongoing record of events in your AWS account.

3. Explain how we can create a trail in aws cloud trail ?
4. How can we enable logging for S3 bucket using cloud trails ?
5. How do you get the list of all created trailers in your production account ?
6. Can we create a trail for a multi region, if yes then how can we configure it ?
7. How can we disable the logging for certain events, services in cloud trail, If yes so explain how ?

8. Real time use case of cloud trail ?
   -Auditing : It can also provide an event history of account activity from the past 90 days
   -Security Monitoring : CloudTrail logs can be used to detect security threats and unauthorised access attempts in real-time.
   -Operational Troubleshooting : CloudTrail logs can be used to troubleshoot operational issues in your AWS environment.
   -Compliance

9. What is cloud trail event history ?
10. What is log file integrity validation in cloud trail ?

● AWS SNS (Simple Notification Service)

1. What is SNS ?
   Amazon Simple Notification Service (Amazon SNS) is a managed service that provides message delivery from publishers to subscribers

2. Why do we use SNS ?
   To get notification of activity from publisher to subscriber

3. What is an Amazon SNS function, and how we can configure it.

4. Difference between Amazon SNS & Amazon SQS.
   SNS is a distributed publish-subscribe system. Messages are pushed to subscribers as and when they are sent by publishers to SNS.
   SQS(Simple Queuing Service) is a distributed queuing system. Messages are not pushed to receivers. Receivers have to poll or pull messages from SQS

5. What are the different delivery formats and transports in AWS SNS ?
   The notification message sent by Amazon SNS for deliveries over HTTP, HTTPS, Email-JSON and SQS

6. What is the difference between SNS FIFO & Standard while creating the SNS topic.
7. On which services are configured with the AWS SNS ?

8. What is 10DLC in AWS ?
   10DLC stands for “10-digit long code”
   Amazon Simple Notification Service (SNS) offers 10 DLC as an SMS product in the United States

9. What are FIFO topics on SNS ?

10. What is SNS Mobile Push ?
    SNS Mobile Push is a feature of Amazon Simple Notification Service (SNS) that allows you to send push notification messages directly to apps on mobile devices

11. On which delivery method do we use and configure the subscription ?

1. What is EC2, Why do we need EC2 service in cloud computing ?
2. Features of Amazon EC2 ?
3. What is Hypervisor ? and its types ?
4. Where we use hypervisor
5. Steps to create an EC2 instance.
6. EC2 Instance state ?
7. How many types of EC2 Instance-State codes ?
8. What is the meaning of server hibernating mode ?
9. What is KMS ? **(IMP)**
10. AWS Amazon EC2 Instance types ?
11. How many types of status checks happen in aws ?
12. When we see the global view option in ec2 service ?
13. When we logged into the cloud account by default why do we always jump into the north virginia region, why it's most popular ?
14. What are EBS Volumes and its types ?
15. Purpose of Using EBS volumes ?
16. How many types of purchasing options do we have in aws ec2 ?
17. Difference between AWS AMI Image & AWS Template ?
18. What is NIC & it's types ?
19. What is elastic IP ? & WHY were we used ?
20. What is the snapshot of why we use it ?
21. How can we save money in snapshot costing, if an automated snapshot has been created ?
22. What is the lifecycle manager in snapshot ?
23. How does the Amazon lifecycle manager work ?
24. Difference between Security Group & NACL ?
25. What are NACL & Its types ?
26. How many IP Addresses can we attach to the instances ?
27. How many types of volume states do we have ?
28. What is a key pair, and its types ?
29. What is load balancer and its types ?
30. How does the load balancer work in the backend? Can you explain it ?
31. Features of Load Balancers ?
32. What is ASG ? & Its types ?

33. What is a Health Check ?
34. What is the threshold ?
35. What is the group of LB ?
36. Why do we prefer ALB over ALB ?
37. Difference between Web server & Application server ?
38. What is the target group ?
39. What is the desired capacity in ASG ?
40. How many types of the Scaling option ?
41. Scaling plans ?
42. Types Auto scaling
43. Difference between vertical scaling and horizontal scaling ?
44. Difference between AMI & Snapshot ?