1) What is EC2 Explain all its details?

* EC2 is very famous and demanded service in AWS Cloud
* EC2 stands for Elastic Compute Cloud
* Using EC2 service we can create Virtual Machines
* In EC2 terminology every machine is called as one Instance
  + Computer/Machine/Server/VM = Instance
* EC2 divided instances into several families (we are using t2.micro which is free tier)
* EC2 instances are free for 1 year and 750 hours for every month
* Billing is calculated based on usage / minutes.
* To Launch EC2 instances we have AMI (Amazon machine Image)
* Image means pre-configured computer with software.
* We can also create our own Images for EC2 instances.
* If we use Amazon Linux, we will get 8 GB by default (EBS root volume)
* We can't detach EBS root volume from EC2 (Its mandatory) when it is running
* We can add additional EBS volumes for EC2
* EBS additional volume size is 16 TB (For free tier 30 GB)
* We can attach/detach EBS additional volume from EC2 instance
* Volumes are Availability Zone specific.
* Volume backup is called as Snapshot.
* Snapshots are Regional scope.
* From Volume we can create snapshot and from snapshot we can create volume
* For EC2 instance we will add Security Groups
* Security Groups contains Inbound rules & Outbound rules
* One Security Group we can attach to multiple EC2 instances
* In one security group we can add multiple rules
* AWS providing security for EC2 instances login using Key-Pair
* AWS will keep public key and it will give private key for us
* One Key-Pair we can use for Multiple EC2 instances
* While Launching EC2 instance we can add user data (bootstrapping scripts)
* User Data script will execute only for first time
* If EC2 instance in Running State it will consider for billing
* IF EC2 instance is stopped or terminated then it will not consider for billing
* In EC2 we have 3 types of IPs (public IP, private IP and elastic IP)
* Public IP is a dynamic IP which is used to connect with EC2
* Private IP is a static IP which is used for internal purpose in VPC
* Elastic IP means static public IP (it is commercial)
* To distribute the load we will use Load Balancer
* To Create Load Balancer we will use Target Group
* Group of servers are called as Target Group
* For Microservices Load Balancing we will use Multiple Target Groups
* Based on demand we need to increase and decrease our servers for that we will use Auto Scaling

2) How to connect with EC2 instance which is having Linux OS?

We can use putty/mobaxterm software with SSH protocol to connect with EC2 instances

SSH : 22

3) How to connect with EC2 instance which is having Windows OS?

We can use RDP client to connect with windows instance

RDP : 3389

4) What is Load Balancer?

Load balancer is used to distribute the load to multiple servers

5) What are the load balancers available in AWS?

In AWS we have 4 types of Load Balancers

1. Application Load Balancer (HTTP & HTTPS requests)
2. Network Load Balancer (TCP, UDP ) - Superfast performance
3. Gateway Load Balancer - Third Party Appliances
4. Classic Load Balancer (Previous Generation)

6) What is EBS? Why it is used?

EBS stands for Elastic Block Store, used to store EC2 data Like OS, files and directories.

7) What type of Volumes available in AWS?

In AWS we have EBS volumes to store data permanently

We have below types of EBS volumes

1. General Purpose (default)
2. Provisioned IOPS (super-fast performance, costly)
3. Throughput
4. Cold
5. Standard Magnetic (previous generation)

8) What is Target Group?

Target Group represents Logical Unit of instances (group of servers)

ALB will distribute load to target group based on listener rules

9) What is Auto scaling?

Adding and removing instances based on demand is called as Auto scaling.

10) Can you tell me which protocols and port numbers you have used?

RDP : 3389

SSH : 22

HTTP : 80

HTTPS : 443

11) Can we attach one volume to multiple EC2 instances?

If it is IOPS (io2) volume then we can attach otherwise we can't attach

12) Can we attach snapshot to EC2 instance?

We can't attach snapshots to EC2 instances. From snapshot we can create volume and then we can attach volume to EC2 instance

Volume <--- Snapshot <---------- volume

13) Can you explain EC2 instances types?

* On Demand Instances
* Reserved Instances
* Spot Instances
* Dedicated Host instances (very costly)

14) What is Launch Template in EC2?

Launch template represents configuration for EC2 instance. It is used to create Auto Scaling Group.

15) How many types of IP's available in EC2?

In AWS we have 3 types of IPs

Private IP: It is static IP and it is mandatory for EC2 instance (for internal purpose)

Public IP: It is dynamic IP and using this we can connect to EC2 instance.

Elastic IP: It is static IP and we can use this to connect with EC2 instance.

(5 EIPs are free, we have to keep them in use)

16) What is Region and AZ in AWS?

* AWS providing global infrastructure using Region and AZ.
* 31 Regions and 99 AZs
* 1 Region can have multiple AZ's

17) What is Data Center?

It is collection of servers with network and power.

One AZ is called as one data center.

In india we have Mumbai Region with 3 AZ's

Mumbai region name is ap-south-1

18) How to install software in EC2 instance?

Using yum install command

Ex: sudo yum install httpd -y (Amazon linux)

Note: apt for Ubuntu

19) How to mount EBS volume to directory?

$ sudo mount /dev/xvdf /newdirectory

20) How to display Instance volumes?

Using 'lsblk' command we can display list of volumes