**AKENUWA EGHE , CLASS NUMBER - 13**

1. VPC- Amazon Virtual Private Cloud (VPC) is a Cloud computing service offered by Amazon commercially, that offers a virtual private cloud, by providing a logically isolated section of Amazon Web Services Cloud. One can create and manage a virtual network in the cloud and launch Amazon Web Services resources such as EC2 instances, RDS Database into the virtual Network that one has full control over.

It’s attributes include Isolation, Security Groups and Network ACLs, Internet Gateway, Subnets, Virtual Private Gateway, etc.

1. **INTERNET GATEWAY-** This is a critical component of the Amazon VPC that allows for resources within the VPC to communicate with the public Internet and vice versa. It is a horizontally scaled highly redundant component of the VPC and supports both IPV4 and IPV6 traffic.
2. **NAT GATEWAY-**The Network Address Translation (NAT) gateway is a resource within the Amazon vpc that allows resources within the subnet of the Amazon VPC to initiate outbound internet traffic and also prevents inbound internet traffic from directly reaching the resources. It helps to offers internet traffic to instances without exposing them to directly to public internet.
3. **ROUTE TABLE**- Route tables are like routers in Physical Network. They help determine how traffic should be directed within the Amazon VPC. It helps ensure that network packets are routed in the right manner to their intended destination whether within or outside the network .
4. **PUBLIC AND PRIVATE SUBNETS**- A public subnet is a subnet that is associated with a route table that has a route to an Internet gateway. This connects the VPC to the Internet and to other AWS services. A private subnet is a subnet that is associated with a route table that doesn't have a route to an internet gateway.
5. **SECURITY GROUPS-** Security Groups in VPC are a fundamental part of security in the VPC and act as firewall to for EC2 instances to manage incoming and outgoing traffic. It is made up of Inbound Rules and Outbound rules: Inbound Rules control traffic coming into the instance and Outbound Rules control the traffic leaving the network.
6. **NETWORK ACLs**- This is a set of rules that allow or deny access to a computer network. The Network devices such as routers and switches apply the ACL rules for ingress (inbound ) and egress ( outbound) network traffic thereby controlling which traffic comes in or goes out.
7. EC2 INSTANCE- The Amazon Elastic Cloud Compute (EC2) instance is a virtual server on the Amazon web service. One can use it to request and provision a virtual server on the Amazon Cloud. Its features include Scalability, Pay as you go Pricing, Auto Scaling , Elastic Load Balancing etc.

2. **DIAGRAM ILLUSTRATING THE CONCEPTS.**

