**Question 2 \_Networks:**

**2.1Explain the concepts of Default Gateway in IP**

*A default gateway is the node in a computer network using the internet protocol suite that serves as the forwarding host (router) to other networks when no other route specification matches the destination IP address of a packet.*

**2.2Explain the concepts of SNAT and DNAT**

***SNAT****is an abbreviation for****Source Network Address Translation****. It is typically used when an internal/private host needs to initiate a connection to an external/public host. The device performing NAT changes the private IP address of the source host to public IP address. It may also change the source port in the TCP/UDP headers.*

*Use Case:  
A client Inside LAN and behind Firewall wanted to browse Internet*

***DNAT****stands for****Destination Network Address Translation****. Destination NAT changes the destination address in the IP header of a packet.*

*It may also change the destination port in the*[*TCP*](https://networkinterview.com/tcp-header/)*/*[*UDP*](https://networkinterview.com/udp-header/)*headers. The typical usage of this is to redirect incoming packets with a destination of a public address/port to a private IP address/port inside your network.*

*Destination NAT is performed on incoming packets, where the*[*firewall*](https://ipwithease.com/network-based-firewall-vs-host-based-firewall/)*translates a public destination address to a private address.*

*Use Case:*

*A Website Hosted inside Data Centre behind the Firewall and needs to be accessible to users over Internet*

**2.4 - Explain ARP**

*The acronym ARP stands for* ***Address Resolution Protocol****Most of the computer programs/applications use logical address (IP address) to send/receive messages, however the actual communication happens over the physical address (MAC address) i.e. from layer 2 of OSI model. So, to get the destination MAC address which helps in communicating with other devices. This is where ARP comes into the picture, its functionality is to translate IP address to physical address.  
ARP finds the hardware address, also known as Media Access Control (MAC) address, of a host from its known IP address.*