Networking Training Program 2025

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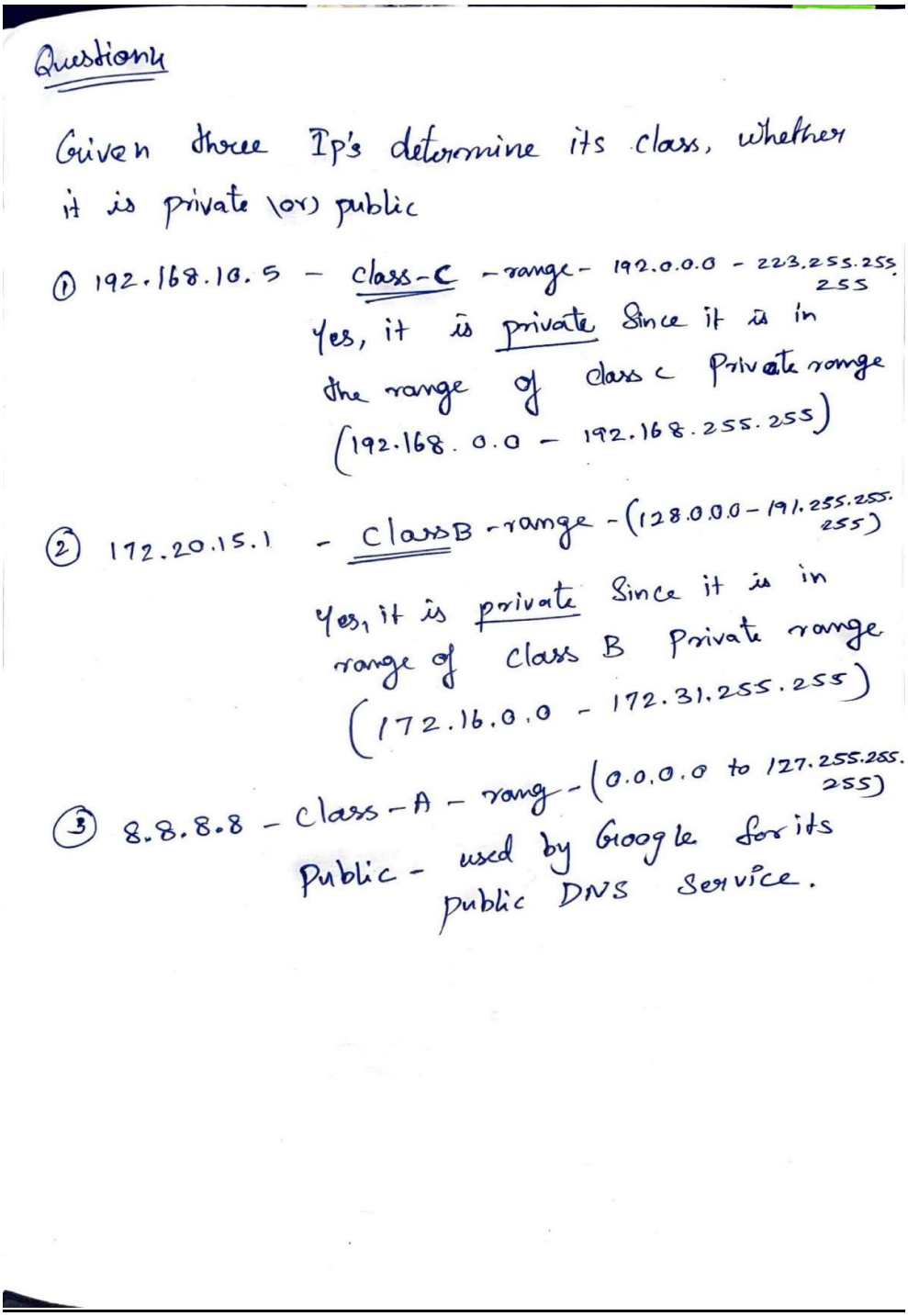
Question-4:



Questions

Given three Ip's determine its class, whether it is private (or) public

① 192.168.10.5 – class-C – range – 192.0.0.0 – 223.255.255.255

Yes, it is private since it is in the range of class c Private range (192.168.0.0 – 192.168.255.255)

② 172.20.15.1 – ClassB – range – (128.0.0.0 – 191.255.255.255)

Yes, it is private since it is in range of class B Private range (172.16.0.0 – 172.31.255.255)

③ 8.8.8.8 – Class-A – rang – (0.0.0.0 to 127.255.255.255)

Public – used by Google for its public DNS service.

When a private IP device wishes to go online:

Packet Generation:

The device generates a packet with:

Source IP: Private IP (e.g., 192.168.1.100)

Destination IP: Public IP of the destination website/server (e.g., 8.8.8.8 for Google DNS)

NAT Translation at Router:

The router rewrites the packet's source IP address, substituting the private IP (192.168.1.100) with the router's public IP (e.g., 203.0.113.5).The router saves this translation in a NAT table to remember connections.

Packet Sent to Internet:

The new packet (with the public IP) is transmitted to the target server.

Response from Internet:

The external server sends data back to the router's public IP in response to the request.

NAT Reverses Translation:

The router refers to the NAT table to find out what private IP created the request. It substitutes the public IP for the proper private IP and directs the packet to the original machine.