**In class activity - Ch.4 (4.4 IP cont’d)**

1. DHCP
   * Automatic allocation of IP addresses
   * Plug&play
   * Cl.-server protocol
   * Getting an IP address from DHCP server Fig. 4.20 and 4.21
2. NAT – Fig. 4.22
   * Home subnets use CIDR addressing space (private network)- ex. 10.0.0.0/24 🡺2^8 =256 addresses for a private network

10.0.0.0 -- 10.255.255.255 🡺 16,777,216 addresses

172.16.0.0 -- 172.31.255.255 🡺 1,048,576

192.168.0.0 -- 192.168.255.255🡺 65,536

* + NAT-enabled routers use a NAT translation table
  + Pb. with NAT:

1. ICMP (Fig. 4.23) - Used by hosts and routers to communicate
2. IPv6
   * Datagram in Fig. 4.24
     1. Compared to IPv4: some fields missing, some added
     2. Uses IP addressing on 128 bits
     3. Has 40 bytes header
   * Transition from IPv4 to IPv6
     1. Duals-stack – Fig. 4.25
     2. Tunneling - Fig. 4.26
3. IP security
   * IPsec protocol used in VPN
4. Explain DHCP Fig. 4.20 and 4.21. Explain dest. 255.255.255.255.
5. T/F IPv6 was invented because IPv4 was depleted by addresses.
6. T/F Like IPv4, IPv6 allows fragmenting.
7. T/F Like IPv4, IPv6 has header checksum.
8. T/F Unlike IPv4, IPv6 has a flow field, which is used for faster or slower datagram transmission (some sort of priority).
9. T/F There was an IPv5 attempt, but it was not popular and thus was not adopted.
10. On June 6, 2012 IPv6 was launched. How much of today’s traffic in Internet uses IPv6?