1. What is the network layer’s task?

* Fragment data from upper layer into packets and reassemble packets on the receiving end
* Routing packets by discovering the best path across a physical network

1. Discuss the difference between a data link layer address and a network layer address.
2. How an IPv4 address is usually expressed? What kind of notation is used, and how the range of each values can be?

* 4 sets of 8 bits

1. Describe the concept of class and subnet mask of IPv4 address.

* Class A: 7 bits network address (0xxxxxxx)
* Class B: 14 bits network address (10xxxxxx.xxxxxxxx)
* Class C: 22 bits network address (110xxxxx…)
* Class D: Multicasting address (1110xxxx…)
* Class E: Reserve for future use (1111xxxx….)
* Subnet mask: indicates the split between network + subnet number and host address

1. What is the routing table? Explain with an example.

* Routing table: a data table stored in a router that lists the routes to a particular destinations, contains information about the topology of the network immediately around it

1. Discuss the role of the ARP and RARP protocols.

* Address Resolution Protocol (ARP): Used for discovering the link layer address (MAC) associated with a given internet address (IP)
* Reverse ARP: Used for request the IP address associated with a given MAC address