a. What is the function of the routing algorithms in the network layer?
b. Explain the link state and the distance vector routing algorithms.

2 a. Explain the oscillation problem. What is a possible solution?
b. Explain the count-to-infinity problem. What is a possible solution?

3 Why are IP addresses organized in a hierarchical way?

4 Datagram fragmentation and reassembly are handled by IP and are invisible to TCP. Does this mean that TCP does not have to worry about data arriving in the wrong order?

5 Why are Inter-AS and Intra-AS routing protocols different?

6 What is the head-of-the-line blocking problem? What is the solution?

7 a. What is the main motivation behind IPv6?
b. Explain the main solution proposed for the transition from IPv4 to IPv6, and what is it trying to improve?