

Problem Set 6
(due before December 12th)

[20 points] Problem 5.4, textbook page 480.

[20 points] Problem 5.1, textbook page 479 (Apply only Prim-Dijkstra algorithm).

[20 points] Problem 5.3, textbook page 479.

[20 points] OSPF standard:

1. Find the OSPF (version 2) IETF RFC and provide the http link.
2. What is the IP protocol value for OSPF?
3. What is the difference between OSPF and a protocol like RIP or BGP?
4. Explain the fields of an OSPF Link State Advertisement (LSA) packet.
5. Draw a simple network topology and provide the details of an LSA packet.

[20 points] Fair Queuing (wait until next lecture to solve it):

Three connections A , B , C , of equal weight share the same link.

$t = 0$: packets arrive for the connections with length 1, 2, 3

$t = 5$: one packet of size 3 arrives for connection A ,

$t = 7$: one packet of size 1 arrives for connection C .

- a. Draw the round number $R(t)$ as a function of time for the ideal GPS (Max-Min fairness).
- b. Compute the finish number for each packet $F(A/B/C, i, t)$ when using weighted fair queuing (WFQ).
- c. In what order would the WFQ schedule the transmission of the packets?