

## CS 348: Problem-Solving Tutorial 2

Do problems from the textbook (Computer Networks, by Petersen-Davie, 5th Edition):

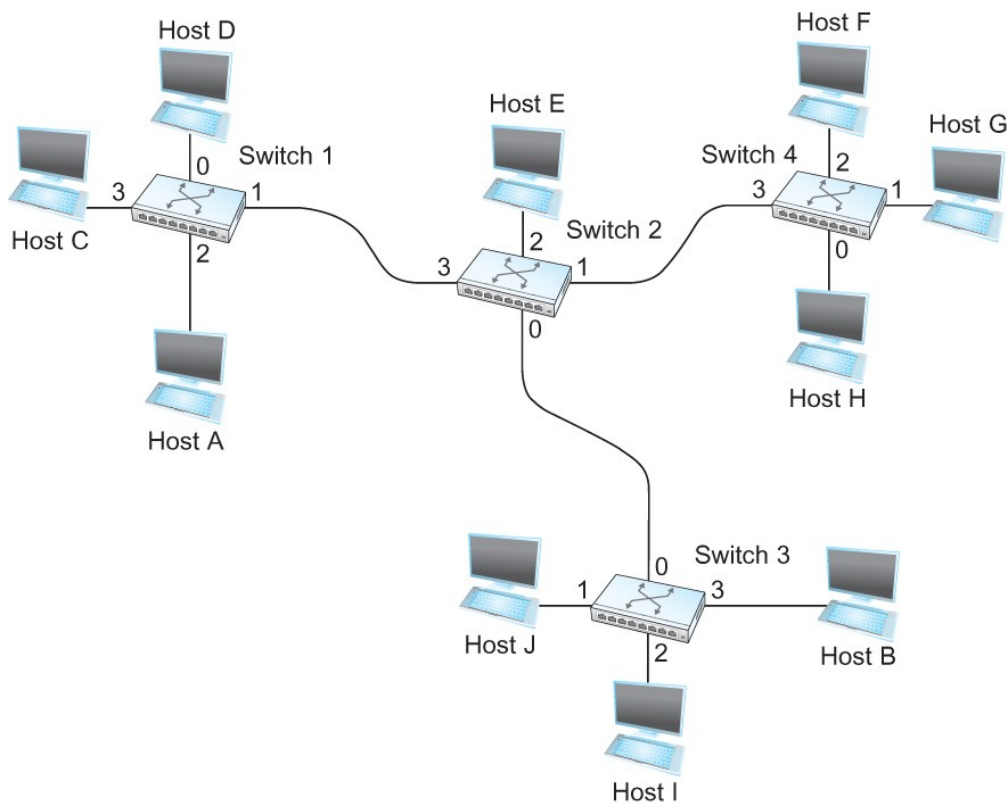
Chapter 1: Solutions to Exercises 4, 6, 14, 17, 27 are provided.

Chapter 2: Solutions to Exercises 7, 19, 25, 32 are provided.

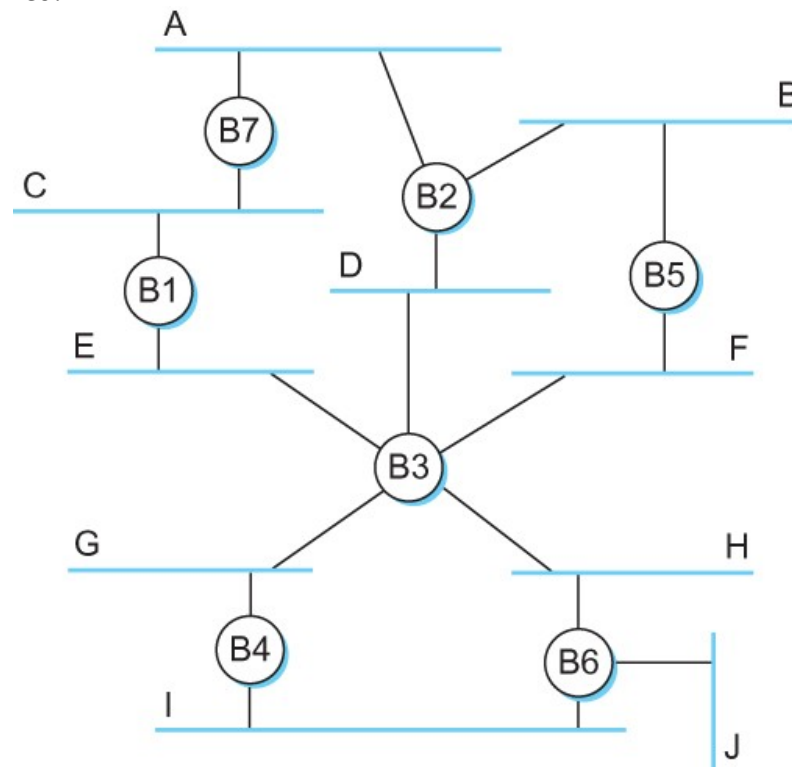
Chapter 3: Solutions to Exercises 2, 14, 16, 47, 53 are provided.

2. Using the example network given in Figure 3.44, give the virtual circuit tables for all the switches after each of the following connections is established. Assume that the sequence of connections is cumulative; that is, the first connection is still up when the second connection is established, and so on. Also assume that the VCI assignment always picks the lowest unused VCI on each link, starting with 0, and that a VCI is consumed for both directions of a virtual circuit.

- (a) Host D connects to host H.
- (b) Host B connects to host G.
- (c) Host F connects to host A.
- (d) Host H connects to host C.
- (e) Host I connects to host E.
- (f) Host H connects to host J.



14. Given the extended LAN shown below, assume that B1 suffers catastrophic failure. Indicate which ports are not selected by the spanning tree algorithm after the recovery process and the new tree has been formed.



47. For the network below, give the distance-vector tables at:

- Initial stage – Each node knows only distances to immediate neighbours.
- After one-pass – Each node exchanges information with immediate neighbours.

