Lab 7 solutions

Question 1.

Node 0 send packets to node 5. The transmitted packets follow the route 0-1-4-5, and the route does not change over time.

Question 2.

At time t=1.0, link 1-4 goes down, but the route between node 0 and node 5 does not change. As a result node 0 is unable to reach node 5.

At time t=1.2, link 1-4 goes up again, and the packets that were waiting at node 1 are now forwarded to node 4 and, eventually node 5.

Question 3.

Now, when link 1-4 goes down, the DV routing protocol discovers a different route (0-1-2-3-5) and uses it. Once link 1-4 becomes available again, the routing protocol reverts to the original route (0-1-4-5), since it has a lower cost (in terms of number of hops to destination).

Question 4.

This changes the cost of link 1-4 to 3 (the cost of the rest of the links is assumed to be 1, implicitly). We can notice that the flow now uses route 0-1-2-3-5, because the cost of this route becomes lower that the cost of 0-1-4-5.

Question 5.

Both routes now have equal cost to the destination. Since the network is now using multipath routing, node 1 will split traffic equally on both these paths.