KFUPM - COMPUTER ENGINEERING DEPARTMENT

COE-540 – Computer Networks

Quiz 04 – Due April 16th, 2012 (in class)– Take home quiz

Student Name:

Student Number:

Problem 1 (25 points): Consider the network shown in Fig. 1(a) and the sink tree for node *I* shown in Fig. 1(b). On the subject of broadcast routing, assume node *I* is to broadcast a packet to all nodes in the network.

a) (3 points) Reverse path forwarding (RPF) is one mechanism that may be used in broadcast routing. Explain *very briefly* the basic procedure.

b) (2 points) Draw the tree built by the reverse path forwarding (RPF) procedure and count the number of packets and hops required to achieve the specified broadcast. Show your computations.

c) (10 points) EXPLAIN briefly how would the sink tree be used instead of the RPF procedure to perform the broadcast; what would be the number of packets and hops needed? Show your computations.

d) (10 points) Compare and contrast the RPF and sink tree based broadcast procedures.

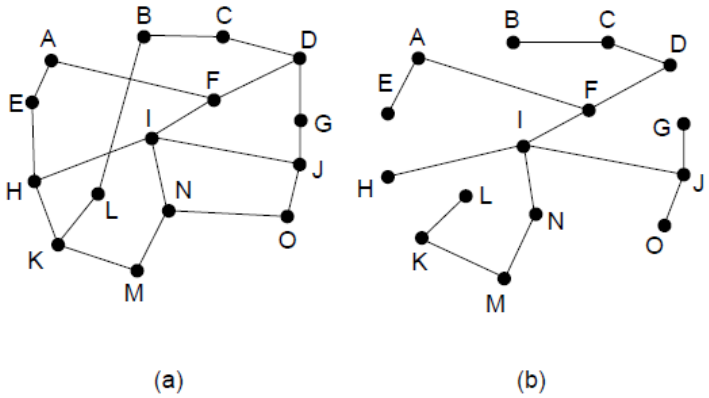

Figure 1: (a) A network. (b) A sink tree for node I.