Electrical, Computer, and Systems Engineering
ECSE-6961: Internet Protocols
Spring 1999

Problem Set 3- Due Thursday, March 25th 1999 *(for on-campus and RSVP students (non-tape delayed));*
Due Thursday, April 1st *(for tape-delayed students)*

Your Name	

Notes:

1. Be brief.
2. Please write your answers on separate sheets and staple it along with the questions to facilitate easy grading.

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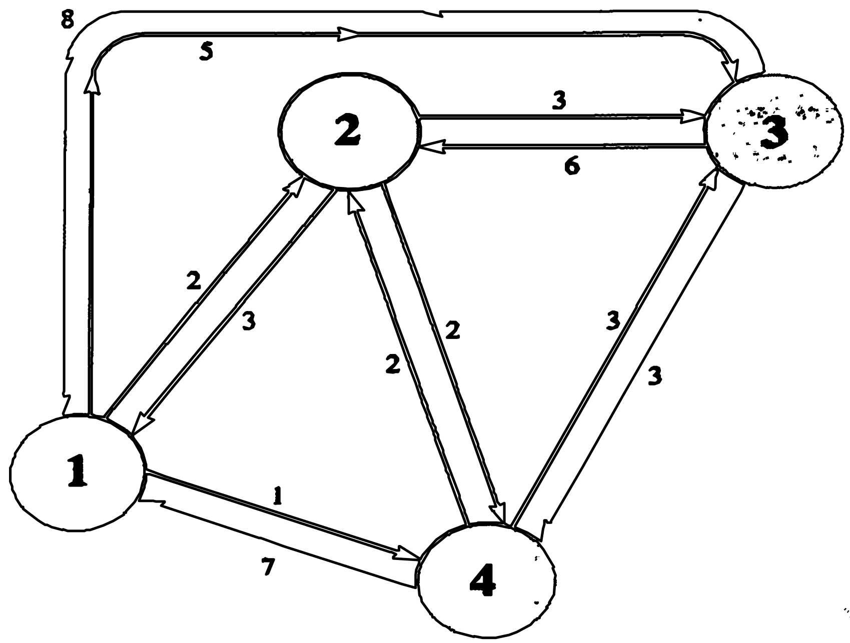
1	2	3	4	Total
35	20	10	35	100

TA Signature :___________________________________



1. In the above figure, the network uses distance vector routing. Trace the evolution of the routing table at node 2. Assume that distance vectors can be exchanged in one time unit over each link. Also assume that the node checks the state of its neighbor once every time unit. The initial state at all nodes is a zero distance for that node and an infinite distance for all other nodes.
2. Why are external gateway protocols different in nature from internal gateway protocols ? Summarize the strengths and weaknesses of EGP, BGP and CIDR.
3. Find out how many hosts and domains are there in the rpi.edu domain. Hint: use the file /etc/hosts on ecse.rpi.edu or any key machine in the rpi.edu domain.
4. Use the command 'tcpdump -n -vv -s 512 &' to look into the DNS packets on the testbed account which has been created for you in the networks lab. This also runs tcpdump in the background. Now try the following commands:
   a) nslookup 192.48.96.9
   b) nslookup shiv
   c) host way.cis.ohio-state.edu
   d) nslookup ecse

Capture and annotate the output in each case {refresher course in tcpdump ☺}. Refer to pg 196-199 in your text for guidance in interpreting these values. You will see many kinds of DNS queries and responses including pointer, A, CNAME, MX, DNS error etc. Explain why multiple DNS queries are generated for each case. Hint: look at /etc/resolv.conf