Computer Network
Spring 2019
Problem Set 3

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This problem set has six questions. Please answer them clearly and concisely. Your solutions must be your own.

Send your solution file to TA's email address with both **subject** and **filename** formatted like ID-NAME-PS1-SOLUTION.DOC/.PDF. Turn in your solution before **Wednesday, May 29, 2019**.

1 Short-answer questions

(1) **Tell the desirable properties in a routing algorithms.**

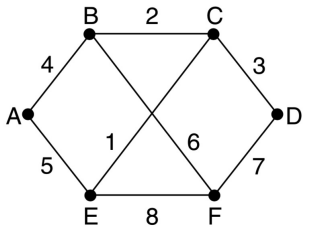
(2) **Show the comparison of Virtual-Circuit and Datagram Networks.**

(3) **Tell the differences between IPv4 and IPv6, and show the goals of IPv6.**

(4) **Explain the OSPF and BGP protocol briefly.**

2 Calculation

(1) **Consider the network of figure(a) below. Distance vector routing is used, and the following vectors have just come in to router C: from B: (5, 0, 8, 12, 6, 2); from D: (16, 12, 6,0,9,10); and from E:(7,6,3,9,0,4). The cost of the links from C to B, D, and E, are 6, 3, and 5, respectively. What is C's new routing table? Give both the outgoing line to use and the cost.**



(a)

(2) **A router has the following (CIDR) entries in its routing table:**

Address/mask	**Next hop**
135.46.56.0/22	**Interface 0**
135.46.60.0/22	**Interface 1**
192.53.40.0/23	**Router 1**
default	**Router 2**

For each of the following IP addresses, what does the router do if a packet with that address arrives? (You are expected to specify the destination(Next hop) for the packet from IP addresses below)
(a) 135.46.63.10
(b) 135.46.57.14
(c) 135.46.52.2
(d) 192.53.40.7
(e) 192.53.56.7