ITFN 1502 Home Assignment 4

Name: _____

10 points each except #5, #6 and #7, which are worth 20 points each.

1. How does a layer-2 switch differ from a router?

2. a) How does a router differ from a VLAN?

   b) What are the advantages and disadvantages of VLANs?

3.
   a) What are the main characteristics of a circuit-switched network? What are its advantages and disadvantages?

   b) What are the main characteristics of a datagram packet switched network? What are its advantages and disadvantages?

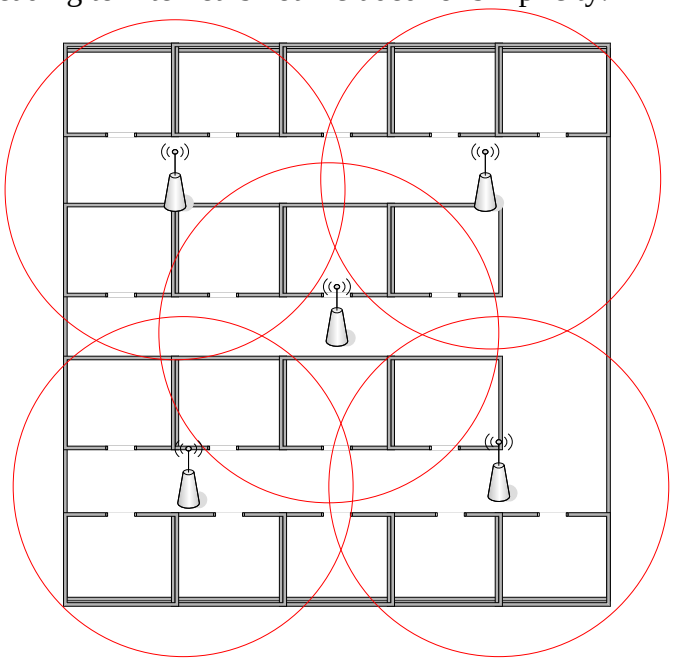
   c) What are the main characteristics of a virtual circuit packet-switched network? What are its advantages and disadvantages?

4.
   a) What are the main advantages and disadvantages of:
      i. Centralized routing
      ii. Distributed routing
      iii. Adaptive routing

   b) What are the differences between RIP and OSPF?

   c) What are the basic goals of Dijkstra's least cost algorithm?

5. The following diagram shows five APs (Access Points) with five Basic Service Sets (BSSs). The wired connection between APs in the LAN cloud and connection to the router leading to Internet is not included for simplicity.



a) Using the above WLAN (Wireless LAN) topology as a basis, draw another WLAN topology with two access points, one LAN cloud, six workstations (3 connected via each access point inside the LAN cloud). Also, include a router from LAN cloud to allow Internet connectivity. You may not skip any wiring details in your drawing. (Show all wiring details including the used devices and connections inside the LAN cloud).
NOTE: You may use any drawing software like Visio or hand draw and include the scanned picture here.

b) Next, explain the steps that workstations must perform within a basic service set (BSS) to get into the Internet including the protocols to be used at each step.

6. Complete D2L quiz Hw4.1, which is based upon chapter 8 animate.

7. Complete D2L quiz Hw4.2, which is based upon chapter 10 animate.