Homework 5

CH5 homework

Please complete these and submit to e-learning. All must be handwritten. Write, scan as pdf, submit.

1. Complete this table with the correct answer, either: BROADCAST, MULTICAST, UNICAST

	Situation	Transmission
a	The lecturer sends to all School of Computing students.	
b	The lecturer sends to year 2 SCSR students.	
c	A message sent to all hosts in the 192.168.1.0/24 subnet	
d	A message sent to hosts in the range of 192.168.1.1 – 192.168.1.100 of the 192.168.1.0/24 subnet	
e	A ping to hosts 192.168.1.1 of the 192.168.1.0/24 subnet	

2. Communication channels that connect adjacent nodes along communication path are called ____.
3. What is another name for the datagram at link layer?
4. At the link layer the _____ address is used.
5. Set the correct parity bit in the table below.

	Data bits	Parity used	Parity bit
a	011110010101	even	
b	011110010101	odd	
c	01101100101	even	
d	01101100101	odd	
e	01101100100	even	

6. The following are transmitted data received by the receiver. Using even parity, can you detect if there is a problem, and where? Show your workings.

a

10101111	**0**
11111010	**0**
01011100	**0**
00001001	**0**

b

01010001	**1**
10101010	**0**
11110101	**1**
00101110	**0**

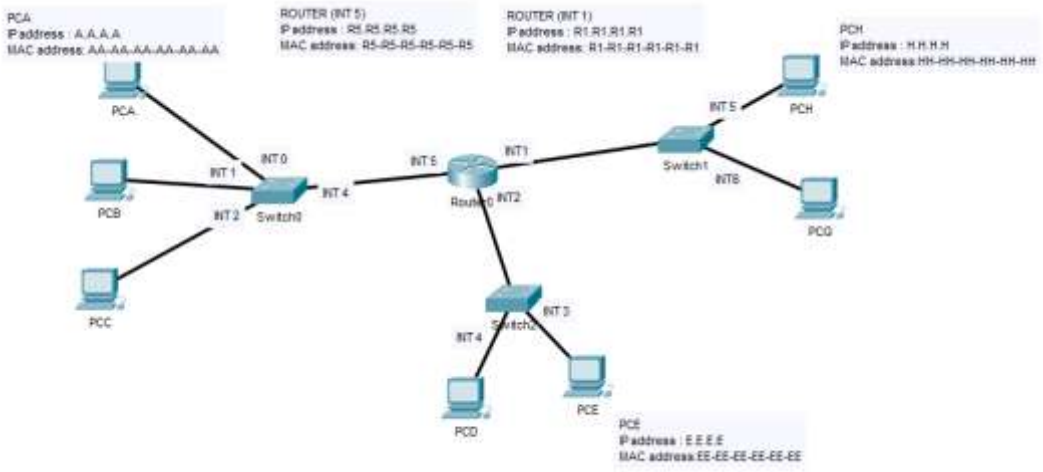
7. You are given the following data, D and generator G;**Show your workings clearly*

D	G
110100	1010

   a. with CRC calculate the message sent, D_{sent}.
   b. Check that your D_{sent} is correct. Is it correct? How do you know?
   c. If receiver receives D = 110110110, show that there is error.

8. Using a mind map of your choice; explain, in general, how frames share the same media. Include all possible methods and what happens during collisions.

9. Refer to the figure below for the following questions. **Note: addressing conventions follows the example given. Also assume that TTL is 60 minutes.*



   a. When it first boot, PCA ARP table is _____.
   b. Then PCC pings PCA. What will the ARP table look like at PCA? **ignore TTL and Type for now.*

IP add	MAC add

   c. Then PCG pings PCA. What will the ARP table look like at PCA now? **ignore TTL and Type for now.*

IP add	MAC add

   d. PCA wants to send a packet to PCB, but does not know PCB's MAC address. Explain how it will get it and finally send the packet.
   e. PCA wants to send a packet to PCD, but does not know PCD's MAC address. Explain how it will get it and finally send the packet.

f. After the communications (at b and c) is done, what will the switch table (A.K.A MAC address table) content for Switch0? ***Assume it also starts empty.*

MAC add	Interface

--END - -

I hated every minute of training, but I said, 'Don't quit. Suffer now and live the rest of your life as a champion.'

Muhammad Ali