Homework 4

Problem 1:

- (a) How does the Ethernet address A0:B2:C3:D4:E5:F6 appear in binary on the line?
- (b) What is the overhead ratio for the smallest Ethernet package.
- (c) In a Gigabit Ethernet, the average size of a frame is 1000 bytes. How many frames can be destroyed if a noise of duration 10 msec appears on the line.
- (d) An ethernet sublayer receives a data-gram of 40 B length from the upper layer. How much padding has to be added?

Problem 2:

A IEEE 802.11 frame has been captured. Its contents are given in hex.

88	42	30	00	38	f9	d3	90	56	5a	64	a5	сЗ	69	52	4d
64	a5	сЗ	5e	ac	95	30	са	00	00	9b	aa	00	20	56	00
00	00	c2	99	19	cd	bf	61	68	9f	82	f0	08	f3	66	63

Notice: Each byte (not hex digit) is captured in reverse order from the bit order given in the following diagram.

Bytes	2 2		6	6			6	2		0-2312		4
	Frame control Duration		Address 1 (recipient)	Ado (tran	Address 2 (transmitter)		Address 3 S		ence	Data	:	Check sequence
	Version = 00	Type = 10	Subtype = 0000	To DS	From DS	More frag.	Retry	Pwr. mgt.	More data	Protected	Orde	r
Bits	2	2	4	1	1	1	1	1	1	1	1	

Determine the type of package (traveling inside a BSS, traveling from DS to station, traveling from station to DS, or going from AP to another AP), destination, source, and AP address.