**Homework #1 – CS 1114**

**Shiv Lakhanpal Sunday, September 21st 2015**

**Question 1:**

Convert the following numbers to their decimal representation:

1. 100110112 :

* 27\*1+26\*0+25\*0+24\*1+23\*1+22\*0+21\*1+20\*1

= **15510**

1. 11011012 :

* 26\*1+25\*1+24\*0+23\*1+22\*1+21\*0+20\*1

**= 10910**

1. 3A816  :

* 162\*3+161\*10+160\*8

**= 93610**

1. 22145 :

* 53\*2+52\*2+51\*1+50\*0

= **30910**

**Question 2:**

Convert the following numbers to their binary representation:

1. 6910 :

* 26\*1+25\*0+24\*0+23\*0+22\*1+21\*0+20\*1

= **1000101**

1. 48510 :

* 28\*1+27\*1+26\*1+25\*1+24\*0+23\*0+22\*1+21\*0+20\*1

= **111100101**

1. 6D1A16 :

* 6 = 23\*0+22\*1+21\*1+20\*0 = (0110)
* D = 23\*1+22\*1+21\*0+20\*1 = (1101)
* 1 = 23\*1+22\*1+21\*0+20\*1 = (0001)
* A = 23\*1+22\*0+21\*1+20\*0 = (1010)

= (**0110 1101 0001 1010)2**