Name:

Date:

Class: CS 160

Assignment #2

1) Convert the following binary numbers to decimal. (Four Points)

1. 101101102 = **182**10
2. 000001002 = **4**10
3. 000010002 = **8**10
4. 001010002 = **40**10
5. 100000102 = **130**10
6. 001011112 = **47**10
7. 111111002 = **252**10
8. 000000012 = **1**10

2) Convert the following decimal numbers to binary (use 8 place holders; ex: 00000000 or 11111111). (Four Points)

1. 310 = **00000011**2
2. 1810 = **00010010**2
3. 12810 = **10000000**2
4. 11410 = **01110010**2
5. 5110 = **00110011**2
6. 010 = **00000000**2
7. 1210 = **00001100**2
8. 24210 = **11110010**2

3) Rotate the following binary numbers. (Four Points)

1. 01102 right(2) = **1001**2
2. 11012 right(1) = **1110**2
3. 10112 right(1) = **1101**2
4. 00102 right(3) = **0100**2
5. 11012 left(2) = **0111**2
6. 00102 left(3) = **0001**2
7. 01012 left(1) = **1010**2
8. 00012 left(1) = **0010**2

4) Shift the following binary numbers. (Four Points)

1. 01102 left(2) = **1000**2
2. 11102 left(1) = **1100**2
3. 00012 left(1) = **0010**2
4. 10102 left(2) = **1000**2
5. 11112 right(2) = **0011**2
6. 11002 right(1) = **0110**2
7. 10102 right(2) = **0010**2
8. 00012 right(3) = **0000**2

5) Add the following 4-bit binary numbers. (Four Points)

1. 00112 + 00012 = **0100**2
2. 00012 + 00012 = **0010**2
3. 01002 + 00102 = **0110**2
4. 00112 + 10102 = **1101**2
5. 01112 + 00012 = **1000**2
6. 10012 + 00112 = **1100**2
7. 00012 + 11102 = **1111**2
8. 01012 + 00012 = **0110**2