Laboratory 1 – Assignment

Exercise 4 - Convert the following numbers from base 16 to 2:

3 (16) = 3 \* 16^0 = 3 (10)

3 / 2 = 1 r 1

1 / 2 = 0 r 1

Therefore, 3 (16) = 11 (2) or 3h = 11b

A (16) = 10 \* 16^0 = 10 (10)

10 / 2 = 5 r 0

5 / 2 = 2 r 1

2 / 2 = 1 r 0

1 / 2 = 0 r 1

Therefore A(16) = 1010 (2) or Ah=1010b

F(16) = 15 \* 16^0 = 15 (10)

15 / 2 = 7 r 1

7 / 2 = 3 r 1

3 / 2 = 1 r 1

1 / 2 = 0 r 1

Therefore F (16) = 1111 (10) or Fh=1111b

2B (16) = 2\*16^1 + 11 \* 16^0 = 32 + 11 = 43 (10)

43 / 2 = 21 r 1

21 / 2 = 10 r 1

10 / 2 = 5 r 0

5 / 2 = 2 r 1

2 / 2 = 1 r 0

1 / 2 = 0 r 1

Therefore 2B (16) = 101011 (2) or 2Bh=101011b

2F8 (16) = 2\*16^2 + 15\*16^1 + 8 \* 16 ^0= 512 + 240 + 8=760 (10)

760 / 2 = 380 r 0

380 / 2 = 190 r 0

190 / 2 = 95 r 0

95 / 2 = 47 r 1

47 / 2 = 23 r 1

23 / 2 = 11 r 1

11 / 2 = 5 r 1

5 / 2 = 2 r 1

2 / 2 = 1 r 0

1 / 2 = 0 r 1

Therefore 2F8 (16) = 1011111000 (2) or 2F8h=1011111000b