

EE 2720, Fall 05

HW #1

Due Wed Sept. 28, 05
at 9:30 am in my
office; (Room EE 245)

EE 2720
Homework #1

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Note: Please STAPLE your homework.

Problem 1: Find the value of the unsigned binary number 10011101.011_2

Problem 2: Find the value of the following octal number 75.6_8

Problem 3: Find the value of the following hexadecimal number $5AC.3_{16}$

Problem 4: Find the value of the following radix-5 number 423.1_5

Problem 5: Convert into octal the following binary number 1010011101.11_2

Problem 6: Convert into binary the following octal number 4567.75_8

Problem 7: Convert into hexadecimal the following binary number 1010011101.11_2

Problem 8: Convert into binary the following hexadecimal number $58E.A6_{16}$

Problem 9: Using a direct procedure convert into radix-4 the following binary number 1011101.111_2 . Hint: $2^2=4$.

Problem 10: Convert 173.625_{10} into binary.

Problem 11: Convert 0.7_{10} into binary. What do you observe?

Problem 12: Convert 785.125_{10} into octal.

Problem 13: Convert 1895.625_{10} into hexadecimal.

Problem 14: Convert 231.3_4 into a radix-7 number. Hint: First convert 231.3_4 into a decimal number and then convert the decimal number into a radix-7 number. What do you observe?

Problem 15: What is the Dynamic Range (DR) of a 10-bit integer binary unsigned system?

Problem 16: Compute $X+Y$ where X and Y are the following 6-bit binary unsigned numbers:
 $X=101011_2=43_{10}$; $Y=010010_2=18_{10}$. When you do the addition show all the carries. Do you have an overflow in this case? Justify your answer.

Problem 17: Repeat problem 16 with

$$X=101111_2=47_{10}; Y=010111_2=23_{10}.$$