King Fahd University of Petroleum and Minerals
College of Computer Sciences and Engineering
**Department of Computer Engineering**

**COE 202 – Digital Logic Design (T131)**

<u>**Homework # 01 (**</u>*<u>due date & time: Tuesday 17/09/2013 during class period</u>*<u>**)**</u>

***\*\*\* Show all your work. No credit will be given if work is not shown! \*\*\****

<u>Showing all calculations steps</u> (i.e. final answers alone are not acceptable), solve the following problems:

**Problem 1 (15 points):** Convert $(43)_{10}$ to binary, octal, and hexadecimal.

**Problem 2 (15 points):** Convert the following binary numbers to decimal:
        1. $(10011010)_2$
        2. $(10011000.0011)_2$
        3. $(100100.0101)_2$

**Problem 3 (30 points):** Convert the following decimal numbers to the stated number system:
        1. $(1479.8828125)_{10} = (?)_{16}$
        2. $(111.59375)_{10} = (?)_8$
        3. $(61.8125)_{10} = (?)_2$

**Problem 4 (30 points):** Convert the following numbers to the stated number system:
        1. $(B9F2.B)_{16} = (?)_8$
        2. $(3637.65)_8 = (?)_{16}$
        3. $(1123.2031)_4 = (?)_8$

**Problem 5 (10 points):** Find the proper radix $r$ in the following case: $(255)_r = (8A)_{16}$