

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

COE 202 – Digital Logic Design (T112)

**Homework # 01 (due date & time: Monday 13/02/2012 during class period)**

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

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

**Problem 1 (5 points):** Convert  $(27)_{10}$  and  $(53)_{10}$  to binary, octal, and hexadecimal.

**Problem 2 (15 points):** Convert the following binary numbers to decimal:

1.  $(10010110)_2$
2.  $(10011100.0101)_2$
3.  $(110010.1001)_2$

**Problem 3 (30 points):** Convert the following decimal numbers to the stated number system:

1.  $(183.921875)_{10} = (?)_8$
2.  $(1571.82421875)_{10} = (?)_{16}$
3.  $(65.203125)_{10} = (?)_2$

**Problem 4 (30 points):** Convert the following numbers to the stated number system:

1.  $(BF21.D)_{16} = (?)_8$
2.  $(5731.74)_8 = (?)_{16}$
3.  $(1312.2031)_4 = (?)_8$

**Problem 5 (20 points):** Find the proper radix  $r$  in each of the following cases:

1.  $(129)_r = (B1)_{16}$
2.  $(164)_r = (137)_8$