King Fahd University of Petroleum and Minerals
Department of Computer Engineering

DIGITAL LOGIC DESIGN COE 202

Homework 1, October 18, 2008

Problems	Grading
1	
2	
3	
4	
5	
TOTAL	

Student Name:……

Student ID:……

Digital Computer and Information

Answer each of the following questions and show all your steps

1. What is the decimal equivalent of the largest binary integer that can be obtained with (a) 12 bits, and (2) 24 bits.
2. Q-2: Convert the following binary numbers to decimal representation $(1001101)_2$, $(1010011.101)_2$, and $(10101110.1001)_2$.
3. Each of the following numbers has a different base $(11100111)_2$, $(22120)_3$, $(3113)_4$, $(4110)_5$, $(530)_{10}$, $(343)_8$. Convert the numbers from the given basis (radix) to decimal. Which of the five numbers have the same value in decimal?
4. Convert the following numbers from the given basis (radix)
    a. $(369.3125)_{10}$ to binary, octal and hexadecimal
    b. $(10111101.101)_2$ to decimal, octal and hexadecimal
    c. $(326.5)_8$ to decimal, binary and hexadecimal
    d. $(F3C7.A)_{16}$ to decimal, binary and octal

   List the results of above conversion in a table for each of the above numbers.
5. Suppose we have $(BEE)_r = (2699)_{10}$ and $(365)_r = (194)_{10}$, where r is the radix (base) and B=11 and E=14 in decimal. Determine the value of the radix r for each equation?