

Name:KEY

Id#

COE 200, Term 023  
Fundamentals of Computer Engineering

Quiz# 1

Date: Tuesday, July 8, 2003

**Q1.** Represent the following numbers in **binary** and **hexadecimal**. Use as many bits as needed, and approximate the fraction to **4 binary digits**:

(i)  $(2699.32)_{10}$

Binary : 101010001011.0101

Hexadecimal: A8B.5

(ii)  $(44.44)_5$

First we convert the number to decimal = 24.96

Binary : 11000.1111

Hexadecimal: 18.F

**Q2.** Determine the radix R that satisfies the following:  $(365)_R = (194)_{10}$ .

$$3R^2 + 6R + 5 = 194 \Rightarrow 3R^2 + 6R - 189 = 0$$

$$R = \frac{-6 \pm \sqrt{36 + 4 \times 3 \times 189}}{2 \times 3} = \frac{-6 \pm 48}{6} = \frac{42}{6} = 7$$