

## ***CS-350: Computer Organization***

# **Spring 2003: Quiz # 1 ANSWERS**

1. The following number is of unknown radix. From inspection of the number, what can you deduce about possible values of the radix  $R$ ? Explain your answer.

4ACD.19<sub>R</sub>

2 pts

*Answer:* **Radix > 13, or Radix  $\geq$  14.** Reason: The largest numeral present is **D**, which has a numeric value of **13**. The radix must be greater than that.

2. Convert 3,492.9483 to radix 5. Show your work.

8 pts

*Answer:* 102432.433232<sub>5</sub>

Integer part:

$$\begin{aligned} 3492/5 &= 698 \text{ R } 2 \\ 698/5 &= 139 \text{ R } 3 \\ 139/5 &= 27 \text{ R } 4 \\ 27/5 &= 5 \text{ R } 2 \\ 5/5 &= 1 \text{ R } 0 \\ 1/5 &= 0 \text{ R } 1 \end{aligned}$$

Fractional part:

$$\begin{aligned} 0.9483 \times 5 &= 4.7415 \\ 0.7415 \times 5 &= 3.7075 \\ 0.7075 \times 5 &= 3.5375 \\ 0.5375 \times 5 &= 2.6875 \\ 0.6875 \times 5 &= 3.4375 \\ 0.4375 \times 5 &= 2.1875 \end{aligned}$$