

ECE 273 W02  
QUIZ 1

NAME:

KEY

HONOR CODE:

(5) 1. Let  $X = 1234_{(10)}$

(2.5) (a) Write  $X$  in binary

$$\begin{array}{r} 2 \overline{)1234} = 617 \text{ R } 0 \\ 2 \overline{)617} = 308 \text{ R } 1 \\ 2 \overline{)308} = 154 \text{ R } 0 \\ 2 \overline{)154} = 77 \text{ R } 0 \\ 2 \overline{)77} = 38 \text{ R } 1 \end{array}$$

$$\begin{array}{r} 2 \overline{)38} = 19 \text{ R } 0 \\ 2 \overline{)19} = 9 \text{ R } 1 \\ 2 \overline{)9} = 4 \text{ R } 1 \\ 2 \overline{)4} = 2 \text{ R } 0 \\ 2 \overline{)2} = 1 \text{ R } 0 \\ 2 \overline{)1} = 0 \text{ R } 1 \end{array}$$

$\Rightarrow 1001\ 1010\ 010_{(2)}$

(2.5) (b) Write  $X$  in hexadecimal

$$\begin{array}{r} 16 \overline{)1234} = 77 \text{ R } 2 \\ 16 \overline{)77} = 4 \text{ R } 13 \\ 16 \overline{)4} = 0 \text{ R } 4 \end{array}$$

$= 4D2_{(16)}$

$$\begin{array}{ccc} 100 & 1101 & 0010 \\ \downarrow & \downarrow & \downarrow \\ 4 & D & 2 \end{array}$$

(2.5) 2. Write  $10010010_{(2)}$  in decimal

Place Value:  $2^7 \dots 2^1 2^0$

$$10010010_{(2)} = 2^7_{(10)} + 2^4_{(10)} + 2^1_{(10)} = 146_{(10)}$$

(2.5) 3. Write  $AEF_{(16)}$  in decimal

Place Value:  $16^2\ 16^1\ 16^0 = 10 \times 16^2_{(10)} + 14 \times 16^1_{(10)} + 15 \times 16^0_{(10)}$

$$= 2799_{(10)}$$