Classwork 02 CPE 221 Computer Organization

Instructor: Rahul Bhadani

Spring 2025, UAH

Student's Name: _____

1. How many items can be counted using 3 bits? (2 points)

2. Consider a number $(312)_7$ is base 7. Convert it to base 10. (2 points)

3. Consider a binary number $(1011\ 1000)_2$. (2 points)

4. Consider a decimal number 200. Write its binary equivalent (or base 2 equivalent).

(2 points)

5. Binary Addition: (2 points)

$$\begin{array}{r} 00110111 \\ +\ 01011011 \\ \hline \end{array}$$

6. Convert the following to hexadecimal numbers:

A0B (2 points)

(7) In a sign-magnitude notation, a binary number is written as $(11100)_2$

What is its decimal equivalent with sign?

(2 points)

(8) Two's Complement: Convert -50 to 2's complement representation using 8 bits.

(4 points)

⑨ Is 01110111 und 2's complement scheme a negative number or a positive number?