

CSSE 132 – Introduction to Systems Programming  
ROSE-HULMAN INSTITUTE OF TECHNOLOGY

Homework 1

Name (Print): \_\_\_\_\_ RHIT Username: \_\_\_\_\_

Put your answers in the spaces reserved below the questions. **Do not** write your answers on **separate sheets of paper**.

1. (12 points) Convert the following unsigned decimal numbers to their 16-bit unsigned binary and hexadecimal representations. You **must show your work** in the dec-to-bin (or dec-to-hex) conversion to earn full credit. You may use a calculator to confirm your answers.

(a) 65533

(b) 256

(c) 255

(d) 43690

2. (12 points) Convert the following unsigned 16-bit binary numbers to their decimal *and* hexadecimal representations. You **must show your work** while converting to decimal to earn full credit. You may use a calculator to confirm your answers.

(a) 0010 0111 1001 0000

(b) 0001 1111 1111 1111

(c) 1000 0000 0000 0000

(d) 0000 0000 0000 0111

3. (12 points) convert the following unsigned 16-bit hexadecimal numbers to their decimal *and* binary representations. You **must show your work** while converting to decimal to earn full credit. You may use a calculator to confirm your answers.

(a) 0x12bd

(b) 0x1ee7

(c)  $FFFF_{16}$

(d)  $0xec01$