Title: **Hexadecimal Conversion** Worksheet: 6

Course: Introduction to Automation Unit: Introduction to PLC CLO: 4

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall calculate a decimal number given its equivalent value in hexadecimal form.
2. Student shall calculate a hexadecimal number given its equivalent value in decimal form.
3. Student shall calculate a binary number given its equivalent value in hexadecimal form.
4. Student shall calculate a hexadecimal number given its equivalent value in binary form.

**Assessment**

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this Worksheet. Grading shall be based on the answer key.

**Instructions**

Convert the following hexadecimal numbers to their decimal equivalents.

1. 3716 \_\_\_\_\_\_10
2. 1216 \_\_\_\_\_\_10
3. 5C16 \_\_\_\_\_\_10
4. 1F316 \_\_\_\_\_\_10
5. D016 \_\_\_\_\_\_10
6. 10016 \_\_\_\_\_\_10
7. 716 \_\_\_\_\_\_10
8. 1A16 \_\_\_\_\_\_10
9. 2116 \_\_\_\_\_\_10
10. 2B16 \_\_\_\_\_\_10

Convert the following decimal numbers to their hexadecimal equivalents.

1. 3710 \_\_\_\_\_\_16
2. 1210 \_\_\_\_\_\_16
3. 5410 \_\_\_\_\_\_16
4. 310 \_\_\_\_\_\_16
5. 12610 \_\_\_\_\_\_16
6. 1610 \_\_\_\_\_\_16
7. 7710 \_\_\_\_\_\_16
8. 1010 \_\_\_\_\_\_16
9. 10110 \_\_\_\_\_\_16
10. 21110 \_\_\_\_\_\_16

Convert the following binary numbers to their hexadecimal equivalents.

1. 100110012 \_\_\_\_\_\_16
2. 000110112 \_\_\_\_\_\_16
3. 100011012 \_\_\_\_\_\_16
4. 111110012 \_\_\_\_\_\_16
5. 111111112 \_\_\_\_\_\_16
6. 100000012 \_\_\_\_\_\_16
7. 010101012 \_\_\_\_\_\_16
8. 101010102 \_\_\_\_\_\_16
9. 101111012 \_\_\_\_\_\_16
10. 110100002 \_\_\_\_\_\_16

Convert the following hexadecimal numbers to their binary equivalents.

1. 2F3716 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2
2. 1DC216 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2
3. 501C16 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2
4. 1AF316 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2
5. D00016 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2
6. 100016 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2
7. FFFF16 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2
8. 1A1A16 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2
9. 123416 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2
10. ABCD16 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2