Title: **Binary, Octal and Hexadecimal Conversion** Worksheet: 8

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

Name ANSWER KEY Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall calculate a hexadecimal value to decimal and vise-versa.
2. Student shall calculate a hexadecimal value to binary and vise-versa.
3. Student shall calculate an octal value to decimal and vise-versa.
4. Student shall calculate an octal value to binary and vise-versa.

**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. 3116 4910
2. 1016 1610
3. 4B16 7510
4. 1E216 48210
5. D416 21210
6. 11116 27310
7. 916 910
8. 1C16 2810
9. B116 17710
10. 2F16 4710

**Instructions**

Convert the following decimal numbers to their hexadecimal equivalents.

1. 3110 1F16
2. 1010 A16
3. 5910 3B16
4. 510 516
5. 11410 7216
6. 1610 1016
7. 7110 4716
8. 1910 1316
9. 9910 6316
10. 25610 10016

**Instructions**

Convert the following binary numbers to their hexadecimal equivalents.

1. 101110012 B916
2. 010110112 5B16
3. 100111012 9D16
4. 110110012 D916
5. 111111102 FE16
6. 100100012 9116
7. 101010102 AA16
8. 110011002 CC16
9. 101001012 A516
10. 110111012 DD16

**Instructions**

Convert the following hexadecimal numbers to their binary equivalents.

1. 4E2616 0100 1110 0010 01102
2. 1CD216 0001 1100 1101 00102
3. 511B16 0101 0001 0001 10112
4. AAF416 1010 1010 1111 01002
5. D0D016 1101 0000 1101 00002
6. 100116 0001 0000 0000 00012
7. FADE16 1111 1010 1101 11102
8. 1F1F16 0001 1111 0001 11112
9. 567816 0101 0110 0111 10002
10. CDEF16 1100 1101 1110 11112

**Instructions**

Convert the following octal numbers to their decimal equivalents.

1. 318 2510
2. 108 810
3. 538 4310
4. 78 710
5. 1278 8710
6. 178 1510
7. 668 5410
8. 118 910
9. 1118 7310
10. 1218 8110

**Instructions**

Convert the following decimal numbers to their octal equivalents.

1. 3110 378
2. 1010 128
3. 5310 658
4. 710 78
5. 11510 1638
6. 1710 218
7. 9910 1438
8. 1310 158
9. 20210 3128
10. 11110 1578

**Instructions**

Convert the following binary numbers to their octal equivalents.

1. 101110012 2718
2. 010110112 1338
3. 101011012 2558
4. 111010012 3518
5. 101111112 2778
6. 100100012 2218
7. 110101012 3258
8. 101010112 2538
9. 101101012 2658
10. 110101002 3248

**Instructions**

Convert the following octal numbers to their binary equivalents.

1. 318 0001 10012
2. 108 0000 10002
3. 538 0010 10112
4. 78 0000 01112
5. 1148 0100 11002
6. 178 0000 11112
7. 728 0011 10102
8. 118 0000 10012
9. 1118 0100 10012
10. 2228 1001 00102