**Chapter 9: Assignment**

**TRUE OR FALSE**

**F** 1. Our primary counting system is based on binary digits to represent

numbers.

**F** 2. The decimal system has a radix of 100.

**T** 3. Negative powers of 10 are used to represent the positions of the

numbers for decimal fractions.

**T** 4. A number with both an integer and fractional part has digits raised

to both positive and negative powers of 10.

**F** 5. In any number, the rightmost digit is referred to as the most

significant digit.

**T** 6. There are 50 tens in the number 509.

**T** 7. The decimal system is a special case of a positional number system

with radix 10 and with digits in the range 0 through 9.

**F** 8. A number cannot be converted from binary notation to decimal

notation.

**T** 9. Although convenient for computers, the binary system is

exceedingly cumbersome for human beings.

**F** 10. A *nibble* is a grouping of four decimal digits.

**MULTIPLE CHOICE**

1. The decimal system has a base of \_\_\_\_\_\_\_\_\_.

A. 0 **B. 10**

C. 100 D. 1000

1. Which digit represents “hundreds” in the number 8732?

A. 8 **B. 7**

C. 3 D. 2

1. Which of the following is correct?
2. 25 = (2 x 102) + (5 x 101)
3. 289 = (2 x 103) + (8 x 101) + (9 x 100)
4. **7523 = (7 x 103) + (5 x 102) + (2 x 101) + (3 x 100)**
5. 0.628 = (6 x 10-3) + (2 x 10-2) + (8 x 10-1)
6. In the number 3109, the 3 is referred to as the \_\_\_\_\_\_\_\_\_.

**A. most significant digit** B. least significant digit

C. radix D. base

1. In the number 3109, the 9 is referred to as the \_\_\_\_\_\_\_\_\_.

A. most significant digit **B. least significant digit**

C. radix D. base

1. Numbers in the binary system are represented to the \_\_\_\_\_\_\_\_\_.

A. base 0 B. base 1

**C. base 2** D. base 10

1. Hexadecimal has a base of \_\_\_\_\_\_\_\_\_.

A. 2 B. 8

C. 10 **D. 16**

1. The binary string 110111100001 is equivalent to \_\_\_\_\_\_\_\_\_\_.

**A. DE116**B. C7816

C. FF6416 D. B8F16

1. The \_\_\_\_\_\_\_\_\_ system uses only the numbers 0 and 1.

A. positional **B. binary**

C. hexadecimal D. decimal

1. Decimal “10” is \_\_\_\_\_\_\_\_\_\_ in binary.

A. 1000 B. 0010

**C. 1010** D. 0001

1. Decimal “10” is \_\_\_\_\_\_\_\_\_ in hexadecimal.

A. 1 **B. A**

C. 0 D. FF

1. Four bits is called a \_\_\_\_\_\_\_\_\_.

A. radix point B. byte

**C. nibble** D. binary digit

1. Another term for “base” is \_\_\_\_\_\_\_\_\_\_.

**A. radix** B. integer

C. position D. digit

1. In the number 472.156 the 2 is the \_\_\_\_\_\_\_\_\_.

A. most significant digit B. radix point

C. least significant digit **D. none of the above**

1. Binary 0101 is hexadecimal \_\_\_\_\_\_\_\_\_.

A. 0 **B. 5**

C. A D. 10

**SHORT ANSWER**

1. In everyday life we use a system based on decimal digits to represent numbers and refer to the system as the **decimal system**.
2. The rightmost digit is called the **least significant** digit.
3. In the decimal system, **9** is the maximum value that a position can hold before it flips over into the next higher position.
4. To convert a number from binary notation to decimal notation all that is required is to multiply each binary digit by the appropriate power of **2** and add the results.
5. The decimal system has a radix of **10**.
6. Because 16 symbols are used, the notation is called hexadecimal and the 16 symbols are the **hexadecimal digits**.
7. Given ( . . . a3a2a1a0.a-1a-2a-3 . . . )r, the dot between a0 and a-1 is called the **radix point**.
8. In the decimal system, **10** different digits are used to represent numbers with a base of 10.
9. (2 x 10-1) + (5 x 10-2) + (6 x 10-3) represents the number **0.256**.
10. Binary 0001 0000 0000 represents **100** in hexadecimal.