**Multiple Choice**

1. Which of the following is a unit in an abstract mathematical system subject to the laws of arithmetic?

A) Number

B) Natural number

C) Integer

D) Negative number

E) Rational number

Ans: A

Complexity: Easy

Ahead: Numbers and Computing

Subject: Chapter 2

Title: Binary Values and Number Systems

2. Which of the following is the number 0 or any number obtained by repeatedly adding 1 to it?

A) Number

B) Integer

C) Natural number

D) Rational number

E) Negative number

Ans: C

Complexity: Easy

Ahead: Numbers and Computing

Subject: Chapter 2

Title: Binary Values and Number Systems

3. What is the largest digit in the decimal number system?

A) 0

B) 9

C) 10

D) 15

E) 16

Ans: B

Complexity: Easy

Ahead: Positional Notation

Subject: Chapter 2

Title: Binary Values and Number Systems

4. Which number represents the value of the base in every number system?

A) 0

B) 1

C) 10

D) 11

E) 100

Ans: C

Complexity: Easy

Ahead: Positional Notation

Subject: Chapter 2

Title: Binary Values and Number Systems

5. In base 16, the digit E corresponds to what decimal value?

A) 1

B) 10

C) 12

D) 14

E) 15

Ans: D

Complexity: Difficult

Ahead: Positional Notation

Subject: Chapter 2

Title: Binary Values and Number Systems

**True/False**

1. The category of numbers called integers includes negative numbers.

Ans: True

Complexity: Easy

Ahead: Numbers and Computing

Subject: Chapter 2

Title: Binary Values and Number Systems

2. A rational number is any number that can be expressed without a fractional part.

Ans: False

Complexity: Difficult

Ahead: Numbers and Computing

Subject: Chapter 2

Title: Binary Values and Number Systems

3. The base of a number system determines the number of digits used in the system.

Ans: True

Complexity: Easy

Ahead: Positional Notation

Subject: Chapter 2

Title: Binary Values and Number Systems

4. Positional notation is possible due to the concept of zero.

Ans: True

Complexity: Easy

Ahead: Positional Notation

Subject: Chapter 2

Title: Binary Values and Number Systems

5. The digits used in base 8 are 0 through 7.

Ans: True

Complexity: Easy

Ahead: Positional Notation

Subject: Chapter 2

Title: Binary Values and Number Systems

6. The base of the binary number system is 2.

Ans: True

Complexity: Easy

Ahead: Positional Notation

Subject: Chapter 2

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7. The value of each position in a number system is determined by subtracting the base from the position number.

Ans: False

Complexity: Difficult

Ahead: Positional Notation

Subject: Chapter 2

Title: Binary Values and Number Systems

8. The number of bits in a word is the same on all machines.

Ans: False

Complexity: Moderate

Ahead: Positional Notation

Subject: Chapter 2

Title: Binary Values and Number Systems

9. Grace Murray Hopper participated in the design of the COBOL programming language.

Ans: True

Complexity: Easy

Ahead: Positional Notation

Subject: Chapter 2

Title: Binary Values and Number Systems

10. Converting from base 10 to other bases involves dividing by the base into which you are converting until the quotient is 1.

Ans: False

Complexity: Moderate

Ahead: Positional Notation

Subject: Chapter 2

Title: Binary Values and Number Systems