**True/False**

*Indicate whether the statement is true or false.*

\_\_F\_ 26. Every computer game, program, picture, or sound is stored in the computer as a series of decimal digits.

\_\_T\_ 27. Negative powers are used to represent the fractional portion of numbers.

\_\_F\_ 28. The hexadecimal numbering system has seventeen unique digits.

\_T\_\_ 29. The hexadecimal number system uses letters to represent digits beyond nine.

\_F\_\_ 30. The term radix is synonymous with positional value.

\_\_\_\_ 31. For any quantity, there is a number in any base to represent it.

\_\_T\_\_ 32. Table look-ups can be used to convert a number from one base to another.

\_\_F\_\_ 33. The decimal equivalent of 111112 is 31000.

\_\_T\_\_ 34. The conversion algorithm from base 10 to another base utilizes a sequence of remainders to construct the new number.

\_\_T\_\_ 35. The difference between adding numbers in base 10 and any other base lies in the carry process.

\_\_F\_\_ 36. Modern computers are capable of storing hexadecimal information.

\_\_T\_\_ 37. Half of a byte is sometimes referred to as a nibble.

\_\_T\_\_ 38. Hexadecimal numbers are used as a shorthand method to represent binary values.

\_\_F\_\_ 39. Whole numbers or integers are internally represented by the computer as hexadecimal numbers.

\_\_F\_\_ 40. Signed and unsigned numbers in the computer are designed to always take up a different number of bits.

\_\_F\_\_ 41. Negative fractional numbers cannot be internally represented in a computer.

\_\_T\_\_ 42. The Unicode character standard is compatible with the extended ASCII standard.

\_\_T\_\_ 43. The number of pixels in each row and column defines the resolution of a display.

\_\_F\_\_ 44. The Unicode method of character representation is fast becoming obsolete.

\_\_F\_\_ 45. In the common monitor resolution specified as 1024 X 768, the number 1024 represents rows and 768 represents dots (or pixels).

\_\_F\_\_ 46. As the resolution numbers get larger for a monitor, the size of each pixel gets larger.

\_\_T\_\_ 47. Sounds are stored in the computer in a manner very similar to images.

\_\_F\_\_ 48. The number of words used for each sound sample determines how many unique amplitude levels can be represented.

\_\_T\_\_ 49. Raw audio samples are stored in files such as WAV files.

\_\_F\_\_ 50. It is not possible to learn to program or to manage a database without understanding binary and hexadecimal number systems.

**Multiple Choice**

*Identify the choice that best completes the statement or answers the question.*

\_\_\_\_ 76. Displays containing the contents of a computer’s memory or the hard disk are often referred to as \_\_\_\_ memory dumps.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | error | c. | decimal |
| **b.** | **hexadecimal** | d. | octal |

\_\_\_\_ 77. The number 10-4 evaluates to which of the following?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 0.000001 | **c.** | **0.0001** |
| b. | 0.00001 | d. | 10000 |

\_\_\_\_ 78. A \_\_\_\_ is identified by the number of digits a numbering system has, including zero.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | root | c. | determinant |
| b. | discriminant | **d.** | **base** |

\_\_\_\_ 79. The concept of \_\_\_\_ value is common to all modern numbering systems.

|  |  |  |  |
| --- | --- | --- | --- |
| **a.** | **positional** | c. | deterministic |
| b. | radical | d. | random |

\_\_\_\_ 80. According to positional value, the binary number 101012 represents \_\_\_\_ things.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 3 | c. | 12 |
| b. | 5 | **d.** | **21** |

\_\_\_\_ 81. The hexadecimal numbering system runs out of digits after \_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | E | c. | G |
| **b.** | **F** | d. | H |

\_\_\_\_ 82. The decimal equivalent of 10016 is \_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 116 | **c.** | **256** |
| b. | 160 | d. | 1600 |

\_\_\_\_ 83. What is the result of converting the decimal number 25to a base 16 equivalent?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | F | c. | 1A |
| **b.** | **19** | d. | 31 |

\_\_\_\_ 84. What is the result of converting the decimal number 25to a base 2 equivalent?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 100012 | **c.** | **110012** |
| b. | 100112 | d. | 111012 |

\_\_\_\_ 85. What binary number results from adding 1112 and 1112?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 10002 | **c.** | **11102** |
| b. | 10112 | d. | 11112 |

\_\_\_\_ 86. A \_\_\_\_ is a basic unit of storage that can have a value of either 1 or 0 (on or off).

|  |  |  |  |
| --- | --- | --- | --- |
| a. | nibble | c. | byte |
| b. | word | **d.** | **bit** |

\_\_\_\_ 87. A \_\_\_\_ is a group of eight bits.

|  |  |  |  |
| --- | --- | --- | --- |
| **a.** | **byte** | c. | nibble |
| b. | word | d. | blip |

\_\_\_\_ 88. An 8-nibble word is more likely to be referred to as the equivalent \_\_\_\_-byte word.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 2 | c. | 8 |
| **b.** | **4** | d. | 16 |

\_\_\_\_ 89. Each hexadecimal digit relates directly to a \_\_\_\_-bit binary pattern.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 2 | c. | 8 |
| **b.** | **4** | d. | 16 |

\_\_\_\_ 90. Which of the following methods represents the most common way of storing signed numbers?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | one’s complement | c. | integer complement |
| b. | binary complement | **d.** | **two’s complement** |

\_\_\_\_ 91. To find the \_\_\_\_ of a given bit, flip it to the opposite state.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | root | c. | position |
| b. | complement | **d.** | **sign** |

\_\_\_\_ 92. In scientific notation, the method of displaying numbers uses a(n) \_\_\_\_ and an exponent.

|  |  |  |  |
| --- | --- | --- | --- |
| **a.** | **mantissa** | c. | abscissa |
| b. | asymptote | d. | ordinate |

\_\_\_\_ 93. The eight bit extended ASCII (American Standard Code for Information Interchange) character set can be used to represent \_\_\_\_ characters.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 128 | c. | 512 |
| **b.** | **256** | d. | 34,168 |

\_\_\_\_ 94. A \_\_\_\_ is the smallest unit that can be displayed on a computer monitor.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | micron | c. | twip |
| b. | picon | **d.** | **pixel** |

\_\_\_\_ 95. \_\_\_\_ patterns contain information about the color and brightness of a pixel.

|  |  |  |  |
| --- | --- | --- | --- |
| **a.** | **Binary** | c. | Decimal |
| b. | Octal | d. | Hexadecimal |

\_\_\_\_ 96. Unicode character representation uses a(n) \_\_\_\_ bit standard.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 4 | c. | 8 |
| b. | 7 | **d.** | **16** |

\_\_\_\_ 97. Various \_\_\_\_ techniques have been designed to allow the same image information to be stored in a smaller file.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | consolidation | c. | scanning |
| **b.** | **compression** | d. | resolution |

\_\_\_\_ 98. A sound consists of a waveform that has amplitude (volume) and a \_\_\_\_ (pitch).

|  |  |  |  |
| --- | --- | --- | --- |
| **a.** | **frequency** | c. | phase angle |
| b. | phase shift | d. | period |

\_\_\_\_ 99. The computer samples sound at fixed intervals and each sample is assigned a binary value according to its \_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | frequency | **c.** | **amplitude** |
| b. | period | d. | pitch |

\_\_\_\_ 100. Which of the following is an example of a video compression format?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | BMP | **c.** | **MPEG** |
| b. | GIF | d. | TIF |