True/ False

1	The sign of this floating-point number x42DC8000 is (-)	
2	Two's complement has just one representation for the 0 value	
3	The maximum positive number represented in two's complement by 5 bits is 31	
4	The result of an XOR operator is true when both of the operands are different	
5	Integrated Circuit is a set of instructions that tell the computer what to do with data	
6	The ALU is where mathematical and logical operations take place.	
7	To store floating point number in memory, you need its sign, exponent, and mantissa	
8	The input subsystem sends the result of the processing to the outside	
9	NOT(X) AND 1 = NOT(X)	
10	The bit patterns of xAF1 is 101011110001	
11	The octal notation of 111110101 is o745	
12	Unicode uses 32 bit pattern	
13	We can make shift right or left for sign and mangntiude representation numner	
14	The equivalent decimal value of binary number 1111111111 is 1023	
15	In the vector Graphic method of representing an image in a computer, rescaling the image creates a ragged or grainy image	
16	Byte is a bit pattern of length 8	
17	Most computers today uses One's complement method of integer representation	
18	The OR operator can be used to set bits.	
19	The shif right operation is used to multiply a number by 2.	
20	Overflow happens when the result of an arithmetic operation is outside the range of possible values for the bit allocation being used.	

Multiple Choice

21. The equivalent binary number of 125 is
   a. 11111100
   b. 11111101
   c. 1111101
   d. 1111100

22. The two's complement of 01000000 is
   a 11000000
   b. 10111111
   c. 11111111
   d. 10111110

23. To flip all the bits of a bit pattern, make a mask of all 1s and then ………… the bit pattern and the mask
   a. AND
   b. XOR
   c. OR
   d. NOT

24. When you want to download sound file to a computer, the audio must be:
   a. Sampled
   b. Quantized
   c. Coded
   d. all of the above

25. The result of subtracting NOT(11110010) from 00010111 is :
   a. 0000 1010
   b. 0000 1001
   c. 1111 0110
   d. 1111 0101

26. If the left most bit is 1 in ……… number representation, then the number is positive
   a. sign-and-magnitude
   b. one's complement
   c. two's complement
   d. Unsigned

27. Show the result of this opeartion: x34 XOR x34
   a. x68
   b. x17
   c. x0
   d. x34

28. Show the result of this opeartion: x34 AND x34
   a. x68
   b. x17
   c. x0
   d. x34

29. If we need 18000 byte to store an image of 6000 pixels, how many bits are needed to represent each pixel?
    a. 30 bits
    b. 2250 bits
    c. 24 bits
    d. 144000 bits

30. The 8-bit unsigned representation of 300 is
    a. Overflow
    b. 100000000
    c. 11111111
    d. None of the above

31. The 8-bit ………… representation of 128 gives Overflow
    a. sign-and-magnitude
    b. one's complement
    c. Both a and b
    d. Unsigned

32. The normalized form of the following 32-bit floating point number   1 01111101 11101111000000000000000 is
    a. $-2^{-3} \times 1.01101111$
    b. $2^{-3} \times 0.11101111$
    c. $-2^{-2} \times 1.11101111$
    d. $-2^{2} \times 1.11101111$

33. Convert the decimal 13.875 to binary
    a. 1101.011
    b. 1101.111
    c. 1110.111
    d. 1110.011

34. The 8-bit one's complement representation of -124 is
    a. 10000011
    b. 00000011
    c. 01111100
    d. 01111110

35. Interpret 1000010 if the representation is Excess_63
    a. -5
    b. 5
    c. -6
    d. none of the above

36. the decimal 65 is ……………….. $(1000000)_2$
    a. Greater than
    b. Less than
    c. equal to
    d. none of the above

37. How many octal digits are needed to represent a floating-point number stored in single precision format?
    a. 22
    b. 11
    c. 21
    d. 10

38. The resulting of add: 11011000 + 00010100 is:
    a. -10
    b. 20
    c. 10
    d. -20

39. The resulting of 11011000 - 00010100 is:
    a. -60
    b. -40
    c. 60
    d. 40

40. In two's complement addition, if there is a final carry after the leftmost column addition, …………..
    a. add it to the rightmost column
    b. Increase the bit length
    c. add it to the leftmost column
    d. none of the above