* Multiple Choice Question *

1 NOT gate is also known as
a. Converter   b. Inverter   c. complement   d. Both b and c

2 Positive integers can be represented as
a. Signed numbers   b. Unsigned numbers   c. Negative integers   d. Both a and b

3 Register is a group of
a. Binary cell   b. Binary system   c. Binary digit   d. binary number

4 A NAND gate is called a universal logic element because
a. it is used by everyone   b. any logic function can be realized by NAND gate   c. Many digital computers use NAND gate   d. None of These

5 The NAND gate output will be low if the two inputs are
a. 00   b. 01   c. 10   d. 11

6 Popular application flip-flop are
a. Counters   b. Shift registers   c. Transfer Registers   d. a,b,c all

7 The output of an AND gate is LOW _____
a. when any input is LOW   b. all the time   c. when all inputs are HIGH   d. when any input is HIGH

8 Which of the following expressions is in the sum-of-products (SOP) form?
a. AB + CD   b. AB(CD)   c. (A + B)(C + D)   d. (A)B(CD)

9 Digital systems are called _____.
a. binary systems   b. logic systems   c. numbering systems   d. ADC systems

10 In the decimal numbering system, what is the MSD?
a. The middle digit of a stream of numbers   b. The digit to the right of the decimal point   c. The last digit on the right   d. The digit with the most weight

11 Digital systems have _____.
a. one state   b. two state   c. three state   d. four state

12   Convert the fractional decimal number 6.75 to binary.
      a. 0111.1100   b. 0110.1010   c. 0110.1100   d. 0110.0110

13   A pulse has a period of 15 ms. Its frequency is _____.
      a. 6.66 Hz   b. 66.66 Hz   c. 666.66 Hz   d. 15 Hz

14   What is an analog-to-digital converter?
      a. It makes digital   b. It takes analog   c. It allows the use   d. It stores
      signals   signals and puts them   of digital signals in   information on a
                                in digital format.   everyday life.   CD.

15   What is the decimal value of 2^3 ?
      a. 2   b. 4   c. 6   d. 8

16   How many binary bits are necessary to represent 748 different numbers?
      a. 9   b. 7   c. 10   d. 8

17   Any number with an exponent of one is equal to:
      a. Zero   b. one   c. two   d. that number

18   What is the decimal value of 2^{-1} ?
      a. 0.5   b. 0.25   c. 0.05   d. 0.1

19   Give the decimal value of binary 10000110.
      a. 134_{10} b. 144_{10} c. 110_{10} d. 126_{10}

20   What is the typical invalid voltage for a binary signal?
      a. 0.7 2.8 volts   b. 0.8–3 volts   c. 0.8–2 volts   d. 0.7–2.5 volts

21   Which of the following is not an analog device?
      a. Thermocouple   b. Current flow in a   c. Light switch   d. Audio
                                circuit   microphone

22   Which of the following is not generally associated with flip-flops?
      a. Hold time   b. Propagation delay   c. Interval time   d. Set up time
                                time

23   A transducer is a device that:
      a. converts a physical   b. converts analog data   c. controls a physical   d. stores digital data
      variable to an   to meaningful data   variable   and then processes
      electrical variable   that data according
                                                                                    to a set of specified
                                                                                    instructions

24   As a general rule for stable flip-flop triggering, the clock pulse rise and fall times must be:
      a. very long.   b. very short.   c. at a maximum   d. of no consequence as
                                                       value to enable the   long as the levels are
                                                       input control signals   within the determinate
                                                       to stabilize.   range of value.

25   What is one disadvantage of an S-R flip-flop?
      a. It has no enable   b. It has an invalid   c. It has no clock   d. It has only a single
      input.   state.   input.   output.

26   How many flip-flops are required to produce a divide-by-128 device?
      a.1   b. 4   c. 6   d. 7

27   How is a J-K flip-flop made to toggle?
      a. $J = 0, K = 0$ b. $J = 1, K = 0$ c. $J = 0, K = 1$ d. $J = 1, K = 1$

28   All computer programs for a machine are called:
      a.Software   b.firmware   c.hardware   d.none of these

29   The items that you can physically touch in a computer system are called:
      a. software   b. firmware   c. hardware   d. none of the above

30   The devices that provide the means for a computer to communicate with the user or other
      computers are referred to as:
      a. CPU   b.ALU   c.I/O   d. none of these

31   Convert the binary number 1011010 to hexadecimal.
      a. 5B   b. 5F   c. 5A   d. 5C

32   What is the result when a decimal 5238 is converted to base 16?
      a. 327.375   b. 12.166   c. 1388   d. 1476

33   An informational signal that makes use of binary digits is considered to be:
      a. solid state   b. digital   c. analog   d. non-oscillating

34   The octal numbering system:
      a. simplifies tasks   b. groups binary   c. saves time   d. simplifies tasks and saves
                               numbers in groups   time
                               of 4

35   Which is not a word size?
      a.64   b. 28   c. 16   d. 8

36 Convert $8B3F_{16}$ to binary.
a. 35647
b. 011010
c. 1011001111100011
d. 1000101100111111

37 Which is typically the longest: bit, byte, nibble, word?
a. bit
b. byte
c. nibble
d. word

38 Convert binary 111111110010 to hexadecimal.
a. $FE2_{16}$
b. $FF2_{16}$
c. $2FE_{16}$
d. $FD2_{16}$

39 Convert hexadecimal value 16 to decimal.
a. 22_{10}
b. 16_{10}
c. 10_{10}
d. 20_{10}

40 Which of the following statements does NOT describe an advantage of digital technology?

a. The values may vary over a continuous range.
b. The circuits are less affected by noise.
c. The operation can be programmed.
d. Information storage is easy

41 When used with an IC, what does the term "QUAD" indicate?

a. 2 circuits
b. 4 circuits
c. 6 circuits
d. 8 circuits

42 If a 3-input NOR gate has eight input possibilities, how many of those possibilities will result in a HIGH output?
a. 1
b. 2
c. 7
d. 8

43 The parallel transmission of digital data:

a. is much slower than the serial transmission of data.
b. requires only one signal line between sender and receiver.
c. requires as many signal lines between sender and receiver as there are data bits.
d. is less expensive than the serial method of data transmission.

44 Digital representations of numerical values of quantities may BEST be described as having characteristics:
a. that are difficult to interpret because they are continuously changing.
b. that vary constantly over a continuous range of values.
c. that vary in constant and direct proportion to the values they represent.
d. that vary in discrete steps in proportion to the values they represent.

45 Digital signals transmitted on a single conductor (and a ground) must be transmitted in:
a. slow speed.
b. parallel.
c. analog.
d. serial.

46 What kind of logic device or circuit is used to store information?

a. Counter b. Register c. Inverter d. Buffer

47 Which of the following is a semiconductor memory?

a. RAM b. MAR c. CD-ROM d. CD

48 A classification of ICs with complexities of 12 to 100 equivalent gates on a chip is known as

a. SSI b. MSI c. LSI d. VLSI

49 How many unique symbols are used in the decimal number system?

a. One b. Nine c. Ten d. Unlimited

50 Which format can send several bits of information faster?

a. Parallel b. Serial c. both are same d. can not tell

Answers:

1 (d)	2 (b)	3(a)	4(b)	5(d)	6(d)	7(a)	8(a)	9(b)	10(d)
11(b)	12(c)	13(b)	14(b)	15(d)	16(c)	17(d)	18(a)	19(a)	20(c)
21(c)	22(c)	23(a)	24(b)	25(b)	26(d)	27(d)	28(a)	29(c)	30(c)
31(c)	32(d)	33(b)	34(d)	35(b)	36(d)	37(d)	38(b)	39(a)	40(a)
41(b)	42(a)	43(c)	44(d)	45(d)	46(b)	47(a)	48(b)	49(c)	50(a)