

1. The number of level in a digital signal is:
  - a) one
  - b) two
  - c) four
  - d) ten
  
2. A pure sine wave is :
  - a) a digital signal
  - b) analog signal
  - c) can be digital or analog signal
  - d) neither digital nor analog signal
  
3. The high voltage level of a digital signal in positive logic is :
  - a) 1
  - b) 0
  - c) either 1 or 0
  
4. A device that converts from decimal to binary numbered is called :
  - a) decoder
  - b) encoder
  - c) CPU
  - d) convertor
  
5. K is an abbreviation used with a number of units. Thus 2K means
  - a) 2000 units
  - b) 2048 units
  - c) 2024 units
  - d) none of these
  
6. Bit is:
  - a) smallest piece of electronic hardware
  - b) a drilling tool

- c) an abbreviation for binary digit
- d) the smallest number

7. A register is:

- a) a group of memories
- b) a group of devices that store digital data
- c) a chip used in computer
- d) a pure silica piece used in digital system

8. A typical microcomputer has 65,536 registers in its memory. It will be specified as :

- a) 65,536 memory
- b) 65,536 K memory
- c) 64 K memory
- d) 8 K memory

9. Nibble is :

- a) a string of 4 bits
- b) a string of 8 bits
- c) a string of 16 bits
- d) a string of 64 bits

10. The high voltage level of a digital signal in negative logic is :

- a) 1
- b) 0
- c) either 1 or 0

11. Number of gates/chip in SSI :

- a)  $< 12$
- b)  $< 100$
- c)  $< 1000$
- d)  $> 1000$

11. Number of gates/chip in LSI :

- a)  $< 12$
- b) Between 12 and 99

- c)  $< 1000$
- d)  $> 1000$

12. Number of gates/chip in VLSI :

- a)  $< 12$
- b)  $< 100$
- c)  $< 1000$
- d)  $> 10000$

13. The electronic, magnetic and mechanical devices of a computer are known as:

- a) CPU
- b) memory
- c) hardware
- d) radix

14. Ordinary electrical switch is:

- a) Analog
- b) Digital
- c) None of the above

15. Train of pulses is:

- a) Analog
- b) Digital
- c) None of the above

16. Octal 16 is equal to decimal:

- a) 13
- b) 14
- c) 15
- d) 16

17. The binary number 101101 is equal to octal number:

- a) 65
- b) 55
- c) 51
- d) 45

18. Binary number 101101 when converted to its 2's complement will become :

- a) 0101.01
- b) 0100.11
- c) 0100.10
- d) 0101.10

19. The sum of binary numbers 11111 and 00001 is given by :

- a) 100100
- b) 100000
- c) 100001
- d) 100010

20. The hexadecimal digits are :

- a) 1 to 16
- b) 1 to 9
- c) 0 to 9
- d) 1 to 6

21. A gate in which all input must be low to get a high output is called:

- a) an inverter
- b) A NOR gate
- c) an AND gate
- d) a NAND gate

22. A NAND circuit with positive logic will operate as :

- a) NOR with negative logic
- b) AND with negative logic
- c) OR with negative logic input
- d) AND with positive logic output

23. To implement all function of the basic logic function, is sufficient to have:

- a) OR
- b) NOT
- c) AND NOT
- d) none of these

24. Which of the following ICs has only one NAND gate:

- a) 7410
- b) 7420
- c) 7430
- d) 7447

25. OR operation is:

- a)  $X + XY$
- B)  $XY$
- C)  $X+Y$
- D)  $(X+Y) (X+Y)$

26. AND operation is:

- a)  $X(X + Y)$
- B)  $XY$
- C)  $X+Y$
- D)  $(X+Y) (X+Y)$

27. NOR operation is:

- a)  $X + Y$
- B)  $XY$
- C)  $X+Y$
- D)  $(X+Y) (X+Y)$

28. NAND operation is:

- a)  $X + Y$



- B) XY
- C) X+Y
- D) (X+Y) (X+Y)

29. What is the no. of OR IC. :

- a) 7402
- b) 7486
- c) 7432
- d) 7404

30. What is the no. of AND IC. :

- a) 7402
- b) 7408
- c) 7447
- d) 7492

32. What is the no. of NOR IC. :

- a) 7402
- b) 7486
- c) 7447
- d) 7492

33. What is the no. of NAND IC. :

- a) 7402
- b) 7404
- c) 7400
- d) 7492

34. What is the no. of NOT IC. :

- a) 7402
- b) 7486
- c) 7404
- d) 7492

35. What is the no. of EX-OR IC. :

- a) 7402
- b) 7486
- c) 7447
- d) 7492

36. Which of the following ICs has three input NAND gate:

- a) 7420
- b) 7430
- c) 7410
- d) 7474

37. Which of the following is Boolean eq. of EX-OR gate:

- a)  $A+B$
- B)  $A+B$
- C)  $AB$
- D)  $A B + A B$

38. Which one is the universal gate:

- a) AND gate
- b) OR gate
- c) NAND gate
- d) EX-OR gate

39. Bubbles on the gate shows

- a) active high
- b) active low
- c) both a and b
- d) none

40. Which statement is verify NAND gate :

- a) if all input are high output is low
- b) if all input are low output is low
- c) any one n are low output is low
- d) none of them

41. In regard to NAND gate the following four statement are made:

1. it is equivalent to an AND gate followed by an inverter
2. if all input to it are low, the output is low
3. if all input are high, the output is low
4. NAND operation on two elements is equivalent to OR operation on them.

Of these, the only true statements are

- a) 1,2
- b) 1,3
- c) 1,4
- d) 2,4

42. The Gray code for number 7 is :

- a) 1100
- b) 1001
- c) 0100
- d) 0110

43. The gray code for number 2 is :

- a) 0010
- b) 0011
- c) 1000
- d) 0101

44. The gray code for number 6 is :

- a) 1100
- b) 1001
- c) 0101
- d) None of the above

45. The Excess 3 for number 6 is :

- a) 1100
- b) 1001
- c) 0101
- d) 0110

46. The excess 3 number 8 is:

- a) 1100
- b) 1011



- c) 0101
- d) 0110

47. BCD numbers are obtained by :

- a) converting decimal number to binary
- b) converting decimal to octal number
- c) each decimal digit is represented by a four bit binary
- d) converting binary to decimal

48.  $(100101)_2$  is

- a)  $(37)_{10}$
- b)  $(69)_{10}$
- c)  $(41)_{10}$
- d)  $(5)_{10}$

49.  $(1001)_{10}$  is equal to :

- a) 7
- b)  $8_8$
- c)  $7_4$
- d)  $8_4$

50. Square root of 4 is :

- a)  $16_{16}$
- b)  $2_{10}$
- c)  $8_{16}$
- d)  $5_{16}$

51. In the expression  $A(A+B)$  by writing the first term A as  $A+0$ , the expression is best simplified as :

- a)  $A+AB$
- b)  $AB$
- c)  $A$
- d)  $A+B$

52. A four bit number is given 1001. its one's complement is :

- a) 1001
- b) 1110

- c) 0110
- d) 0111

53. The term VLSI generally refers to a digital IC having :

- (a) more than 1000 gates
- (b) more than 100 gates
- (c) more than 1000 but less than 9999 gates
- (d) more than 100 but less than 999 gates

54. The expression for sum of A, B in the half adder is given by:

- a)  $AB$
- b)  $A + B$
- c)  $A \oplus B$
- d) none of these

55. Which expression for the sum of full adder circuit.:

- a)  $AB$
- b)  $A+B$
- c)  $A \oplus B$
- d) none of these

56. Combinational circuit has :

- a) memory
- b) no memory
- c) flip-flops
- d) counters

57. The sum of  $111010_2$  and  $11011_2$  in decimal form will be

- a) 65
- b) 75
- c) 85
- d) 95

58. The digit 0 with carry of 1 is the sum of binary addition:

- a)  $1 + 1$
- b)  $1 + 0$
- c)  $0 + 1$

d) 0 + 0

59. Which of the following flip-flop is used as latch:

- a) TTL
- b) ECL
- c) CMO
- d) LSI

60. Which of the following flip-flops is used as latch:

- a) JK flip-flop
- b) D flip-flop
- c) RS flip-flop
- d) T flip-flop

61. Which of the following circuit can be used as parallel to series converter

- a) digital counter
- b) decoder
- c) de-multiplexer
- d) multiplexer

62. Which of the following ICs contain four negative edge triggered flip-flops.

- a) 7493
- b) 7486
- c) 7490
- d) 7419

63. Multiplexer is :

- a) 1 input many output
- b) many inputs 1 output
- c) many input many output
- d) one input one output

64. Demultiplexer is :

- a) 1 input many output
- b) many inputs 1 output
- c) many input many output
- d) one input one output

64. In 8:1 mux the no. of select lines are :

- a) 1
- b) 3
- c) 5
- d) 32

65. In 16:1 mux the no. of select lines are :

- a) 6
- b) 3
- c) 4
- d) 5

66. In 3: 8 decoder the no. of inputs are

- a) 8
- b) 3
- c) 1
- d) 2

67. Decoder is:

- a) ) 1 input many output
- b) many inputs 1 output
- c) many input many output
- d) one input one output

68. Sequential circuit has :

- a) feedback
- b) no feedback
- c) may or may not
- d) none of these

69. For a level input sequential circuit :

- a) output in a level only
- b) output is in the pulse form
- c) output may be a pulse or a level form
- d) none of these

70. In a ring counter 1 for N clock pulse the scale for the counter is :

- a) N:1
- b) N:2
- c) N:10
- d) N:100

71. Binary coded decimal number express each decimal digit as a :

- a) unit
- b) bit
- c) byte
- d) nibble

72. How many bytes are there in 1111 1011 0111 0100 1010:

- a) 2
- b)  $2\frac{1}{2}$
- c) 3
- d)  $3\frac{1}{2}$

73. For a decade counter, number of binaries required is :

- a) five
- b) ten
- c) eight
- d) two

74. Counter ;

- a) it counts the no. randomly
- b) it counts the no. sequentially
- c) both a and b
- d) none of these

75. What is asynchronous counter :

- a) each flip-flop has its own clock
- b) all the flip-flops are combined to common clock
- c) both a and b
- d) none of the above

76. UP Counter is :

- a) it counts in upward manner
- b) it counts in downward manner
- c) it counts in both the direction
- d) none of the above

77. DOWN counter is:

- a) it counts in upward manner
- b) it counts in downward manner
- c) it counts in both the direction
- d) none of the above

78. Another name of Johnson counter :

- a) asynchronous counter
- b) synchronous counter
- c) ring counter
- d) none of above

79. Give full form of SIPO shift registers :

- a) serial in parallel output
- b) single in parallel output
- c) series input peripherals output
- d) none of above

80. Give full form of PISO shift registers :

- a) primary input secondary output
- b) parallel in secondary output
- c) parallel in serial out
- d) none of above

81. Give full form of PIPO shift registers :

- a) parallel in parallel out
- b) primary in parallel out
- c) parallel in primary out
- d) none

82. What is tristate shift registers :

- a) it has 3 inputs
- b) it has high , low or high impedance output
- c) both a and b
- d) none

83. Which ICs belongs to tristate shift registers

- a) 7483
- b) 7492
- c) 74164
- d) none

84. In bidirectional shift registers data can be shifted to:

- a) right or left
- b) up or down
- c) both
- d) none

85. How many 7490 ICs are to be cascaded to count upto 999:

- a) 1
- b) 2
- c) 3
- d) 4

86. Program counter in a digital computer :

- a) counts the number of program run in the machine
- b) counts the number of times a subroutine is called
- c) counts the number of times the loops are executed
- d) points the memory address of the current or the next instruction to be executed



87. A ring counter is same as :

- a) up-down counter
- b) parallel
- c) shift register
- d) none of these above

88. In a sign magnitude representation, the leading bit

- a) is a part of the number itself
- b) is unity for positive
- c) is always unity
- d) stands for the sign

89. In a four variable Karnaugh map eight adjacent cells give a :

- (a) two variable term
- (b) single variable term
- (c) three variable term
- (d) four variable term

90. A Karnaugh map with 4 variables has :

- (a) 2 cells
- (b) 4 cells
- (c) 8 cells
- (d) 16 cells

91. In a Karnaugh map for an expression having 'don't care terms' the don't cares can be treated as :

- (a) 0
- (b) 1
- (c) 1 or 0
- (d) none of the above

93. The Boolean expression  $A B + A B C + (A+B+C)$  simplifies to :

- a.  $A B + B C$
- b.  $AB + BC$
- c.  $A B + B C$



d.  $A B + B C$

94. The radix for binary system is :

- a. 0
- b. 1
- c. 2
- d. 10

95. The radix for decimal system is :

- a. 0
- b. 1
- c. 10
- d. Log<sub>10</sub>

96. The radix for octal system is :

- a. 1
- b. Log<sub>6</sub>
- c. 6
- d. 8

97. Typical size of digital IC is about :

- (a) 1 "x 1"
- (b) 2 " x 2"
- (c) 0.1 "X 0.1"
- (d) 0.001 "x 6.001"

98. A digital clock uses 4 chip :

- (a) SSI
- (b) LSI
- (C) VLSI
- (d) MSI

99. Digital tectonologies being used now-a-days are :

- (a) DTL and EMOS
- (b) TTL, ECL, CMOS and RTL
- (c) TTL, ECL and CMOS

(d) TTL, ECL, CMOS and DTL

100. A TTL circuit with totem pole output has :

- (a) high output impedance
- (b) low output impedance
- (c) very high output impedance
- (d) any of above

101. TTL uses:

- (a) multi emitter transistors
- (b) multi collector transistors
- (c) multi base transistors
- (d) multi emitter or multi collector transistors

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