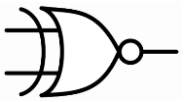
MCQ:

1. The circuit converting binary data in to decimal is
   a) Encoder b) Multiplexer c) Decoder d) Code Converter

2. Which of the following logical operations is represented by the + sign in Boolean algebra?
   a) Inversion b) AND c) OR d) complementation

3. Which logic gate represented by this symbol?
   a) OR b) XNOR c) XOR d) NAND



4. Total number of inputs in a half adder is _____
   a) 2 b) 3 c) 4 d) 1

5. The output of a NOR gate is HIGH if _____.
   a) all inputs are HIGH b) any input is HIGH
   c) any input is LOW d) all inputs are LOW

6. If A and B are the inputs of a half adder, the sum is given by _____
   a) A AND B b) A OR B c) A XOR B d) A EX-NOR B

7. If A, B and C are the inputs of a full adder then the sum is given by _____
   a) A AND B AND C b) A OR B AND C c) A XOR B XOR C d) A OR B OR C.

8. Half subtractor is used to perform subtraction of _____
   a) 2 bits b) 3 bits c) 4 bits d) 5 bits

9. The IC number of AND gate is
   a) 7402 b) 7404 c) 7408 d) 7432

10. A register is defined as _____
    a) The group of latches for storing one bit of information
    b) The group of latches for storing n-bit of information
    c) The group of flip-flops suitable for storing one bit of information
    d) The group of flip-flops suitable for storing binary information

11. The binary system use powers of……for positional values.
    a) 2 b) 10 c) 8 d) 16

12. The 2's complement of 1000_2 is _____

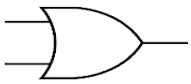
13. Flip flop is also called as _____
    a) Stable b) bistable c) Tri stable d) not stable

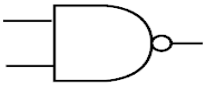
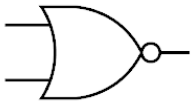
14. Which of the following expressions is not equivalent to x^1?
    x NAND x b) x NOR x c) x NAND 1 d) x NOR 1

15. Which of the following is used as storage locations both in the ALU and the control section of a computer?
a) Accumulator b) Register c) Adder d) Decoder

16. Which logic gate is represented by this truth table?

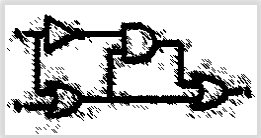
INPUT A	INPUT B	OUTPUT
0	0	0
1	0	0
0	1	0
1	1	1

a)  b) 

c)  d) 

17. What is the function of a NOT gate?
a) Inverts its input b) Outputs 1 if both inputs are 1
c) Prevents errors d) Outputs 0 if both inputs are 0

18. What is the output Z of this logic circuit if A = 1 and B = 1
a) 0 b) 1



19. The truth table for an S-R flip-flop has how many VALID entries?
a) 1 b) 2 c) 3 d) 4

20. The flip-flops which has not any invalid states are _____
a) S-R, J-K, D b) S-R, J-K, T c) J-K, D, S-R d) J-K, D, T

21. What does the circle on the clock input of a J-K flip-flop mean?
a) Level enabled b) Positive edge triggered c) negative edge triggered d) Level triggered

22. What is the binary equivalent of hexadecimal A5?
a) 10101101 b) 10100101 c) 11010011 d) 10101010

23. What is the decimal equivalent of octal 20?
a) 16 b) 18 c) 22 d) 20

24. What is the decimal equivalent of hexadecimal B4?
a) 180 b) 170 c) 160 d) 150

25. Sequential circuit contains
a) No memory element b) Atleast one memory element

c) All inputs applied simultaneously d) None of the above

26. The output of a logic gate is 1 when all its inputs are at logic 0, the gate is either

a) AND, XNOR b) NAND, XNOR c) NOR, XNOR d) OR, XOR

27. The circuit converting binary data in to decimal is

a) Encoder b) Multiplexer

c) Decoder d) Code Converter

28. The flip-flops which has not any invalid states are _____

a) S-R, J-K, D b) S-R, J-K, T

c) J-K, D, S-R d) J-K, D, T

29. What is the octal equivalent of decimal 30?

a) 36 b) 38 c) 37 d) 35

30. Sequential circuit contains

a) No memory element b) Atleast one memory element

c) All inputs applied simultaneously d) None of the above

31. Let $*$ be defined as a Boolean operation given as $x * y = x\,{}^{1}y^{1} + xy$ and let $C = A * B$. If $C = 1$ then

a) $A = B$ b) $A = B'$ c) C. $A + B = 1$ d) None of the above

32. The operation which is commutative but not associative is

a) AND b) OR c) EXOR d) NAND

33. A flip-flop is a binary cell capable of storing one-bit information

a) True b) False

34. Combinational circuit will have memory

a) True b) False

35. Determine the values of A, B, C, and D that make the sum term $A^1 + B + C^1 + D$ equal to zero? Two bits can be compared using

a) AND b) OR c) EXOR d) EXNOR

36. What does the circle on the clock input of a J-K flip-flop mean?

a) Level enabled b) Positive edge triggered

c) negative edge triggered d) Level triggered

37. What is the function of a NOT gate?

a) Inverts its input b) Outputs 1 if both inputs are 1

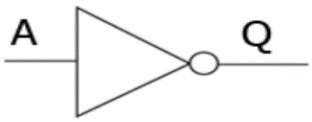
c) Prevents errors d) Outputs 0 if both inputs are 0

38. What gate is this table for?

A	B	Output
0	0	0
0	1	0
1	0	0
1	1	1

a) AND b) OR c) NOT d) XOR

39. What logic gate is this?



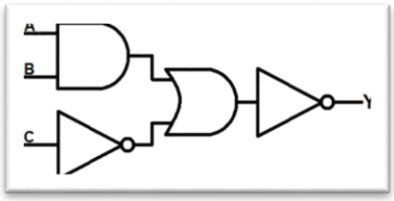
a) AND b) OR c) NOT d) XOR

40. Which of the following is used as storage locations both in the ALU and the control section of a computer?
a) Accumulator b) Register c) Adder d) Decoder

41. A logic state can only be….
a) On or 1 b) Off or 1 c) 1 or 0 d) In and out

42. Which of the following expressions is not equivalent to x^1?
a) x NAND x b) x NOR x c) x NAND 1 d) x NOR 1

43. In a multiplexer the selection of a particular input line is controlled by a set of _____lines.



44. What is the output Y of this logic circuit if A = 1, B = 1, and C = 1?

a) 0 b) 1

45. Which of the following is not a Boolean operation?
b) NOT b) AND c) BUT d) XOR

46. What is the decimal equivalent of octal 30?
a) 36 b) 24 c) 37 d) 35

47. The binary system use powers of……for positional values.
a) 2 b) 10 c) 8 d) 16

48. The truth table for an S-R flip-flop has how many VALID entries?
a) 1 b) 2 c) 3 d) 4

49. What is the binary equivalent of hexadecimal A5?
a) 10101101 b) 10100101 c) 11010011 d) 10101010

50. What is the octal equivalent of binary 1101?
a) 13 b) 14 c) 15 d) 16

51. 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

52. The IC number of NOT gate is
a) 7402 b) 7404 c) 7408 d) 7432

53. Which of the following gate is a universal gate?
a) AND b) XOR c) NOT d) NAND

54. What is the decimal equivalent of octal 30?
a) 36 b) 24 c) 37 d) 35

55. A Binary Digit is called a
a) Byte b) Bit c) Nibble d) None of above

56. Let $*$ be defined as a Boolean operation given as $x * y = x\,{}^{1}y^{1} + xy$ and let $C = A * B$. If $C = 1$ then
a) $A = B$ b) $A = B'$ c) C. $A + B = 1$ d) None of the above

57. The operation which is commutative but not associative is
a) AND b) OR c) EXOR d) NAND

58. A flip-flop is a binary cell capable of storing one-bit information
b) True b) False

59. Combinational circuit will have memory
b) True b) False

60. Determine the values of A, B, C, and D that make the sum term $A^1 + B + C^1 + D$ equal to zero? Two bits can be compared using
a) AND b) OR c) EXOR d) EXNOR

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63. What gate is this table for?

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0	0	0
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b) AND b) OR c) NOT d) XOR

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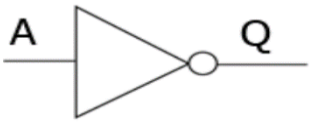

a) AND b) OR c) NOT d) XOR

65. Which of the following is used as storage locations both in the ALU and the control section of a computer?
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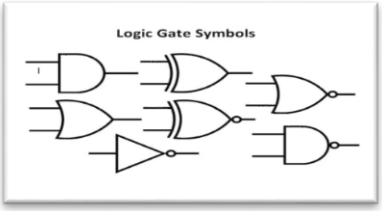
66. A logic state can only be….
b) On or 1 b) Off or 1 c) 1 or 0 d) In and out

67. Which of the following expressions is not equivalent to x^1?
b) x NAND x b) x NOR x c) x NAND 1 d) x NOR 1

68. In a multiplexer the selection of a particular input line is controlled by a set of _____lines.

69. Choose all the Boolean logic gates
a) NOT b) AND
c) BUT d) XOR



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74. What is the octal equivalent of binary 1101?
b) 13 b) 14 c) 15 d) 16

75. The output of a NOR gate is HIGH if .
a) all inputs are HIGH b) any input is HIGH

c) any input is LOW d) all inputs are LOW