1) The universal gate is .....
a) JAK Electronics
b) NAND gate
c) OR gate
d) AND gate

2) The inverter is .....
a) NOT gate
b) OR gate
c) AND gate
d) None of the above

3) The inputs of a NAND gate are connected together. The resulting circuit is .....
a) OR gate
b) AND gate
c) NOT gate
d) None of the above

4) The NOR gate is OR gate followed by .....
a) AND gate
b) NAND gate
c) NOT gate
d) None of the above

5) The NAND gate is AND gate followed by .....
a) NOT gate
b) OR gate
c) AND gate
d) None of the above

6) Digital circuit can be made by the repeated use of .....
a) OR gates
b) NOT gates
c) NAND gates
d) None of the above

7) The only function of NOT gate is to .....
a) Stop signal
b) Invert input signal
c) Act as a universal gate
d) None of the above

8) When an input signal 1 is applied to a NOT gate, the output is .....
a) 0
b) 1
c) Either 0 & 1
d) None of the above

9) In Boolean algebra, the bar sign (-) indicates .....
a) OR operation
b) AND operation
c) NOT operation
d) None of the above

10) An OR gate has 4 inputs. One input is high and the other three are low. The output is .....
a) Low
b) High
c) alternately high and low
d) may be high or low depending on relative magnitude of inputs

11) Both OR and AND gates can have only two inputs.
a) True
b) False

12) The output will be a LOW for any case when one or more inputs are zero in a/an .....
a) OR Gate
b) NOT Gate
c) AND Gate
d) NAND Gate

13) A single transistor can be used to build ..... gates .
a) OR Gate
b) NOT Gate
c) AND Gate
d) NAND Gate

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14) The logic gate that will have HIGH or "1" at its output when any one of its inputs is HIGH is a/an ..... gate.
a) OR Gate
b) NOT Gate
c) AND Gate
d) NAND Gate

15) ..... NAND circuits are contained in a 7400 NAND IC.
a) 1
b) 2
c) 4
d) 8

16) Exclusive-OR (XOR) logic gates can be constructed from .....logic gates.
a) OR gates only
b) AND gates and NOT gates
c) AND gates, OR gates, and NOT gates
d) OR gates and NOT gates

17) ..... truth table entries are necessary for a four-input circuit.
a) 4
b) 8
c) 12
d) 16

18) A NAND gate has ..... inputs and ..... output.
a) LOW inputs and LOW outputs
b) HIGH inputs and HIGH outputs
c) LOW inputs and HIGH outputs
d) None of these

19) The basic logic gate whose output is the complement of the input is .....
a) OR gate
b) AND gate
c) INVERTER gate
d) Comparator

20) ..... input values will cause an AND logic gate to produce a HIGH output.
a) At least one input is HIGH
b) At least one input is LOW
c) All inputs are HIGH
d) All inputs are LOW

21) Which number system is used by digital computers?
a) Decimal
b) Binary
c) Octal
d) Hexadecimal

22) What is the base of binary number system?
a) 2
b) 10
c) 8
d) 16

23) Which number system has a base of 16?
a) Decimal
b) Binary
c) Octal
d) Hexadecimal

24) Which of the following is a logic gate?
a) OR gate
b) XOR gate
c) NAND gate
d) All of the above

25) Which of the following is a NOT gate?
a) AND gate
b) OR gate
c) XOR gate
d) None of the above

26) Which of the following is a universal gate?
a) AND gate
b) OR gate
c) XOR gate
d) NAND gate

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27) Which of the following is a basic logic gate?
a) AND gate
b) XOR gate
c) NAND gate
d) All of the above

28) What is the output of an AND gate?
a) 0
b) 1
c) Depends on the input
d) None of the above

29) What is the output of an OR gate?
a) 0
b) 1
c) Depends on the input
d) None of the above

30) What is the output of a NOT gate?
a) 0
b) 1
c) Depends on the input
d) None of the above

31) Which of the following gates is equivalent to an OR gate followed by a NOT gate?
a) NAND gate
b) NOR gate
c) XOR gate
d) XNOR gate

32) Which of the following gates is equivalent to an AND gate followed by a NOT gate?
a) NAND gate
b) NOR gate
c) XOR gate
d) XNOR gate

33) What is the truth table for an AND gate?
a) 0 0 0 1
   0 1 0 1
b) 0 0 1 1
   0 1 1 1
c) 0 1 1 1
   1 0 0 0
d) 0 1 0 0
   1 0 1 1

34) What is the truth table for an OR gate?
a) 0 0 0 1
   0 1 0 1
b) 0 0 1 1
   0 1 1 1
c) 0 1 1 1
   1 0 0 0
d) 0 1 0 0
   1 0 1 1

35) What is the truth table for a NOT gate?
a) 0 1
   1 0
b) 0 0
   1 1
c) 1 0
   0 1
d) 1 1
   0 0

36) Which of the following gates is equivalent to an XOR gate followed by a NOT gate?
a) NAND gate
b) NOR gate
c) XOR gate
d) XNOR gate

37) What is the truth table for an XOR gate?
a) 0 0 0 1
   0 1 1 0
b) 0 0 1 1
   0 1 0 1
c) 0 1 1 0
   1 0 0 1
d) 0 1 0 0
   1 0 1 1

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38) Which of the following is a combinational logic circuit?
a) Flip-flop
b) Counter
c) Decoder
d) All of the above

39) What is the purpose of a decoder?
a) To convert a binary code into a decimal number
b) To convert a decimal number into a binary code
c) To convert a binary code into a hexadecimal number
d) None of the above

40) Which of the following is an example of a half adder?
a) AND gate
b) OR gate
c) XOR gate
d) None of the above

41) What is the purpose of a full adder?
a) To perform addition of two binary numbers
b) To perform subtraction of two binary numbers
c) To perform multiplication of two binary numbers
d) None of the above

42) Which of the following is an example of a multiplexer?
a) AND gate
b) OR gate
c) XOR gate
d) None of the above

43) What is the purpose of a multiplexer?
a) To perform addition of two binary numbers
b) To select one of several input signals and forward the selected input to a single output line
c) To convert a binary code into a decimal number
d) None of the above

44) Which of the following is an example of a demultiplexer?
a) AND gate
b) OR gate
c) XOR gate
d) None of the above

45) What is the purpose of a demultiplexer?
a) To perform addition of two binary numbers
b) To select one of several input signals and forward the selected input to a single output line
c) To convert a binary code into a decimal number
d) None of the above

46) Which of the following is an example of a flip-flop?
a) AND gate
b) OR gate
c) XOR gate
d) None of the above

47) What is the purpose of a flip-flop?
a) To perform addition of two binary numbers
b) To store a single bit of information
c) To convert a binary code into a decimal number
d) None of the above

48) What is the output of an XNOR gate?
a) 0
b) 1
c) Depends on the input
d) None of the above

49) What is the truth table for an XNOR gate?
a) 0 0 1 0
   0 1 0 1
b) 0 0 1 1
   0 1 1 0
c) 0 1 0 1
   1 0 1 0
d) 0 1 1

50) How many types of logic families exist?
a) Two
b) Six

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c) Four
d) Seven

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