

Time: One Hour

Max. Marks: 25

Instructions

Solve any 25 questions from Q.1 to Q.30

- 1 The binary system uses powers of for positional values
(A)2 (B)10 (C)8 (D)16
- 2 The binary equivalent of A16 is
(A)1010 (B)1011 (C)1000 (D)1110
- 3 The decimal equivalent of 11012 is
(A)8 (B)6 (C)13 (D)11
- 4 The binary addition 10002 + 00102 + 01012 gives
(A)1010 (B)1110 (C)1111 (D)0111
- 5 The binary subtract 11012-10012 gives
(A)0011 (B)0100 (C)0101 (D)1000
- 6 Convert the binary fraction 0.101 in to its decimal equivalent.
(A)(0.625)10 (B)(0.225)10 (C)(0.500)10 (D)None of the above
- 7 The number 128 is equivalent to decimal
(A)12 (B)20 (C)10 (D)4
- 8 Multiply 1012 by 1002 using binary multiplication method
(A)101002 (B)100012 (C)10012 (D)100002
- 9 A logic gate is an electronic circuit which
(A)Makes logic decisions (B)allows electron flow only in one direction (C)works in binary algebra (D)alternates between 0 & 1 values
- 10 A NOR gate is ON only when all its inputs as
(A)ON (B)positive (C)high (D)OFF
- 11 An XOR gate produces an output only when its two inputs are
(A)High (B)Low (C)Different (D)Same
- 12 In a certain 2-input logic gate, when A=0, B=0, then C=1 and when A=0, B=1 again c=1. It must be gate
(A)XOR (B)AND (C)NAND (D)NOR
- 13 In positive logic, logic state 1 corresponds to
(A)Positive voltage (B)higher voltage level (C)Zero voltage level (D)lower voltage level
- 14 For getting an output from an XNOR gate. Its both inputs must be...
(A)High (B)low (C)at the same logic level (D)at the opposite logic levels
- 15 The only function of a NOT gate is to
(A)Stop a signal (B)recomplement a signal (C)invert an input signal (D)act as a universal gate
- 16 An AND gate
(A)Implements logic addition (B)is equivalent to a series switching Ckt. (C)is an any-or-all -gate (D)is equivalent to a parallel switching Ckt.
- 17 The commutative law of addition for two variables is algebraically written as $A+B = \dots\dots\dots$
(A) $A \square B$ (B) $B \square A$ (C) $B+A$ (D)None of the above
- 18 To put lamp ON, the switches S1 and S2 both must be closed. If any one of the switch is open then the lamp will be
(A)OFF (B)ON (C)Both a & b (D)None of the above
- 19 Boolean algebra is essentially based on
(A)Symbol (B)logic (C)truth (D)numbers
- 20 The dual of Inc. Statement $(A+1) = 1$ is.....
(A) $A+A=A$ (B) $A \square A=1$ (C) $A \square 1=A$ (D) $A \square 0=0$
- 21 According to the algebra of logic, $(A+)$ equals
(A)A (B)1 (C)0 (D)None of the above
- 22 Which of the following rules states that if one input of an AND gate is always 1, the output is equal to the other input ?
(A) $A+1 =1$ (B) $A+A=A$ (C) $A \square A=A$ (D) $A \square 1=A$
- 23 The inputs to a full adder are A=1, B=1, Cin=0, the output are
(A), Cout =1 (B), Cout =0 (C), Cout =0 (D), Cout =1
- 24 The first person who used Boolean algebra for the design of relay switching circuit was ...
(A)Ramanujan (B)Shannon (C)Aristotle (D)Boole
- 25 The only function of agate is to invert an input signal

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- (A)AND (B)OR (C)NOT (D)Ex- OR
- 26 Digital circuit can be made by repetitive use of
(A)OR gate (B)NOT gate (C)AND gate (D)NAND gate
- 27 The AND operation can be produced with
(A)Two NAND gates (B)Three NAND gates (C)one NOR gate (D)Three NOR gates
- 28 For binary half sub tractor having two inputs A & B, the correct set of logical expression for the output D (=A min B) and x (=borrow) are
(A)Y=0 (B)Y=1 (C)Y= = = A2 (D)Y= A0 =A1=A2
- 29 The inputs to a full adder are A=1, B=1, Cin=0, the output are
(A), Cout =1 (B), Cout =0 (C), Cout =1 (D), Cout =0
- 30 The device used to convert a binary number to a 7-segment display format is
(A)Multiplexer (B)Register (C)Encoder (D)Decoder