

NADAR SARSWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E./CSE	Year / Semester : II/III	Format No.	NAC/TLP-07a.13
Subject Code : CS8351	Subject Name : Digital Principles and System Design	Rev. No.	02
Unit No : 1	Unit Name : Boolean Algebra and Logic Gates	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1	The binary number 10101 is equivalent to decimal number A) 19 B)12 C) 27 D) 21	L2
2	The universal gate is a) NAND b)OR c) AND d) None of the Above	L2
3	The inverter is a) NOT b)OR c) NOR d) None of the Above	L4
4	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	L5
5	2's complement of binary number 0101 is a) 1011 b) 1111 c) 1101 d) 1110	L1
6	Which statement below best describes a Karnaugh map? a) It is simply a rearranged truth table b) The Karnaugh map eliminates the need for using NAND and NOR gates c) Variable complements can be eliminated by using Karnaugh maps d) A Karnaugh map can be used to replace Boolean rules	L2
7	Which of the examples below expresses the commutative law of multiplication? a) $A + B = B + A$ b) $A \cdot B = B + A$ c) $A \cdot (B \cdot C) = (A \cdot B) \cdot C$ d) $A \cdot B = B \cdot A$	L2
8	The observation that a bubbled input OR gate is interchangeable with a bubbled output AND gate is referred to as: a) A Karnaugh map b) DeMorgan's second theorem c) The commutative law of addition d) The associative law of multiplication	L4
9	Which of the following expressions is in the sum-of-products form?	L5

NADAR SARSWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E./CSE	Year / Semester : II/III	Format No.	NAC/TLP-07a.13
Subject Code : CS8351	Subject Name : Digital Principles and System Design	Rev. No.	02
Unit No : 1	Unit Name : Boolean Algebra and Logic Gates	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

	a) $(A + B)(C + D)$ b) $(A * B)(C * D)$ c) $A * B *(CD)$ d) $A * B + C * D$	
10	Which of the following expressions is in the product-of-sums form? a) $(A + B)(C + D)$ b) $(AB)(CD)$ c) $AB(CD)$ d) $AB + CD$	L1
11	Any signed negative binary number is recognised by its _____ A) MSB B) LSB C) Byte D) nipple	L2
12	The representation of octal number $(532.2)_8$ in decimal is _____ A) 346.25 B) 532.864 C) 340.67 D) 531.668	L2
13	The decimal equivalent of the binary number $(1011.011)_2$ is _____ A) 11.375 B) 10.123 C) 11.175 D) 9.23	L4
14	What is the addition of the binary numbers 11011011010 and 010100101? A) 0111001000 B) 1100110110 C) 1110111111 D) 10011010011	L5
15	Perform binary subtraction: $101111 - 010101 = ?$ A) 100100 B) 010101 C) 011010 D) 011001	L1
16	In boolean algebra, the OR operation is performed by which properties? A) Associative properties B) Commutative properties C) Distributive properties D) All of the Mentioned	L2
17	The expression for Absorption law is given by _____ A) $A + AB = A$ B) $A + AB = B$ C) $AB + AA' = A$	L2

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E./CSE	Year / Semester : II/III	Format No.	NAC/TLP-07a.13
Subject Code : CS8351	Subject Name : Digital Principles and System Design	Rev. No.	02
Unit No : 1	Unit Name : Boolean Algebra and Logic Gates	Date	30.09.2020

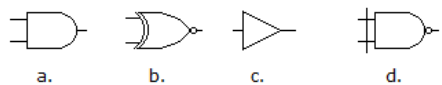
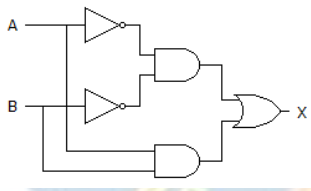
OBJECTIVE TYPE QUESTION BANK

	D) $A + B = B + A$	
18	The involution of A is equal to _____ A) A B) A' C) 1 D) 0	L4
19	Complement of the expression $A'B + CD'$ is _____ A) $(A' + B)(C' + D)$ B) $(A + B')(C' + D)$ C) $(A' + B)(C' + D)$ D) $(A + B')(C + D')$	L5
20	Simplify $Y = AB' + (A' + B)C$. A) $AB' + C$ B) $AB + AC$ C) $A'B + AC'$ D) $AB + A$	L1
21	The boolean function $A + BC$ is a reduced form of _____ A) $(A + B)(A + C)$ B) $AB + BC$ C) $A'B + AB'C$ D) $(A + C)B$	L2
22	According to the property of minterm, how many combination will have value equal to 1 for K input variables? A) 0 B) 1 C) 2 D) 3	L2
23	The canonical sum of product form of the function $y(A,B) = A + B$ is _____ A) $AB + BB + A'A$ B) $AB + AB' + A'B$ C) $BA + BA' + A'B'$ D) $AB' + A'B + A'B'$	L4
24	There are _____ cells in a 4-variable K-map. A) 12 B) 16 C) 4 D) 8	L5
25	Determine the values of A, B, C, and D that make the sum term $\bar{A} + B + \bar{C} + D$ equal to zero. A) $A = 1, B = 0, C = 0, D = 0$ B) $A = 1, B = 0, C = 1, D = 0$ C) $A = 0, B = 1, C = 0, D = 0$ D) $A = 1, B = 0, C = 1, D = 1$	L1

NADAR SARSWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E./CSE	Year / Semester : II/III	Format No.	NAC/TLP-07a.13
Subject Code : CS8351	Subject Name : Digital Principles and System Design	Rev. No.	02
Unit No : 1	Unit Name : Boolean Algebra and Logic Gates	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

26	<p>Which of the figures shown below represents the exclusive-NOR gate?</p>  <p>a. b. c. d.</p> <p>A) a B) b C) c D) d</p>	L2
27	<p>Which of the following logic expressions represents the logic diagram shown?</p>  <p>A) $X=AB'+A'B$ B) $X=(AB)'+AB$ C) $X=(AB)'+A'B'$ D) $X=A'B'+AB$</p>	L2
28	<p>Complement of F' gives back _____</p> <p>a) F' b) F c) FF d) FF'</p>	L4
29	<p>What is the frequency of a clock waveform if the period of that waveform is 1.25sec?</p> <p>a) 8 kHz b) 0.8 kHz c) 0.8 MHz d) 8 MHz</p>	L5
30	<p>The inverter can be produced with how many NAND gates?</p> <p>a) 2 b) 1 c) 3 d) 4</p>	L1
31	<p>How many NOT gates are required to implement the Boolean expression: $X = AB'C + A'BC$?</p> <p>a) 2 b) 3 c) 4 d) 5</p>	L2
32	<p>According to boolean law: $A + 1 = ?$</p> <p>a) 1 b) A</p>	L2

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E./CSE	Year / Semester : II/III	Format No.	NAC/TLP-07a.13
Subject Code : CS8351	Subject Name : Digital Principles and System Design	Rev. No.	02
Unit No : 1	Unit Name : Boolean Algebra and Logic Gates	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

	c) 0 d) A	
33.	A(A + B) = ? a) AB b) 1 c) (1 + AB) d) A	L4
34.	DeMorgan's theorem states that _____ a) (AB)' = A' + B' b) (A + B)' = A' * B c) A' + B' = A'B' d) (AB)' = A' + B	L5
35.	Complement of the expression A'B + CD' is _____ a) (A' + B)(C' + D) b) (A + B')(C' + D) c) (A' + B)(C' + D) d) (A + B')(C + D')	L1
36.	The logical sum of two or more logical product terms is called _____ a) SOP b) POS c) OR operation d) NAND operation	L2
37.	The expression Y=(A+B)(B+C)(C+A) shows the _____ operation. a) AND b) POS c) SOP d) NAND	L2
38.	A variable on its own or in its complemented form is known as a _____ a) Product Term b) Literal c) Sum Term d) Word	L4
39.	There are _____ cells in a 4-variable K-map. a) 12 b) 16 c) 18 d) 8	L5
40.	The prime implicant which has at least one element that is not present in any other implicant is known as _____ a) Essential Prime Implicant b) Implicant c) Complement d) Prime Complement	L1

NADAR SARSWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E./CSE	Year / Semester : II/III	Format No.	NAC/TLP-07a.13
Subject Code : CS8351	Subject Name : Digital Principles and System Design	Rev. No.	02
Unit No : 1	Unit Name : Boolean Algebra and Logic Gates	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

