Name_____

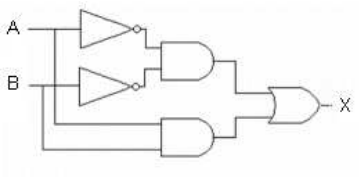


Figure 5–1

1) Which of the following logic expressions represents the logic diagram in Figure 5–1? 1) _____

A) $X = \overline{AB} + \overline{A}\,\overline{B}$ B) $X = A\overline{B} + \overline{A}B$ C) $X = \overline{A}\,\overline{B} + AB$ D) $X = AB + AB$

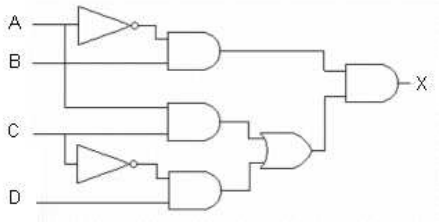


Figure 5–2

2) A correct logic expression for Figure 5–2 is _____. 2) _____

A) B)

3) How many gates, including inverters, are required to implement the equation, $X = A + AB + \overline{A}B$, as it is written? 3) _____

A) 1 B) 2 C) 3 D) 4

4) The NAND gate is referred to as a "universal" gate, because it _____. 4) _____

A) is used in all the countries of the world
B) can be found in almost all digital circuits
C) can be used to build all the other types of gates
D) was the first gate to be integrated

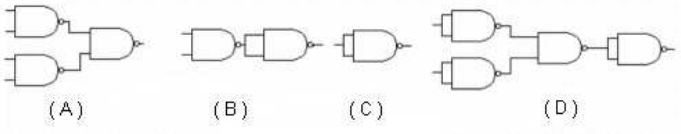


Figure 5–3

5) Which circuit in Figure 5–3 represents the NAND implementation of a NOR gate? 5) _____

A) Figure (A). B) Figure(B). C) Figure (C). D) Figure (D).

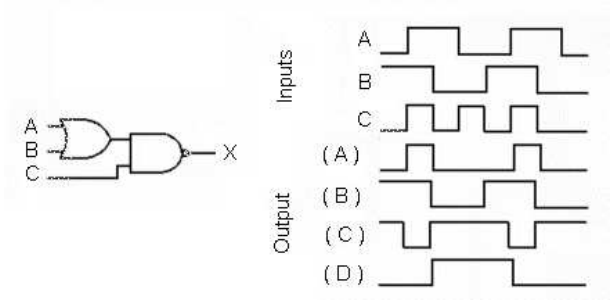
6) The relationship between a NOR gate and a negative–AND gate is expressed by_____. 6) _____

A) $AB = \overline{\overline{A} + \overline{B}}$ B) $\overline{A} + \overline{B} = \overline{A + B}$ C) $AB = \overline{A + B}$ D) $\overline{A + B} = \overline{A}\,\overline{B}$

7) Which of the following expressions is in the sum–of–products form? 7) _____

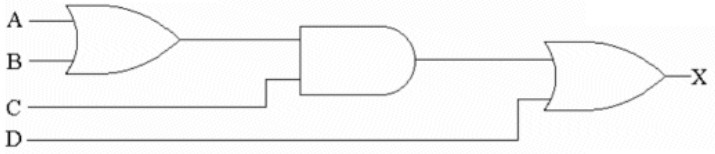
A) AB + CD B) AB(CD) C) (A + B)(C + D) D) (AB)(CD)

8) Which output waveform is correct for the circuit input waveforms shown? 8) _____



A) Output (A) B) Output (B) C) Output (C) D) Output (D)

9) For the network shown below, the boolean expression for X is _____. 9) _____



A) A + BC + D B) D(A + B + C) C) ((A + B) · C) + D D) (AC + BC)D

10) The simplest Boolean expression for the Karnaugh map below is _____. 10) _____

		$\overline{C}$	C
$\overline{A}$	$\overline{B}$	0	0
$\overline{A}$	B	1	1
A	B	1	1
A	$\overline{B}$	0	1

A) $AB\overline{C} + ABC + A\overline{B}C$ B) X = AC + B
C) $X = A\overline{B}$ D) $AB + \overline{A}B$

Answer Key
Testname: TEST C4

1) C
2) A
3) D
4) C
5) D
6) D
7) A
8) C
9) C
10) B