

Computer Organization and Architecture

Lecture 02: Revision — Decimal codes // How to fill in Truth Table

1. Convert each of the following decimal numbers to BCD

8	67
170	2469

2. Convert each of the following BCD codes to decimal

10000110	1001010001110000
001101010001	1100110101010101

3. Use **ASCII** table to determine the binary ASCII codes that are entered from the computer's keyboard when the following C language program statement is typed in. Also express each code in hexadecimal.

if(x > 5)

4. An inverter

(a) performs the NOT operation	(b) changes a LOW to a HIGH
(c) changes a HIGH to a LOW	(d) does all the above

5. The output of an OR gate is LOW when

(a) any input is HIGH	(b) no inputs are HIGH
(c) all inputs are HIGH	(d) Both (a) and (b)

6. The output of an AND gate is LOW when

(a) any input is LOW	(b) all inputs are HIGH
(c) no inputs are HIGH	(d) Both (a) and (c)

7. An example of a data storage device is

(a) the logic gate	(b) the flip-flop
(c) the comparator	(d) the register
(e) both answers (b) and (d)	

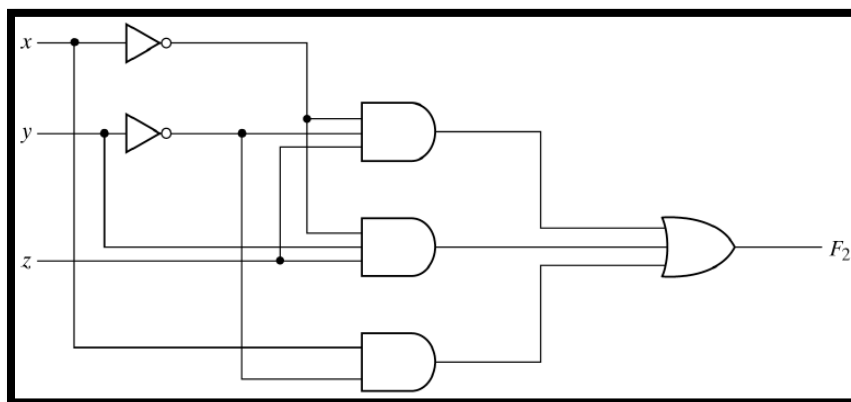
8. Determine the values of A and B that make the sum term $\bar{A} + B$ equal to 0

9. Determine the values of A, B, C, and D that make the product term $A\bar{B}C\bar{D}$ equal to 1

10. Determine the values of A, B, and C that make the sum term $\bar{A} + B + \bar{C}$ equal to 0

11. Construct a truth table for the following Boolean expression $f = AB + BC + CA$

12. Find the Boolean equation and truth table



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