

QUESTION

1. Write the address "10111010101" in gray the values of the following:

- a. A 2-bit even-parity code for the address (concatenate)
- b. A 2-bit even-parity code for the address (concatenate)
- c. A 2-bit odd-parity code for the address (concatenate)
- d. A 2-bit odd-parity code for the address (concatenate)
- e. A 2-bit even-parity code for the address (concatenate)
- f. A 2-bit odd-parity code for the address (concatenate)
- g. A 2-bit even-parity code for the address (concatenate)
- h. A 2-bit odd-parity code for the address (concatenate)

2. Draw the circuit diagram by changing the architecture below:

- a. Change the circuit to use the 74181 and 74182.
- b. The circuit should be able to perform adding and subtraction.
- c. The circuit should be able to perform adding and subtraction.
- d. The circuit should be able to perform adding and subtraction.
- e. The circuit should be able to perform adding and subtraction.

3. Write the abstract syntax of the following algorithms:

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Algorithm 1:          Algorithm 2:          Algorithm 3:
1. Input: A, B, C     1. Input: A, B, C     1. Input: A, B, C
2. Output: A, B, C   2. Output: A, B, C     2. Output: A, B, C
3. A ← A + B         3. A ← A + B         3. A ← A + B
4. B ← B + C         4. B ← B + C         4. B ← B + C
5. C ← C + A         5. C ← C + A         5. C ← C + A
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4. Complete the following table:

Address	Output	Input	Output
0000	0000	0000	0000
0001	0001	0001	0001
0010	0010	0010	0010
0011	0011	0011	0011
0100	0100	0100	0100
0101	0101	0101	0101
0110	0110	0110	0110
0111	0111	0111	0111
1000	1000	1000	1000
1001	1001	1001	1001
1010	1010	1010	1010
1011	1011	1011	1011
1100	1100	1100	1100
1101	1101	1101	1101
1110	1110	1110	1110
1111	1111	1111	1111

5. Write the opposite of some inputs using a correct code:

- 1010 --- 0101 --- 1010 --- 1010
- 1111 --- 0000 --- 1111 --- 1111
- 0101 --- 1010 --- 0101 --- 0101
- 1111 --- 0000 --- 1111 --- 1111