



Course: Digital Engineering

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Tutorial 6: ADDER/SUBTRACTOR CIRCUITS

Answer the following questions:

Q. The adder–subtractor circuit of Fig. 1 has the following values for mode input M and data inputs A and B . In each case, determine the values of the four SUM outputs, the carry C.

	M	A	B
(a)	0	0111	0110
(b)	0	1000	1001
(c)	1	1100	1000
(d)	1	0101	1010

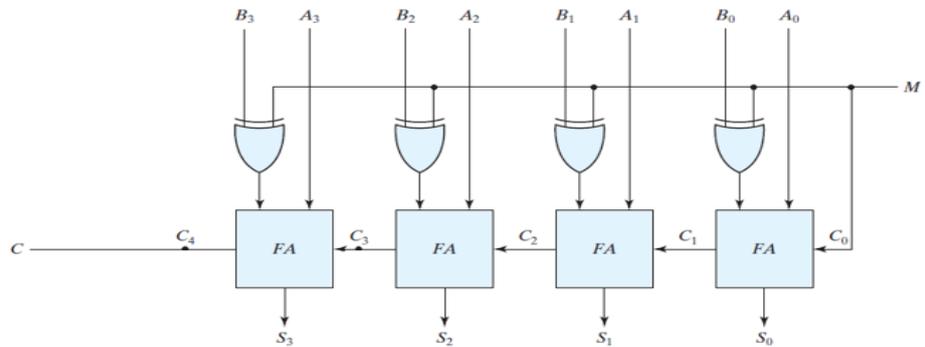


Figure 1

Q. How many inputs/outputs does a half adder have?

- a. 2/1
- b. 2/2
- c. 3/2
- d. 3/3

Q. What is the main advantage of a full adder over a half adder?

- a. Higher speed
- b. Handles carry input
- c. Lower power consumption
- d. Smaller size

Q. What is a key characteristic of combinational circuits?

- a. Memory elements
- b. Feedback loops
- c. Output depends only on current input
- d. Clock pulses

Q. What distinguishes sequential circuits from combinational circuits?

- a. Presence of memory elements
- b. No use of gates
- c. Faster operation
- d. Fixed output for any given input

Q. How many inputs does a full adder have?

- a. Two
- b. Three
- c. Four
- d. Five