Take Test: Practice test - 1

Test Information

Description

Instructions

Multiple Attempts Not allowed. This Test can only be taken once.

Force Completion This Test can be saved and resumed later.

Your answers are saved automatically.

QUESTION 1

2 points Saved

What is the base-10 value of 0xE0 using 2's complement representation?

-32

QUESTION 2

2 points Saved

What is the base-10 value -10 when converted to base-2? Use 6 digits and 2's complement signed representation.

110110

QUESTION 3

2 points Saved

Using 2's complement, what is the octal representation of the hexadecimal value A9?

251

QUESTION 4

2 points Saved

Assuming 6-bit inputs and an 8-bit output, which of the following numbers represents the sum of the two **unsigned** binary numbers 0b101001 and 0b011011 ?

- (●) 0x44
- ( ) 0xC4
- ( ) 0d196
- ( ) 0x3C
- ( ) not listed here

QUESTION 5

2 points Saved

Assume 6-bit representation. The sum of the two **unsigned** binary numbers 0b111010 and 0b100101 is:

- [ ] 0o27
- [ ] 0xD7
- [ ] 0x17
- [ ] 0d215
- [x] not listed here

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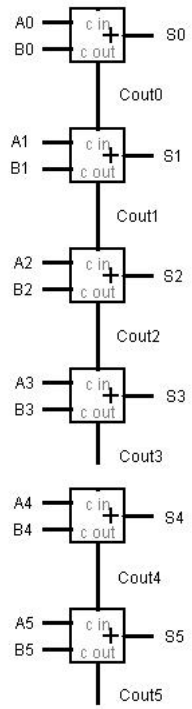
Save All Answers Save and Submit

Question Completion Status:

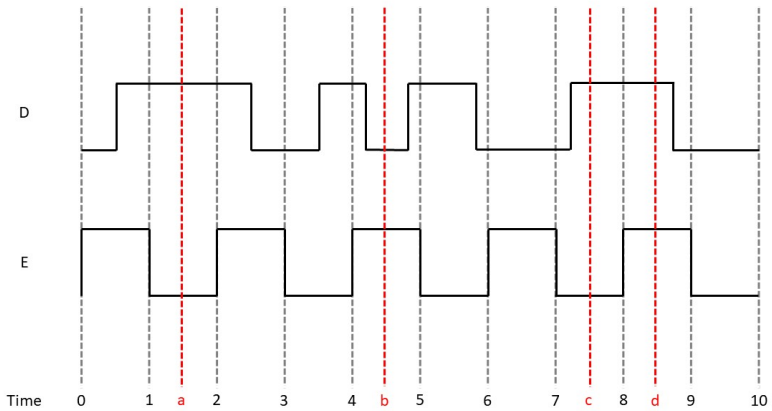


For the above circuit diagram, complete the following table:

Adder Number	A	B	Cout	S
0	1	1	1	0
1	0	0	0	1
2	1	0	0	1
3	1	1	1	0
4	0	1	1	0
5	0	0	0	1

QUESTION 7

2 points Saved



For the above active-high D latch waveform, complete the following table for the output Q at the hightlighted points in time a, b, c, and d:

Time	Q
a	high
b	low

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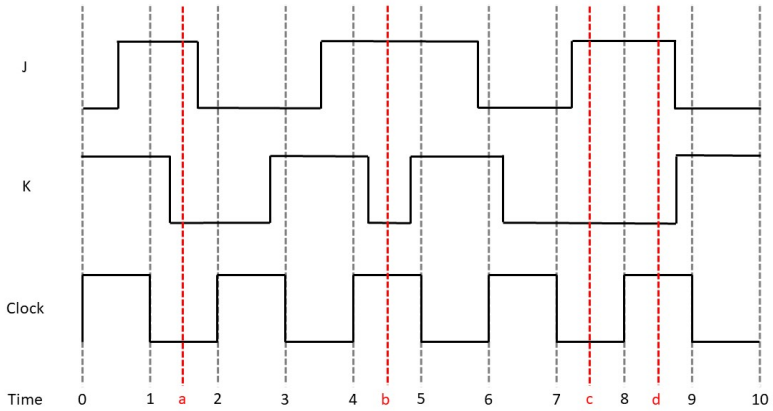
Question Completion Status:

QUESTION 8

2 points Saved

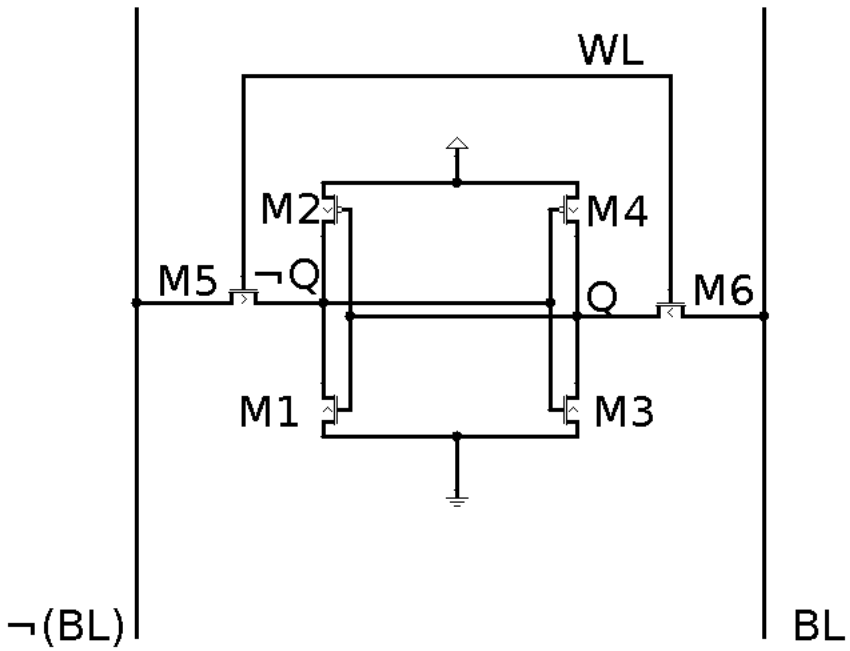


For the above rising edge JK Flip Flop waveform, complete the following table for the output Q at the highlighted points in time a, b, c, and d:

Time	Q
a	low
b	high
c	high
d	high

QUESTION 9

2 points Saved



Assume Q = 0, ¬Q = 1. What are the status of each transistor and the signals WL and BL in the above 6T SRAM circuit when we are writing 1 to Q and after ¬Q has become 0?

M1 is OFF .

M2 is ON .

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Question Completion Status:

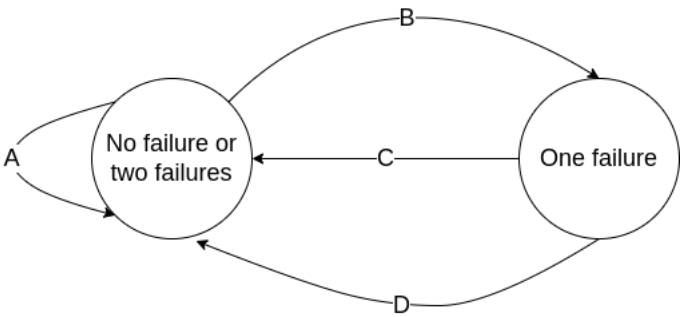
M6 is ON .

BL is HIGH .

WL is HIGH .

QUESTION 10

3 points Saved



Never fail to do a task twice in a row.
This FSM diagram depicts a system that receives "1" as an input to indicate the user failed to do their task and "0" to mean the user did not fail to do their task.
If the user fails to do two tasks in a row, the output should be "1". On the other hand, the output should be "0" for any other scenarios.
Suppose the user failed to do two tasks in a row, and the system produced "1" as an output; the first subsequent output should be "0" regardless of the input.

Complete the sentences that describe the inputs and outputs of the transitions A, B, C and D in this FSM with either value 0 or 1.

The input that triggers transition A is 0 , and the output produced by transition A is 1 .

The input that triggers transition B is 1 , and the output produced by transition B is 0 .

The input that triggers transition C is "0", and the output produced by transition C is 0 .

The input that triggers transition D is 1 , and the output produced by transition D is "1."

QUESTION 11

3 points Saved

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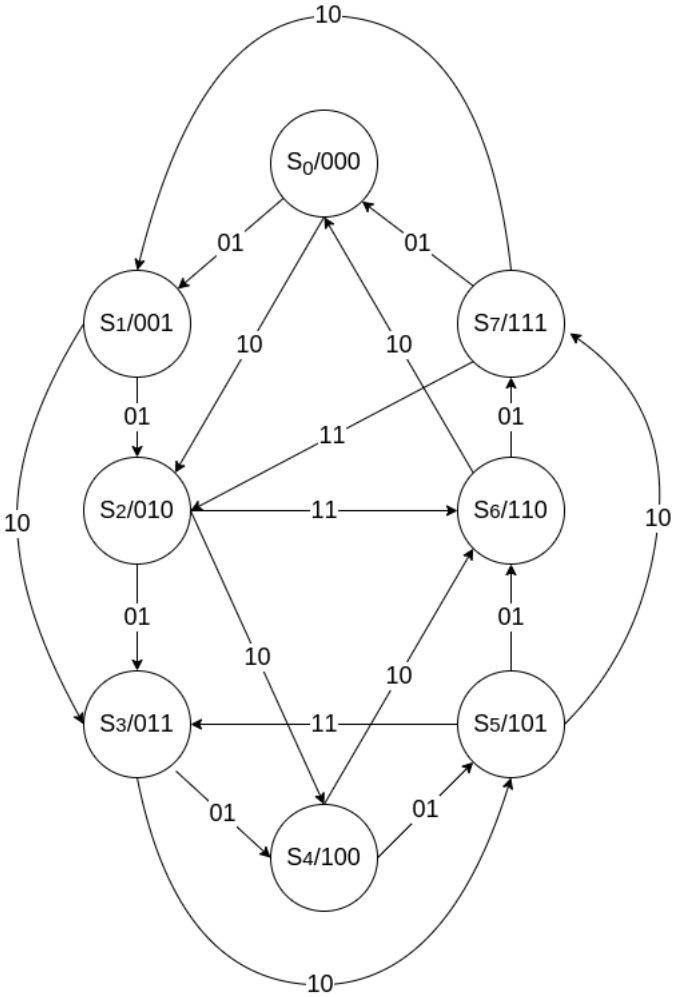
Question Completion Status:



Complete the transition table that captures the transitions of this FSM diagram. The empty cells are the inputs of row number 3, the bits of the current state and the row number 12, and all the cells of row number 19.

No.	S2	S1	S0	Input1	Input0	S2'
1	0	0	0	0	1	0
2	0	0	1	1	0	0
3	0	0	1	0	1	0
4	0	1	1	1	0	1
5	0	1	0	0	1	0
6	0	1	0	1	0	1
7	0	1	0	1	1	1
8	0	0	0	1	0	0
9	0	1	1	0	1	1
10	1	0	0	0	1	1
11	1	0	0	1	0	1
12	1	0	1	0	1	1
13	1	0	1	1	0	1
14	1	1	1	1	1	0
15	1	0	1	1	1	0
16	1	1	0	1	0	0
17	1	1	1	0	1	0
18	1	1	0	0	1	1
19	1	1	1	1	0	0

QUESTION 12

3 points Saved

Which of the logic functions F listed below is the minimum DNF formula that represents the output F from the

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Question Completion Status:

1	1	1	1	0	1
1	0	0	1	0	1
1	0	1	1	0	1
1	0	1	0	0	1
0	0	1	0	1	1
0	1	0	1	1	1
0	1	1	1	1	1
1	1	0	1	1	1
1	1	1	1	1	1

Note that the entries which result in F being false have been omitted for brevity.

- F = bd + e-ad + e-b-cd- + a-b-cd-
- F = e-bd + e-ad + e-b-cd- + ebd + a-b-cd-
- F = e-bd + e-ab-d + e-b-cd- + ebd + a-b-cd-
- F = bd + e-ab-d + e-b-cd- + a-b-cd-
- F = e-bd + e-ad + e-b-cd- + ebd + ea-b-cd-
- (selected) not listed here

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