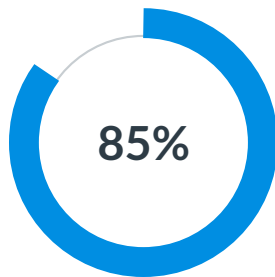# Results

Dylan Nguyen

85%

8.5
Out of 10 points

05:15
Time for this attempt

Your Answers:

1   1 / 1 point

Which of the following are components used to build circuits for state machines?

- ✓ ◉ Registers, AND gates, and OR gates
- ○ AND gates, OR gates, and decoders
- ○ Multiplexers
- ○ Decoders
- ○ Multiplexers and Decoders

2   1 / 1 point

What inputs are given to the combinational logic of a state machine?

○ The current state

○ The inputs

○ The outputs

✓ ◉ The inputs and current state

○ The inputs, current state, and outputs

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3 1 / 1 point

How many state bits are necessary for a state machine with 18 states?

○ 3

○ 4

✓ ◉ 5

○ 6

○ 18

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4 1 / 1 point

Which of the following is **NOT** a characteristic of finite state machines?

○ A finite number of state

○ A finite number of external inputs

○ A finite number of external outputs

○ An explicit set of all allowed state transitions

✓ ◉ An explicit set of accept states

Instructions

Sketch, for your own reference (you don't need to turn it in) the finite state machine and answer the following questions regarding the state machine described below

Upcounter State Machine

A 2-bit upcounter is a counter that starts at 00 and goes to 01, then 10, then 11. Design the state machine for this counter (you won't turn it in), and answer the associated questions

5   0 / 1 point

With reference to the upconter FSM, how many states are required, and how many bits are needed for those state.

× **6**   state(s), and

Correct Answer: **4**

× **3**   bit(s)

Correct Answer: **2**

6   0.5 / 1 point

With reference to the upcounter FSM, how many internal inputs and external inputs are involved in the upcounter?

✓ **2**   internal input(s), and

× **2**   external input(s)

Correct Answer: **0**

Instructions

Answer the following four questions based on the ISA description below.

ISA

7   1 / 1 point

An ISA specifies a word size of 4 bytes, byte addressability and an address space of 16M

7   1 / 1 point

How many bits are used for addresses?

(You answer should be in the form n bits, the number of bits followed by the word bits)

✓   24 bits

8   1 / 1 point

How many bits are in a word?

(You answer should be in the form *n* bits, the number of bits followed by the word bits)

✓   32 bits

9   1 / 1 point

How many bits are in any value of the memory?

(You answer should be in the form n bits, the number of bits followed by the word bits)

✓   8 bits

10   1 / 1 point

What is the total size of the memory in bytes?

(You answer should be in the form n MBytes, the number of bytes followed by

the standard abbreviation and the word Bytes)

✓	16 MBytes