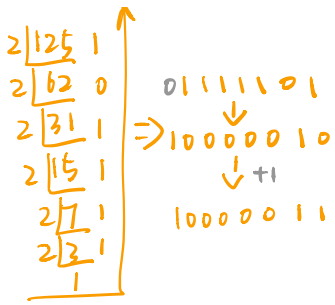
Question 1

1 / 1 pts

In eight bit two's complement notation write down the binary for -125

Correct!

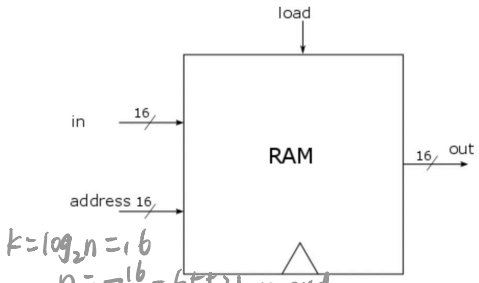
- (●) 1000 0011
- ( ) 0111 1101
- ( ) -125 is too large to represent in 8 bits 2's complement
- ( ) 1000 0010



Question 2

1 / 1 pts

What is the capacity of the following memory in terms of bytes (B) or bits (b)?



$k = \log_2 n = 16$

$n = 2^{16} = 65536$ word (number of address)

- ( ) 131 Kb
- ( ) 1 MB
- ( ) 256 Mb

Correct!

- (●) 128 KB

Excellent.

16-bits = 2 bytes = 1 word

$65536 \times 2 = 131072$ Byte

$65536 \times 16 = 1048576$ bits

1 KB = 1024B　　1Mb = 1024Kb

1 MB = 1024KB　　1kb = 1024 b

1 GB = 1024MB

131072 B = 128KB ✓✓

1048576 b = 1024Kb = 1 Mb

Question 3

1 / 1 pts

Consider a standard DFF.

By itself, this chip is not able to store and retain a bit of information. Why is it not suitable?

同步

- ( ) Because the DFF provides no way of synchronising the input and output signal
- ( ) Because there is no way to get a bit of information into the circut

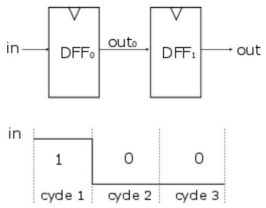
Correct!

- (●) Because the DFF always outputs its input from the previous clock cycle
- ( ) Because after one clock cycle delay the dff reverts to zero

Question 4

1 / 1 pts

Two DFFs are directly connected as shown in the following schematic. Consider the input signal 'in' in the following three clock cycles. What is the value of 'out' in clock cycle 3?



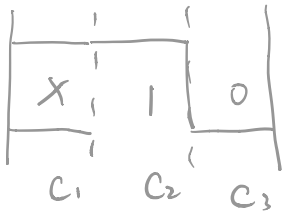
Correct!

- (•) 1

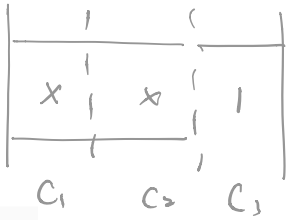
  Correct.

- ( ) 0
- ( ) Unknown value

out0 :



out :



Question 5

1 / 1 pts

Which of the following statements are true?

Choose all that apply.

Correct!

- [x] SRAM is used in cache and is faster than DRAM.

  This statement is true.

Correct!

- [x] The width of a word could vary in different systems.

  That is a correct statement.

- [ ] SRAM and DRAM do not need power to maintain data.

need power to maintain data

SRAM : 快

Static Random Access Memory

DRAM : 慢

Dynamic Random Access Memory.