Quiz 12

Due Mar 2 at 11:59pm **Points** 18 **Questions** 8 **Available** Feb 23 at 12am - Mar 9 at 11:59pm **Time Limit** None

Instructions

Read Sections 14.1-14.4 fro the text and Section 16 from the C8051F020 data sheet (https://faculty.weber.edu/fonbrown/EE3710/datasheets/C8051F02x-14.pdf) then answer the following questions. One try. No time limit.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	844 minutes	17 out of 18

Correct answers will be available Mar 3 at 12am - Mar 9 at 12am.

Score for this quiz: 17 out of 18
Submitted Mar 2 at 10:31pm
This attempt took 844 minutes.

Question 1

1 / 1 pts

Which three of the following are the primary properties we use to characterize memory? (Choose 3)

- [x] Access time
- [x] Organization
- [ ] Volatility
- [ ] Power consumption
- [ ] Supply voltage
- [x] Capacity

Question 2

1 / 1 pts

Which type of memory must be refreshed every few milliseconds?

- (•) Dynamic RAM
- ( ) Non-volatile RAM
- ( ) Volatile RAM
- ( ) Static RAM

Question 3

3 / 3 pts

Determine the organization of each of the memories below given their number of address and data lines. Use the letter 'x' to separate the number of words from the word size. You may specify the number of words in kilo-words with the 'k' suffix (if it is at least 1024). For example, both 2048x1 or 2kx1 would be acceptable (assuming either is correct). Do not use spaces.

(a) EEPROM: 17 address lines, 8 data lines

Organization = 128kx8

(b) SRAM: 15 address lines, 16 data lines

Organization = 32kx16

(b) DRAM: 9 address lines, 4 data lines (careful)

Organization = 256kx4

Answer 1:

128kx8

Answer 2:

32kx16

Answer 3:

256kx4

Question 4

3 / 3 pts

How many address lines and data lines for the memories listed below?

(a) 256k x 8 EPROM

Address lines = 18 , data lines = 8

(b) 64k x 4 DRAM

Address lines = 8 , data lines = 4

(c) 32k x 9 SRAM

Address lines = 15 , data lines = 9

Answer 1:

18

Answer 2:

8

Answer 3:

8

Answer 4:

4

Answer 5:

15

Answer 6:

9

Question 5

3 / 3 pts

What is the capacity of each of the three memories shown below. You may use the 'k' or 'M' suffix for kilobits or megabits, respectively.

(a) 256k x 8 EPROM

Capacity = 2M bits

(b) 64k x 4 DRAM

Capacity = 256k bits

(c) 32k x 16 SRAM

Capacity = 512k bits

Answer 1:

2M

Answer 2:

256k

Answer 3:

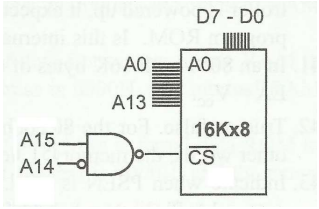
512k

Incorrect

Question 6

0 / 1 pts

Find the address range of the memory design in the diagram, below. Give your answers each as four hexadecimal digits (no '0x' prefix and no 'H' suffix).



Lowest address = 2000

Highest address = 2FFF

Answer 1:

2000

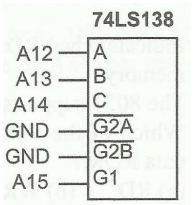
Answer 2:

2FFF

Question 7

3 / 3 pts

Find the address range for Y1, Y2 and Y5 (outputs of the 74LS138, not shown) for the memory decoder design shown below. Give your answers each as four hexadecimal digits (no '0x' prefix and no 'H' suffix).



Y1: Range 9000 to 9FFF

Y2: Range A000 to AFFF

Y5: Range D000 to DFFF

Answer 1:

9000

Answer 2:

9FFF

Answer 3:

A000

Answer 4:

AFFF

Answer 5:

D000

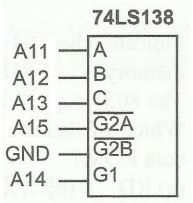
Answer 6:

DFFF

Question 8

3 / 3 pts

Find the address range for Y3, Y6 and Y7 (outputs of the 74LS138, not shown) for the memory decoder design shown below. Give your answers each as four hexadecimal digits (no '0x' prefix and no 'H' suffix).



Y3: Range 5800 to 5FFF

Y6: Range 7000 to 77FF

Y7: Range 7800 to 7FFF

Answer 1:

5800

Answer 2:

5FFF

Answer 3:

7000

Answer 4:

77FF

Answer 5:

7800

Answer 6:

7FFF

Quiz Score: **17** out of 18