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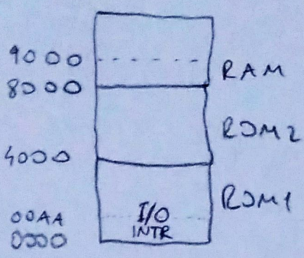
Q1-

MOV AX, 2000H command takes data from ROM

MOV 8000H, BH command writes data to RAM, because it can't write to ROM.

IN AL, 0AAH command takes input. So, I/O address is 0AAH.

Interrupts are on ROM. Procedures can be in RAM, or ROM. This case ROM.



$\frac{512}{8}$ = 64 KB ROM needs 2 chips.

$\frac{64}{8}$ = 8 KB RAM needs 1 chip.

Q2- Different addresses can be given to different peripherals.

For example 00AAH address is for keypad, 00ABH address is for Display.

IN AL, 0AAH → We take a input from keypad.

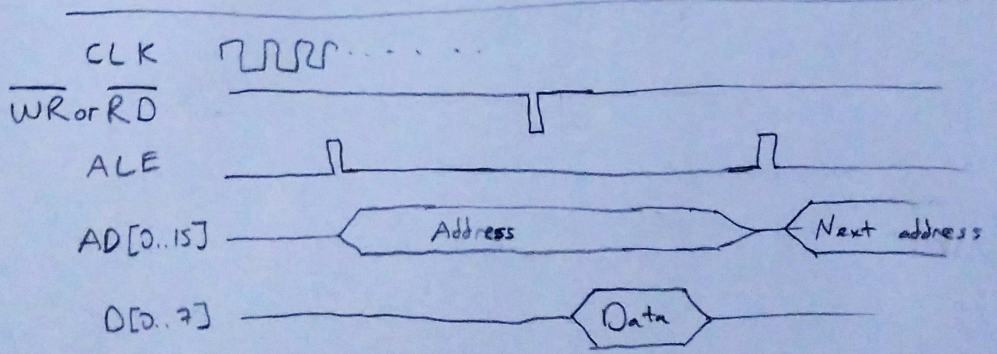
OUT 0ABH, AL → We write this data to Display.

When a peripheral plugged to computer, we(OS) need to determine a address for this peripheral.

Q3- Minimum mode of microprocessors is doing basic tasks that only 1 microprocessor can do. In maximum mode, there can be coprocessor like 8087 or 8089.

Also instead of control signals, maximum mode has status signals. Performance and complexity increases.

Q4-



5 MHz is 200ns per clock. Response time is 500ns. So, addressing will be 1 clock, waiting response is 4 clocks and taking data will be 1 clock. 6 clock = 1200 ns.

6 clock is 1 bus cycle.

Q5- Address of a peripheral must not change during data transmission. Thus we use address latch. Also, transceiver blocks address data and passes pure data to read/write operations. If we don't use them, results will not be reliable.