

Block A: upper part C = ~~input~~ input.

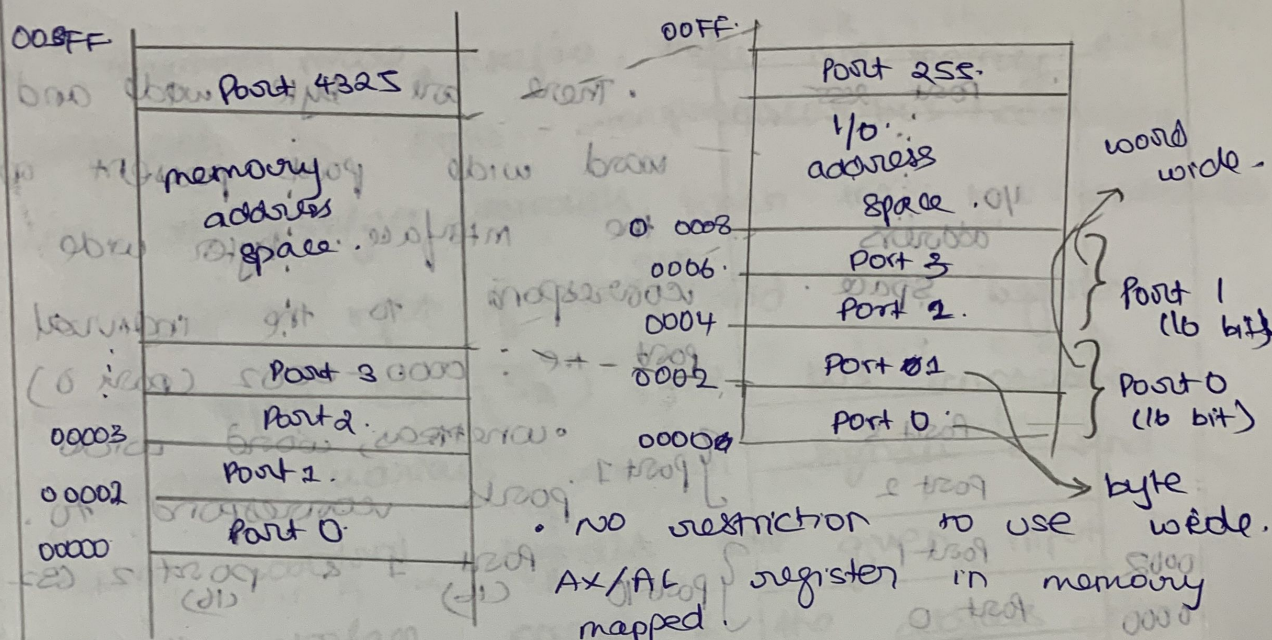
part A = output.

mode = 1.

(b)(i) Memory mapped I/O

- In memory mapped I/O, interface, ~~the~~ both the I/O addresses & the memory addresses reside in the same address space. The memory address space is 1M byte.
- Therefore, while executing instructions no separate instructions are required for I/O operations.
- Also, no special instructions are dedicated for memory mapped I/O.
- When compared to isolated I/O, the instructions gets executed much faster.
- No unnecessary memory space is utilised here, the available memory spaces are utilised effectively.
- Arithmetic and logical operations can be performed directly with the input data.
- In memory mapped I/O, ~~the~~ ~~most~~ all the possible control signals are present i.e. ALE,  $\overline{IO/\overline{M}}$ ,  $\overline{DTIR}$ ,  $\overline{DEN}$ ,  $\overline{RD}$ ,  $\overline{WR}$ , ~~addresses~~ etc.





### Isolated I/O

- In isolated I/O interface, the I/O address space is given a dedicated space compared to memory address space, it is not attached with the memory address space.
- Therefore, special instructions are framed for isolated I/O i.e. related to I/O operations and processing.
- When compared to memory mapped I/O, the instructions are executed much slower.
- The only ALIAX register can be used in the case of isolated I/O, this restricts the no. of execution of instructions results in more time.



