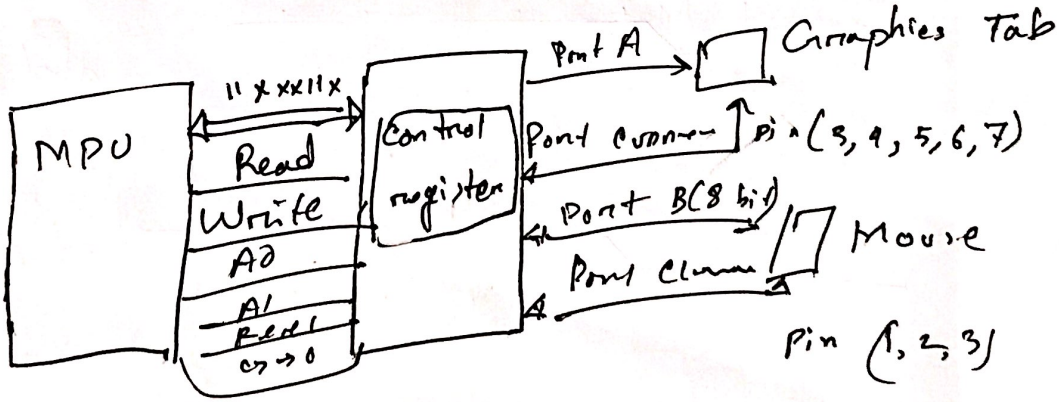
Answer to the question no - 1

a) Port A is working on mode 2 where port B is working on mode 1.

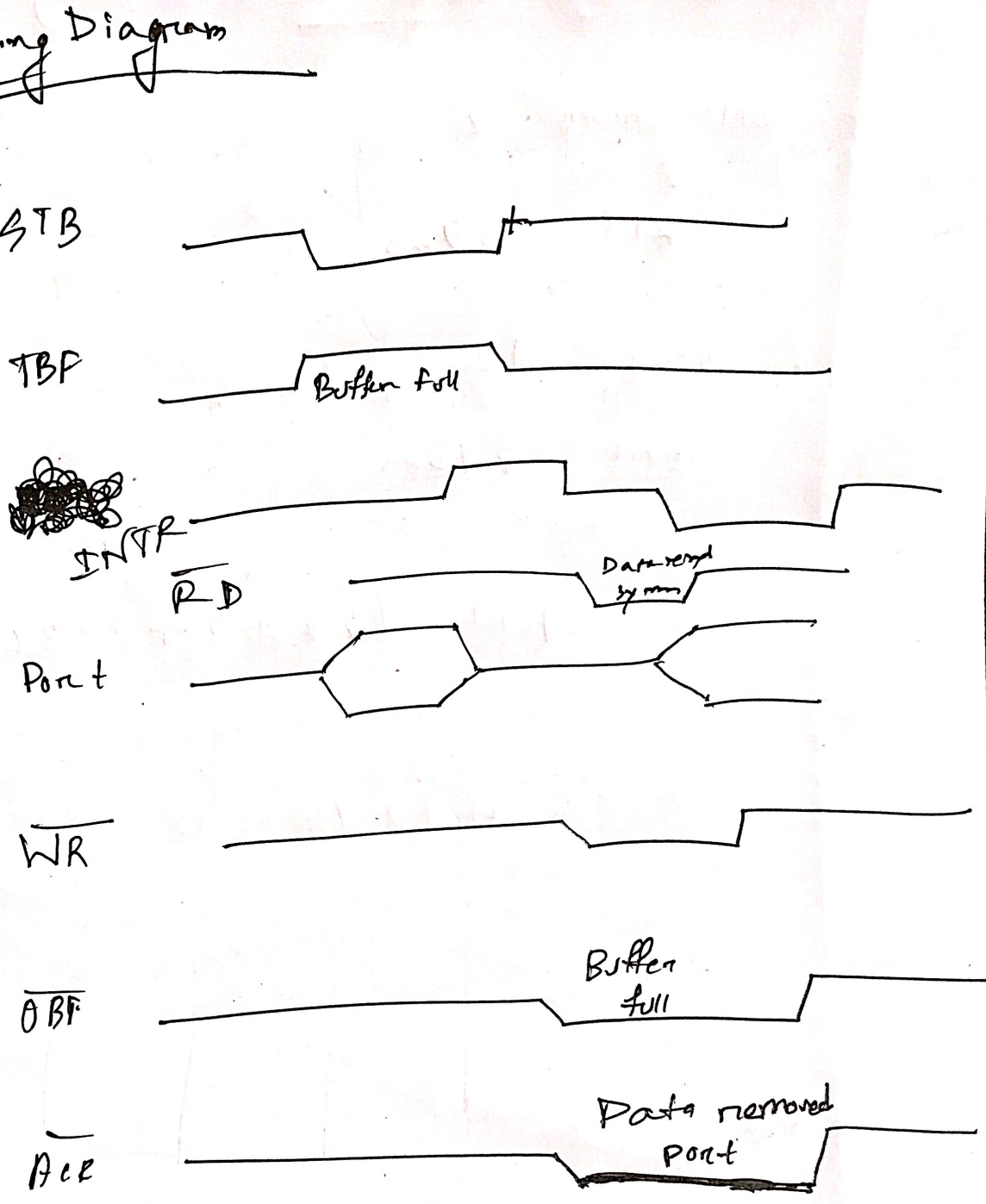
Control word = 11 x x x 11 x

Here, x = don't care

b) The configuration of the 8255 IC



Timing Diagram

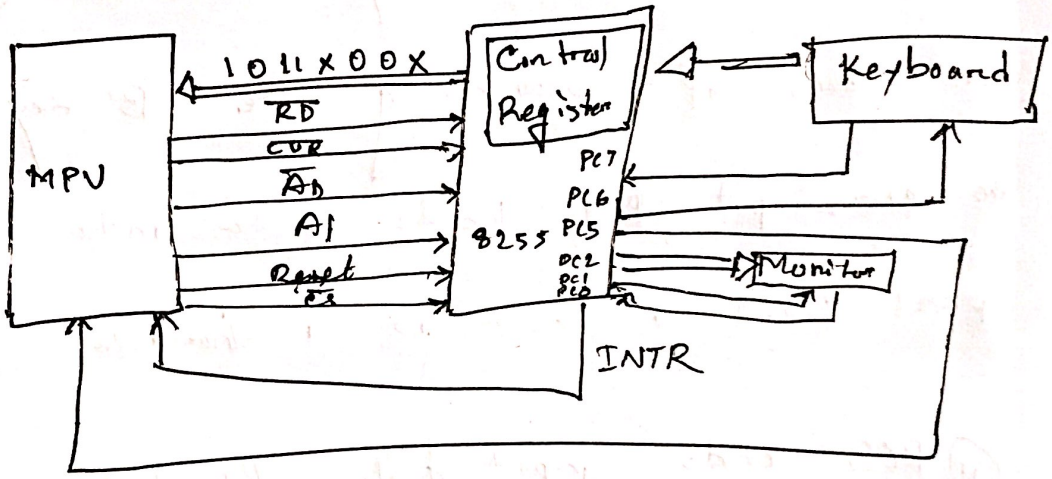


Answer to the question no-2

a)

1	0	1	1	x	0	0	x

b)



Part A

$\overline{RD} = 0$

$\overline{CUR} = 1$

$A0 = 0$

$A1 = 0$

$Reset = 0$

$\overline{CS} = 0$

Part B

$\overline{RD} = 1$

$\overline{CUR} = 0$

$A0 = 1$

$A1 = 0$

$Reset = 0$

$\overline{CS} = 0$

c) Pressing 'B' key on keyboard. steps on 82C55 IC is as follows:

(i) Input comes from keyboard. In this case, in form of processing the 'B' key, the strobe input (STB) loads data into the part latch on a 0 to 1 transition in 82C55.

(ii) PCS sends input buffer full (IBF) to keyboard to indicate that no new input is needed now.

(iii) Data gets in the datapath.

(iv) Interrupt (INTR) is sent to microprocessor

(v) Microprocessor will generate read command

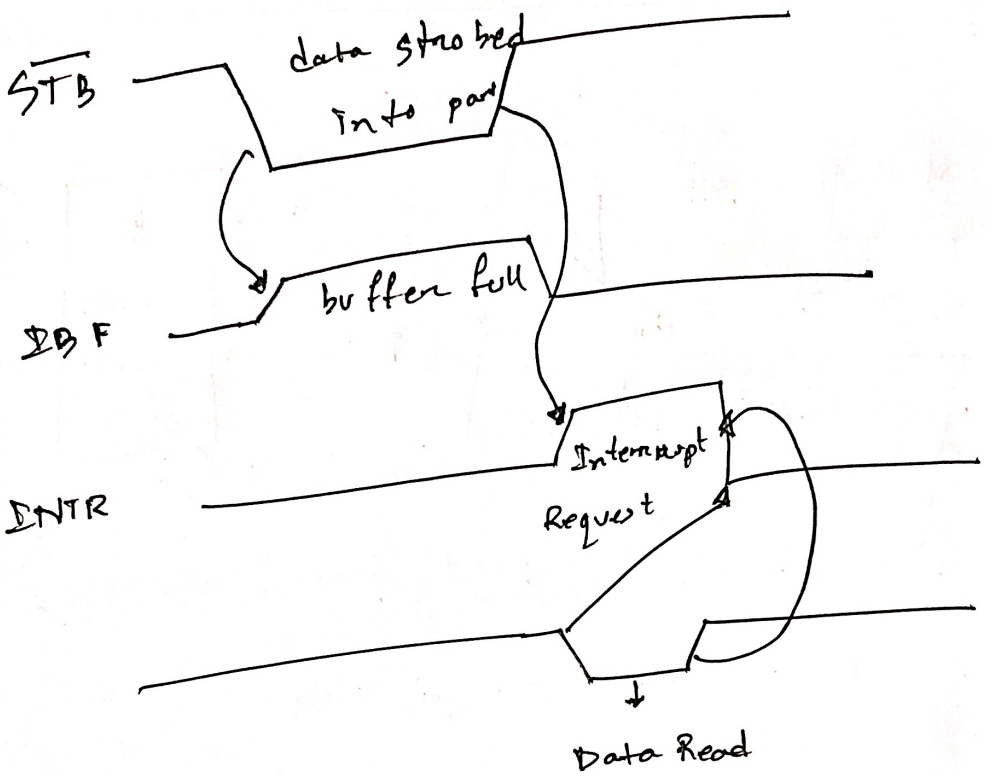
(vi) Interrupt is deactivated

(vii) Data comes from 82C55 through the datapath to microprocessor

(viii) Input buffer full signal is deactivated

d)

Diagram


STB
data strobed into port
IBF
buffer full
INTR
Interrupt Request
Data Read