

CSE360

Assignment - 2

Question - 01

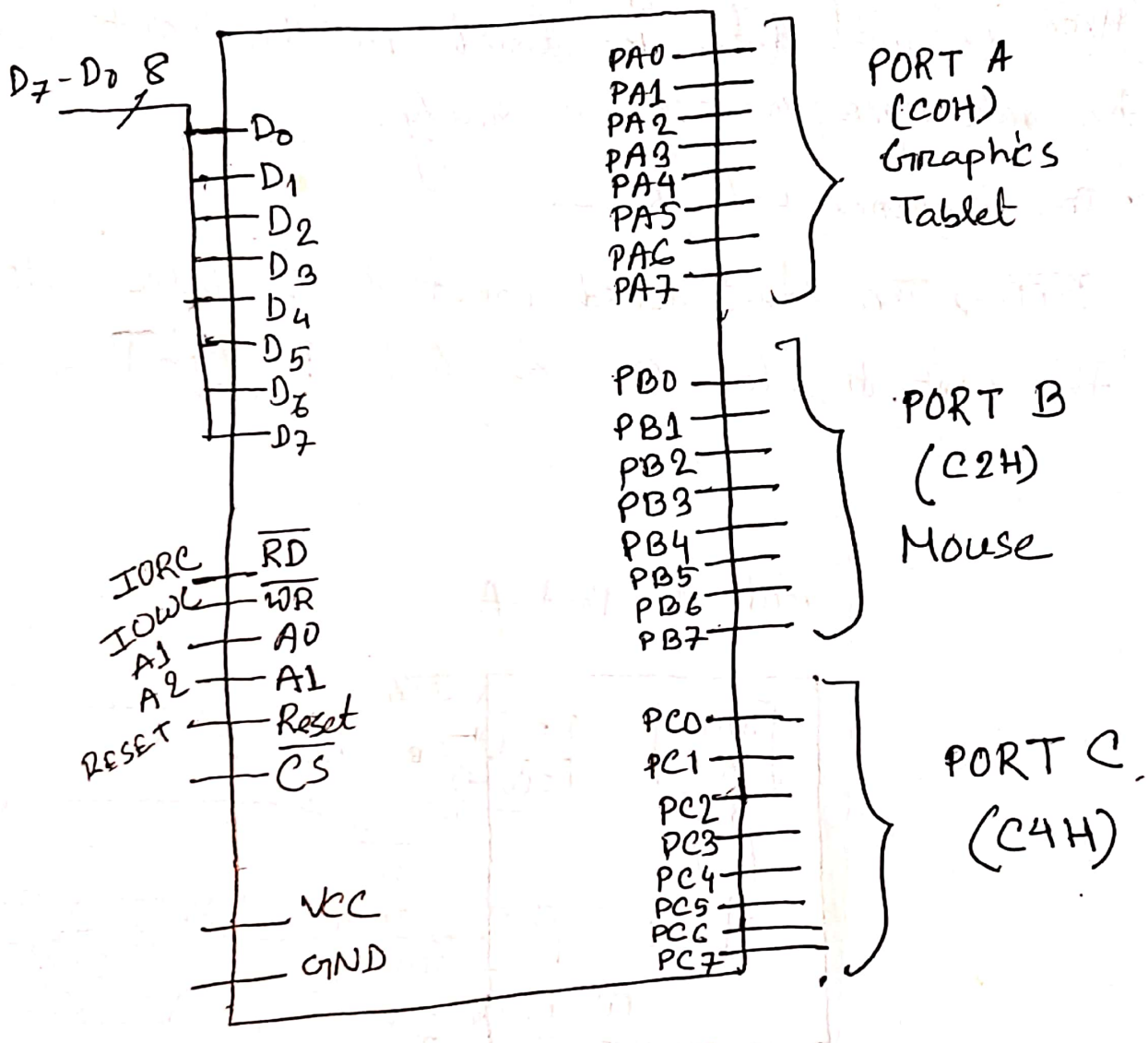
a) ans: ~~In~~ In the question mouse & the graphics tablet is more likely simply input device. So, we need to active the ~~imple~~ simple I/O mode of the IC 82C55. Here mode-01 is the I/O mode in the IC.

To activate the simple I/O mode & take input through port A & B.

The control word will be —

D <sub>7</sub>	D <sub>6</sub>	D <sub>5</sub>	D <sub>4</sub>	D <sub>3</sub>	D <sub>2</sub>	D <sub>1</sub>	D <sub>0</sub>
1	0	0	1	1	1	1	1

b) ans:



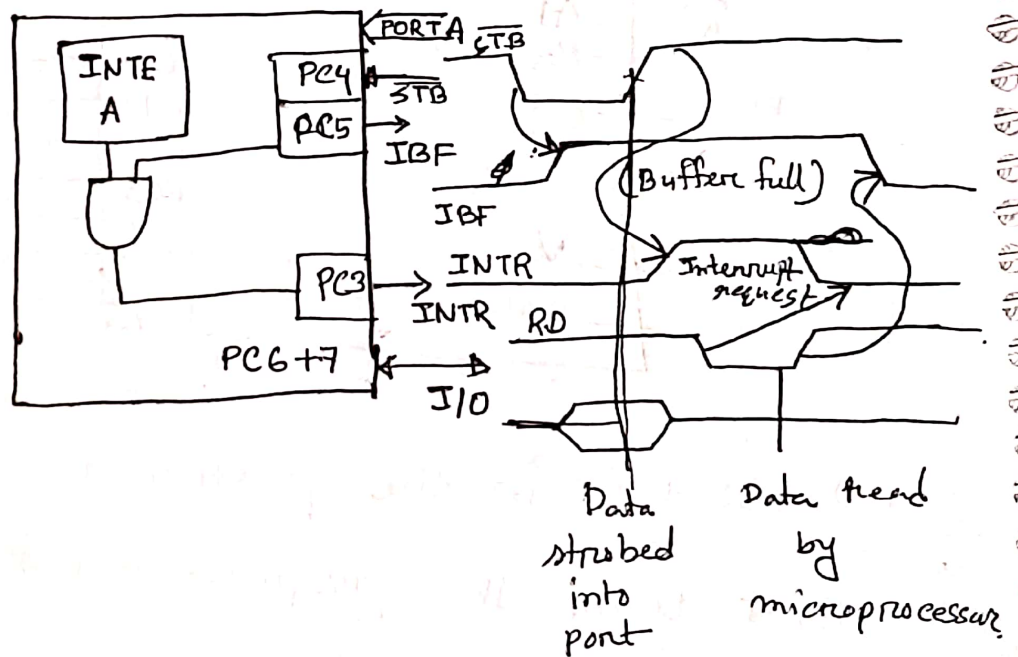
c) ans: Here in the question, IC 82C55 is taking input from the graphics tablet. As the graphics tablet is connected with the Port A, Then the process will be —

- Port A is functioning as latching input device.  
Here external data is stored in the port until the ~~micro~~ microprocessor is ready.

• The sequence will be -

$\overline{STB}$  → The ~~store~~ stored input loads data into the port to latch on a 0 to 1 ~~thru~~ transition.

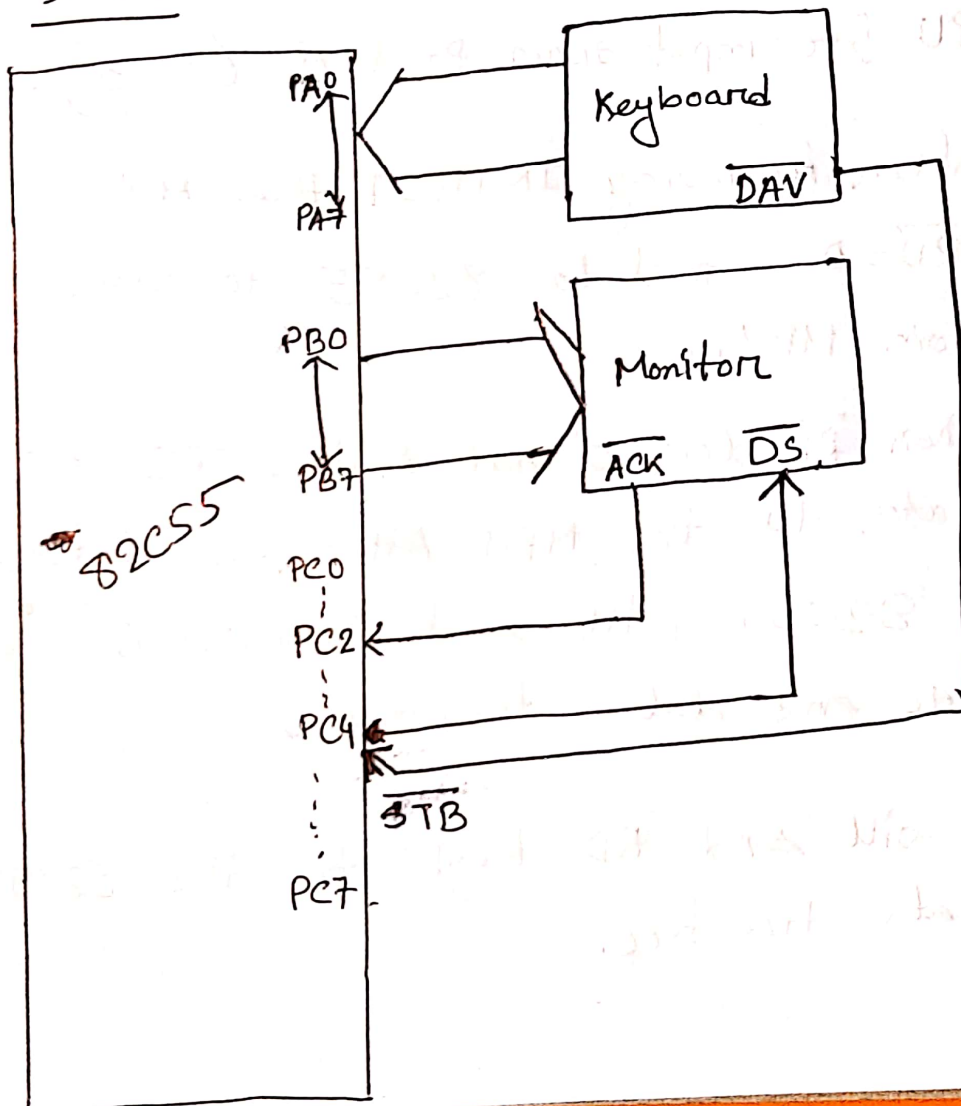
mode-1 Port-A



2. a) ans In the question port A keyboard is connected with the keyboard. It will take input and ~~and~~ monitor is connected with port B. So the control ~~with~~ bites —

D <sub>7</sub>	D <sub>6</sub>	D <sub>5</sub>	D <sub>4</sub>	D <sub>3</sub>	D <sub>2</sub>	D <sub>1</sub>	D <sub>0</sub>
1	0	1	1	1	0	0	0

b) ans:





Ques: If we pressed the "B" keyboard IC 82C55 will take input.

Step-1: Port A will function as latching input device. Here pin 4  $\overline{STB}_A$  will be given from the keyboard.

Step-2: In port A pin-5 IBF will send signal to 82C55 to block input so that it doesn't receive more data as the buffer full.

Step-3: After step-2 82C55 will send  $INTR=1$  signal to MPU for input from Port C (PC3).

Step-4: Then, after receiving  $INTR=1$  the MPU will send  $\overline{RD}=0$  signal to 82C55 to send input from MPU.

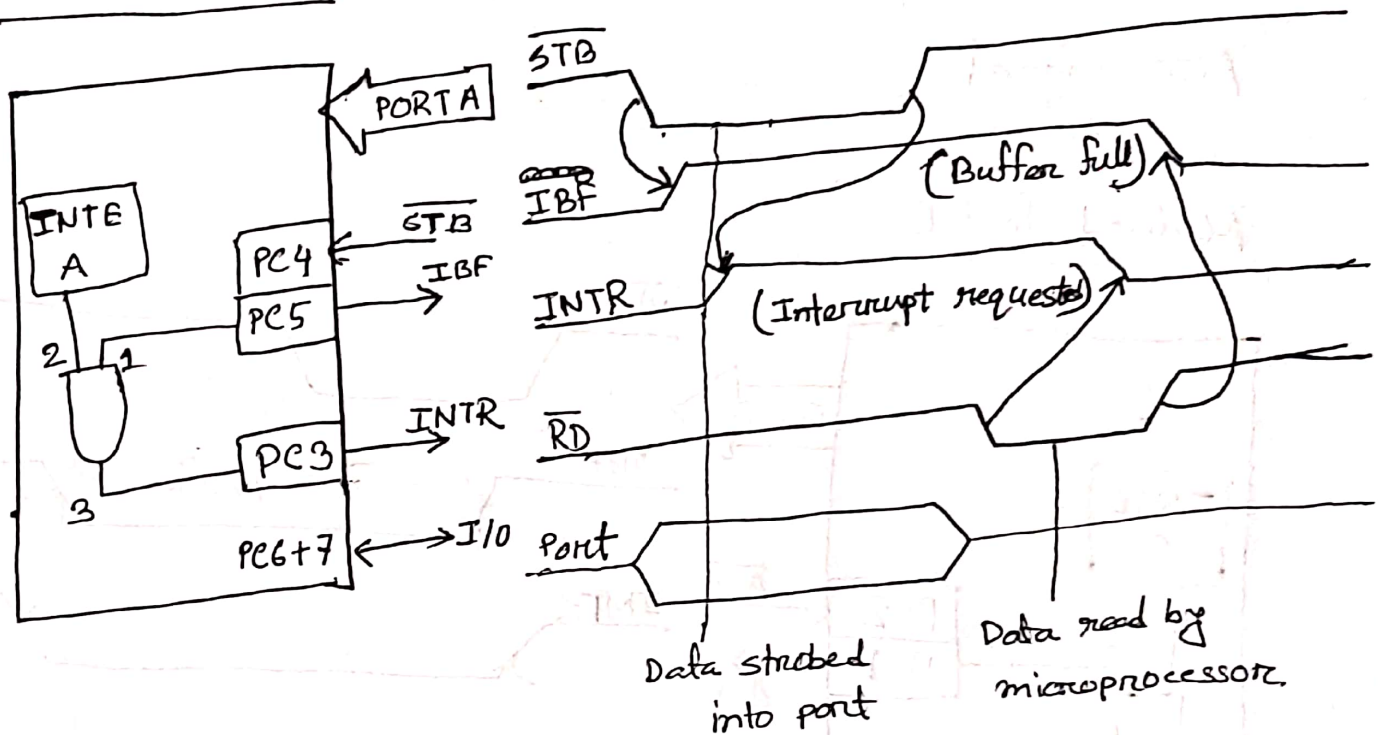
Step-5: MPU Then  $\overline{RD}$  low signal to the IC to send all data to the MPU. After the data being sent 82C55 will send  $INTR=0$  to the MPU to end data transfer.

Step-6: MPU will send  $\overline{RD}$  high to the 82C55 to confirm data transfer.

Step-7: 82C55 send  $IBF=0$  to the input device to end input transfer, and will stop the taking input from the input device.

Mode-1 Port A

Timing Diagram



d) ans: For the monitor, it will use port B and the IC 82C55 will give output.

Step-01: First the acknowledgement signal ACK will sent signal to 82C55.

Step-02: OBF will go low to give data

output through port B. It will happen when the ACK is logic 1.

Step-03: INTR will interrupt the processor as the external device receives the data via the ACK signal.

Mode-1 Port B

Timing Diagram

