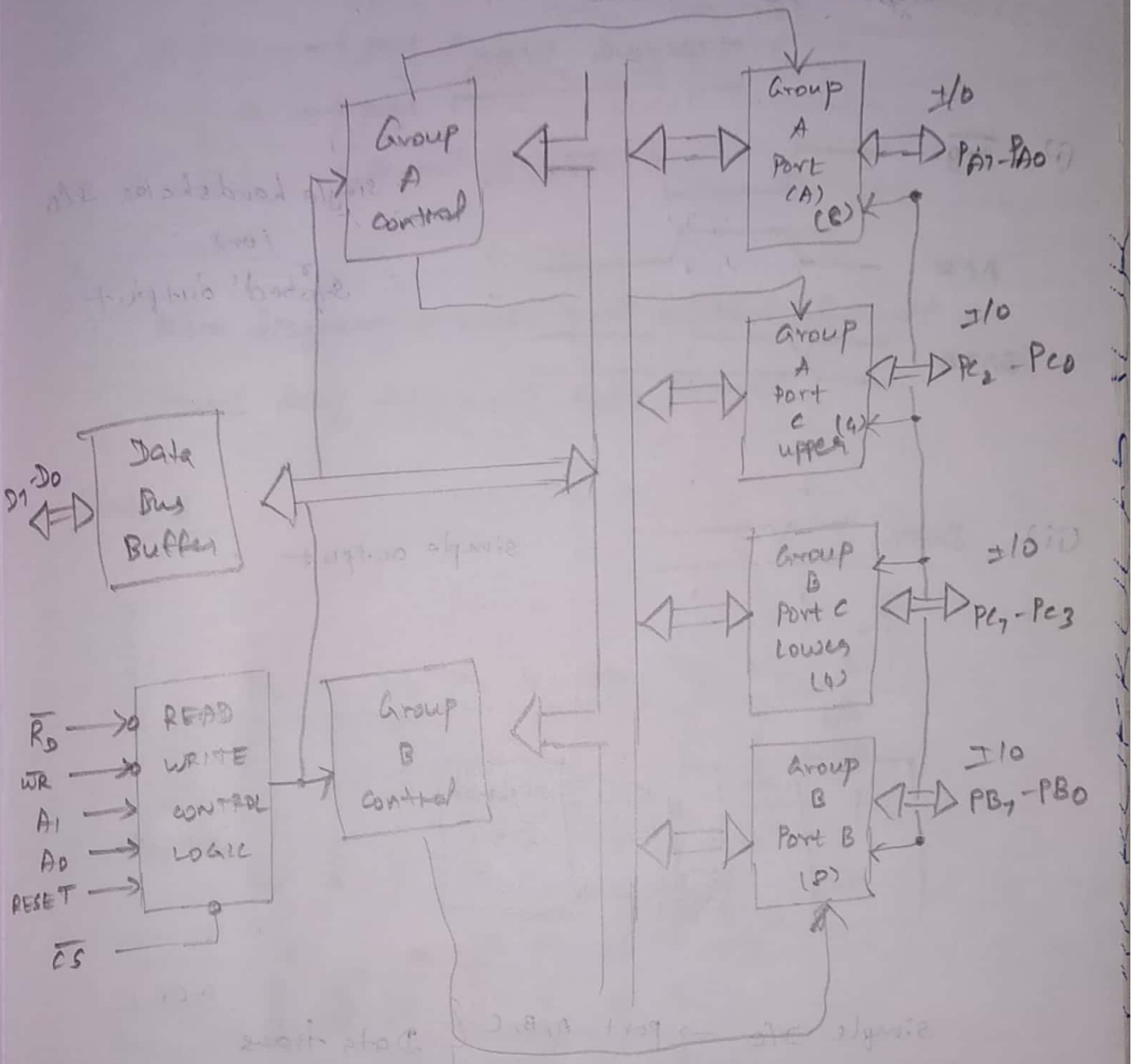
17/03/2022

8255

PROGRAMMABLE PARALLEL PORT



* short dist → I²C data transfer
* Connect printer to processor through this interface chip to match the speed

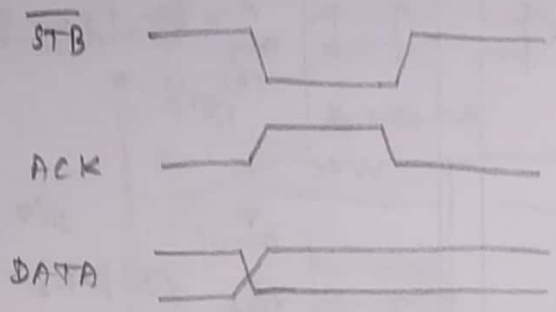
8251 → serial data transfer

8255 → parallel data transfer

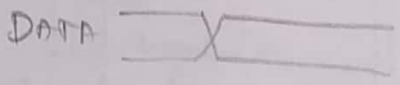
Simple I/O → No acknowledgement from receiver

Strobed I/O → sends ack

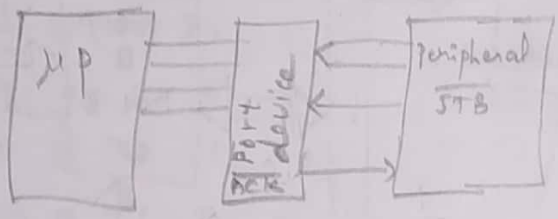
TIMING DIAG

(i) 

single handshake I/O
(or)
strobed output

(ii) 

simple output



simple I/O → port A, B, C } Data trans
strobed I/O → port A, B
port C = handshake

Mode 0 – All ports
Mode 1 – port A & B
Mode 2 – only in port A

Selecting Port

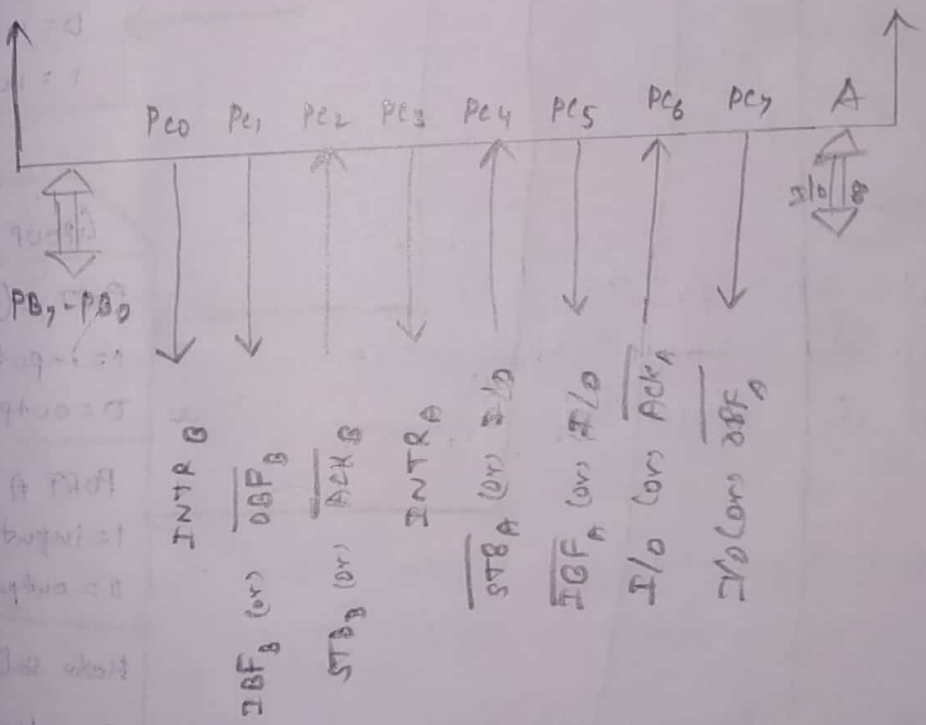
A_1	A_0	
0	0	→ port A
0	1	→ port B
1	0	→ port C
1	1	→ Control format

2 x 10 marks

Block diagram + bitset & reset control format

Mode1 diag along with mode format

Mode - 1



(i) port B initialized in mode 1
PC0, PC1, PC2 functions as Handshake lines

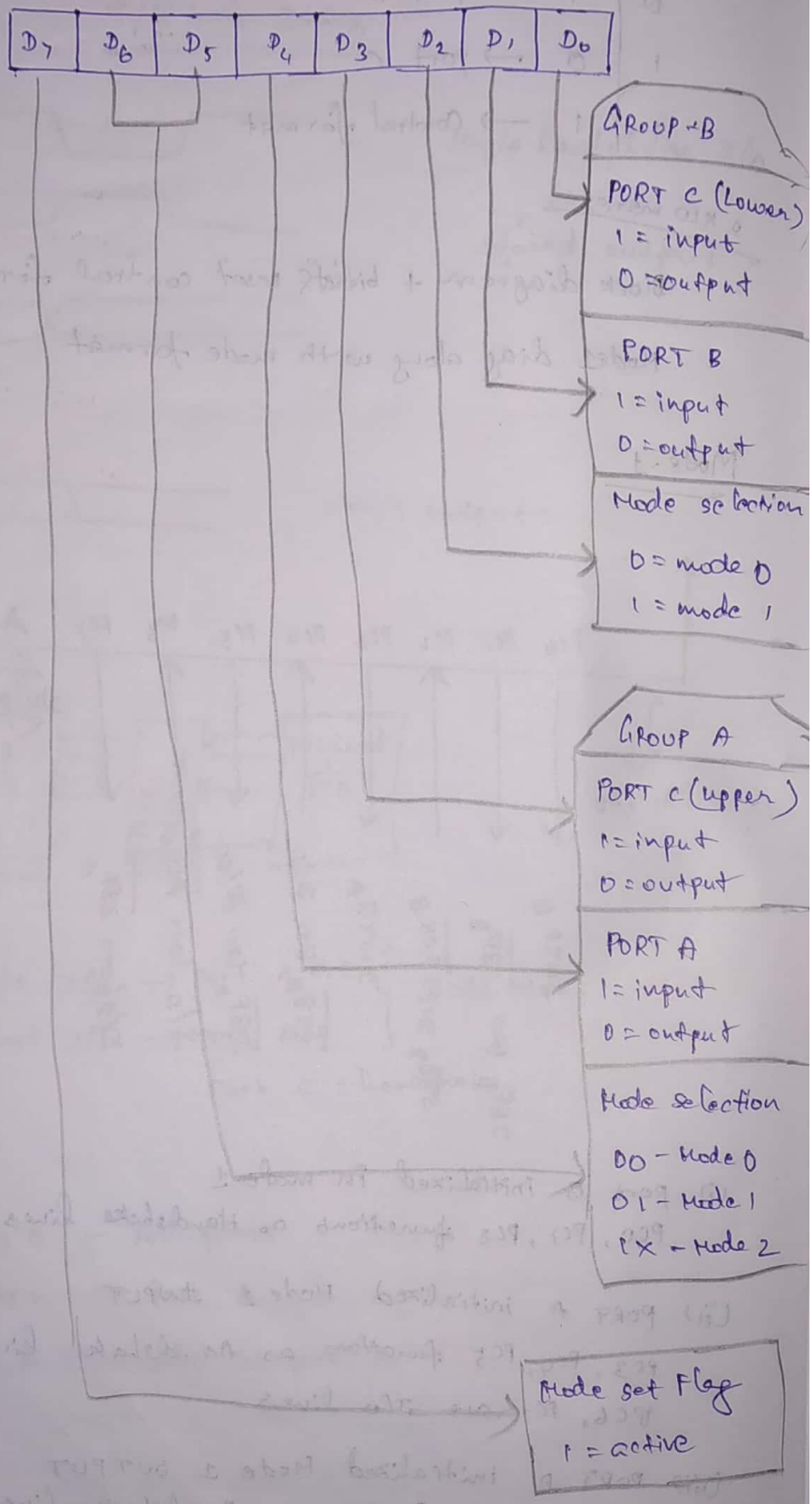
(ii) PORT A initialized Mode 1 INPUT
PC3, PC4, PC5 functions as Handshake lines
PC6, PC7 are I/O lines

(iii) PORT A initialized Mode 1 OUTPUT
PC3, PC6, PC7 function as Handshake lines
PC4, PC5 are I/O lines

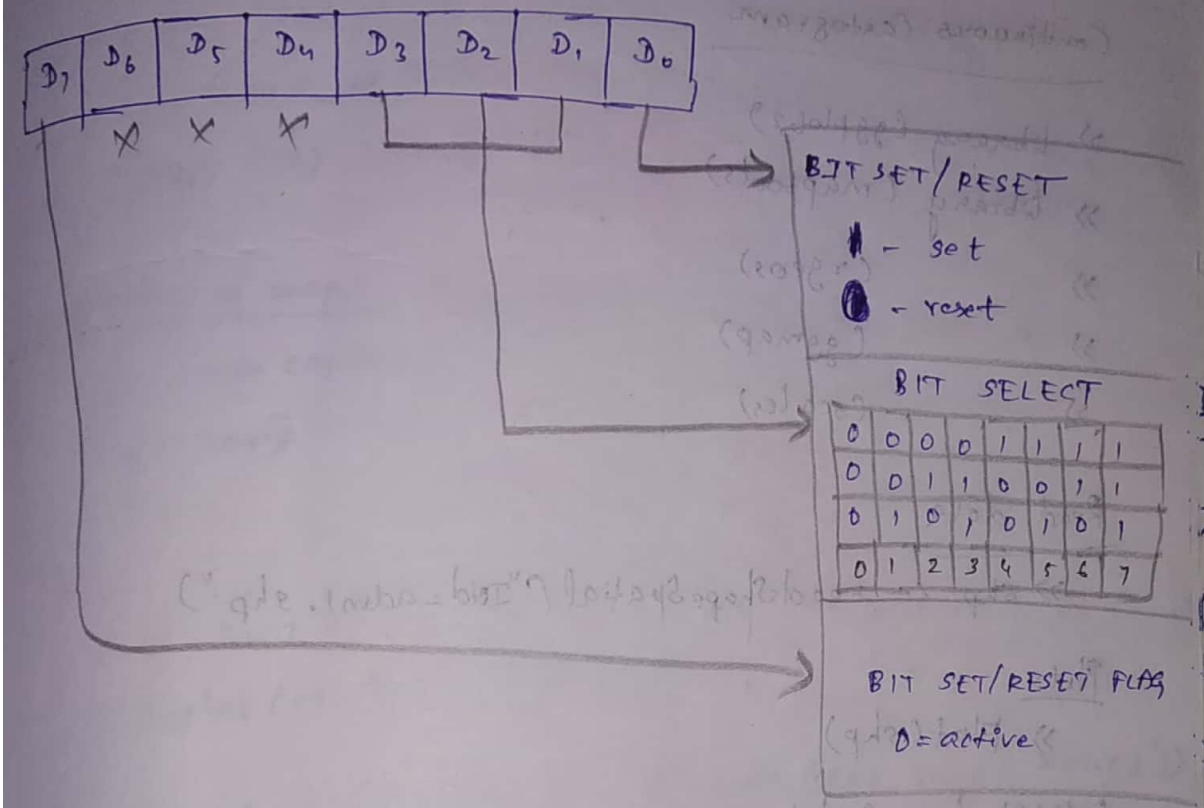
8255

PROGRAMMABLE PARALLEL PORT CONTROL WORD FORMAT

(a) MODE SET CONTROL WORD



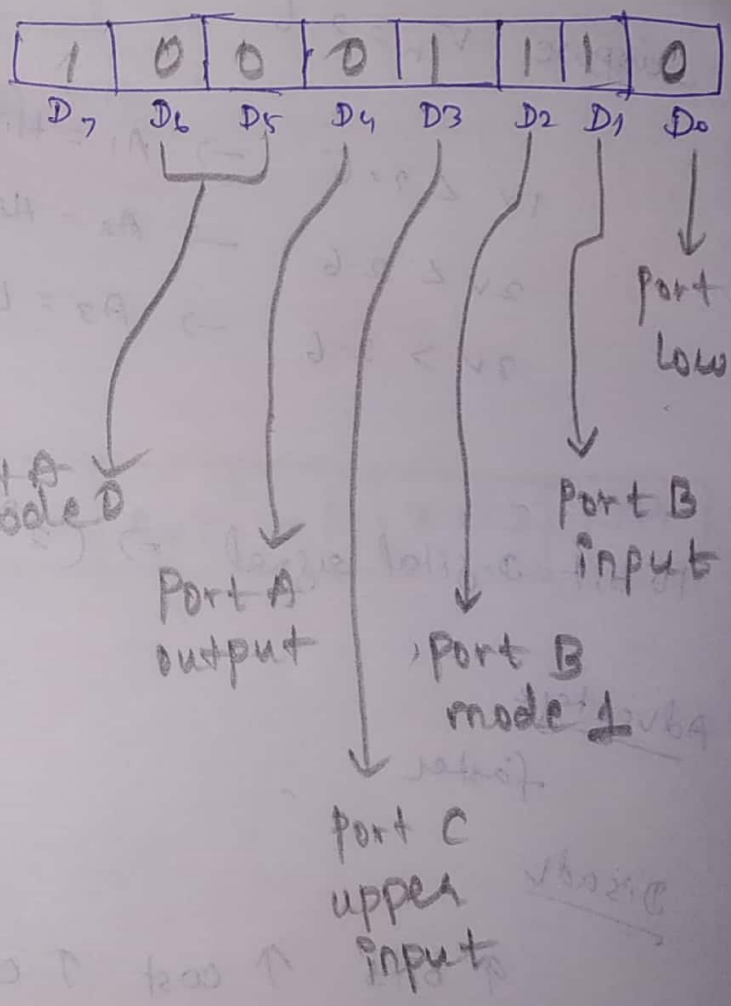
PORT C BIT SET/RESET CONTROL WORD



8255 MODE FORMAT

Port B Initialized as MODE 1 input
PORT A initialized as MODE 0 output
PORT C upper Input
PORT C Bits as output

Mode set Control word :



BIT SET / RESET

PORT C bit set / Reset

set Bit 3 of Port C