Q2 Draw an interfacing diagram to interface an 8-bit analog to digital converter through 8255 with 8086.

→ While interfacing an ADC to 8255 we must know the signals which are available in 0800 ADC which are to be interfaced. Here we have three signals, which control the conversion operation. These are:-

1. SOC (start of conversion): This signal is input to the 0800 and tells the convertor when to start the conversion process.
2. EOC (end of conversion) - This is an output from the converter and tells that conversion process ends.
3. OE (output enable) - This signal is also input to the 0800 and tells the converter when to output the converted digital signal.

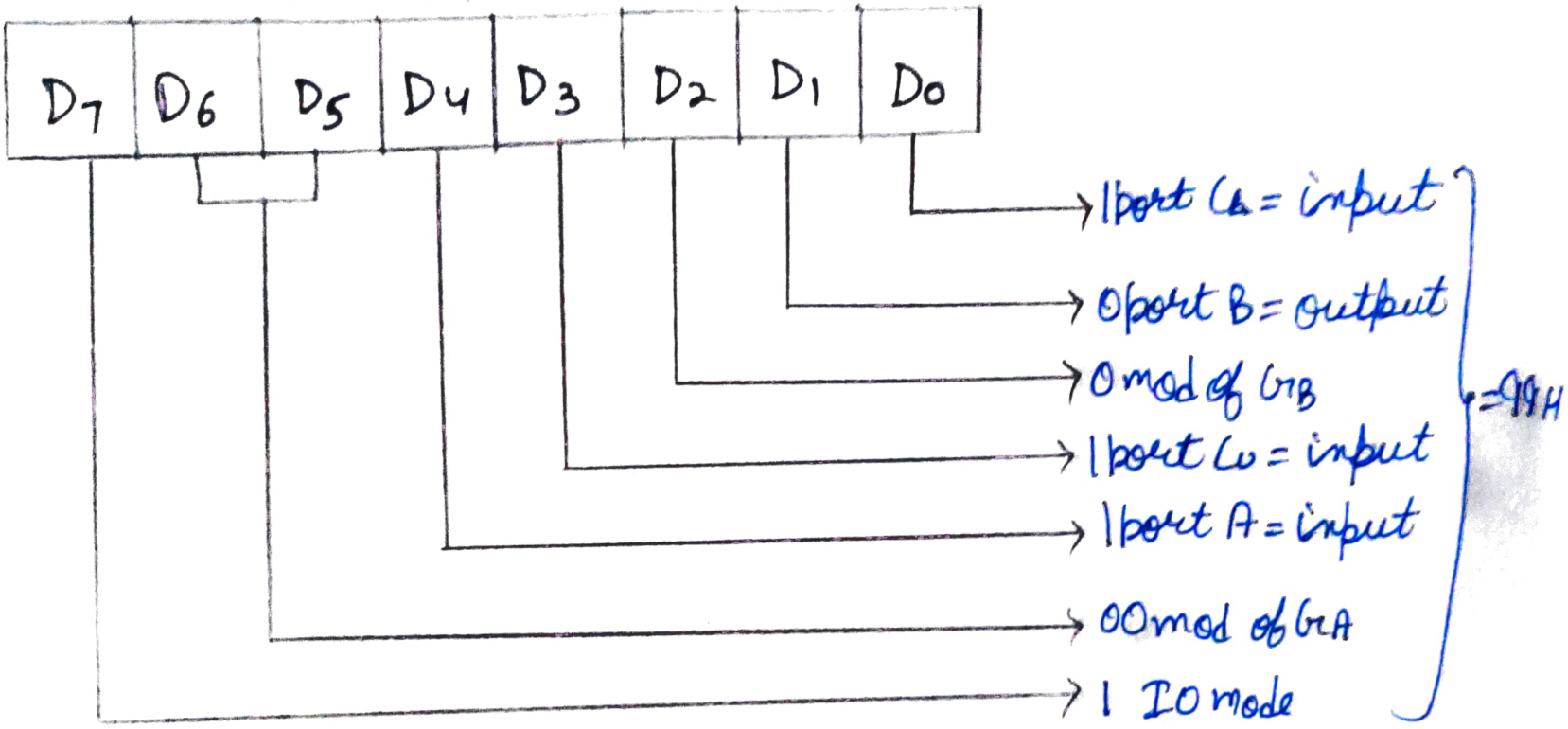
In this interfacing diagram the SOC and OE signals are interfaced to the PB_0 and PB_1 pins of 8255 and the EOC is interfaced through the PC_0 pin of 8255. The digital output is made available through the port PA.

The addresses to the ports and the CWR are:

A_7	A_6	A_5	A_4	A_3	A_2	A_1	A_0	
1	0	0	1	1	0	0	0	= 98H = Port A
1	0	0	1	1	0	1	0	= 9AH = Port B
1	0	0	1	1	1	0	0	= 9CH = Port C
1	0	0	1	1	1	1	0	= 9EH = CWR

Decided by chip select logic

The control word format and the control word is shown in the diagram -



The data to start the conversion process, end the conversion process and to make the output available are:

D_7	D_6	D_5	D_4	D_3	D_2	D_1	D_0	Hex Code	Process
0	0	0	0	0	0	0	0	01H	SOC
0	0	0	0	0	0	1	0	02H	OE
0	0	0	0	0	0	0	1	01H	EOC