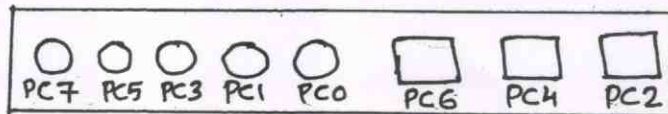


# Exp No: 9: 8255 - Parallel Interface (PPI)

PORT ADDRESSES	
Control Register -	C6
Port A	- C0
Port B	- C2
Port C	- C4

## PORT C PATTERN IN BOARD



### EXPERIMENT - 1.

AIM: To initialise Port A as an input port in mode-0.

#### PROGRAM:

1000	BE 00 15	MOV SI,1500H
1003	B0 90	MOV AL,90
1005	E6 C6	OUT C6,AL
1007	E4 C0	IN AL,C0
1009	88 04	MOV [SI], AL
100B	F4	HLT

Enter the program starting from user RAM address 1000H set a known data at the SPDT switches. Execute the program. Now the data as set by the SPDT switch settings is stored at the location 1500H.

### EXPERIMENT - 2.

AIM: To initialise Port A as input port and Port B as output port in mode-0.

#### PROGRAM:

1000	B0 90	MOV AL,90H
1002	E6 C6	OUT C6,AL
1004	E4 C0	IN AL,C0
1006	E6 C2	OUT C2,AL
1008	F4	HLT

Enter the program starting from user RAM address 1000H. Set a known data at the SPDT switches. Execute the program. The data as set by the SPDT switch settings is made output to Port B. Please verify visually that the data output at the LEDs is the same as that set by the SPDT switch settings.

### EXPERIMENT - 3.

AIM: To initialise Port C as output port in mode-0.

PROGRAM:

```
1000      B0 90          MOV AL,90
1002      E6 C6          OUT C6,AL
1004      B0 80          MOV AL,80
1006      E6 C4          OUT C4,AL
1008      F4             HLT
```

Enter the program starting from the user RAM address 1000H. Execute the program.

Data output at any one of the lines PC0, PC1, PC3, PC5 and PC7 glows the corresponding LED. In this program, PC7 bit is made high.

### EXPERIMENT - 4.

AIM: To initialise Port C as an output port in mode-0 and to explain the bit set and reset feature of Port C.

PROGRAM:

```
1000      B0 80          MOV AL,80
1002      E6 C6          OUT C6,AL
1004      B0 01          MOV AL,01
1006      E6 C4          OUT C4,AL
1008      B0 07          MOV AL,07
100A      E6 C6          OUT C6,AL
100C      F4             HLT
```

Enter the program starting from the user RAM address 1000H. This program is very useful in learning the unique feature of 8255, the bit set and reset capability for Port C. You can also change the data and check the change with the help of the LEDs.

## EXPERIMENT - 5.

AIM: To initialise Port C as an input port in Mode-0.

PROGRAM:

1000	BE 00 12	MOV SI, 1200
1003	B0 99	MOV AL, 99
1005	E6 C6	OUT C6, AL
1007	E4 C4	IN AL, C4
1009	88 04	MOV [SI], AL
100B	F4	HLT

In the design used in our VBMB-008 board, PC2, PC4 and PC6 bits of Port C have been connected to the debounce switches. We can input the data after pressing any one of these switches and store it at the RAM location 1200H.

Ex: - 6

AIM: To verify the working of 8255 in mode 1

Program:

```
MOV AL, B4
OUT C6, AL

read: IN AL, C4
      AND AL, 20
      JZ read

      IN AL, C0
      OUT C2, AL
      HLT
```