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| --- | --- |
| **Roll No:** | 65 |
| **Class/Sem:** | SE/IV |
| **Experiment No.:** | 9 |
| **Title:** | Program for interfacing 8086 with 8255 PPI. |
| **Date of Performance:** |  |
| **Date of Submission:** |  |
| **Marks:** |  |
| **Sign of Faculty:** |  |

**Aim:** 8255 is configured in mode O is simple Inuput / Output Mode. Ports A,B,C are in mode 0. All the posts are in output mode and data is transmitted to the respective ports.

**Apparatus :** Microprocessor 8086 and 8255 PPI experimental setup kit

**Theory:**

The programmable Peripheral Interface chip 8255 has three 8-bit Input / Output ports i.e. Port A, Port B, Port C upper (PCU) and Port C lower (PCL). Direct bit set/reset capability is available for port C. 8255 is a very powerful tool for interfacing peripheral equipment to the microprocessor. It is flexible enough to interface with any I/o device without the need of external logic.

**Procedure :**

1. Connect 8086 kit to 8255 PPI kit using 50 pin FRU cable.
2. Default I/O address ranges are :

SELECTION ADDRESS

Port A 30 H

Port B 31 H

Port C 32 H

Command Port 33 H

1. 80 H is the control word for 8255. It is set in simple I/O mode and all the ports are in output mode 0



| **D7** | **D6** | **D5** | **D4** | **D3** | **D2** | **D1** | **D0** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Always 1 Group A Port A Port C1 Group B Port B Port C2

for I/O mode 0 (output) (output) (output) (output) (output)

1. The LED’s connected to the pins at Port A glow according to the data transmitted on port A.
2. The LED’s connected to the pins of port B glow according to the data transmitted on Port B.
3. The LED’s connected to the pins of port C glow according to the data transmitted on Port C.

**Program :**

Segment : C000

Offset : C000

| **Memory** | **Opcode** | **Instructions** | **Comments** |
| --- | --- | --- | --- |
| C000 | B0 | MOV AL,80H | Mode 0, All ports in output mode |
| C001 | 80 |  |  |
| C002 | E6 | OUT CWR, AL |  |
| C003 | 33 |  |  |
| C004 | B0 | MOV AL, 55H | Data for Port A |
| C005 | 55 |  |  |
| C006 | E6 | OUT PORT A,AL |  |
| C007 | 30 |  |  |
| C008 | B0 | MOV AL,AAH | Data for port B |
| C009 | AA |  |  |
| C00A | E6 | OUT PORT B,AL |  |
| C00B | 31 |  |  |
| C00C | B0 | MOV AL,0FH | Data for port C |
| C00D | 0F |  |  |
| C00E | E6 | OUT PORTC,AL |  |
| C00F | 32 |  |  |
| C010 | CC | INT 3 | Stop |

Code :

Output :

**Conclusion :**

1. Explain the modes of 8255.
2. Explain the format of control word of 8255 PIC