

**Department of Computer System Engineering**

**COMPUTER DESIGN LAB**

**ENCS 411**

**PRELAB 4**

**Experiment No. 4**

***Programmable Interrupt Controller Application***

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**Section: 3**

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**Modes of operation for 8259 :**Fully Nested Mode
Rotating Priority Mode
Special Masked Mode
Polled Mode

* **What would be the I/O ports for the 8259 if direct addressing mode is used with only 8086 A4 being “1” and 8086 A1 being connected to A0 of 8259?**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **A7** | **A6** | **A5** | **A4** | **A3** | **A2** | **A1** | **A0** |
| **0** | **0** | **0** | **1** | **0** | **0** | **X** | **0** |

Addresses of I/O Ports:

P1 = 10H, P2 = 12H

* **Study the TO-DO Practices and write down the values for ICW1, ICW2, and ICW4?**

**ICW1 = 13**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | 0 | 1 | 0 | **0** | 1 | 1 |

**ICW2 =40**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

**ICW4 =01**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

* **What values of OCWs are needed?**

**OCW1 = FB**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |

**OCW2 = 20**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

**OCW3 = 0C**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | **0** | 0 | 1 | 1 | 0 | 0 |