

**B.Tech III Year II Semester**

**JNTUA COLLEGE OF ENGINEERING (AUTONOMOUS) PULIVENDULA**

**19AEC66- MICROPROCESSORS & MICROCONTROLLERS LAB**

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**Course Objectives:** The objectives of the course are to make the students learn about

- To become skilled in 8086 assembly language programming.
- To understand programmable peripheral devices and their interfacing.
- To learn interfacing and writing assembly language programming with 8051 microcontroller.

**Minimum Ten Experiments to be conducted (Five from each section)**

**I) 8086 Microprocessor Programs using MASM/8086 kit.**

1. Introduction to MASM Programming.
2. Arithmetic operation – Multi byte Addition and Subtraction, Multiplication and Division – Signed and unsigned Arithmetic operation, ASCII – arithmetic operation.
3. Logic operations – Shift and rotate – Converting packed BCD to unpacked BCD, BCD to ASCII conversion.
4. By using string operation and Instruction prefix: Move Block, Reverse string, Sorting, Length of the string, String comparison.

**Interfacing:**

5. 8259 – Interrupt Controller and its interfacing programs
6. A /D Interfacing
7. D /A Interfacing
8. Stepper Motor.

**II) Microcontroller 8051 Trainer kit**

1. Arithmetic operation – Multi byte Addition and Subtraction, Multiplication and Division – Signed and unsigned Arithmetic operation.
2. Logic operations – Shift and rotate.
3. Sorting- Ascending and descending order.

**Interfacing using 8051 Trainer kit:**

4. A/D Interfacing
5. D /A Interfacing
6. Switch Interfacing
7. Relay Interfacing

**Course Outcomes:**

At the end of this Course the student will be able to

- Write programs in assembly language and work with 8086 microprocessor. L6
- Interface programmable peripheral devices with 8086 microprocessor. L3
- Learn interfacing and write assembly language programming with 8051 microcontroller. L1



