

## **32055- PROCESS AUTOMATION PRACTICAL**

### DETAILED SYLLABUS

#### **OBJECTIVES**

- Design and operate pneumatic circuits.
- Design and operate fluid power circuits
- Use PLC system and its elements for process control
- Familiarize the working of function blocks in PLC
- Use ON-Delay timer to control a motor
- Use OFF-Delay timer to control a motor
- Use counter function block (Up counter and Down counter)
- Control the automatic operation of pneumatic cylinder using PLC
- Record of work to be prepared.

#### **Exercises**

##### Pneumatics Lab.

1. Direct operation of single and double acting cylinder.
2. Operation of double acting cylinder with quick exhaust valve.
3. Speed control of double acting cylinder using metering-in and metering-out circuits.
4. Automatic operation of double acting cylinder in single cycle - using limit switch.
5. Automatic operation of double acting cylinder in multi cycle - using limit switch.

##### Hydraulics Lab.

1. Direct operation of double acting cylinder.
2. Direct operation of hydraulic motor.
3. Speed control of double acting cylinder metering-in and metering-out control.

##### PLC Lab.

1. Direct operation of a motor using latching circuit.
2. Operation of a motor using 'AND' logic control.
3. Operation of a motor using 'OR' control.
4. On-Delay control of a motor and Off –Delay control of a motor.
5. Automatic operation of a Double acting cylinder-single cycle.

## Diploma, Anna University-UG, PG., HSC & SSLC

*Notes*

*Syllabus*

*Question Papers*

*Results and Many more...*

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6. Automatic operation of a Double acting cylinder-single cycle - forward, time delay, return.
7. Automatic operation of Double acting cylinder-Multi cycle.
8. Sequential operation of double acting cylinder and a motor.