TRANSDUCERS / PROCESS INSTRUMENTATION / DCS-PLC LABORATORY POSSIBLE LIST OF EXPERIMENTS

1. Study flow Measurement using **ROTAMETER**.
2. STUDY pressure measurement using **Pressure gauge**.
3. Study pressure measurement using **GP TRANSMITTER**.
4. Study Level measurement using **DP TRANSMITTER**.
5. Study flow measurement using **Magnetic flow meter**
6. Study flow Measurement using **vortex flow meter**.
7. STUDY Temperature measurement using **Temp gauge**.
8. Study Temperature measurement using **RTD / Temperature TRANSMITTER**.
9. Study Level measurement using **Tubular level gauge.**
10. Study flow measurement using **Coriolis Mass flow meter.**
11. Study operation of **Solenoid valves**.
12. Study operation of **Globe control valve**.
13. Study operation of **current to pneumatic converter.**
14. Study operation of **VFD.**
15. Study operation of **pump speed Regulation using VFD.**
16. Study plug design & flow characteristics of **control valves.**
17. Study Control valve Performance.
18. Study Operation of **Ball Valve** using Rotary Actuator.
19. Study Operation of **Butterfly Valve** using Rotary Actuator.
20. Familiarization of **Control valve accessories**.
21. Study & familiarization of **mA / mV Calibrator**.
22. Study & familiarization of **475 Field communicator**.
23. Study operation of Globe control valve with & without valve positioner.
24. Study various MOC for control valve.
25. Study & familiarization of **PID CONTROLLER.**
26. Study& familiarization of **ON OFF CONTROLLER**.

27. Study operation of **Heaters control panel.**
28. Study first order system.
29. Study second order interacting system.
30. Study second order Non interacting system.
31. Study self-regulation & non self-regulation systems.
32. Study operation of Tank Level control system.
33. Study operation of split range control system.
34. Study operation of Ratio control system.
35. Study Temperature control system using STHE.
36. Study operation of batch reactor.
37. Study & verify Cv sizing of the control valves.
38. Study Pressure control loop for CWH.
39. Study & perform calibration of **I / P CONVERTER**.
40. Study factory configuration of **Magnetic flow meter**.
41. Study configuration of **Pressure Transmitter.**
42. Study configuration of **DP Transmitter**.
43. Study & Testing of **PLC 1** Control panel Wiring drawings.
44. Study & Testing of **PLC 2** Control panel Wiring drawings.
45. Study & Testing of **PLC 3** Control panel Wiring drawings.
46. Study & Testing of Level control panel GA drawings & wiring Diag.
47. Study & Testing of pressure control panel drawings.
48. Study Junction Box wiring.
49. Study operation of DOL starters.
50. Study & Familiarize yourself with Different **Erection Material** & its usage.
51. Study & Identity process control loop using **Mimic Drawings**.
52. Study operation & calibration of Temperature Transmitter.
53. Study operation of pneumatic control components.
54. Study operation of Air Compressor & air headers distribution system.
55. Study operation of various **switches**.
56. Study & perform **Loop Testing activities**.

57. Study& perform **Hydro Testing** using lab Equipment.
58. Study & Development of **cable Trays route drawings**.
59. Study & familiarization with Instrument Erection.
60. Study & development of **Cable Schedule**.
61. Study & development of **Air Headers Schedule**.
62. Study **PLC & SCADA software Features**.
63. Study Ladder logic programming using **RS Logix 500.**
64. Development of Ladder Logic for Process Application & Implementation using I/O Simulator.
65. Study Features of **Siemens PLC.**
66. Study operation of **Electro pneumatic positioner.**
67. Study **Reactor temperature control system.**
68. Study Hazardous area classification charts.
69. STUDY Delta V Hardware & DCS Panel wiring Diagrams.
70. Study Delta V DCS & its Features.
71. Study DCS (Delta V) based Pump characteristics set up.
72. Study Mass Flow Measurement by Delta V system.
73. Study DCS Simulators.
74. Study Operation of Dry block Temperature calibrators.
75. Study operation of ultrasonic level Transmitter.
76. Study characteristics of RTD.
77. Study characteristics of T/C.
78. Familiarization of Thermometers.
79. Study characteristics of Thermistor.
80. Study flow measurement using ORIFICE METER.
81. Study flow measurement using venturi meter.
82. Study flow measurement using flow Nozzle.
83. Study operation of Flow switch.
84. Study operation of Temperature switch.
85. Study operation of level switch.

86. Study operation of Pressure switch.

87. Study operation of strain gauge.

88. Study operation of LVDT.

89. Study operation of Dead weight Tester.

90. Study operation of flapper nozzle system

91. Study operation of Alarm Annunciator.

92. Study operation of relay based control panel.

93. Study line pressure drop measurement across the erection fittings.

94. Study operation of Temperature sensor with thermo well.

95. Study operation of Hg thermometer.

96. Familiarization of Factory sensors (AIA Sensor Kit)

97. Familiarization of FESTO Control Components (AIA FESTO KIT)

98. Study Heater control Panel.

99. Familiarization of Various Junction Box schedules.

100. Study A/M starter Panel for Motor/Pumps.