

AMPTE22 PROCESS CONTROL AND INSTRUMENTATION

UNIT-1 ELEMENTS OF MEASUREMENT

- 1.1 Functions and general classifications of measuring instruments
- 1.2 Indicating and recording type of instruments.
- 1.3 Elements of measuring instruments, static and dynamic characteristics of measuring instruments.

UNIT-2 PRINCIPLE OF OPERATION

- 3.1 Construction and application of important industrial instruments for the measurement of temperature, flow, liquid level and composition

UNIT-3 DYNAMIC BEHAVIOR OF FIRST ORDER

- 3.1 Second order and two or more first order systems in series.

UNIT-4 BLOCK AND PHYSICAL DIAGRAMS OF CONTROL SYSTEM

- 4.1 Open and closed loop control systems.
- 4.2 Characteristics of measuring elements, controllers and final control elements
- 4.3 Mods of control actions.

UNIT-5 CLOSED LOOP

- 5.1 Response of closed loop control systems for various kind of control actions and measurement lag.

References Books:

1. Ogunnaika B.A. and Ray W.H., "Process Dynamics, Modeling and control". Oxford University Press, U.K. 1994.
2. Alciatore D.G. and Histan M.B., "Introduction to Mechatronics", Tata McGraw Hill. Bolton W. "Mechatronics", Pearson Education Singapore.