

AMPL17 INSTRUMENTATION

UNIT-1 TEMPERATURE AND PRESSURE MEASUREMENTS

- 1.1 Thermometer,
- 1.2 Resistance Temperature Detector,
- 1.3 Thermistor, thermocouple,
- 1.4 Total radiation pyrometers,
- 1.5 Optical pyrometer,
- 1.6 Pressure measurement:
- 1.7 Manometers, Elastic transducers,
- 1.8 McLeod gauge, thermal conductivity gauges,
- 1.9 Calibration of pressure gauge using dead weight tester.

UNIT-2 FLOW AND MISCELLANEOUS MEASUREMENTS

- 2.1 Venturi,
- 2.2 Orifice and nozzle meters,
- 2.3 Pitot tube, turbine type meters,
- 2.4 Hot wire anemometer,
- 2.5 Magnetic flow meters.
- 2.6 Level measurement: float level meters and electrical conductivity meters.

UNIT-3 INSTRUMENTATION IN ANALYTICAL TECHNIQUE

- 3.1 IR spectroscopy,
- 3.2 Gas chromatography,
- 3.3 X-ray spectrometer,
- 3.4 Thermo analytical method,
- 3.5 Thermal conductivity analyzer,
- 3.6 Measurement of color.

References Books:

1. Rangan, Mani and Sharma, Instrumentation, Tata McGraw-Hill, New Delhi, 1997.
2. I.J. Nagarath and M. Gopal, Control systems engineering, 2nd Ed. New Age International Pvt. Ltd., 1982.
3. R. K. Jain, Mechanical and Industrial measurements, Khanna Publishing. 1988.
4. B.C.Nakra, K.K.Chaudhry, Instrumentation, Measurement and Analysis. Tata McGraw-Hill, New Delhi, 2006, 7th edition.