

INDUSTRIAL ELECTRONICS

UNIT - I - ELECTRONICS INSTRUMENT FOR MEASURING BASIC PARAMETERS:

Amplified DC meter – AC voltmeter using rectifiers – Electronic multimeter – digital voltmeters – Component measuring instrument – Q meter RF power and voltage measurement.

UNIT - II - SIGNAL GENERATION:

Sine wave generator – Frequency synthesized signal generator – Frequency divider generator – Signal generator modulation – Sweep frequency generator – Pulse and Square wave generators – Function generator – Audio frequency signal generation.

UNIT - III - FREQUENCY COUNTERS AND TIME INTERVAL MEASUREMENT

Simple frequency counter – Measurement errors – Extending the frequency range of the counter – Automatic and computing counters.

UNIT - IV - FABRICATION OF INTEGRATED CIRCUITS:

IC technology – Basic ICs – Epitaxial growth – Masking and etching – Diffusion of impurities – Transistors for monolithic circuits – Monolithic diodes – IC resistors, capacitors, and inductors.

UNIT - V - OP - AMP AND TIMER IC APPLICATION

General purpose IC op-amp-741 details – IC audio power amplifier block diagram (CA-3020) – Op-amp voltage regulator.

555 timer – Function diagram – monostable astable modes of operation – Schmitt trigger 555 timer.

Books for Study:

1. Modern Electronic Instrumentation and Measurement Techniques – Albert D. Helfrick and William D, Cooper – PHI
2. Electronic devices and circuitss – Allen Mottershead – PHI.

Books for Reference:

1. Integrated circuits – Millman and Halkias.
2. Linear ICs-Roy Choudhry Sherif Jain.