SPECIFICATIONS

1. Instruments and Measurement Assignments
2. **Books for Measurements and Instruments** **: 10 Nos in pdf Format**
3. **Mp4 Video Class for Measurements and Instruments Lab : 40 Classes in Mp4 on Pen Drive**

EXPERIMENTS

1. 1. Carry out Statistical Analysis of Digital Voltmeter
·   Calculate mean, standard deviation, average deviation, and variance.
·   Calculate probable error.
·   · Plot Gaussian curve.

2. Perform following using Multimeter
·   Measurement of dc voltage, dc current, ac (rms) voltage, ac (rms) current, resistance and capacitance. Understand the effect of decimal point on resolution. Comment on bandwidth.
·   To test continuity, PN junction and transistor.
3. Perform following using CRO
·   Observe alternate, chop modes.
·   Measure unknown frequency and phase using XY mode.
·   Perform locking of input signal using auto, normal, external, rising and falling edge trigger modes.
·   Verify calibration, level, astigmatism, ac, dc, ground, attenuator probe operations.
4. Perform following using DSO
    Perform Roll, Average, Peak detection operations on signal
·   Capture transients
·   Perform FFT analysis of sine and square signals
·   Perform various math operations like addition, subtraction and multiplication of two waves.
5. Study of True RMS meter
    Measure RMS, peak, average voltages for half controlled rectifier or Full controlledrectifier by varying firing angle.
6. Study of programmable LCR meter
·   Measure L, C & R
·   Measure Q and Dissipation factor.
7. Study of Spectrum Analyzer
·   Perform harmonic analysis and Total Harmonic Distortion (THD) measurement for sine and square waves.
·   Verify frequency response of filters & high frequency (HF) amplifier.
·   Analyze Spectrum of AM & FM and to measure percent modulation and bandwidth.
·   8. Study of Frequency Counter
·   Carry out measurements through different modes of measurement.
·   Measure frequency, time, ratio, events & pulse width.
9. Calibration of Digital Voltmeter (DVM)
    Calibrate DVM for dc voltage, ac voltage and dc current.
10. Study function generator/Arbitrary waveform generator
·   Generate signal of required amplitude, frequency, duty cycle, offset etc.
·   Generate special signals such as noise, ECG, sweep, burst, AM, FM, PM etc.To study Broad side linear array with uniform spacing and amplitude