

# UG Laboratories/ Measurement Laboratory



## List of Experiments

1. Measurement of unknown medium resistance by using Wheat Stone Bridge
2. Measurement of unknown small resistance by using Kelvin Double Bridge
3. Measurement of unknown medium inductance by using Maxwell Bridge
4. Measurement of unknown high inductance by using Hay' Bridge
5. Study of analog meters—PMMC, Electro Dynamo Meter, Moving Iron
6. Measurement of small distance variations by using LVDT
7. Measurement of weight by using Strain Gauge
8. Measurement of Torque
9. Study of CRO (Cathode Ray Oscilloscope)
10. Measurement Wind using Digital Anemometer
11. Measurement of solar irradiance using Digital Pyranometer (Solar Power meter)

## List of Major Equipment's

1. **Wheat Stone Bridge** Source-5V R1 -1K $\Omega$ , 10K $\Omega$ , 100K $\Omega$ . R2- 10K. R3-, 10 $\Omega$ , 100 $\Omega$ , 1K $\Omega$ , 10K $\Omega$ , 100K $\Omega$
2. **Kelvin Double Bridge** Source-5V. R1 -1K $\Omega$ , 10K $\Omega$ , 100K $\Omega$ . R2- 100 $\Omega$ , R3-1K $\Omega$ , 10K $\Omega$ , 100K $\Omega$ .
3. **Maxwell Bridge Source**-1KHz Oscillator R1-10K. R2-0.1mf. R3 -10 $\Omega$ , 100 $\Omega$ , 1K $\Omega$ , 10K $\Omega$ , 100K $\Omega$
4. **Hay' Bridge Source**-1KHz Oscillator R2 -10 $\Omega$ , 100 $\Omega$ , 1K $\Omega$ , 10K $\Omega$ , 100K $\Omega$ . R3 -10 $\Omega$ . R4 -10 $\Omega$
5. PMMC, Electro Dynamo Meter, Moving Iron
6. **LVDT** Input 203 AC Display 0-10 V Displacement range 0-20 mm
7. **Strain Gauge** Measuring Range-0-5,Kg Non-linearity Error -  $\pm 1\%$  Excitation Source-D.C. Excitation (5Volts) Display- 3(1/2) Digit LED
8. **Torque** Measuring Range-0-2.5Newton meter. Non-linearity Error -  $\pm 1\%$  Source-D.C. Excitation (5Volts) ; Working Temperature-0-500C Display- 3(1/2) Digit LED
9. **CRO (Cathode Ray Oscilloscope)**
10. **Anemometer** Display-LCD ,Size-65x25 mm Operating Temperature-0-500C(32-1220F) Air Velocity Sensor Structure- Conventional twisted vane arms and low friction ball-bearing design. Power supply-006P DC 9V battery Power Consumption-Approx DC 9mA Weight-325g/0.72lb(Including Battery)
11. **Pyranometer** (Solar Power meter) Sensor-High Sensitivity Silicon Photodiode Range-0~2000W/m<sup>2</sup>(0~634BTU/ft<sup>2</sup>.h) Tilt angle range- 00~90 Store temp .&relative humidity- - 100C~600 C(140F~1400F Less than 85%RH) Memory-20 point memory Accessories-9V battery