

**COLLEGE OF ENGINEERING, KALLOPPARA**

TENDER No: 02 - 2017 - 2018

**Items Required in Communication Lab**

Sl.No	Item with Specification	Qty
1.	<p><b>Optic Fibre Trainer Kit</b></p> <ul style="list-style-type: none"> <li>. Two Transmitter Fiber Optics LED having peak wavelength of emission 660nm &amp; 950nm.</li> <li>. Two Receiver Fiber Optic photodetector On-board AC Amplifiers. Analog Band Width 350 Khz.</li> <li>. Digital Band Width: 2.5 Mhz. 4<sup>th</sup> order Butter worth 3.4KHz Low Pass Filter.</li> <li>. On-board 1Hz. To 10 KHz sine wave (amplitude adjustable), Square wave (NRZ-TTL8 Bit) FO voice link using microphone &amp; speaker RS-232C PC to PC Serial link using 9 Pin D-type.</li> <li>. Four Switched Faults for transmitter &amp; receiver. Fiber Optics Cable Connector type Standard SMA. Polished fiber at both end for Numerical Aperture Measurement. Step indexed multimode PMMA plastic cable. Core Refractive Index 1.492. Clad Refractive Index 1.406.</li> <li>. Numerical aperture Better than 0.5.</li> <li>. Acceptance Angle Better than 60 Fiber Diameter 1000 microns. Outer Diameter 2.2mm. Fiber Length 1m. In-Built</li> <li>. Power Supply +5V/1.5A, ±12V/250mA. Interconnections 2 mm Banana Sockets User's Manual with set of Patch Chords.</li> </ul> <p>Warranty: 3 year or more .</p>	1
2.	<p><b>Microwave test bench with Klystron Oscillator- X band</b></p> <p>Klystron mount with klystron tube 2K25/2K27</p> <p>Isolator</p> <p>Frequency meter(direct readout)</p> <p>Variable attenuator</p> <p>Slotted section</p> <p>Tunable probe</p> <p>Detector mount</p> <p>Detector diode(extra)</p> <p>Movable short</p> <p>Matched termination</p> <p>VSWR meter -solid state</p> <p>Klystron Power supply</p> <p>Wave guide stand</p> <p>Accessories</p> <ul style="list-style-type: none"> <li>    Cooling fan</li> <li>    BNC cable</li> </ul> <p>Experiment manual with explanations</p> <p>Warranty :3 years</p>	1
3.	<p><b>Digital LCR meter</b></p> <p>Dual Backlit LCD display</p> <p>Auto LCR smart check and measurement</p> <p>Series/Parallel modes are selectable</p> <p>Ls/Lp/Cs/Cp with D/Q/ θ/ESR parameters</p> <p>Support DCR mode 200.00Ω~200.0MΩ</p> <p>Test frequency: 100/120/1k/10k/100k Hz</p> <p>Test AC signal level: 0.6mVRMS typ.</p> <p>Test range: (ex. F=1kHz)</p> <p>L: 200.00 μH ~ 2000.0 H</p> <p>C: 2000.0 pF ~ 2.000 Mf</p> <p>R: 20.000 Ω ~ 200.0 MΩ</p> <p>Multi-level battery voltage detector</p> <p>Support Backlight &amp; Buzzer sound driver</p> <p>Display:DC Resistance, Serial Inductance, Parallel Inductance, Serial Capacitance, Parallel Capacitance, Serial Resistance, Parallel Resistance, Phase Angle, Equivalence Serial Resistance, Dissipation Factor, Quality Factor</p>	1

<b>Function generator, 5MHz</b>	
Operating Modes	: Sine, Square, Triangle, Ramp, Pulse, TTL
Frequency Range	: 0.5 Hz - 5 MHz (Sine), 0.5 Hz - 3 MHz (Square & Triangle), 0.5Hz - 2 MHz (Ramp, Pulse & TTL)
Frequency Accuracy	: $\pm 0.5\%$
Sine Wave Distortion	: 1 % (typical) or less
Square Wave/pulse Rise Time & Fall Time	: $\leq 50$ ns
Pulse Duty Cycle	: 15 % to 85 % var. (min width 200 ns)
Output Impedance	: 50 $\Omega$
Output Voltage	: 20 Vpp O.C.
Attenuation	: 20 or 40 dB (fixed) & 20 dB (variable)
DC Offset	: $\pm 5$ V adjustable
Internal Sweep speed	: 20 ms-4 s
External Modulation	: AM Std, AM Balance, FM & PWM
Modulation Input	: 2 Vpp max.
<b>Frequency Counter</b>	
Range	: DC - 40 MHz
Resolution	: 1 Hz
Sensitivity	: 0.5 V
Input Impedance	: 1 M $\Omega$
Frequency Accuracy	: $\pm 0.5\%$
Max. Input Voltage	: 200 V (DC+AC Peak)
Included Accessories	: Manual, BNC-BNC cable
Warranty	: 3 years onsite

  
**PRINCIPAL**