

MODEL ENGINEERING COLLEGE  
THRIKKAKA, COCHIN-21  
PH:2577379,2575370

Ref no.A2/3657/18/MEC  
Tender No.7/2018-19/MEC

dtd 26.11.2018

**TENDER shedule**

Sealed tenders in the prescribed format are invited for the purchase of “Oscilloscope and Function Generator ” for various department of this institution under Plan fund 2018-19.

- 1.Last date and time of sale of tender form:12/12/2018 10 am
- 2.Last Date & Time of Reciept of Tender: 12/12/2018 11 am
- 3.Date & Time of Opening of Tender:12/12/2018 2.30 P M

Cost of Tender Form:

Original : 600 + 18% GST

Duplicate :300 + 18% GST

Tender form and details can be had from Model Engineering College,Thrikkakara. Mode of remittance by Cash payment at College Office.Those who apply for tender form by post should remit additional amount of Rs.50/- as postal charges.Agreement in stamp paper worth Rs.200/- to accompany tender.EMD 1% of quoted amount. Further details available at [www.mec.ac.in/](http://www.mec.ac.in/) Tenders.

PRINCIPAL

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**Specification**

Sl. No.	Item	Specifications	Quantity
1.	Digital Storage Oscilloscope	60 MHz, bandwidth, 2 channels, upto 1 GS/s sample rate and 2.5k point record length on all channels, Advanced Triggers including Pulse Width Trigger and Line-selectable Video Trigger	1
2.	Digital Storage Oscilloscope	Vertical Axis: Bandwidth: DC-30MHz or above Sample rate on each channel: $\geq 500$ MS/s No of channels: 2, Sensitivity: $\leq 2$ mV to $\geq 5$ V/div, Vertical Modes: CH1, CH2, UAL (ALT/CHOP) & ADD, Input coupling: AC, DC, GND, Vertical zoom: Vertically expand or compress a live or stopped waveform Triggering: Triggering source: CH1, CH2, Ext, Ext/5, AC Line, Triggering modes: AUTO, NORMAL, Single sequence Horizontal Axis: Sweep Time: $\leq 10$ ns to $\geq 50$ s/div, Horizontal zoom: Horizontally expand or compress a live or Digital Storage stopped waveform XY mode: Sensitivity: Same as vertical axis Input/Output ports: USB interface Waveform measurements: Cursors, Amplitude, Time Measurements $\Delta T$ , $1/\Delta T$ , $\Delta V$ , Automatic measurements, Period, Frequency, Pos Width, Neg Width, Rise Time, Fall Time, Maximum, Minimum, Peak-Peak, Mean, RMS, Cycle RMS, Cursor RMS, Phase, Rise Edge Cnt, Fall Edge Cnt, Pos Duty, Neg Duty, Amplitude, Cycle Mean Arithmetic Add, Subtract, Multiply Math functions FFT	1
3.	Function Generator	Frequency Range 0.3Hz ~ 3MHz (7 Range) Amplitude $> 10$ Vpp (into $50\Omega$ load) Impedance $50\Omega \pm 10\%$ , Attenuator $-20\text{dB} \pm 1\text{dB} \times 2$ DC Offset $< -5\text{V} \sim > 5\text{V}$ (into $50\Omega$ load)	8

		<p>Duty Control 80% ~ 20%, maximum 1MHz (continuously adjustable) Display Triangular Wave &lt; 0.3dB, 0.3Hz ~ 300 kHz &lt; 0.5dB, 300 kHz ~ 3MHz</p> <p>Square Wave Symmetry, ±2%, 0.3Hz ~ 100kHz Rise or Fall Time &lt; 100nS at maximum output (into 50Ω load)</p> <p>CMOS OUTPUT Level 4Vpp±1Vpp ~14.5Vpp±0.5Vpp adjustable Rise or Fall Time &lt; 120nS TTL OUTPUT Level &gt; 3Vpp Fan Out 20 TTL load Rise or Fall Time &lt; 25nS</p> <p>Built-in 6 Digit Counter with INT./EXT. Function up to 150MHz/high resolution POWER SOURCE AC115V/230V±15%, 50 / 60Hz 6 digits LED display Range Accuracy ±5%+1Hz (at 3positions) Sine Wave, Distortion &lt; 1%, 0.3Hz ~ 200 kHz</p>	
4	Function Generator	<p>Frequency Range: upto 3MHz Resolution: 0.1Hz Max Waveforms: Sine, Triangle, Square and TTL output. Amplitude: 0-10 Vpp (into 50Ω load) Impedance: 50Ω ±10% Attenuator:-40 dB ± 1dB X 1 DC offset control: -5V to +5V (into 50Ω load) Display: 6 digits LED Display NB: The item shall be available for demonstration, if needed.</p>	2
5	Multi-output power supply	<p>Mains Supply : 230 V ±10 %, 50 Hz DC Output : (a): 0-30 V,1 A continuously variable by means of coarse &amp; fine controls (b): 5 V, 1 A Adjustable from 4 V - 6 V (c) : 0 - ± 15 V, 1 A adjustable by means of coarse &amp; fine controls, Current Limit : 20 mA - 1 A, Continuously Adjustable Resolution : Voltage : 10 mV Current : 2 mA Load Regulation : ≤ 0.05 % Line Regulation : ≤ 0.05 % Temp. Coefficient : ≤5 mV / °C) Ripple &amp; Noise : ≤ 1 mVrms</p>	2

		Display : 7 segment LED type Accuracy : $\pm(1 \% + 1 \text{ digit})$ Over Range Indication by LEDs Built-in overheat, over voltage & Over current protection.	
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