

College of Engineering, Kalloppara

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Tender Notice

No: D/365/2021/CEK

Date: 15/11/2021

Sealed Tender are invited for supply of the following items.

Tender No	Items	Tender Cost	EMD
1/2021-2022	Supply of Electronics lab equipment	Rs 400/- +GST	Rs. 3000/-
02/2021-2022	Supply and installation of multimedia projector- 5nos	Rs400/- +GST	Rs. 3000/-

Last date of sale of Tender from 09/12/2021, 3 PM. Receiving Tenders 10/12/2021, 11 AM, Opening Tenders 10/12/2021, 12 Noon. Full details of Tender Advertisement are exhibited in the College office & Website.

PRINCIPAL
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1) Digital Storage Oscilloscope

3 Nos.

Specifications
Analog channels : 2 + 1 (ext. trigger viewable as digital channel)
Bandwidth : 50 MHz
External trigger (or 3rd digital channel) - 1
Maximum sample rate - 1 GSa/s (all channels)
Maximum memory depth - 200,000 points (all channels)
Waveform update rate - 100,000 waveforms per second
WaveGen - 20-MHz function generator
Bode plot - Standard
Serial protocol analysis Standard: I2C, UART/RS-232
Integrated digital voltmeter- Standard
Frequency counter - Standard
Built-in training signals - Standard
Waveform math Add, subtract, multiply, divide, FFT (magnitude and phase), low pass filter
Automatic measurements 14 amplitude, 14 timing, and 4 pulse count measurements
Display 7-inch TFT LCD WVGA
Connectivity USB 2.0 (host and device), LAN
Warranty : 3 years

2) 3 MHz DDS based function generator

5 Nos.

Specifications	
Main	
Output Function	Sine, Square, Triangle, TTL 0.1Hz ~
Frequency Range(For Sine, Square)	3MHz
Frequency Range(For Triangle)	0.1Hz ~ 1MHz 0.1Hz
Resolution	maximum 20ppm
Stability	20ppm 5ppm/year
Accuracy	10Vp-p (into 50 load)
Aging	20% at maximum position
Amplitude Range	-40dB 1dB 1
Amplitude Accuracy	-5V ~ 5V (into 50 load)
Impedance	25% ~ 75% below 1MHz (for square wave only)
Attenuator	6-digit LED display
DC Offset	ON/OFF selector
Duty Control Range	
Display	
Output Control	

SINE WAVE	
Harmonics Distortion Flatness (at maximum amplitude relative to 1kHz)	From Amplitude control at maximum position without any attenuation to its 1/10 of any combination setting, TTL OFF -55dBc, 0.1Hz ~ 200kHz -40dBc, 0.2MHz ~ 2MHz -35dBc, 2MHz ~ 3MHz 0.3dB, 0.1Hz ~ 1MHz 0.5dB, 1MHz ~ 2MHz 1dB, 2MHz ~ 3MHz
TRIANGLE WAVE	
Linear	98%, 0.1Hz ~ 100kHz ; 95%, 100kHz ~ 1MHz
SQUARE WAVE	
Symmetry Rise or Fall Time	5% of period + 4ns, 0.1Hz ~ 100kHz 100ns at maximum output. (into 50 load)
TTL OUTPUT	
Level Fan Out Rise or Fall Time	3Vp-p 20 TTL load 25ns
GENERAL	
Operation Environment	Indoor use, altitude up ~ 2000m Ambient Temperature 0°C ~ 40 Relative Humidity: Up to 80% at 0 ~ 40°C Up to 70% at 35°C ~ 40°C Installation category II Pollution Degree 2
POWER SOURCE	
	AC 240V/220V/110V 10%, 50/60Hz
STORAGE CONDITION	
Temperature Humidity	-10°C ~ 70°C 70% (Maximum).
DIMENSION & WEIGHT	
251(W) x 91(H) x 291(D) mm, Approx. 2.1kg	

Dual Output Power Supply

- 2 Nos

Specifications

Input Voltage	230V AC, $\pm 10\%$, 50Hz 1 Phase		
Output Voltage	0 to 32V	12V to 15V	4.50 to 5.50V
Output Current	0 to 2A	0.5A	5A
Line Regulation CV *	$\pm 0.01\% \pm 2mV$	$\pm 0.1\%$	$\pm 0.1\%$
Load Regulation CV	$\pm 0.01\% \pm 2mV$	$\pm 0.1\%$	$\pm 0.1\%$
Line Regulation CC *	$\pm 0.1\% \pm 250\mu A$	NA	NA
Load Regulation CC	$\pm 0.1\% \pm 250\mu A$	NA	NA
Output Ripple CV	1mV rms	1mV rms	1mV rms
Output Ripple CC	0.04% rms	NA	NA
Operating Temp.	0 to 50°C	0 to 50°C	0 to 50°C
Protection	OL/SC (CC type)	OL/SC (fold back type)	OL/SC (fold back type)
O/P OVP Indication (LED)	NA	NA	Crowbar Type
3 Digit Display			

4) Digital Multimeter

Specifications

- 6 Nos

DC VOLTAGE	
Range	40mV, 400mV, 4V, 40V, 400V, 400mV, 4V, 40V, 400V, 200mV, 2V, 20V, 200V, 600V 200mV, 2000mV, 20V, 200V,
AC VOLTAGE	
DC CURRENT	
Range	2mA, 20mA, 200mA, 10A

Accuracy	$\pm(0.8\%rdg + 1 \text{ digit})$ for GDM-357
AC CURRENT	
Range	20mA, 200mA, 10A(GDM-357)
Accuracy	$\pm(1.0\%+3)$
RESISTANCE	
Range	200 Ω ~ 20M Ω 6 ranges
Accuracy	$\pm(1.0\%rdg + 2 \text{ digits})$
CAPACITANCE	
Range	2nF, 20nF, 200nF, 2 μ F, 200 μ F
Accuracy	$\pm(4.0\%+3)$
DIODE TEST	
Open Circuit Voltage	Standard
CONTINUITY BEEPER	
Buzzer sounds if conductance less than 10 Ω	
TEMPERATURE	
Range	-40 $^{\circ}$ C~1000 $^{\circ}$ C
Accuracy	$\pm(1.0\%rdg + 7 \text{ digits})$ for GDM-357
LCD DISPLAY	
3 1/2 digits	
POWER SOURCE	
Single 9V Battery (6F22)	

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List of Items required

MULTIMEDIA PROJECTOR

S/No	Item Description
1	Projection System: 3 LCD technology RGB liquid crystal shutter
2	LCD panel: 0.55 inch with C2 fine
3	Colour light O/P: Not less than 3600 lumens
4	Resolution :- XGA , 1024 x 768, 4:3
5	Contrast:-16,000:1
6	Lamp life: 12000 hours (at least)
7	Speaker:- 5 W
8	USB 2.0
9	VGA in (2x), VGA out, HDMI in
10	Composite I stereo mini jack audio out stereo mini jack audio in (2x) USB 2.0 Type A
11	At least 2 years warranty with 1 year lamp warranty
12	Power consumption : \leq 327 Watt 225 watt (economy mode) along with the projector, the following accessories are needed:-
13	11. Ceiling mount
14	12. Wall mount Screen (Retractable) at least (4:3) 8 foot wide
15	13. Installation with Cables and Accessories
16	14. Tripod stand (for Projector)-1 no
17	15. Fold able wall mounted stand for laptop (Dimension: 2ft x 1 ft) preferably made from metal (powder coated)

Principal

