Annexure "H"

e-Tender No. 02 Part 04 (2020-2021) ELECTRONICS BRANCH & OTHER RELATED LAB ITEM

TECHNICAL SPECIFICATION

1. The scanned copy of this annexure "H" (original downloaded) duly completed and seal signed by the bidder must be uploaded otherwise bid should not be considered. Any supplementary information may be uploaded separately.
2. The samples where-ever mentioned in specifications must be submitted in this Directorate of Technical, Jodhpur(Education wing) along with physical submission otherwise concerned item will not be considered for technical evaluation.
3. Scanned Copies Items wise Original Literature/Leaflets/Catalogue correct Image as per Tender Specification enclosed, Authorization Certificate of manufacturer prescribed format (Annexure-L) etc. must be enclosed in support of your Make and Specifications otherwise concerned items will not be considered for Technical Evaluation.
4. The delivery period up to 60 days.
5. The Material will be Supplied F.O.R. at Principal Government Polytechnic College, as per order List.
6. Index Page No. 1 & 2 all Document of S. No. 1 to 34(if applicable) and other required document must be enclosed otherwise concerned Tender will not be considered for Technical Evaluation.
7. All the material supplied should be new and no item can be supplied which is refurnished.

S. No.	Item with Full Specifications	Churu	Pali	Women Ajmer	Alwar	S. Madhopour	Total Qty.	Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
1	**WAVEFORM Software** It should seamlessly connects to the Electronics Explorer and provides a clean, easy to use graphical interface for each instrument. With WaveForms, it should	5	0	0	0	0	5	

S. No.	Item with Full Specifications	Churu	Pali	Women Ajmer	Alwar	S. Madhopour	Total Qty.	Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	be easy to acquire, store, analyze, produce, and reuse analog and digital signals. • Designed exclusively for use with the Electronics Explorer Board. • Easy to use graphical interface for all EEBoard instruments • Powerful multi-triggering options • Import/Export file options for all instruments • PC-based virtual Input/Output devices • AC/DC coupling, +/- 20V input range, realtime FFT and XY functions data display (FFT, XY, Zoom and others), data export in multiple formats Oscilloscope feature 4 channel, 40MSps, 10-bit converter w/ up to 16Kbyte buffer depth, powerful triggering options, AC/DC coupling, +/- 20V input range, realtime FFT and XY functions data display (FFT, XY, Zoom and others), data export in multiple formats Logic Analyzer feature 32 channel, 100MSps, up to 16KSa/pin buffer depth, internal/external clock and trigger, multiple visualization options of all signals, data export in multiple formats Arbitrary Waveform Generator feature 2 channels, 40MSps, 14-bit converter, up to 32Kbyte buffer depth, 4MHz bandwidth, 10V p-p, standard, complex(damped and swept, AM/FM modulated) & user-defined waveforms							

S. No.	Item with Full Specifications	Churu	Pali	Women Ajmer	Alwar	S. Madhopour	Total Qty.	Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	Digital Pattern Generator feature **32 digital channels shared with logic analyzer, 2KSa/pin buffer depth, standard (clock, counters, constant, random, walking values) and custom patterns** **Power Supplies & Voltmeters feature** **Programmable, high power supplies with independent voltage and current limit settings of up to 2A, configured as simple, low frequency signal generators, two fixed 5V & 3.3V supplies, 4 channels voltmeter, two +/-10V reference voltages, input protection up to 200V, 1.2M** **Static I/O feature** **PC-based virtual I/O devices including push buttons, LEDs, switches, seven segment displays, sliders and progress bars**							
2	**DISTORTION METER** **※ Automatic level & distortion measurements** **※ Auto or Hold function selectable** **※ 0.1% ~ 100% in 7 distortion measuring ranges** **※ 20Hz ~ 20kHz in 3 continuous ranges** **※ 400Hz, 1kHz, 10kHz 3 frequency spots** **※ 1mVrms ~ 300Vrms in 12 ACV measuring ranges** **DISTORTION MEASUREMENT**	**1**	**0**	**0**	**0**	**0**	**1**	

S. No.	Item with Full Specifications	Churu	Pali	Women Ajmer	Alwar	S. Madhopour	Total Qty.	Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	Range : 0.1% ~ 100% full scale in 7 ranges (auto ranging) Fundamental Frequency Range : 20Hz ~ 20kHz in 3 continuous ranges with fine adjustment tuning 3 spots for 400Hz, 1kHz, 10kHz Input Level : 100mVrms ~ 300Vrms Automatic Level Control Range : ±10dB Fundamental Rejection : > 80dB Second Harmonic Accuracy : ±1dB at basic frequency 20Hz ~ 20kHz Residual Distortion : < 0.03% including hum and noise AC VOLTAGE MEASUREMENT Range : 1mVrms to 300Vrms full scale in 12 ranges (auto-ranging) Frequency Response : 20Hz ~ 200kHz ±1dB Input Impedance : 100kΩ ±10%, <70pF (unbalanced) Accuracy : ±3% of full scale (@ 1kHz) Residual Noise : < 10uV (input short circuit) Output Level : X:1Vrms, Y:500Vrms at meter full scale Output Impedance : Approx. 600Ω POWER SOURCE : AC 100V/120V/220V/240V ±10%, 50/60Hz							
3	3 ¾ Digit Digital Multimeter with USB Interface 3¾ Digital Multimeter with USB Interface shall have following specifications; • USB interface can connect to computer	20	0	0	0	0	20	

S. No.	Item with Full Specifications	Churu	Pali	Women Ajmer	Alwar	S. Madhopour	Total Qty.	Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	• Large LCD anolog bar graph display. • Unit symbol display • Metallic screen board with strong antimagnetic and anti-interferential function • Auto power off and alarm when stopped used after 15 minutes. Full function protection anti-high voltage circuit design • Software to acquire the reading into the PC. • Different functions can be controlled by PC. • Technical Specification • Function Range Accuracy • DC Voltage 400mV/4V/40V/400V/1000V ±(0.5%+4) • AC Voltage 400mV/4V/40V/400V/750V ±(0.8%+4) • DC Current 400uA/4000uA /40mA/400mA/4A/10A ±(0.10%+10) • AC Current 400uA/4000uA /40mA/400mA/4A/10A ±(1.5%+10) • Resistance 400Ω/4kΩ/40kΩ/400kΩ/4MΩ/40MΩ ±(0.8%+4) • Frequency 4Hz/40Hz/400Hz/4kHz/40kHz/400kHz/4MHz/30MHz ±(0.1%+4) • Capacitance 50nF/500nF/5uF/50uF/100uF ±(3.5%+8)							

S. No.	Item with Full Specifications	Churu	Pali	Women Ajmer	Alwar	S. Madhopour	Total Qty.	Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	• Temperature (-20 ~ 1000)°C ±(1.0%+5) • Special Function such as Diode test, Low battery indication, Continuity buzzer, Data hold, Auto power off, Bar graph display, RS232 / USB interface jack, Function protection, Shockproof protection shall be there. • Frequency /duty cycle(0.1%~99.9%), • Input impedance 10MΩ • Sampling rate 3 times/s • AC Frequency response (40-400)Hz • Operation way Auto range • Max. display 3999 • LCD Size 70×50mm • Power 3V (1.5V×2)							
4	10 MHZ Function Generator with DDS USB Direct Digital Synthesis[DDS] technology. Simple & Clear Front panel design. VFD florescent display Interface. USB Interface. Types: 16 waveforms including sine, square, ramp, double pulse, noise, DC	2	0	0	0	0	2	

S. No.	Item with Full Specifications	Churu	Pali	Women Ajmer	Alwar	S. Madhopour	Total Qty.	Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	and so on Length: 1024 points Sampling Rate: 100 MSa/s Amplitude Resolution: 8 bits Harmonic Distortion: (1 Vpp) ≤−40 dBc (<5 MHz) , ≤−35 dBc (≥5 MHz) Total Distortion of Sine: ≤1%(20 Hz ~ 20 kHz, 20 Vpp) Rising/Falling Edge Time: ≤35 ns Overshoot: ≤ 10 % Duty Cycle of Square: 0.1%～99.9%(limited by edge time) Symmetry of Ramp: 0.0%～100.0%							
5	CHEMICALS & RAW MATERIAL FOR PCB LAB.	2 (set)	0	0	0	0	2 (set)	
6	ROLLER TINNING MACHINE a tabletop unit for Tin/Solder coating of PCB's . The machine is ideal for polytechnics & engineering colleges. A hand operated flywheel allows easy coating of boards. Maximum PCB Width : 250mm (10") Maximum PCB Thickness : 6 mm Solder Bath Capacity : 5 Kgs. Heaters : 2 x 500 Watts	1	0	0	0	0	1	

S. No.	Item with Full Specifications	Churu	Pali	Women Ajmer	Alwar	S. Madhopour	Total Qty.	Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	Rollers : Silicon Coated Roller Revolution : Gear Flywheel Drive Bearings : Teflon Electrical Power : 230 V - 50Hz, 5A Socket required							
7	PCB Drafting Aids Kit	5	0	0	0	0	5	
8	ARTWORK TABLE (Illuminated) Tabletop artwork and PCB inspection table with bottom illumination and diffused light. Area for work: 10" X 14"	1	0	0	0	0	1	
9	TOOLS	5 (set)	0	0	0	0	5 (set)	
10	OrCAD PSpice Simulation and PCB Design Suite ▪ OrCAD Capture ▪ OrCAD Capture CIS Option ▪ OrCAD PSpice A/D ▪ PSpice Advanced Analysis Option ▪ PSpice SLPS Interface Option ▪ Allegro PCB Editor and ▪ Spectra Autorouter	5	0	0	0	0	5	

S. No.	Item with Full Specifications	Churu	Pali	Women Ajmer	Alwar	S. Madhopour	Total Qty.	Specify variation in Specification if any, otherwise write "No variation" / as per Specification & write Make & Model
	▪ OrCAD signal Explorer							
11	Digital Storage Oscilloscopes 60 Mhz Performance characteristics DC to 60 MHz Real-time sample rate 2 GSa/sec half channel, 1 GSa/sec each channel Memory depth 20 kpts half channel , 10 kpts each channel Channels : 2 channels Vertical resolution 8 bits Vertical range 2 mV/div to 10 V/div DC gain accuracy 2 mV/div to 5 mV/div: ± 4.0% full scale 10 mV/div to 5 V/div: ± 3.0% full scale Vertical zoom Vertical expand Maximum input voltage CAT I 300 Vrms, 400 Vpk; transient overvoltage 1.6kVpk Dynamic range ±6 div Time-base range DSO102xA: 1 nsec/div to 50 sec/div 2 nsec/div to 50 sec/div Selectable BW limit 20 MHz Horizontal modes Main (Y-T), XY, delayed zoom and roll	2	0	0	0	0	2	