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Ref. No.: IITI(MM)/DAASE/1/1A/617/NNP/2023-24 Date: 06/01/2024

**PREBID REPORT**

The Online Pre-bid meeting discussion was held at IITI on **December 26, 2023, at 03: 00 PM** for procurement of Electronic Workbench, GeM Bid No: **GEM/2023/B/4278780 date: 16/12/2023.**

Online Pre bid meeting attend firms as:
**M/s Scientech Technologies**
**M/S S & S ENTERPRISES**
**M/s. Amigos Scientific Solutions.**

**The report of the meeting is as below:**

| Sl. No. | Reference of the Clause No. of the Tender Document | Query/Clarification/Deviation sought | Response from IITI |
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| 01. | ELECTRONIC WORKBENCH: -<br>An integrated workbench consisting of instrument panel and working table should be suitable for students to learn and perform testing of Components. Instruments should internally electrically connect and should be fitted/on Bench in the panel such that only front panel and necessary interfaces are easily accessible to use. The structure of the workbench should be made up of approx. 1.5 mm thick Stainless-Steel pipes with a top made up of good quality 18 mm thick plywood and covered with 1 mm of mica. Structure and design of Workbench should follow the below specifications:<br>The basic structure should be made of 40mm x 40mm x 1.5 mm Stainless/ MS pipes with powder coating for sturdiness. The overall dimensions of Workbench should be not less than W = 1200 mm; D = 900 mm; H = 1750 mm. MS drawers 03 numbers W = 400 mm; D = 450 mm; H = 710 mm with caster wheel and thickness 1mm with handle & separate lock on each Drawer should be<br>provided. Two Pole MCB to be provided for safety of Workbench.<br>Workbench must have followed testing and measuring instruments. | As there are various grades of stainless<br>steel available in the market which can affect the quality and prices as well as create confusion while evaluating the bids technically as well as commercially.<br>So, in order to avoid confusion, we suggest to go to MS pipes with powder coating | As SS is durable and rust proof, we suggest to go with SS. |
| 02. | Section-II Schedule of Requirement<br>i) Digital Storage Oscilloscope<br>No. of Analog Channel: 2<br>Bandwidth: 100 MHz<br>Real time Sampling: 1GS/s Each Channels<br>Memory: 50Mpts 28 mpts each Channel<br>Waveform capture rate: More than 1,50,000 wfms/sec 52,000 wfms/sec<br>Vertical Sensitivity: 1mV/div to 20 V/div 500 uV/div to 10 V/div<br>Vertical Resolutions: 8 bits<br>Time based Range: 2 ns/div to 1000s/div 5.000 ns/div to 1.000 ks/div<br>Coupling: AC-DC-GND<br>Trigger: Edge, slope, pulse, RS232, I2C, SPI<br>Triggering Decode: Hardware based Decoding RS232, I2C, SPI<br>Math Functions: A+B, A-B, A*B, A/B, FFT, Intg, Diff, Sqrt, Logical AND, OR, NOT, EXOR<br>Built-in 6-bith Frequency Counter & Digital Voltmeter Built-in Dual-channel 25 MHz Source | The specifications seemed to be of specific make, so we request you to kindly generalize the specifications for competitive bidding.<br>Digital Storage oscilloscope with tendered specification is sufficient to for measurement of different parameters of voltage.<br>So, an additional Digital Voltmeter is not required, we suggest kindly remove the same.<br>Also, specifications seemed to be of specific make, requesting you to generalize the specifications. by amending the specifications by removing "Red" highlighted specifications and by adding the "Green" highlighted specifications for competitive bidding. | We have framed generalised specifications considering our requirement / cost effectiveness and the utility of these products to our labs. These days many Digital Storage Oscilloscope manufacturers are offering high memory into entry level Digital Storage Oscilloscopes. Even 100Mpt / 200Mpt /500Mpt is offered in DSO's.<br>Having high memory allows user to derive maximum real time sampling for more number of time base settings.<br>Built in DVM is a True RMS voltmeter which provides high resolution voltage reading which auto measurement function of DSO does not provide. You will appreciate that almost all Digital Storage Oscilloscopes provides 6- or 7-bit built-in frequency counters because it provides better resolution of frequency measurement compared to auto frequency measurement provided.<br>There are many DSO's available with this memory built-in digital voltmeter from Siglent , Keysight , Rigol, Tektronix etc.. |

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| | True RMS<br>Display: 8 " Inch<br>Interface: USB HOST & Device, LAN | | |
| 03. | Section-II Schedule of Requirement<br>ii) Function Generator<br>Freq :25 MHz, 2 CH<br>Sampling Rate: 200 125 MSa/s<br>Vertical Resolution: 14 bits<br>Memory: 4kPts 2 mpts<br>Display: more than 4" 3' TFT.<br>Counter: 6 digits (100mHz to 100 MHz)<br>Connectivity: USB Device<br>Waveforms: Sine, Square, Pulse, Ramp, Noise, DC, Arb 20 built in wave forms like Sinc, Exponential, ECG etc<br>Modulation: AM, FM, FSK, Sweep<br>Range<br>Sine :1uHz to 25 MHz<br>Square. 1uHz to 15 10 MHz<br>Pulse: 1uHz to 15 10 MHz<br>Ramp: 1uHz to 400 kHz<br>Arb: 1uHz to 10 MHz<br>PRBS : 2 kbps to 20 Mbps<br>Amplitude.<br>< 10 MHz 10mVpp to 10Vpp<br><30 MHz 10mVpp to 5 Vpp | In item no. i) Digital Storage oscilloscope, you have asked for 50 Mpts memory per channel which is very high whereas for function generator memory of 4 kpt is asked for which is very low.<br>This is creating a dilemma in bidder/supplier mind whether requirement is for Advanced Electronic Workbench or not.<br>Suggest increasing the memory required for this product also.<br><br>Also, specifications seemed to be of specific make, requesting you to generalize the specifications. by amending the specifications by removing "Red" highlighted specifications and by adding the "Green" highlighted specifications of Soldering Station. | Waveform Generator, there is no connection between Digital Storage Oscilloscope memory and waveform Generator Memory technically. The reason for having high memory in DSO is explained above, while memory specified for waveform generator is always of arbitrary waveforms. 4k memory is more than sufficient to generate any type of arbitrary waveform required. It has no relation with DSO memory hope you understand the technical aspect. Please note the functions which you are suggesting PRBS are more specific and irrelevant. |
| 04. | Section-II Schedule of Requirement<br>iii) Programmable Power Supply<br>CH1 0-30V/0-5A 3A, CH2 0-30V/0-5A 3A, CH3 0-5V/0-3A, CH4 5V/2A (USB Output)<br>Modes:CH1 & CH2: Series/Parallel<br>Constant Voltage (CV), Constant Current (CC),<br>4.3 inch TFT Display, Displays V, I, Power of 3 Channels simultaneously<br>Resolution 10mV, 1mA<br>Line Regulation: CV < 0.01% + 2mV<br>Load Regulation CC < 0.01% +500µA<br>Ripple CV <1mVrms, CC <3mArms<br>Connectivity USB Host & Device, LAN | The tendered specification is of specific make and model.<br>Also, triple output power supply is sufficient to perform the lab experiments.<br>Also, specifications seemed to be of specific make, requesting you to generalize the specifications. by amending the specifications by removing "Red" highlighted specifications and by adding the "Green" highlighted specifications for competitive bidding. | Power Supply we have specified Voltage / Current requirement for general purpose lab requirements as Current 5A as these days many Opamp IC's, Power Amplifier ICs, Relays need more current to drive. A small BLDC Motor used in drone also needs more current. Many embedded system boards are USB Powered. |
| 05 | Section-II Schedule of Requirement<br>iv) 5 ½ Digit Digital Multimeter<br>Power supply: 220V/ 110V AC<br>Manual range<br>4 5/6 5 ½ digit maximum reading 59999, 4.3 inch full-color display<br>Voltage measurement up to 1000VDC and 750V AC, DC, AC current up to 20A<br>ACV frequency response: 100kHz<br>Frequency, Resistance, Capacitance measurement, Diode check and Continuity Test<br>Connectivity USB Device | Values for Number of digits required for the Digit Multimeter are different. In the name of item 4 ½ digits Digit Multimeter is required whereas in specification 4 5/6 digits is mentioned. Suggest making it 5 ½ digits which is better than both 4 ½ and 4 5/6 and is as per industry standard.<br>Also, specifications seemed to be of specific make, requesting you to generalize the specifications. by amending the specifications by removing "Red" highlighted specifications and by adding the "Green" highlighted specifications for competitive bidding. | Digital Multimeter 45/6-digit DMM is better than 41/2-digit DMM as it has more counts. In this also 4 digits are full and the 5th digit goes from 0 to 5 in place or 0 & 1 which increases the count from 20000 to 60000 This gives better precision for measuring compared to 20000 count 41/2 DMM. Many DMMs are available with these specifications. 51/2-digit DMM is advanced model and not required for general purpose lab. |
| 6. | Section-II Schedule of Requirement<br>v) Soldering & Desoldering Station<br>TECHNICAL SPECIFICATIONS<br>Power consumption: 60 W<br>Input voltage: 170 to 270 V<br>Temperature range: 180 to 270<br>Temp stability: ± 10°C<br>Temp accuracy: ± 1°C of tolerance at idling time<br>Input Voltage: 180-240VAC,50Hz<br>Fuse: 3.15A<br>De-soldering: 24VAC,80W,<br>Soldering: 24VAC,70W<br>Desold pump :24VDC, 80W<br>Vacuum Pressure :12000 rpm, 500 to 600mm/hg<br>Temp Range: 180 to 480°C<br>Temperature control accuracy +/- 1°C<br>Tip Leakage Current: < 2 mA<br>Temperature control Stability +/- 1°C | For this item specifications for only Desoldering Station is mentioned, specification for Soldering station is mission.<br>Request to generalize the specifications. by amending the specifications by removing "Red" highlighted specifications and by adding the "Green" highlighted specifications of Soldering Station | Specifications for both Soldering and De-soldering Stations have been mentioned. |

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| | Tips replace Spanner 1No, Cleaning | | |
| 7. | Section-II Schedule of Requirement<br>vii) Add-on cut section for trainer kit<br>Analysis of diode circuits (Clipping Circuits, Voltage Doublers, Rectified Differentiator, Precision Rectifier).<br>SALIENT FEATURES.<br>Aesthetically designed injection molded electronic desk (Main unit) carrying useful experiment resources Variable enclosure/ Status / Pulsar / Function Generator DPMs etc. while the central slot will carry replaceable experiment panel secured in an ABS molded plastic sturdy enclosure & has colorful screw less overlay showing circuit & its connection tag numbers for easy connectivity.<br>Connection through Sturdy 4mm 2mm Banana Sockets & Patch Cords.<br>Set of Users Guide provided with each Unit.<br>SPECIFICATIONS OF MAIN UNIT<br>Built in Power Supply:<br>DC Supply :5V / 1A. & ± 12V, 1A. 0 to 15V DC (Variable), 100 mA (Isolated), 0 to 30V DC (Variable), 100 mA (Isolated High Volt DC 15V to 110V, 100Ma, AC Supply: 12-0-12V AC,150 mA.<br>DC Power Supplies: +5V, 1A (fixed) +15V, 1A (fixed) -15V, 1A (fixed) +15V, 200 mA (variable) -15V, 200 mA (variable) AC Supply: 5V-0V-5V, 10V-0V-10V can be used as 5V, 10V, 15V, 20V AC & also as center tap.<br>Short circuit Protected.<br>Built in Function Generator –<br>O/p Waveform: Sine, Triangle & TTL O/Ps<br>Output Frequency: 1 10 Hz to 1MHz in 6 ranges, with amplitude & frequency control pots.<br>O/P Voltage 20 15 Vp-p max. (Sin/TRG), Modulation I/P:AM: - I/P voltage + 5V (100% modulation) O/P - For 0V (min), + 5V (max.) - 5V (Phase reversal of O/P)<br>FM: I/P voltage ± 400mV (+ 50% modulation)<br>Clock Generator: 10 MHz TTL clock.<br>Data Switches (10 No.) & bi-colour LED status indicators 10X2 Nos, for High / Low indication.<br>Pulser switches (2 Nos.) with four debounced outputs - 2No.<br>BNC to 2 channel banana adapter - 2No.<br>Logic probe to detect High/Low level pulses upto 1MHz, with bi-colour LEDs to indicate status.<br>2 / 4-digit 7 segment display with BCD to 7 segment decoders.<br>Onboard DPMs provided with mode/range selection.<br>(A) DC volt: 2V/200V - 1No.<br>(B) DC current: 2mA/200mA - 1No.<br>(C) DC Volts/Current: 20V/200mA - 1No.<br>Onboard moving iron meters provided for<br>(A) AC Current: 1 AMP - 1No.<br>(B) AC Voltage: 15V - 1No.<br>Onboard speaker: 8 Ohms, 0.5 Watt (1No.)<br>Onboard POTS: 1K - 1No. 1M - 1No.<br>Operating Voltage: 220/240Vac switch settable ±10%, 50Hz/60VA.<br>DC, AC & Wave Shaping Circuit Experiment Panel:<br>DC : Resistance, current & voltage measurements, Loading of Potentiometer, Ohm's law, Power DC circuits, Series, parallel & mixed circuits, Kirchoff's law, Superposition theorem, Thevenin's & Norton's theorems, Reciprocity, Compensation, Tellegen, Millman theorems & Maximum Power transfer | The tendered specification is of specific make and model. For your ready reference, a catalog is attached with this letter.<br>Also, specifications seemed to be of specific make, requesting you to generalize the specifications. By amending the specifications by removing "Red" highlighted specifications and by adding the "Green" highlighted specifications for competitive bidding. | The specifications has all the requirements parameters suitable for expirement. Please feel free to quote if you have better than this. |



6/11/14

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| | theorem, Voltage distribution of capacitors in series & parallel, total capacitance of capacitors in series & parallel, charging & discharging of capacitor through resistance & time constant, Wheatstone's Bridge, 2 Port Network Y, Z,h, ABCD Parameters & Star Delta Network, T & Pi attenuators.<br>AC: AC Voltage & Current Measurements - R-L series, R-C series, R-L-C series circuit (Series Resonance). R - L parallel, R-C parallel, R-L-C parallel (Parallel Resonance), Active, Reactive power & power factor (Vector Diagram), average & RMS Value measurement.<br>Wave Shaping: Differentiator, Integrator, Clipping, Clamping, Passive filters LC / RC, LPF/ HPF Rectifier, Filter, Zener Regulator<br>Experiment Panel: Transformer & its study (Transformer DC/AC resistance, Transformation Ratio, Electromagnetic Induction, Loading of Transformer), Half wave rectifier, Full wave rectifier, Bridge rectifier, Filter, Voltage multiplier, Zener shunt regulator | | |

**Note :-**

1. **The date of submission of online bids is extended upto 16/01/204 @ 15:00 Hrs**

2. **The date of Opening of bids is extended upto 16/01/2024 @ 15:30 Hrs**

3. **All prospective/willing bidders are requested to take note of this report as part of the Tender document. All other parts of the tender including the terms and conditions of the tender will remain unchanged.**

6/1/24

**Assistant Registrar**

**MM Section**

**IIT Indore**

सहायक कुलसचिव
(सामग्री प्रबंधन विभाग)
Assistant Registrar
(Materials Management Section)