



Design and Development of Laboratory Instruments

**St. Edmund's College**

Shillong- 793003, Meghalaya, India

No: SEC/EL/NEC/2023-24/PC/001

Date: 5<sup>th</sup> May 2023

## **e-TENDER NOTICE**

On behalf of the Governing Body and the concerned Purchase Committee, sealed quotations are invited for the execution/ supply and installation of the laboratory equipment's under **NEC Sponsored Project** from approved and eligible Govt. / Private Supplier/ Manufacturer/ authorized dealers/vendors, etc. having valid license. The bid document is available in the college website, w.e.f **5<sup>th</sup> May 2023 to 15<sup>th</sup> May 2023**. The sealed bid documents (Financial & Technical) shall be received till **16:00** hrs, on or before **15<sup>th</sup> May 2023** at the Department of Electronics, St. Edmund's College.

The bidders may download the pdf of the tender documents from the website ([www.sec.edu.in](http://www.sec.edu.in)) and submit the same within the stipulated time.

[NB: Interested Bidders are requested to submit all documents (Financial & Technical) as laid in the terms & conditions, failing which the Purchase Committee has every right to reject the tender documents]

Secretary  
St. Edmund's College  
Shillong - 793003  
Meghalaya

(Chairman)

(Purchase Committee)



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## St. Edmund's College

Shillong- 793003, Meghalaya, India

### *REQUIREMENT OF INSTRUMENTS/SOFTWARE/COMPONENTS TO BE PROCURED UNDER THE PROJECT ENTITLED "DESIGN & DEVELOPMENT OF LABORATORY INSTRUMENTS"*

**1.Equipment 1:** Digital Storage Oscilloscope (DSO) Bandwidth 200MHz

**Company/Brand:** Tektronix

**Specification:**

- 2 Channel
- Large 7 Inch WVGA wide – screen color – display
- Sample Resolution of 1GS/s on all Channel
- FFT analysis for waveform spectrum analysis
- USB device port support facility for direct PC control of the Oscilloscope
- GPIB interfacing Card support facility to capture easy and quick storage of screen images, different parameters of the pulses in Desk top.
- Two Probes for two channels with attenuation facility, 1X and 10X.
- Tektronix Power cable, IC pin connector
- Digital Storage Oscilloscope Probe

**Warranty:** Warranty should be minimum 5 years

**2. Equipment 2:** Function Generator

**Company/Brand:** Tektronix

**Specifications:**

- 2 Channel models
- Output amplitude range 1mVpp to 10 Vpp into 50 Ohm loads
- Vertical Resolution 14 bits,
- Band width: Band width 60 MHz
- Sampling Rate Minimum 300 MS/s
- Record Length : 1M Points
- Color Display
- Two Probes for two channels with attenuation facility, 1X and 10X.
- Power cable as per company preferred
- IC pin connector as per company preferred



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### **3.Equipment 3:** Digital Counter Timer

**Company/Brand:** ECIL 5104

**Specification:**

- High speed pulse counter
- Counting facility at No of counts/1S
- Counting facility at No of counts/10S
- Counting facility at No of counts/100S
- Low Voltage DC power supply
- 4 Digit adjustable time with set and reset Facility.

**Warranty:** Warranty should be minimum 1 year  
(N.B: Necessary document will be provided as per requirement)

### **4.Equipment 4:** Digital DC Microvolt/Ammeter

**Company/Brand:** Testronix-8,

**Specifications:**

- Digital Display
- Low DC Power supply,
- Zero Adjustment Facility
- Measurement in a different ranges , 1999mV/UA, 199.9mV/UA, 199.9mV/UA, 19.99mV/UA, To 19.99V/mA, 1999V/Ua, 199.9V/mA, 1000V/mA,

**Warranty:** Warranty should be minimum 1 year.

### **5.Equipment 5:** High Voltage Meter

**Company/Brand:** MOTE WANE Digital Meter, Model No: DM352, 080206

**Specifications:**

- LCD Display
- 3 1/2 Digit
- Both AC and DC measuring facility
- Style: Digital, Heavy Duty, Heavy Duty, Unique





- Weight: 350 Grams
- About This Item: 3 ½ , LCD display
- Over load protection up to 450V AC on all ranges
- Most Accurate meter (0.25 percent) on DC Voltage range
- Optional 40KV AC/DC High Voltage Probe

**Warranty:** Warranty should be minimum 1 year.

**6.Equipment 6 :** High Voltage detector Probe

**Company/Brand:** MOTE WANE HV/40

**Specification:**

- High Voltage Measuring capability of an AC /DC Voltmeters to measure 40,000Volts peak AC or DC over Voltage.
- It can be used for AC measurements up to 100HZ It has 1.5 m long connectivity wire is provided to keep the digital multimeter away from the measuring point.
- Input Resistance 1000 M Ohm
- Voltage Range : 1 KV to 40 KV
- Weight : Approximately 0.75 KG

**Warranty:** Warranty should be minimum 1 year,

**7.Equipment7:** Soldering Station Type 1:

**Company/Brand:** YIHUA, 853D

**Specifications:**

- 3 in 1C, temperature from 1000 to 480 C.
- Specification of the Desoldering tools part:
- Power of the pump: 830W
- Type of Nozzle 212 896<sup>0</sup>F
- Nozzle to ground resistance : Less than 2 Ohm
- Nozzle tp ground potential less than 2 mili Volt
- Motor: Brushless Motor
- Weight: 4KG
- Power of the heating :60W
- Temperature stability: plus minus 2C
- Heating ambient temperature: 40C



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- Type of Nozzle 200C to 480C
- Storage Humidity more than 35 °C
- LED Display
- Heating element : Electromagnetic

**Warranty:** Warranty should be minimum 1 year.

### **SMD:**

#### **Specification:**

- Power : 1000W
- Temperature : 100 C to 500 C
- Air flow Range: 1-120
- 

**8.Equipment 8:** Hot plate Digital Magnetic Starrier

**Company/Brand:** Borosil, Borosil HLS 200, 2 Lit.

#### **Specifications:**

- Hot plate Digital Magnetic Starrier with temperature and speed control
- Uses Special enamel plate heating technology
- The plate temperature should reach up to 200 C
- Should meet the various needs of various heating and stirring experiments
- Intelligent size of color display
- Maximum stirring capacity 2 Liter
- Should come with speed, temperature and time setting functions.

#### **Specifications:**

- Plate form size 120mm
- Maximum Speed Range: 500 RPM
- Temperature control range 30 C – 200C
- Voltage AC 220V
- Net Weight: 2.4KG
- Warranty: 1 year.

**Warranty:** Warranty should be minimum 1 year.



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### **9.Equipment 9.** (a) MATLAB and Simulink, Power Electronics Tool Box

(b) Dip Trace/Proteus for PCB design Software

**Company/Brand:**

#### **Specification:**

- 64 bit
- Windows Support
- Single User
- Authentication Certificate

### **10. Equipment 10:** Rotary Tool Drill press work Station

**Company/Brand:** Dremel 220-01

#### **Specification:**

- Speed 2600 RPM
- 3 -in 1 Tool: Its drill Press, Rotary tool holder, and flex - shaft tool stand
- Articulating drill press, drills perpendicular and angled holes in 15 degree increments, up to 90 degrees horizontally
- Tool holder : holds tool at 90 degrees horizontally for tasks such as polishing metal objects, standing different shapes and grinding metal pieces.
- Flex shaft tool stand : allows telescopic adjustment to any height between 16 inch and 29 inch
- Crow's nest provides on board storage for drill bits, wrenches and other accessories.
- weight not more than 4.8 pounds.
- Color : Blue and Grey
- Power : Single Phase, AC 230V

**Warranty:** Warranty should be minimum 1 year.





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**11. Equipment 11:** List Of the components

Sl No	Name	Quantity
1	IN4148	200
2	2N3904	30
3	2N3906	30
4.	IRF840	20
5	UF4008	10
6	HFC0300	5
7	TPS63000	5
8	LTC3789	3
9	UC3524	10
10	BFY50	10
11	BZX85C12	10
12	TIP41C	10
13	LM311	10
14	OPAMP PA79	10
15	Figure 8 Amp	10
16	IGBT FF200R12KT	2
17	DTV1100 , HV Diode	3
18	Terminal panel Mounting- BTI-15(Red, Black and Green)	300
19	Diode, BZX85C3V6	10
20	2N3053	10
21	Transistor, 2SD797	10
22	SG3524	10
23	IRF 150 MOS	10
24	LM358	20
25	IRF260N	20
26	IRFD110	10
27	IN5818	10
28	TLC2272	10
29	2N3905	10
30	IRFZ44	20
31	IN2609	10
32	IN2617	10
33	IN400	200
34	IN5400	50
35	CD4047	10
36	HPCL 316J	10
37	LT1116, Over Current Protect	10
38	MJD 45H11,IGBT	10



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39	High Voltage Neon sign transformer, 15KV , FB-21A	3
40	ESJA53-HV Silicon Diode	10
41	IGBT-FF1200R17KE3	10
42	MBN1200E33C	10
43	IN5062, HV DIODE	10
44	2N3053T Transistor	10
45	Op27	20
46	Op07	20
47	2sk170	4
48	Bc547	50
49	BP244A	20
50	MAX 186 A/D, IC	4
51	LM 73, Temp Sensor	5
52	TL084, IC	5
53	2N2222	10
54	TIP31C, TRANSISTOR	10
55	LM368	20
56	ATP15D60B, DIODE	10
57	Parasitic cap, 75nF	20
58	Filter Inductor 3mH	10
59	Flying Cap 470 UF	10
60	Flying Inductor, 0.3mH	10
61	30F124, IGBT	10
62	FGA25N120 ANTD,IGBT	10
63	MAX 8550	5
64	HCPL 31316J, optocoupler	5
65	LM324	10
66	BP244A, RF TRANSISTOR	5
67	BPW21R, Photodiode	5
68	BPW20R, Photodiode	5
69	BFP420, RF Transistor	5
70	TGF 2936, RF Transistor	5
71	LM337, 200MHz	5
72	2N3904	10
73	2N3901	10
74	BC394	10
75	2N3901	10
76	LM301	10
77	LM361	10
78	IC74121	10
79	BC368	10
80	C2233	10
81	CD4090UBE	10





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82	L200, Regulator IC	10
83	LM7809	50
84	LM7805	50
85	LM7809	50
86	LM7812	50
87	LM7818	50
88	LM7905	50
89	LM7909	50
90	LM7912	50
91	LM7918	50
92	LM723	20
93	LM317	20
94	LM337	20
95	LMIRFP450	20
96	BD243C	10
97	LM358	50
98	NE 555	50
99	565	5
100	566	5
101	BC107	50
102	XR2206	5
103	BC157	20
104	6A4, DIODE 6A	20
105	BY127, Diode, 1200V,1A	10
106	Bc140	10
107	Lm324	20
108	LM339	20
109	4N35	20
110	MOC3021 OPTOCOUPLER	20
111	2N3055, TRANSISTOR	10
112	JKIC SN74LS112	10
113	IC CD4027	10
114	IC747F3	10
115	IC74F74	10
116	SCR TYN612	5
117	IRFZ540	20
118	T10XL08, SCR	5
119	LM3914	20
120	SG3525	10
121	IRF540	20
122	MCT2E O/C	10
123	CD4001	10
124	AD590	2
125	MC1458 OPAMP	5



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126	FLU2, Filter	5
127	MF5	5
128	3329/03Power booster	5
129	LM380	10
130	MC1723, 5V,1A Regulator	5
131	UA78S40Step down /up ,inverting Regulator	5
132	MC 1403	5
133	MC1408D/A	5
134	VI7660 (Negative Single converter)	5
135	IN914 Diode	20
136	MOC 3011O/C	5
137	LF398 Sample and hold	10
138	UAF772, 14 PIN Dip	5
139	UAF 772, 8 pin Dip	5
140	9400F , V/F, F/V	5
141	LM 566	5
142	LM301	10
143	LM308	10
144	MC10H124	5
145	MC10H125	5
146	10MM LED	Red, Green,Ambar, Yellow, white,100 each
147	5MMLED	Red, Ambar, Green,Yellow, white,100 each
148	CI100	100
149	Ck100	100
150	SI100	100
151	Sk100	100
152	Bc547	100
153	BC548	100
154	BC549	100
155	BC147	100
156	BC148	100
157	BC149	100
158	PDS 8958A, OPAMP	5
159	2N4403	10
160	2N4401	10
167	2N4402	10
168	Fuse for power supply	1A=100P,2A=100



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169	Fuse holder for power supply	100 P
170	On/ off Switch, SPST	20
171	On/ Off Switch, 1A Switch	20
172	On/ Off , Switch 3A, SPDT	20
173	Transformer, 500 Ma, V6-0-6V	20
174	Transformer, 500Ma, 12V-0-12V	20
175	Transformer, 500 Ma, 6V-0-6V	20
176	Transformer, 1 A, 6V-0-6V	20
177	Transformer, 1A, 12V-0-12V	20
178	Transformer, 3 A, 6V-0-6V	10
179	Transformer, 3A, 12V-0-12V	10
180	Transformer, 4A, 12V-0-12V	5
181	Power Cable for P/S	100
182	OA 79	20
183	PDS 8958A, OPAMP	10
184	2N4403	10
185	2N4401	10
186	2N4402	10
187	OPA 277, 1Mhz OPAMP	10
188	OPA 211, 180MHz	10
189	OPA180, 2 MHZ opamp	10
190	OPA 170 12 MHZ	10
191	7414, Schmitt trigger IC	10
192	LF 411, OPAMP	10
193	2N3906, TRANSISTOR	10
194	TL082, OPAMP	10
195	CA 3080	10
196	25MHZ CRYSTAL	10
197	Glass epoxy PCB board 1ft x 1ft	20
198	Bakelite PCB board 1ft x 1ft	20
199	3 LEAD ECG Probe	2
200	Round Pin IC Base 8, 14,16	150
201	ISO 124, IOSOLATOR OPAMP	10
202	INA 126	4
203	INA 118	4
204	OPA 4227	4
205	OPA 222T	4
206	LF411	4





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207	LG100, IC	10
208	Silicon Rubber High voltage Cable JGG (0-10KV)	100 Meters
209	BNC T Connector	20
210	Amphenol RF HV Connector, MHV male	20
211	Amphenol RF HV Connector, MHV Female	20
212	RG 58 A/U RF Coaxial Cable	100 Meter
213	RG 57 HF Cable	1 coil
214	BNC Connector Male	20
215	BNC Connector Female	20
216	Digital panel meter, 0-100V, 10 A	20
217	Caesar , for cutting small size PCB	1
218	Digital Lux Meter	2
219	Digital LCR Multimeter	2
220	Dual Led Voltage current Measurement Module	10
221	7 Segment Display common cathode	50
222	7 Segment Display common anode	50
223	Resistance 1/4W, 1M, 2.2M, 10M, 25M	100P each
224	Resistance 1/2W, 1M, 2.2M, 10M, 25M	100P each
225	Resistance 1W, 1M, 2.2M, 10M, 25M	100P each
226	Inductor 1mH, 1/2w	100P
227	Inductor 10mH, 1/2w	100P
228	47uH, 1/2 w	100P
229	Ac power cable(for power supply)	100P
230	Mobile PWD holder/PWB flxture	5p
231	ESD Straight & band twiser	5p
232	Magnifying Lens	2
233	Mobile Phone screw Driver Set	2
234	SMD IC 555	20
235	SMD IC 358	20
236	SMD IC OP27	20



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237	SMD Diode IN4007	50
238	SMD Resistance 1k,2.2k, 10k, 4.7k,47k	100p Each
239	SMD Cap 1nF,33nF 50V,	5p Each
240	SMD Cap 22uF,1uF 25V,	5p Each
241	Tri Colour LED, RGB 5mm Common cathode	20P
242	3MM round bicolour LED	20
243	LASER diode-Red-650nm- 5v-6mm-50mW	10
244	IN270RF	3P
245	1N60, TUNNEL DIODE	5
246	ByV95C, RECOVERY DIODE	5
247	Ferrite rod, 5 inch and 6 inch	10
248	Single stand wire for circuit assembling	100 m
249	Multi stand wire, for circuit assembling	100 m
250	PN 2907	20
251	2SK 176	2
252	IC CD4027	10
253	Optical Probe with USB	2
254	Variable Capacitor (trimmer, 3 to 18pF), 100PF, 22PF	20 each
255	Fly back transformer(input, 18V , 24W)	3
256	TL 494	10

### SPECIAL TERMS & CONDITIONS

SL.No	List of Equipment	Maximum Quoted Price
1.	<b>1.Equipment 1:</b> Digital Storage Oscilloscope (DSO) , Tektronix Bandwidth 200MHz	₹2.5Lakhs
2	<b>3. Equipment 2:</b> Function Generator, Company/Brand: Tektronix	₹1Lakhs
3	<b>3.Equipment 3:</b> Digital Counter Timer Company/Brand: ECIL 5104	₹20,000





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4	<b>4.Equipment 4:</b> Digital DC Microvolt/Ammeter <b>Company/Brand:</b> Testronix-8,	₹20,000
5	<b>Equipment 5:</b> High Voltage Meter, <b>MOTE WANE</b>	₹28,000
6	<b>Equipment 6 :</b> High Voltage detector Probe <b>Company/Brand:</b> MOTE WANE HV/40	₹8,000
7	<b>7.Equipment7:</b> Soldering Station Type 1: <b>Company/Brand:</b> YIHUA, 853D	₹15,000
7	Soldering Station Type 2 Soldering station 60W with temperature controlled facility.  <b>Company/Brand:</b> V A R Tech, 936A	₹5,000
8	<b>Equipment 8:</b> Hot plate Digital Magnetic Stirrer <b>Company/Brand:</b> Borosil, Borosil HLS 200, 2 Lit.	₹20,000
9	<b>Equipment 9.</b> (a) MATLAB and Simulink, Power Electronics Tool Box (b) Dip Trace/Proteus for PCB design Software	₹2Lakhs
10	<b>10. Equipment 10:</b> Rotary Tool Drill press work Station <b>Company/Brand:</b> Dremel 220-01	₹15,000
11.	<b>11. Electronics Components Different Types</b>	₹2.5Lakhs

1. Earnest Money Deposit (EMD) @ 1 % of the Tender Value for each equipment's to be made in the form of Demand Draft (DD) payable to St. Edmund's College, Shillong, State Bank of India, Laitumkhrah Branch. The EMD shall be adjusted accordingly during the final payment to the eligible vendor (s).
2. The Eligible vendors must deposit an amount as PERFORMANCE SECURITY DEPOSIT (PSD). The amount is to be finalized during issuance of purchase order to the eligible vendor by the Purchase Committee. The modalities of such refundable deposits shall be made available to the eligible vendor (s).





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**GENERAL TERMS & CONDITIONS**

The vendor must provide the following:

- 1) **Validity:** All Quoted rates including GST must be valid for 12 months.
- 2) **Rate:** The rate quoted should not exceed the Company price/ M.R.P. /unit and should be quoted on Door Delivery basis and including of all applicable tax. **Tax amount should be clearly indicated separately.**
- 3) Details of the technical features of the offered equipment
- 4) Standard Technical literature on each of the items offered
- 5) List of reputed organizations/Institutions, where similar orders have been executed (copies of the purchase/work orders will have to be enclosed)
- 6) **Warranty/Guarantee:** The material is quoted with a minimum Warranty/Guarantee period of 12 months after the date of delivery and acceptance at destination. The rates should be quoted in Indian Rupee/unit. Details of nature and maximum period of warranty offered by the vendor must be clearly mentioned.
- 7) **Delivery:** The stated delivery of items to St. Edmund's College, Shillong, will have to be done within maximum of 30 days from the date of issue of the Purchase Order. All aspects of safe delivery shall be the exclusive responsibility of the vendor. If the firm fails to deliver the goods within the stipulated time, the purchase order may get cancelled.
- 8) **Delivery:** The stated delivery of items to St. Edmund's College, Shillong, will have to be done within maximum of 30 days from the date of issue of the Purchase Order. All aspects of safe delivery shall be the exclusive responsibility of the vendor. If the firm fails to deliver the goods within the stipulated time, the purchase order may get cancelled.
- 9) **The bidder must clearly mention the following:**
  - a. *Packing & Forwarding Charge, if any.*
  - b. *Annual Maintenance Contract (AMC) rate (after expiry of warranty period) is to be clearly indicated – preferably in both comprehensive and non-comprehensive terms, failing which the offer may not be considered even if it turns out to be at the lowest price.*
  - c. *Installation & commissioning charge (including Service Tax), to be shown item-wise extra, if any.*
- 10) Any loss or damage of items before/during delivery would be borne by the supplier only.
- 11) **Dealership Certificate:** Dealer certificate need to be enclosed along with Quotation, if any.
- 12) **GST Certificates:** TIN/TAN/PAN/GST number clearly will have to be indicated with the quotation to be submitted.



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- 13) PAN/ AADHAR Card for individuals
- 14) BANK DETAILS (A CANCELLED SIGNED CHQ) for individuals/ firms
- 15) Advance payment is not admissible, and payment will be made only after complete installation of the items by the supplier to our full satisfaction and bills may be submitted in triplicate. **The payment will be made through electronic bank transfer.**
- 16) The College Purchase Committee (PC) will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the best price
- 17) The College Purchase Committee (PC) reserves the right to modify/cancel the requirements.
- 18) The College Purchase Committee (PC) reserves the right to accept or reject any or all the quotations without assigning any reason.

NOTE: The bid documents are not transferable

Secretary  
St. Edmund's College  
Shillong - 793003  
Meghalaya



(Chairman)

(Purchase Committee)



Design and Development of Laboratory Instruments

**St. Edmund's College**

Shillong- 793003, Meghalaya, India

To

The Chairman,

College Purchase Committee

St. Edmund's College,

Laitumkhrah, Shillong-793003

Sub: Quotation for the supply of \_\_\_\_\_

Sir,

I/We have the honour to submit herewith the Quotation for the above mentioned work and am/are willing to execute the same at the rate quoted in Annexure 1 for favour of your kind consideration

My/Our GST registration No. is \_\_\_\_\_ of \_\_\_\_\_

I /We have gone through the detailed quotation document and undertake to execute the work if allotted to me / us as per terms and conditions laid down therein and at the rate quoted by me/us as in Annexure-II.

I/We also pledge to execute the work myself/ourselves without subletting to others.

**Encl:** Quotation documents (Financial & Technical) in original and self-attested copies of certificate as required

Yours faithfully

Signature of the Bidder with Seal

Dated: \_\_\_\_\_

Place: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
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