



# तेजपुर विश्वविद्यालय / TEZPUR UNIVERSITY

(केंद्रीय विश्वविद्यालय / A Central University)

- कुलाध्यक्ष का सर्वोत्तम विश्वविद्यालय पुरस्कार, 2016 और एनआईआरएफ भारत रैंकिंग 2016: नं. 05
- Visitor's Best University Award, 2016 and NIRF India Ranking 2016: No. 05

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तेजपुर-784028 :: असम / TEZPUR-784028 :: ASSAM

## SHORT QUOTATION NOTICE

TU/11-24/Pur/Qtn/2016-17/4124-A dated:- 09.01.2017

Sealed quotations are invited from reputed manufacturers/authorized dealers/vendors for supply, installation & commissioning etc. of following items required for the Department of Electronics & Communication Engineering, Tezpur University.

### List of Items with specifications:

| Sl No. | Item  | Specification   |
|--------|---|---|
| 1      | DC variable Power supply                      | 0-15V,1 Amp.  |
| 2      | DC Shunt Motor                                | 220V, 250W  |
| 3      | BLDC motor                                    | 48V, 1000W  |
| 4      | Contactless current sensor                    | + 200 amp, Hall Effect  |
| 5      | Analog AC voltmeter                           | 0-500V, 0-300V, 0-150V  |
| 6      | Single phase analog wattmeter                 | 50A, 600V, 5-10A,150-300-600V   |
| 7      | AC analog ammeter                             | 0-5 amp, 0-2 amp, 0-3 amp, 0-10 amp, 0-200Amp   |
| 8      | Variac  | 10 Amp, single phase  |
| 9      | Rheostat                                      | 250 ohm, 20 Amp; 100 ohm, 5 Amp.  |
| 10     | Digital multi meter                           | 4.5 digit   |
|        | Digital multimeter                            | micro-amp facility  |
|        | DC milliammeter                               | 0-15 mA, 0-20mA   |
|        | RLC meter(Q-factor)                           | 20Hz to 1MHz, Resolution: 5 digits, Accuracy of set frequency $\pm 0.005\%$   |
| 11     | Single phase transformer                      | 1KVA ,230V  |
| 12     | Digital Tachometer                            | Contact type  |
| 13     | Function Generator                            | 10 MHz, 2 output channels, and 1 mV p-p to 10 Vp-p output amplitude across full bandwidth.  |
| 14     | Function Generator with AM/FM generation      | 10MHz AM/FM Function Pulse Generator – Sine, Square, Triangle, Ramp & Pulse outputs; 30 Vpp signal output, AM Balance, AM Std., FM, Internal Modulation Generator |
| 15     | Digital Storage Oscilloscope                  | 20MHz & 25 MHz 500M Sa/s  |
| 16     | Digital Storage Oscilloscope                  | 100 MHz, 2 analog channels, 2G Sa/S sample rate, color LCD display, automatic measurement, math & FFT function etc.   |
| 17     | Digital Storage Oscilloscope                  | Digital Storage Oscilloscope (70 MHz, 1GSa/S sample rate, color LCD display, automatic measurement, math & FFT function etc.)                                     |
| 18     | Mixed signal oscilloscope                     | 2/4-channels,200 MHz, 1 GS/s, USB3.0  |
| 19     | Vector Network Analyzer                       | 5Hz - 200MHz, 0.001 dB, 0.005 degree, 1ps, and .001 Hz resolution   |
| 20     | Spectrum Analyzer                             | 10K – 1.5 GHz, Bandwidth - 1 kHz  |
| 21     | Digital Trainer Kit                           | 100mA, 230 V  |
| 22     | Analog Trainer Kit                            | 350mA, 230 V  |
| 23     | TDM Pulse Code Modulation Transmitter Trainer | -   |



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|    |   |   |
|----|---|---|
| 24 | TDM Pulse Code Modulation Receiver Trainer                          | -   |
| 25 | Delta, Adaptive Delta & Delta Sigma Modulation/Demodulation Trainer | -   |
| 26 | Data Formatting and Carrier Modulation Transmitter Trainer          | -   |
| 27 | Data Formatting and Carrier Modulation Receiver Trainer             | -   |
| 28 | TDM Pulse Amplitude Modulation/Demodulation Trainer                 | -   |
| 29 | DSB/SSB AM Transmitter Trainer                                      | -   |
| 30 | DSB/SSB AM Receiver Trainer   | -   |
| 31 | PAM-PPM-PWM Modulation/Demodulation Trainer                         | -   |
| 32 | Amplitude Modulation Transmitter Kit                                | -   |
| 33 | Amplitude Demodulation Receiver Kit                                 | -   |
| 34 | Frequency Modulation Transmitter Kit                                | -   |
| 35 | Frequency Demodulation Receiver Kit                                 | -   |
| 36 | FDM Transmitter / Receiver Kit                                      | -   |
| 37 | Fourier Synthesis Kit   | -   |
| 38 | Filter / Noise And Audio Amplifier Kit                              | -   |
| 39 | Noise Power Spectral Density Measurement Kit                        | -   |
| 40 | FM/AM super heterodyne Radio Receiver Kits                          | -   |
| 41 | Strain Gauge based load cell Trainer Setup                          | 0-100 Kg  |
| 42 | Inductance Decade Box   | 10 $\mu$ H-10H (variable from 10 $\mu$ H to 10H in 6 decades)   |
| 43 | Lag-Lead Compensator study unit                                     | -   |
| 44 | PID Controller study unit   | -   |
| 45 | Linear Variable Differential Transformer (LVDT) Trainer Kit         | -   |
| 46 | RPM Measurement Trainer Kit   | sensor MOC 7811, range 2000 rpm   |
| 47 | Temperature Indicator (for connecting thermocouple terminal etc.)   | Six input channel   |
| 48 | Data Acquisition/Switch Unit  | -   |
| 49 | Type T Thermocouple   | (Copper/Constantan); Plain stem (no threads or bushings); Stem Termination with Leads; Thermocouple Grade wire: -270 °C – 370°C; Extension wire: 0 – 200°C) |
| 50 | Mercury-in Glass Thermometer  | 0 – 250°C, division 1°C   |



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|    |                                    |  |
|----|------------------------------------|--|
| 51 | Digital Thermometer                | (LCD display, memory function, water resistant, temperature display 3-digit + °C, display in 0.1°C increment, power source battery)          |
| 52 | DC Motor Speed Control Trainer Kit | (PID controller for speed control, LCD for speed and voltage display, square wave generator)   |
| 53 | DC Shunt motor starter             | 230V DC  |
| 54 | Tong tester                        | AC current: 0.01A to 600A, DC current: 0.1µA ~ 2000 µA, AC voltage: 0.1m V ~ 600 V, DC voltage: 0.001V ~ 600 V, Capacitance : 0.1Nf ~ 3000µF |
| 55 | Exhaust fan                        | 4000 CFPM  |
| 56 | Exhaust fan (4 Inlet 4 Outlet)     | 3300 RPM, 115 - 230 V  |
| 57 | Exhaust fan ( 2 Inlet 2 Outlet)    | 3300 RPM, 115-230V   |

### Software/ EDA Tools:

| SI No. | Item  | Specification   |
|--------|---|---|
| 1      | Silvaco TCAD                                | TCAD (Device and Process simulator) University TCAD OMNI BUNDLE with 10 interactive tools (3 Years) |
| 2      | Matlab 10 or higher with optional toolboxes | For use in teaching and academic research at a degree-granting institution.                         |
| 3      | Cadence for VLSI Lab                        | Circuit simulator for VLSI design (Analog and Digital)<br>Total license=30                          |

### Hand tools/ Components and Consumables:

| SI No. | Item                                       | Specification   |
|--------|--|---|
| 1      | Wire wound potentiometer                   | 10K ohm   |
| 2      | Multi-strand wire (Havels/finolex/LNT etc. | 1.5 mm, 2.5mm   |
| 3      | Bread board                                | More than 700 holes   |
| 4      | 3-pin Plug top                             | 6amp  |
| 5      | Pencil cell                                | AA, AAA   |
| 6      | Capacitor (Electrolytic)                   | 1000mf/400V   |
| 7      | Lamp for load (Bulb)                       | 40W, 60W, 100W  |
| 8      | Wire cutter and stripper                   | -   |
| 9      | Screw driver set                           | Make: Taparia   |
| 10     | Pliers                                     | 6"  |
| 11     | Soldering Iron with stand                  | 65W, 35W and 25 W   |
| 12     | Soldering wire                             | 2.527777778   |
| 13     | 9 V Cell                                   | small   |
| 14     | Diode                                      | 40 A ,Body cathode  |
| 15     | RCCB                                       | single phase, 25 Amp  |
| 16     | Box for RCCB                               | -   |
| 17     | 7 Segment Display                          | -   |
| 18     | IC   | IC 7408, 7432, 7476, 7486, 7474, 7447, 0808, 0809, 74283, 74161, 7485, LM 335, 74192, 4017, 7805, 7905, 7812, 7912, 7815, 7915, 74151, 74109, 4060, 317, 74155, 351 |
| 19     | Resistance                                 | 10E, 33E, 47E, 56E, 100E, 150E, 220E, 330E, 470E, 560E,   |



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|    |                              |  |
|----|------------------------------|--|
|    |                              | 820E, 1K, 1.5K, 2.2K, 3.3K, 4.7K, 10K, 22K, 33K, 47K, 100k, 220K, 470K, 330K, 1Meg, 2Meg, 3Meg, 4MEG, 5Meg |
| 20 | Potentiometer                | 1K, 5K, 10K, 47K, 100K, 470K   |
| 21 | Preset                       | 1K, 10K, 100K, Wire-wound Pot 10K  |
| 22 | Capacitor (Carbon)           | 0.1 $\mu$ F, 0.01 $\mu$ F, 0.001 $\mu$ F, 0.005 $\mu$ F  |
| 23 | Capacitor (Electrolytic)     | 1mF, 10mF, 100mF, 470mF  |
| 24 | Variable Inductors           | 100mH, 200mH, 300mH, 400mH, 500 mH<br>( Ferrite Core, enameled Cu wire)                                    |
| 25 | CRO Probes                   | 1X/10X Switchable, BW=200MHz (apprx)   |
| 26 | Hook up wire                 | PVC coated   |
| 27 | Jumper wire                  | PVC coated   |
| 28 | LED                          | Red, Green, Yellow, Blue etc.  |
| 29 | LDR                          | (small/big)  |
| 30 | Zener Diode                  | 5.5V, 6.3V, 7.2V   |
| 31 | Diode                        | 1N4007, 1N4002, 1N4003, 1N5400, 1N5401, 1N5402, 1N5403   |
| 32 | Transistor (BJT)             | BC547, BC548, BC557, BC546, BC546B/547B/548B<br>BC548C, BC547A/548A  |
| 33 | MOSFET                       | 2N7000, 2N4393E, IRF620PBF, NNM20V6L, NNM20V4J6  |
| 34 | Fuse                         | 5Amp, 10Amp  |
| 35 | Push Button Switch           | small  |
| 36 | Fuser pressure roller        | for Hp L J P3005 dn  |
| 37 | Fuser Film                   | for Hp L J P3005 dn  |
| 38 | Toner Cartridge Xerox copier | (WC5016)   |
| 39 | Cartridge Xerox copier       | (WC5016)   |
| 40 | Toner Powder                 | for Hp L J 1320n, Hp L J 1606dn  |
| 41 | CAT 5E LAN cable             | -  |

### GENERAL TERMS & CONDITIONS:

1. No separate tender paper will be issued from the office; one should only download the specifications/List from the website.
2. **The rates should be preferably quoted in Indian Rupee and FOR Tezpur University, Napaam basis. Charges for clearing and transportation should be incurred by the supplier.**
3. *Quotations should be accompanied by i) An EMD (in the form of Demand Draft/Call Deposit/TDR) of ₹. 5000/- (Rupees Five Thousand) only drawn/pledged in favor of Registrar, Tezpur University, payable at Tezpur. **No request for consideration of earlier deposited EMD will be considered.** ii) A non refundable application (quotation) fee of ₹.1000.00 (Rupees One Thousand) only have to be paid only by Demand Draft drawn in favour of Registrar, Tezpur University payable at Tezpur.*
4. The rates should be exclusive of taxes and applicable tax % should be clearly indicated.
5. Applicable levies, surcharge and discounts should be clearly indicated itemwise.
6. Quoted rates should be valid at least for a period of 01 year.
7. The rates should be quoted along with supporting documents of specifications and technical features and list of users.
8. The system must be installed at the laboratory, and after installation a basic training must also be provided by the supplier or their Indian counterpart without any additional costs.
9. All the quotations must be accompanied with supporting documents and / or literature.
10. Demonstration may be sought from the vendors for authentication of quoted specification.



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11. Details of availability of after sales support will have to be furnished. After sales support directly from manufacturer and from Assam (Guwahati / Tezpur) will be preferred.
12. The University is exempted from paying Custom and Excise duty.
13. Proprietary items should be quoted with sole Manufacturer/Distributorship certificate.
14. Warranty/Gurantee period should be specifically mentioned in the quotation.
15. No Advance payment will be made. However, for foreign supplier, advance payment will be made either by FDD/Wire Transfer/LC. In such cases 10% Performance Bank Guarantee should be submitted before issuing FDD/Wire Transfer/LC, covering the warranty period.
16. Performance Bank Guarantee also has to be submitted for Major equipments of Indian origin, covering the warranty period.
17. Items of Foreign origin should have Insurance up to installation on site.
18. The University reserves the right to accept or reject any or all the quotations without assigning any reason.
19. Quoted price should be inclusive of essential accessories and should be CIF Tezpur University, Tezpur
20. Applications for release of EMD should be submitted to the Registrar/ Joint Registrar.
21. Apart from the above terms and conditions the University has the right to include any other terms and conditions as and when felt necessary.
22. **Quotation should be submitted in the DROP BOX placed in the reception of the Administrative Building of the University within 30 days from the issue of the notice. If posted/couriered, should be reached within 30 days from the issue of this notice addressed to "The Joint Registrar , Tezpur University". The Quotation Notice No. and date should be clearly superscribed in the the envelope/packet containing the quotation.**

Sd/- Joint Registrar  
Tezpur University