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VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY: BURLA

P.O: Engineering College Burla (Siddhi Vihar), Dist:Sambalpur
Odisha– 768018, India
Website :www.vssut.ac.in, E-mail: registrar@vssut.ac.in,Ph:(0663)2430573,Fax-2430592

No.: VSSUT/EEE/218 /2022 Date:20/05/2022

TENDER CALL NOTICE

Sealed tenders are invited from original manufacturers/authorized dealers for the supply of Equipment / hardware/ firmware/Software for the **Dept. of Electrical and Electronics Engineering**", VSSUT, Burla, Sambalpur, Odisha. The tenders shall reach the office of the undersigned through **Speed/Registered** post /Courier services only **on or before 20/07/2022 up to 4.00PM**.

For more details, please visit our university website www.vssut.ac.in. The authority the reserve right to accept or reject all the tenders without assigning any reason thereof.

Sd/-
20.5.2022
REGISTRAR

Size: 8 × 6 Sqcm

Memo No. VSSUT/EEE/2195/2022 **Date:20.05.2022**

Copy to:-

1. The Director, Department of I & PR, Govt. of Odisha, Bhubaneswar with request to publish above advertisement in one issue of the All Odisha daily edition of "The Samaja" and All India edition of "The New Indian Express + Indian Express" at the I&PR approved/lowest rate. The bill may be sent in triplicate along with a copy of the paper in which the publication is made.
2. University Notice Board of VSSUT, Burla.
3. Comptroller of Finance for information and necessary action.
4. Dean F & P, with a request to upload the notice & documents in the university website.
5. PA to Vice Chancellor for information of the Honorable Vice Chancellor.

Sd/-
20.5.2022
REGISTRAR
VSSUT,Burla

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY: BURLA

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No: VSSUT/EEE/~~2022~~ 218 / 2022 Date: 20 / 05/2022

TENDER CALL NOTICE

Sealed Bids (properly stitched separately) in two separate covers **(Technical Bid and Price Bid)** are invited by the **"The Registrar, Veer Surendra Sai University of Technology, Odisha" from intending reputed, registered and experienced firms for Supply, Installation, Commissioning and Maintenance of equipment(s) for the procurement of different items related to "Communication System Lab, EEE, Prof. I/C, Mr. Prasanta Kumar Parida at Department of Electrical & Electronics Engineering (EEE), VSSUT Burla, Odisha**. The sealed quotations shall reach the undersigned by regd. / speed post / Courier services within the office hour by **4.00 P.M.** of date **20.07.2022**. Tender received beyond this date & time is shall be rejected. **"Tender for Electrical & Electronics Engg. Deptt. for supply of Equipment(s)"** must be super scribed on the sealed envelope. The details of the equipment/ firmware/Software and their technical specifications are mentioned as below.

Details of theEquipment/Firmware

Sl.No	Name of the Equipment/Firmware /Experiment	Specification	Quantity (No. of units)
1.	**Amplitude Modulation Transmitter Kit** Experiment to be performed: To study amplitude modulated waveforms for different modulation depths and measure the value of modulation index.	• Carrier Frequency Generator: On the board Carrier Frequency generator • Modulating Signal generator • : On the board Modulating Signal generator • On the board Amplitude Modulator circuit • On-board potentiometer for varying modulation percentage • Test Points : Test points are provided at	Two unit

		various stages • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Audio Oscillator :With adjustable Amplitude & Frequency (300 Hz - 3.4 KHz) and better • Audio Output : Amplifier with speaker • Modulators :Balanced Modulator with Band pass Filter (1 MHz) - 2 nos. • Balanced Modulator :1 No. (455 KHz or better) • Ceramic Bandpass Filter :1 No. (455 KHz) • Carrier Frequency :1 MHz and better(Oscillator controlled) • Switched Faults : 8 nos. • Interconnections : 2mm Banana socket • Power Supply :110-220 V AC ±10%, 50Hz • Power Consumption :4 VA approximately • Operating Conditions :0-40° C, 80% RH	
2	**AM Receiver Kit** <u>Experiment to be performed:</u> To study the demodulation of AM wave.	• Carrier Frequency Generator: On the board Carrier Frequency generator • Modulating Signal generator • : On the board Modulating Signal generator • On the board Amplitude Demodulator circuit • On-board potentiometer for varying modulation percentage • Test Points : Test points are provided at various stages • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Construction :Superhetrodyne • Frequency Range : 980 KHz to 2060 KHz or better	Two unit

		• Intermediate Frequency :455 KHz • Input Circuits :1) RF Amplifier 2)Mixer3) Local Oscillator 4) Beat Frequency Oscillator5) IF Amplifier 16) IF Amplifier 2Tuning With variable capacitor (ganged) Dial marking on board • Detectors:1) Diode detector (for DSB) • Audio Output : Amplifier with speaker • Automatic Gain Control :Switchable • Switched Faults :8 nos. • Power Supply : 110-220 V AC ±10%, 50Hz • Power Consumption :3 VA approximately • Operating Conditions :0-40° C, 80% RH	
3	**Frequency Modulation & Demodulation Kit with Foster Seeley Discriminator:** Experiment to be performed: To generate frequency modulation (FM) signals and detect using Foster-Seely discriminator.	• Carrier Frequency Generator: On the board Carrier Frequency generator • Modulating Signal generator : On the board Modulating Signal generator • On the board Amplitude Modulator circuit • On the board Amplitude Demodulator circuit • On-board potentiometer for varying modulation percentage • Test Points : Test points are provided at various stages • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Audio Oscillator :Sine wave (10Vpp adjustable)Frequency (300 Hz - 3.4 KHz or better) • FM Modulators : • Reactance Modulator : Carrier Frequency - 455 KHz (± 3KHz) • Varactor Modulator : Carrier Frequency - 455 KHz (± 2KHz) • VCO Based Modulator : Carrier Frequency - 10 KHz - 200KHz (adjustable)	Two unit

		• Mixer / Amplifier :Allows FM input signal to be amplitude modulated by a noise input prior to demodulation, with gain adjustment. • FM Demodulator : • Foster-Seeley Detector • Ratio Detector • Low Pass Filter : 3.4 KHz Cut off Frequency Amplifier (with adjustable gain) • Amplitude Limiter : 1 no. • Power Supply : 230 V ±10%, 50 Hz • Power Consumption : 3 VA approximately • Operating Conditions :0-40°C, 80% RH	
4	**FM Demodulation using Phased locked loop:** Experiment to be performed: Study of Voltage Controlled Oscillator and Demodulation of FM signal using Phase Locked Loop(PLL)	• On the board PLL circuit • Test Points : Test points are provided at various stages to analyse the signal • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Generator : • Waveforms : Sine • Amplitude : Adjustable from 0 - 4 Vpp or better • Frequency Adjustable from 0.1 to 1 KHz & 1 to 10 KHz or better • VC0 1: • Output signal: Sine • Frequency : 400 KHz to 1500 KHz or better • Amplitude: Adjustable from 0-2 VPP or better • Inputs : Modulating signal • VC02 : • Output signal : Sine • Frequency : Switching on 2 ranges 400 KHz to 500 KHz and500 KHz to 1500 KHz	Two unit

		• Amplitude: Adjustable from 0- 2 VPP • Input: Modulating Signal, Marker • Sweep : • Frequency: 7 Hz • Depth : Adjustable • RF Detector: Input level adjustable • Balanced Modulator: Adjustable output amplitude & Adjustable carrier null • Ceramic filter: Central frequency 455 KHz • Bandwidth: 3 ±1 KHz • Low pass filter :Cut off frequency 10 KHz • PLL Detector : 1 Nos. • Interconnections : 2mm. banana sockets • Power Supply : 230 V ±10 %, 50 Hz • Power Consumption : 2.5 VA (approx.) • Operating Conditions : 0-40° C, 80% RH	
5	**Amplitude/Frequency/Phase Shift Keying Modulation & Demodulation Kit** Experiment to be performed: Generation and detection of ASK, PSK, FSK signal.	• Carrier Frequency Generator: On the board Carrier Frequency generator • Modulating Signal generator : On the board Modulating Signal generator • On the board Data Clock circuit • On the board ASK Modulator circuit • On the board ASK Demodulator circuit • On the board FSK Modulator circuit • On the board FSK Demodulator circuit • On the board PSK Modulator circuit • On the board PSK Demodulator circuit • Test Points : Test points are provided at various stages • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Modulation & Demodulation : ASK , FSK , BPSK Techniques • Internal Data Generator :Digital Data • Data Pattern : 8-Bit , 16-Bit , 32-Bit , 64-	Two unit

		Bit or more • Frequency :2KHz, 4KHz, 8KHz, 16KHz or more • Internal Carrier Generator :Direct Digital Synthesized • Carrier Signal : Sine Wave • SMD LED Indicators :24 nos for Digital Data Selection Data frequency selection Technique selection • Crystal Frequency : 8MHz or better • Selection Mode :Push switches • Power Supply : 110V - 260V AC, 50Hz • Operating Condition :0-40° C, 85% RH	
6	**QPSK, DPSK Modulation & Demodulation Kit :** Experiment to be performed: Generation and detection of QPSK, DPSK signal.	• Carrier Frequency Generator: On the board Carrier Frequency generator-100KHz • On the board Quadric phase carrier generator • On the board Data generator at 1Kb/s • On the board Bit pair data generator • On the board QPSK modulator circuit • On board QPSK demodulator circuit • Test Points : Test points are provided at various stages • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Techniques: QPSK ,DPSK • Internal Data Generator :Digital Data • Data Pattern :8-Bit , 16-Bit , 32-Bit , 64-Bit or more • Frequency :2KHz, 4KHz, 8KHz, 16KHz or more • Internal Carrier Generator :Direct Digital Synthesized • Carrier Signal : Sine, Cosine • SMD LED Indicators : 25 nos for Digital Data Selection Data frequency selection Technique selection	Two unit

		• Crystal Frequency :8MHz • Selection Mode: Push switches • Power Supply : 110V - 260V AC, 50Hz • Operating Condition : 0-40° C, 85% RH	
7	**Digital Storage Oscilloscope:**	• Bandwidth: 100MHz or better • Number of Channels: 02 • Real time sample rate: 1 GSa/s or better • Memory Depth: 10Mpts for each channel or better • Vertical Scale: 1mV/Div to 10V/Div or better • Time base Range: 5ns/div to 100s/div or better • Waveform Signal Process: FFT, FFTrms, User Defined Expression • Trigger Type: Edge, Pulse Width, Video, Pulse Runt, Rise & Fall, Alternate, time out, Event-Delay, Time-Delay or more • Automatic Measurement: 36 sets or more sets of automatic measurement should be available • Waveform Update Rate: 50,000 waveforms per second or better • Display: Minimum 7" TFT WVGA Color Display • Interface: USB 2.0 host port on front panel easy data storage and for easy connection to PC	Eight unit
8	**DC regulated power supply:**	• Input Power: - 230V A.C, +/- 10%, 50Hz. • Digital panel meters: Digital Voltmeter & ammeter for measurement for voltage & current. • Output On/Off control, Large bright easy to read LCD display • Output Voltage: 0 – 32 VDC, Ripple ±5 mV rms & Noise (Peak to Peak) ±50 mV or better • Output Current: 0 – 3 A, Voltage regulation Load (10 % to 100 %) ±50 mV or better • Current Regulation Load (10 % to 100 %)	Three unit

		±20 mA, • USB OUTPUT Voltage 5 V (±10 %), Current 400 mA (±10 %) • Constant voltage and constant current operation, Overvoltage protection • Voltmeter and Ammeter Display 3 Digit, Voltmeter Accuracy ±1 % of rdg. ± 5 digits • Switching Operation Frequency 80 kHz to 120 kHz, Ammeter Accuracy ±1 % of rdg. ± 5 digits LCD Indication CC, CV, Amp, Volt, Output ON-OFF	
9	**Digital Function Generator:**	• Waveforms: Sine, Square, Ramp, Pulse, Noise, Arbitrary • No. of Channel: 2 Nos identical performance Arbitrary Chanel • Frequency Range: Sine: 1uHz to 25MHz or better • Square: 1uHz to 25MHz or better • Triangle/Ramp: 1MHz or better • Frequency Resolution: Minimum 1μHz or better • Amplitude Range: 1mVpp to 10Vpp (into 50) or better • Offset Range: ±5 Vpk or better • Arbitrary Signal Feature: Sample Rate: 100Msa/Sec or better • Waveform length: 4k points or better • Amplitude Resolution: 10bit or better • Pulse Characteristics: Pulse Width: 20nS to 1999.9S or better • Variable Duty Cycle: 1% to 99% or better • Modulations Support: AM, FM, PM, FSK, SUM, Sweep, Burst • Built in Frequency Counter: Up to 150MHz or better • Dual Output Channel Supports: Phase synchronization; Tracking operation; Coupling Frequency or better • Display: 3.5'' Color LCD or better • Interface: USB Host & Device or better • Protection: Short-circuit protection, Overload Protection or better Software: Arbitrary waveform editing & generation software should be provided or better	Six unit

10	**Desktop Computer:** Experiment to be performed: Desktop Computers are required to carry out experiments that involves simulations of convolution, correlation, and power spectral density of different functions, generation of DSB-SC, SSB-SC, FM,PM Signal, simulation of TDM, and measuring performance of any digital Modulation and demodulation scheme.	• Processor Make: Intel • Processor Generation: 10.0 or higher • Number of Cores per Processor: 8, 10, 12 or higher • Processor Base Frequency (GHz): 3, 3.1, 3.2, 3.3, 3.4 or higher • Processor Description: Intel Core i7 or higher • Chipset series: Intel Q series or higher • Chipset Number: Intel Q 470 or higher • Graphics Type: Integrated • Operating System (Factory Pre- Loaded): Windows 10 Professional • RAM Size (GB): 8, 16, 32, 64 GB or higher • Storage: HDD: 1TB • Cabinet form factor: SFF (7to13 litre) • Monitor Technology: 19.5, 21.5 or higher LED display • Bluetooth Connectivity: Yes • Input devices: Mouse and Keyboard • Mouse Connectivity: Wired • Keyboard connectivity: Wired.	Five unit
11	**MATLAB Software:** Experiment to be performed: MATLAB Software is required to carry out experiments that involves simulations of convolution, correlation, and power spectral density of different functions, generation of DSB-SC, SSB-SC, FM,PM Signal, simulation of TDM, and measuring performance of any digital Modulation and demodulation scheme.	MATLAB Communication System toolbox Signal Processing Toolbox DSP system toolbox	Five users

12	**Digital Bench Top Multimeter:**	• Type: Bench Top • Display Resolution: 5.5 Digit • True RMS: Yes • Dual measurement/ Dual display: Yes • Range: Auto/ Manual • Measurement Speed: Selectable measurement speed, maximum 150 readings/s or better • DC Voltage Measurement: Range: up to 1000V or better • Characteristics: Accuracy: 0.02% or better • True RMS AC Voltage: Range: up to 750V or better • Measurement Characteristics: Accuracy: 0.2% or better • True RMS AC Current: Range: up to 10A or better Measurement Characteristics: Accuracy: 0.5% or better • Other measurements: 2W/4W Resistance, Continuity, Diode, Capacitance, Frequency, Temperature • Interface: USB device • Software: Software to be provided for remote control and saving results to PC • Accessories: Test Lead, User manual, Power Cable	Two unit
13	**Digital handheld Multimeter:**	• DC voltage range 200 mV, 2 V, 20 V, 200 V, 1000V, or better with respective resolution 0.1 mV, 1 mV, 10 mV, 100 mV, 1 V and better. and Accuracy ±(0.8 % rdg + 1 dgts) or better. Over load protection • AC voltage range (50 to 500 Hz) 200 mV, 2 V, 20 V, 200 V, 750V or better with respective Resolution 0.1 mV, 1 mV, 10 mV, 100 mV, 1 V 750 V and better. Accuracy 200 mV & 20 V ranges: ±(1.5 % rdg + 5 dgts) and 200 V & 750 V ranges: ±(2.0 % rdg + 5 dgts or better. • DC Current Ranges 20 mA, 200 mA, 10 A or better with respective Resolution 10 uA, 100 uA, 10 mA and Accuracy 20 mA to 200 mA ranges: ±(1.0 % rdg + 1 dgts), 10 A range: ±(3.0 % rdg + 3 dgts) or better	Five unit

		• AC Current (50 Hz-500 Hz) Ranges 20 mA, 200 mA, 10 A with respective Resolution 10 uA, 100 uA, 10 mA with Accuracy 20 mA to 200 mA ranges: ±(2.0 % rdg + 5 dgts), 10 A range: ±(3.0 % rdg + 5 dgts) • Resistance Measuring range Ranges 200 Ω, 2 kΩ, 200 kΩ, 20 MΩ, 2000 MΩ, with resolution 0.1 Ω, 1.0 Ω, 100 Ω, 10 kΩ, 1 MΩ and Accuracy 200 Ω to 200 kΩ ranges: ±(1.0 % rdg + 4 dgts), 20 MΩ range: ±(2.0 % rdg + 4 dgts) and 2000 MΩ range: ±(5.0 % rdg + 10 dgts) • Capacitance Ranges 2 nF , 20 nF, 200 nF, 2.0 uF, 20 uF with respective Resolution 1 pF, 10 pF, 100 pF, 1 nF, 10 nF and Accuracy ±(4 % rdg + 10 dgts • Continuity test with audible Indication Less than 100 Ω and Response Time 100 ms • Diode test • Logic test ranging - Threshold Logic Hi (2.8 V ±0.8 V) / Logic Lo (0.8 V ±0.5 V) with over load protection 500 VDC/AC rms • hFE Transistor test • One-handed operation • Display 3 1/2 digit or better, 2000 count LCD and better Polarity Automatic, positive implied, negative polarity indication	
14	**Oscilloscope Probe:**	Oscilloscope Chord (1:1) BNC to crocodile clip of co-axial cable	Forty Nine unit
15	**Computer Tables:**	Specification: • Computer table with key board drawer and table top Size of Computer Table ±10 mm (LXBXH) : 900 Mm X 600 Mm X 750 Mm	Five unit
16	**Uninterruptible Power Supply (UPS):**	Rating: 1.0KVA Technology: IGBT-PWM without inbuilt isolation transformer Input Power: single phase 160V - 260V sinewave,50Hz Output power: Single phase 230V +/-1% sinewave 50 Hz Backup time (Minutes): 60	Five unit

		Metering And Indications: Yes	

The Bidders may download the **Tender Documents** directly from the website available at **http://www.vssut.ac.in** and the Tender cost fee of Rs. 1000/- (Non-refundable) by way of separate Demand Draft drawn in favour of **"The Registrar, Veer SurendraSai University of Technology, Burla" payable at SBI, Burla** should be enclosed along with the Bid. The Tender cost fee and the Earnest Money Deposit (EMD) amount should be submitted separately in separate demand drafts. In case of any bid clarification, responsibility lies with the bidders to collect the same from the website and the purchaser shall have no responsibility for any delay/ omission on part of the bidder.

TIME SCHEDULE:

a) Tentative date of commencement of downloading bidding document -27/05/2022 at 04.00 PM

b) Last date and time for Receipt of bids -20/07/2022 up to 04.00 PM

c) Time and date of opening of Tender &Technical bid 21/07/2022at 11.00 AM

d) PLACE OF OPENING OF TENDER AND ADDRESS FOR COMMUNICATION AND RECEIPT OF BID DOCUMENTS

THE REGISTRAR

VEER SURENDRA SAI UNIVERSITY OF TECHNLOGY, ODISHA

At- Burla, Po-Burla Engineering College, Dist-Sambalpur-768018,

Tel. No-0663-2430211 Fax No-0663–2430204

20.5.2022

REGISTRAR

VSSUT, Burla

General Terms and Conditions

GENERAL TERMS & CONDITIONS OF CONTRACT FOR SUPPLY, INSTALLATION AND DEMONSTRATION OF THE HARDWARE, SOFTWARE, REQUIRED FOR DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING, VSSUT, BURLA, ODISHA.

1. Document Establishing Bidder's Eligibility & Qualification

The Bidders shall furnish as part of the Bid the following Documents establishing Bidder's eligibility and qualification to the Purchaser's satisfaction.

1.1 Manufacturer / Authorized Distributor / Dealer having valid license / certificates for the quoted item and the direct Importers holding valid Import License Manufacturer / Authorized Distributor / Dealer of the product are eligible to participate in the Bid.

1.2 Bidders should have **ISI or equivalent** certification for quoted instruments and equipment. However, the Purchaser shall have the right to consider the items where ISI or equivalent certification is not applicable.

1.3 The Bidder whether manufacturer/ distributor/ dealer must have experience of supply and installation of the quoted items in reputed Government Institutions / Public Undertakings / reputed Private Institutions within India during last preceding 3(Three) years reckoned from the date of bid opening and the details must be submitted along with documentary proof.

1.4 The Bidders shall have to produce document in support of their service associates **nearest to Bhubaneswar/ Sambalpur**, Odisha / within Odisha state.

1.5 Bidder shall have to provide demonstration of hardware **to Purchaser.**

1.6 The Bidder shall quote items of one reputed Brand/model with all accessories in complete to perform functionality of Equipment.

1.7 Manufacturer has to submit copy of Industry Registration of quoted products and Tax Registration Certificate issued from the Competent authority. In case of Authorized Distributor / Dealer/Suppliers have to submit Manufacture authorization along with copy of above documents of Manufacture Industry.

2. Document Establishing Goods Eligibility

The hardware and software offered against the schedule of requirement, should be in accordance with the stipulated specifications and of one reputed brand/model (**N.B: Specifications of equipment of items are to be procured as per detailed specifications mentioned in pp. 01-11**)

2.1 The documentary evidence establishing the brand and the model may be in the form of literature, pamphlets, manuals etc.

2.2 Detailed description of hardware and software with essential technical and performance characteristics may also be furnished.

2.3 The Bidders should clearly mention in their bid regarding the compatibility of the various equipment or the individual units.

2.4 The quantity shown in the bid can be increased or decreased to any extent depending upon the actual requirement.

2.5 The hardware should have testing certificate for its satisfactory functioning.

3. Technical Bid (COVER - A)

The following document should be submitted in cover-A.

3.1 Earnest Money Deposit(EMD)

3.2 Technical details of the equipment/hardware/firmware as per **Annexure-V**.

3.3 Copy of the manufacturing license/ import license/ Authorized Distributor/ Dealer certificates

3.4 Copy of the authorization from the Manufacturing Company in case of Authorized Distributor /Dealer.in along with Manufacturer Industry Registration and Tax Registration Certificate.

3.5 GST clearance certificate up to **date** where applicable/Copy of GST regd. certificate.

3.6 Performance/ Market standing certificate establishing that the Bidders have executed supply of similar items as mentioned in Schedule of Requirement of hardware and software to different Govt. Organizations/ Government PSUs / reputed Private Institutions.(proof of documents)

3.7 Copy of the IT PAN Card.

3.8 Detail name, address, telephone no. fax, e-mail of the firm and of the Director/Managing Director/ Proprietor of the firm (As per **Annexure IV**)

3.9 Address, Telephone No., e-mail, Fax of the Branch Office/ Contact Person/ Liaisoning Office in Odisha. (As per **Annexure IV**)

3.10 Power of Attorney/ Authorization to a person for liaisoning and monitoring the business on behalf of the manufacturer / bidder but not entitled to raise the bills.

3.11 Document if any to establish the recognition of the manufacturing unit in respect of ISO or equivalent.

3.12 **The original bid document signed & sealed by authorized person in each page as a token of acceptance of all terms and conditions of the tender with original receipt**.

3.13 Documentary evidence establishing that the hardware, software and ancillary services to be supplied by the Bidders shall confirm to the Bidding Document

3.14 Any deviation in the specification of the item including standard accessories / optional accessories in complete for functionality of hardware should be marked in **bold letters.**

3.15 Details of hardware, if any, should be provided.

3.16 The details of the service station / service associates nearest to Bhubaneswar/Sambalpur shall have to be submitted to qualify in the technical bid.

4. **Price Bid (COVER – B)**

4.1 The hard copy of price bid giving the rates for various instruments & equipment and other items should be submitted along with sealed soft copy of **price bid in Excel format through CD/Pen drive** both in separate sealed cover hereinafter called **Cover B (Price Bid). Price Bid (Cover - B)** of the bidders who qualify in **Technical Bid (Cover – A)** will only be opened and will be communicated through **E-mail/Fax.**

4.2 Each quoted item and all accessories should cover the warranty / guarantee for **3(three)** years from the date of commissioning **(Annexure-II)**.

4.3 The **Cover B** of the technically qualifying bidders shall be only opened at the Office of the **"The Registrar, Veer Surendra Sai University of Technology, Burla"** on the date and time to be communicated to them after technical evaluation of **Cover A by E-mail/Fax.**

4.4 The cost of standard accessories shall be included in basic price and optional accessories shall have to be quoted separately.

5 **BID CONDITIONS**

5.1 The quoted rate shall not vary with the quantum of order placed or destination point.

5.2 A copy of the original bid conditions and the schedules should be signed by the bidder at the bottom of each page with the office seal duly affixed and returned along with the bid. Bid schedule should be duly filled in with an **index** and **page number** for the documents, enclosures & EMD etc. **Paging** must be done for all the documents submitted.

5.3 Bids should be type written or Computerized and every correction/ over writing in the bid should invariably be attested with signature of the bidder with date before submission of the bids to the authorities concerned. No revision of price upward or downward will be allowed once the bid is opened. However the purchaser shall have the right for considering the exchange rate of foreign currencies on verification of documents.

5.4 **Language of Bid**

The Bid prepared by the bidders and all correspondence and document relating to the bid exchanged by the Bidders and the *Purchaser*, shall be written in the English language. Supporting document and printed literature furnished by the Bidders may be written in another language provided they are accompanied by an accurate translation of the relevant passages in the English language in which case, for purposes of interpretation of the Bid, the English translation shall govern.

5.5 **Bid Price**

- The contract shall be for the full quantity as described above. Corrections, if any, shall be made by crossing out, initialling, dating and re-writing.
- All duties, taxes(excluding GST), and other levies payable on the raw materials and components, Forwarding and Handling charges, Insurance charges, commissioning including testing and training, any other charges if applicable shall be included in the basic unit price as per annexure-I.
- GST in connection with the sale shall be shown separately.
- The rates quoted by the bidders shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
- The price shall be quoted in Indian Rupees only.

5.6 **GST clearance**

Copies of valid GST clearance Certificates shall be furnished by the Bidders and the originals of the above certificates shall be produced to the purchaser before placement of notification of award if asked for by the Purchaser.

5.7 **EMD**

All bidders are required to submit **EMD ₹38,500/- or 2% of total bidding estimation (if not participating for all the items)**in shape of **Demand draft** drawn in favour of **"The Registrar, Veer Surendra Sai University of Technology, Burla" payable at SBI, Burla**only**.** The EMD shall be in Indian Rupees (₹).

NOTE: Non-submission of EMD or submission of less EMD than the desired one shall result in rejection of Bid. The EMD deposited against other Bids cannot be adjusted or considered for this Bid. No interest is payable on EMD. Parties are invited to participate in all items or some items.

5.8 **SUBMISSION OF BIDS**

Sealing and Marking of Bids

Bid should be submitted in two Bid system containing two parts as detailed below.

Sealed Cover-A: Technical Bid.

Sealed Cover-B: Price Bid (hardcopy & sealed soft copy in CD/pen drive)

Both the sealed envelopes should then be put in one outer cover and each cover should have the following indication:

i) Name of Dept.:_____

ii) Reference No of Bid _____

iii) Bid regarding _____

iv) Due date & time for submission of the Bid _____

v) Due date & time for opening of the Bid _____

vi) Name of the Firm _____

NOTE:

A. Bids submitted without following two Bid system procedures as mentioned above will be summarily rejected.

B. Please Note that **prices should not be indicated in the Technical Bid**. The Prequalification document including EMD as required in the Bid document should invariable be accompanied with the Technical Bid (**Cover A**).

The outer envelope shall indicate the name and address of the bidders to enable the bid to be returned unopened in case it is declared "**late**". If the cover containing the outer envelope is not sealed and marked as required, ***Purchaser*** will assume no responsibility for the bid's misplacement or premature opening.

The above procedure shall be adopted both for the Technical bid and price bid separately. Telex, cable, email or facsimile bids will be rejected.

5.9 **Deadline for Submission of Bids**

Bids must be received by the ***Purchaser*** at the address specified not later than the time and date specified in the Invitation of Bids. In the event of the specified date for the submission of bids being declared a holiday for the ***Purchaser***, the bids will be received up to the appointed time on the next working day.

The ***Purchaser*** may, at its discretion, extend this deadline for submission of bids by amending the bid document, in which case all previous rights and obligations of the purchasers and bidders will remain same till the extended date.

5.10 **Modification and Withdrawal of Bids**

No Modification and Withdrawal of Bids is allowed between the interval of time of submission and the last date and time of the bids.

No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the bidders on the bid form.

5.11 **BID OPENING**

5.12 The ***Purchaser*** will open all bids, in the presence of bidder's representatives who choose to attend at 21/07/2022 at 11.00 AM at the Office of the **"The Registrar, Veer Surendra Sai University of Technology, Burla".**

5.13 The bidder's representatives who are present shall sign a register evidencing their attendance. In the event of the specified date of bid opening being declared a holiday for the ***Purchaser***, the bids shall be opened at the appointed time and location on the next working day.

5.14 The bidder's names, and the presence or absence of the requisite EMD and such other details as the ***Purchaser***, at its discretion, may consider appropriate will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened to the bidders.

5.15 **Acceptance of the Bid**

- Bidders submitting bids would be considered who have considered and accepted all terms and conditions. No enquiries, verbal or written, shall be entertained in respect of acceptance or rejection of the bid.
- Genuine equipment(s) and softwareetc. should be supplied. Bidders should indicate the source of supply i.e. name and address of the manufacturers from whom the items are to be sourced.
- Supply of equipment means – Installation and Commissioning (except civil works), Demonstration as well as Training at site. **No separate charges will be paid on this account**.

5.16 **Rejection of the Bid**

The Bid document shall be out-rightly rejected under following stipulation and no correspondence will be entertained whatsoever.

- If the Bidders has not furnished the required **Tender paper cost** and **EMD** or EMD exemption certificate from competent authority.
- If the Bidders has not submitted the Price as per the prescribed format **Annexure-I**
- **Manufacturing Authorization Annexure-III and in case of Authorized Distributor / Dealer/Suppliers have to submit Manufacture authorization along with copy of above documents of Manufacture Industry.**
- Photo copy of the up-to-date valid manufacturing license/ import license (if it is imported) /dealership certificate/Distributor certificate of the product along with Tax registration Certificate of Manufacturer issued from competent authority.
- If the bidders, whether manufacturer or authorized distributor/ dealer have not supplied the required quantity for qualification as per the eligibility criteria and not submitted the performance statement at **Annexure-IV with supporting documents.**

- If the bidder has not furnished technical details of the hardware with **one make & model** as per **Annexure-V.**
- **If bidder will quote items of more than one make/model.**
- If the bidders have not agreed to give **bid validity**.

5.17 **Purchaser's Right to Accept any Bid and to Reject any Bid**

The Purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all the bids without assigning any reason thereof at any time prior to award of Contract, without thereby incurring any liability to the affected Bidders or Bidders on the grounds of such action of the purchaser. In case no bidder qualifies as per qualifying criteria and standards, purchaser may at his discretion relax qualification criteria for award of contract.

5.18 **Evaluation and Comparison of Bids**

The comparison shall be of FOR destination price basis including the price of all costs wherever applicable as well as duties and taxes (**but excluding GST**) paid or payable on Machineries, instruments & equipment incorporated or to be incorporated in the items including the warrantee/guarantee period from the date of installation.

- The Purchaser's evaluation of a bid will take into account, in addition to the bid price and the price of incidental services.
- The purpose of bid evaluation is to determine substantially responsive bid with the lowest evaluated cost, but not necessarily the lowest submitted price, which should be recommended for award.
- Evaluation of bids should be made strictly in terms of the provisions in the bid document to ensure compliance with the commercial and technical aspects.
- The past performance of the suppliers will be taken into account while evaluating the bids.
- Cost of the inland transportation, insurance and other costs within the Purchaser's Country incidental to delivery of the goods to their final destination;
- Delivery schedule offered in the bid;
- Deviations in payment schedule from that specified in the General Terms & Conditions of Contract;

- The projected operating and maintenance costs during the life of the equipment/ goods.
- The performance and productivity of the equipment/ goods offered;
- The quality and adaptability of the equipment/ goods offered.
- Any other point as deemed proper to be incorporated by the evaluation committee.
- Alternative options of offer shall not be allowed.
- Each Bidder shall submit only one quotation with one make & model.
- The quotation would be evaluated separately for each item
- Sales Tax in connection with sale of goods shall not be taken into account in evaluation.
- Negotiation shall be made with the lowest evaluated bidder.
- Lowest evaluated price shall be taken in to consideration, but not the lowest quoted price.

6.0 **Supply Conditions**

6.1 **Delivery of Goods**

The delivery of goods shall be made by the supplier to the Consignee in accordance to the order placed as shall be detailed in the Schedule of requirements & technical specifications. All the items must be delivered within 45 days from the date of issue of purchase order.

6.2 **Instruments, Equipment, Demonstration cum Inspection**

Purchaser reserves the right to ask for demonstration cum inspection of the equipment where ever applicable.

6.3 **Inspection/ Test/Training**

The supplier shall get each equipment inspected in manufacturer's works and submit a test certificate (New & Unused) and also guarantee/warranty certificate that the equipment confirms to laid down specifications.

The supplier shall invite the purchaser for pre-dispatch inspection. The Purchaser or his representative shall have the right to inspect/ examine/ test the goods in conformity with the contract awarded/supply order during the production or before dispatch from the manufacturer's premises. Such inspection and clearance will not prejudice the right of the consignee to inspect and test the equipment on receipt at destination.

The inspection/examination/ test may be conducted in the premises of the Supplier or at the goods final destination or at the premises of the consignee, as will be decided by the Purchaser.

The purchaser's right to inspect/ examine/test & where necessary to reject the instruments after the arrival of the goods at the final destination, shall in no way be limited or waived by the reason of the goods having been inspected and tested by the manufacturer previously. In case of rejection of the goods at the final destination after inspection and test as stipulated above and in case any inspected/ tested goods fail to confirm to the specification/ working condition, the purchaser may reject them and the supplier shall replace/ repair the same free of cost.

6.4 **Warrantee Period (comprehensive)**

The Bidders must quote for a minimum period of **3 (Three) years** of comprehensive **warranty** from the date of completion of the satisfactory commissioning as per **(Annexure-II)**. This also includes all accessories related to instruments & equipment quoted for.

6.5**Payment Terms**

No advance payment will be made by the Purchaser to the supplier for performance of the contract. 90% of the contract price shall be paid within 20 (twenty) days after satisfactory supply, installation, demonstration, Commissioning & training and stock entry of bills of the goods within due date of delivery. Remaining 10% of the contract price shall be paid after 10 (ten) days of period from the date and day of installation subject to satisfactory performance of equipment(s).

6.6**Transportation**

The Supplier shall be required to meet all transport and storage expenses until commissioning of the instrument(s) / equipment covered in the contract.

6.7**Taxes and Duties**

The Supplier shall be entirely responsible for payment of all Taxes, Duties etc. incurred until delivery of the contract goods to the Consignee subject to recovery afterwards in the bill as claimed in the Bid offer.

GST as applicable is payable, to the suppliers of the State of Odisha if claimed in the Bid offer.

GST will be paid to the Suppliers of the outside State other than Odisha, if claimed in the Bid offer. Any revision of GST shall automatically be taken into account.

6.8**Incidental Services**

The Supplier shall be required to provide any or all of the following services:(The cost should be included in the quoted Price)

- Furnishing of detailed literature/pamphlets/ circuit diagram/ operation & maintenance manual / drawings (as applicable) for each appropriate unit of supplied goods.
- Furnishing of tools required for assembly and / or maintenance of the supplied goods.
- Performance or supervision of on-site assembly and the supplied goods.
- Performance or supervision or maintenance and/ or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty/ guarantee obligations under the contract.

6.9**Period of Validity of Bids**

- The bid rates should be kept open/ valid for a period of **180** days from the date the Bids are opened.
- A bid valid for a shorter period i.e. less than **180** days shall be rejected, as nonresponsive.
- In absence of any indication of the date of validity in the bid, it will be presumed that the offer will remain valid for the minimum period i.e. **180** days as prescribed above.
- In exceptional circumstances the purchaser may solicit the bidders consent for extension of the period of validity. If agreed upon, the bid security so deposited shall also be suitably extended.

6.10**Commissioning Period**

Maximum commissioning period is **15 days** from the date of supply OR **60 days from the date of issue of Purchase Order** failing which the purchaser will have the right to impose penalty for the delay period @ **0.5% per week of the contract value of item/items excluding taxes from the bill amount subject to maximum of 10%.** However, Registrar has right to extend the delivery period/commissioning period in special cases.

6.11**Penalty against Non Supply**

In case of non-supply of Stores within the due date i.e. within the date of delivery the EMD deposited by the bidder shall be forfeited.

6.12**Rejected items**

No payment shall be made for rejected supplied items. Rejected items must be removed by the bidders within two weeks of the date of rejection at their own cost and replace immediately. In case these are not removed these will be auctioned by the purchaser (at the risk and responsibility of the suppliers) without any further notice.

6.13 **Jurisdiction of the Court**

The Purchaser and the Supplier shall agree that the competent Court at Sambalpur shall have the jurisdiction to try and decide anything between the parties and they may approach the Competent Court at Sambalpur if required at any time.

20.5.2022

REGISTRAR

VSSUT,Burla

ANNEXURE-I

Format for Price Scheduled

Sl.No.	Description of Item and Model	Quantity	Basic Unit Price
01	**Amplitude Modulation Transmitter Kit** • Carrier Frequency Generator: On the board Carrier Frequency generator • Modulating Signal generator • : On the board Modulating Signal generator • On the board Amplitude Modulator circuit • On-board potentiometer for varying modulation percentage • Test Points : Test points are provided at various stages • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Audio Oscillator :With adjustable Amplitude & Frequency (300 Hz - 3.4 KHz) and better • Audio Output : Amplifier with speaker • Modulators :Balanced Modulator with Band pass Filter (1 MHz) - 2 nos. • Balanced Modulator :1 No. (455 KHz or better) • Ceramic Bandpass Filter :1 No. (455 KHz) • Carrier Frequency :1 MHz and better(Oscillator controlled) • Switched Faults : 8 nos. • Interconnections : 2mm Banana socket • Power Supply :110-220 V AC ±10%, 50Hz • Power Consumption :4 VA approximately • Operating Conditions :0-40° C, 80% RH	02 set	
02	**Amplitude Modulation Receiver Kit** • Carrier Frequency Generator: On the board Carrier Frequency generator • Modulating Signal generator • : On the board Modulating Signal generator • On the board Amplitude Demodulator circuit	02 Set	

	• On-board potentiometer for varying modulation percentage • Test Points : Test points are provided at various stages • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Construction :Superhetrodyne • Frequency Range : 980 KHz to 2060 KHz or better • Intermediate Frequency :455 KHz • Input Circuits :1) RF Amplifier 2)Mixer3) Local Oscillator 4) Beat Frequency Oscillator5) IF Amplifier 16) IF Amplifier 2Tuning With variable capacitor (ganged) Dial marking on board • Detectors:1) Diode detector (for DSB) • Audio Output : Amplifier with speaker • Automatic Gain Control :Switchable • Switched Faults :8 nos. • Power Supply : 110-220 V AC ±10%, 50Hz • Power Consumption :3 VA approximately • Operating Conditions :0-40° C, 80% RH		
03	**Frequency Modulation & Demodulation Kit with Foster Seeley Discriminator** • Carrier Frequency Generator: On the board Carrier Frequency generator • Modulating Signal generator : On the board Modulating Signal generator • On the board Amplitude Modulator circuit • On the board Amplitude Demodulator circuit • On-board potentiometer for varying modulation percentage • Test Points : Test points are provided at various stages • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Audio Oscillator :Sine wave (10Vpp adjustable)Frequency (300 Hz - 3.4 KHz or	**02 Set**	

	better) • FM Modulators : • Reactance Modulator : Carrier Frequency - 455 KHz (± 3KHz) • Varactor Modulator : Carrier Frequency - 455 KHz (± 2KHz) • VCO Based Modulator : Carrier Frequency - 10 KHz - 200KHz (adjustable) • Mixer / Amplifier :Allows FM input signal to be amplitude modulated by a noise input prior to demodulation, with gain adjustment. • FM Demodulator : • Foster-Seeley Detector • Ratio Detector • Low Pass Filter : 3.4 KHz Cut off Frequency Amplifier (with adjustable gain) • Amplitude Limiter : 1 no. • Power Supply : 230 V ±10%, 50 Hz • Power Consumption : 3 VA approximately • Operating Conditions :0-40°C, 80% RH		
04	**FM Demodulation using Phased locked loop** • On the board PLL circuit • Test Points : Test points are provided at various stages to analyse the signal • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Generator : • Waveforms : Sine • Amplitude : Adjustable from 0 - 4 Vpp or better • Frequency Adjustable from 0.1 to 1 KHz & 1 to 10 KHz or better • VC0 1: • Output signal: Sine • Frequency : 400 KHz to 1500 KHz or better • Amplitude: Adjustable from 0-2 VPP or better • Inputs : Modulating signal	**02 Set**	

	• VC02 : • Output signal : Sine • Frequency : Switching on 2 ranges 400 KHz to 500 KHz and500 KHz to 1500 KHz • Amplitude: Adjustable from 0- 2 VPP • Input: Modulating Signal, Marker • Sweep : • Frequency: 7 Hz • Depth : Adjustable • RF Detector: Input level adjustable • Balanced Modulator: Adjustable output amplitude & Adjustable carrier null • Ceramic filter: Central frequency 455 KHz • Bandwidth: 3 ±1 KHz • Low pass filter :Cut off frequency 10 KHz • PLL Detector : 1 Nos. • Interconnections : 2mm. banana sockets • Power Supply : 230 V ±10 %, 50 Hz • Power Consumption : 2.5 VA (approx.) • Operating Conditions : 0-40° C, 80% RH		
5	**Amplitude/Frequency/Phase Shift Keying Modulation & Demodulation Kit** • Carrier Frequency Generator: On the board Carrier Frequency generator • Modulating Signal generator : On the board Modulating Signal generator • On the board Data Clock circuit • On the board ASK Modulator circuit • On the board ASK Demodulator circuit • On the board FSK Modulator circuit • On the board FSK Demodulator circuit • On the board PSK Modulator circuit • On the board PSK Demodulator circuit • Test Points : Test points are provided at various stages • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Modulation & Demodulation : ASK , FSK , BPSK Techniques • Internal Data Generator :Digital Data • Data Pattern : 8-Bit , 16-Bit , 32-Bit , 64-	**02 Set**	

	Bit or more • Frequency :2KHz, 4KHz, 8KHz, 16KHz or more • Internal Carrier Generator :Direct Digital Synthesized • Carrier Signal : Sine Wave • SMD LED Indicators :24 nos for Digital Data Selection Data frequency selection Technique selection • Crystal Frequency : 8MHz or better • Selection Mode :Push switches • Power Supply : 110V - 260V AC, 50Hz • Operating Condition :0-40° C, 85% RH		
6	**QPSK, DPSK Modulation & Demodulation Kit** • Carrier Frequency Generator: On the board Carrier Frequency generator-100KHz • On the board Quadric phase carrier generator • On the board Data generator at 1Kb/s • On the board Bit pair data generator • On the board QPSK modulator circuit • On board QPSK demodulator circuit • Test Points : Test points are provided at various stages • Accessories : Necessary Patch Cords for Interconnections • Instruction Manual: Instruction Manual complete with theory and operating details • With built-in power supply • Techniques: QPSK ,DPSK • Internal Data Generator :Digital Data • Data Pattern :8-Bit , 16-Bit , 32-Bit , 64-Bit or more • Frequency :2KHz, 4KHz, 8KHz, 16KHz or more • Internal Carrier Generator :Direct Digital Synthesized • Carrier Signal : Sine, Cosine • SMD LED Indicators : 25 nos for Digital Data Selection Data frequency selection Technique selection • Crystal Frequency :8MHz • Selection Mode: Push switches • Power Supply : 110V - 260V AC, 50Hz • Operating Condition : 0-40° C, 85% RH	**02 Set**	

7	**Digital Storage Oscilloscope** • Bandwidth: 100MHz or better • Number of Channels: 02 • Real time sample rate: 1 GSa/s or better • Memory Depth: 10Mpts for each channel or better • Vertical Scale: 1mV/Div to 10V/Div or better • Time base Range: 5ns/div to 100s/div or better • Waveform Signal Process: FFT, FFTrms, User Defined Expression • Trigger Type: Edge, Pulse Width, Video, Pulse Runt, Rise & Fall, Alternate, time out, Event-Delay, Time-Delay or more • Automatic Measurement: 36 sets or more sets of automatic measurement should be available • Waveform Update Rate: 50,000 waveforms per second or better • Display: Minimum 7" TFT WVGA Color Display • Interface: USB 2.0 host port on front panel easy data storage and for easy connection to PC	**08 unit**	
8	**DC regulated power supply** • Input Power: - 230V A.C, +/- 10%, 50Hz. • Digital panel meters: Digital Voltmeter & ammeter for measurement for voltage & current. • Output On/Off control, Large bright easy to read LCD display • Output Voltage: 0 – 32 VDC, Ripple ±5 mV rms & Noise (Peak to Peak) ±50 mV or better • Output Current: 0 – 3 A, Voltage regulation Load (10 % to 100 %) ±50 mV or better • Current Regulation Load (10 % to 100 %) ±20 mA, • USB OUTPUT Voltage 5 V (±10 %), Current 400 mA (±10 %) • Constant voltage and constant current operation, Overvoltage protection • Voltmeter and Ammeter Display 3 Digit,	**03 unit**	

	Voltmeter Accuracy ±1 % of rdg. ± 5 digits • Switching Operation Frequency 80 kHz to 120 kHz, Ammeter Accuracy ±1 % of rdg. ± 5 digits LCD Indication CC, CV, Amp, Volt, Output ON-OFF		
9	**Digital Function Generator** • Waveforms: Sine, Square, Ramp, Pulse, Noise, Arbitrary • No. of Channel: 2 Nos identical performance Arbitrary Chanel • Frequency Range: Sine: 1uHz to 25MHz or better • Square: 1uHz to 25MHz or better • Triangle/Ramp: 1MHz or better • Frequency Resolution: Minimum 1μHz or better • Amplitude Range: 1mVpp to 10Vpp (into 50) or better • Offset Range: ±5 Vpk or better • Arbitrary Signal Feature: Sample Rate: 100Msa/Sec or better • Waveform length: 4k points or better • Amplitude Resolution: 10bit or better • Pulse Characteristics: Pulse Width: 20nS to 1999.9S or better • Variable Duty Cycle: 1% to 99% or better • Modulations Support: AM, FM, PM, FSK, SUM, Sweep, Burst • Built in Frequency Counter: Up to 150MHz or better • Dual Output Channel Supports: Phase synchronization; Tracking operation; Coupling Frequency or better • Display: 3.5'' Color LCD or better • Interface: USB Host & Device or better • Protection: Short-circuit protection, Overload Protection or better Software: Arbitrary waveform editing & generation software should be provided or better	**06 unit**	
10	**Desktop Computer** • Processor Make: Intel • Processor Generation: 10.0 or higher • Number of Cores per Processor: 8, 10, 12 or higher • Processor Base Frequency (GHz): 3, 3.1, 3.2, 3.3, 3.4 or higher	**05 unit**	

	• Processor Description: Intel Core i7 or higher • Chipset series: Intel Q series or higher • Chipset Number: Intel Q 470 or higher • Graphics Type: Integrated • Operating System (Factory Pre- Loaded): Windows 10 Professional • RAM Size (GB): 8, 16, 32, 64 GB or higher • Storage: HDD: 1TB • Cabinet form factor: SFF (7to13 litre) • Monitor Technology: 19.5, 21.5 or higher LED display • Bluetooth Connectivity: Yes • Input devices: Mouse and Keyboard • Mouse Connectivity: Wired • Keyboard connectivity: Wired.		
11	**MATLAB Software** MATLAB Communication System toolbox Signal Processing Toolbox DSP system toolbox	**05 user**	
12	**Digital Bench Top Multimeter** • Type: Bench Top • Display Resolution: 5.5 Digit • True RMS: Yes • Dual measurement/ Dual display: Yes • Range: Auto/ Manual • Measurement Speed: Selectable measurement speed, maximum 150 readings/s or better • DC Voltage Measurement: Range: up to 1000V or better • Characteristics: Accuracy: 0.02% or better • True RMS AC Voltage: Range: up to 750V or better • Measurement Characteristics: Accuracy: 0.2% or better • True RMS AC Current: Range: up to 10A or better Measurement Characteristics: Accuracy: 0.5% or better • Other measurements: 2W/4W Resistance,	**02 unit**	

	Continuity, Diode, Capacitance, Frequency, Temperature • Interface: USB device • Software: Software to be provided for remote control and saving results to PC • Accessories: Test Lead, User manual, Power Cable		
13	**Digital handheld Multimeter** • DC voltage range 200 mV, 2 V, 20 V, 200 V, 1000V, or better with respective resolution 0.1 mV, 1 mV, 10 mV, 100 mV, 1 V and better. and Accuracy ±(0.8 % rdg + 1 dgts) or better. Over load protection • AC voltage range (50 to 500 Hz) 200 mV, 2 V, 20 V, 200 V, 750V or better with respective Resolution 0.1 mV, 1 mV, 10 mV, 100 mV, 1 V 750 V and better. Accuracy 200 mV & 20 V ranges: ±(1.5 % rdg + 5 dgts) and 200 V & 750 V ranges: ±(2.0 % rdg + 5 dgts or better. • DC Current Ranges 20 mA, 200 mA, 10 A or better with respective Resolution 10 uA, 100 uA, 10 mA and Accuracy 20 mA to 200 mA ranges: ±(1.0 % rdg + 1 dgts), 10 A range: ±(3.0 % rdg + 3 dgts) or better • AC Current (50 Hz-500 Hz) Ranges 20 mA, 200 mA, 10 A with respective Resolution 10 uA, 100 uA, 10 mA with Accuracy 20 mA to 200 mA ranges: ±(2.0 % rdg + 5 dgts), 10 A range: ±(3.0 % rdg + 5 dgts) • Resistance Measuring range Ranges 200 Ω, 2 kΩ, 200 kΩ, 20 MΩ, 2000 MΩ, with resolution 0.1 Ω, 1.0 Ω, 100 Ω, 10 kΩ, 1 MΩ and Accuracy 200 Ω to 200 kΩ ranges: ±(1.0 % rdg + 4 dgts), 20 MΩ range: ±(2.0 % rdg + 4 dgts) and 2000 MΩ range: ±(5.0 % rdg + 10 dgts) • Capacitance Ranges 2 nF , 20 nF, 200 nF, 2.0 uF, 20 uF with respective Resolution 1 pF, 10 pF, 100 pF, 1 nF, 10 nF and Accuracy ±(4 % rdg + 10 dgts • Continuity test with audible Indication Less than 100 Ω and Response Time 100 ms • Diode test • Logic test ranging - Threshold Logic Hi (2.8 V ±0.8 V) / Logic Lo (0.8 V ±0.5 V)	**05 unit**	

	with over load protection 500 VDC/AC rms • hFE Transistor test • One-handed operation • Display 3 1/2 digit or better, 2000 count LCD and better Polarity Automatic, positive implied, negative polarity indication		
14	**Oscilloscope Probe** Oscilloscope Chord (1:1) BNC to crocodile clip of co-axial cable	**49 unit**	
15	**Computer Tables** Specification: • Computer table with key board drawer and table top Size of Computer Table ±10 mm (LXBXH) : 900 Mm X 600 Mm X 750 Mm	**05 unit**	
16	**UPS** Rating: 1.0KVA Technology: IGBT-PWM without inbuilt isolation transformer Input Power: single phase 160V - 260V sinewave,50Hz Output power: Single phase 230V +/-1% sinewave 50 Hz Backup time (Minutes): 60 Metering And Indications: Yes	**05 unit**	

Delivery Mode: FOR VSSUT, Burla

Total bid price F.O.R. VSSUT Burla {Same as grand total in (f) above} quoted items is Rs._____.

Place

Date:

Signature_____

Name_____

Business Address_____

Email _____

Contact Number_____

Affix Rubber stamp

Note:-

1. GST in connection with the items shall be shown separately.

2. The stipulations in Technical Specification will supersede above provisions.
3. The supplier shall keep sufficient stock of spares require during warranty period. In case the spares are required to be imported, it would be the responsibility of the supplier to import and get them custom cleared and pay all necessary duties.

Place:
Date:

Signature of Bidder
Business Address
Seal of the Bidder

ANNEXURE-II

WARRANTY MAINTENANCE CONTRACT AGREEMENT.

THIS AGREEMENT made the.....day of ....., 20___ between the **"The Registrar, Veer SurendraSai University of Technology, Burla"** (hereinafter "the Purchaser") of the one part and M/s..... (hereinafter called "the Supplier") of the other part:
WHEREAS the Purchaser invited bids for certain Goods & ancillary services viz, supply and commissioning of the instruments & equipment at Bhubaneswar including Comprehensive Warranty Maintenance Services and has accepted a bid by the Supplier for the instruments & equipment specified below at the Consignee site including Comprehensive Warranty maintenance Services for a period of 3 (Three) year from the date of installation & commissioning of the instruments & equipment as per award of Contract No..... dated.....

Name of the Equipment & machineries Qty

(To be filled in as per details of goods in the award of Contract)

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. Maintenance Services shall consist of Preventive and Corrective maintenance of equipment specified above & will include repair and replacement of parts free of cost during the warranty period of the equipment(s).
2. Preventive maintenance, six monthly once, which includes:

2.1 Check-up to ensure that device connection is proper, cabling is at proper condition etc.
2.2 Cleaning of the above instruments &equipments and checking the System Performance.
3. The Supplier is to furnish the tentative schedule of the preventive maintenance of Warranty Maintenance Contract (WMC) to be carried out.
4 The parts replaced must be new parts or equivalent in performance to new parts.
5. The Supplier will also provide the same maintenance service in case of the movement of equipment from the place of original installation to a different place or location, if the equipment is shifted by the Purchaser to another place or location at the cost and risk of the purchaser.
6. Any complaint informed through telephone must be acknowledged with a Complaint No. by the Supplier which will be noted by Consignee. All further contact with the Supplier on such complaint will be initiated through that Complaint No. Once rectification done, that No. will be cancelled by both parties. A register is to be maintained by the Supplier where complaints are to be noted along with Complaint No.
7. The maintenance shall normally be done at the earliest.
8. The Service Engineer of the Supplier will be allowed to handle the respective plant & machineries only in presence of the officer in charge at the Consignee site.
9. The Supplier should ensure that maintenance job is not hampered/delayed due to paucity of spares/inadequate manpower etc.
10. The Supplier should submit the services call report, to the Consignee for each and every service call without fail.
11. The Supplier evaluation data format for the WMC of Consignee systems may be filled up for necessary action.
12. All formats after filled up should be signed at the end of each page by the Supplier.

Signature

For the Supplier

Name:

Designation:

Address:

Telephone No:

ANNEXURE-III

MANUFACTURES' AUTHORISATION FORM

No._____/ Date _____/

To

The Registrar,
VSSUT Odisha
Burla, Sambalpur.

Dear Sir, Bid No._____

We _____ who are established and reputable manufacturers of _____ having factories at _____ _____ (Address of Factory) do here by authorize M/s._____ (Name and address of Agent) to submit a bid and sign the contract with you against the above bid.

* No company or firm or individual other than M/s._____ are authorized to bid and conclude the contract in regard to this business against this specific invitation for bid.

We hereby extend our full guaranty and warranty as per general conditions of contract for the goods and services offered by the above firm against this bid.

Yours faithfully,
(Signature for and on behalf of Manufacturers)

Note: This letter of authority should be on the letter head of the manufacturer and should be signed by a person, competent and having the power of attorney to bind the manufacturer. It should be included original by the Bidders in its bid.

- This para should be deleted for simple items where manufacturers sell the product through different stockiest.
- The Supplier/Managing Director of the Company (if the supplier is a Company) or the Power of Attorney Holder having specific power to signthe contract can only sign the contract/execute the agreement.

ANNEXURE-IV

DETAILS OF THE BIDDERS

Bid Reference No.
Name and address of the Bidder:

01 Name of the bidder
- a) Full postal address
- b) Full address of the premises
- c) Telegraphic address
- d) Telephone number
- e) Fax number
- f) E mail:
- g) PAN No
- h) TIN No

02 Total annual turn-over (value in Rupees)
03 Quality control arrangement details
04 Test certificate held
- a) Type test
- b) BIS/ISO certification
- c) Any other

05 Details of staff
- a) Technical
- b) Skilled
- c) Unskilled

06 Branch Office/ Contact Person/ Liaisoning Office in Odisha.
- a) Address
- b) Telephone No.
- c) e-mail,
- d) Fax

Signature and seal of the Bidder

ANNEXURE-V

Technical details of the equipment/ hardware/ firmware to be supplied by the bidder

Bid SlNo. of the item	Tender specification	Bidders Specification with make and model no (Enclose manufactures catalogue / brochurefor each item)	Deviation if anyWith university specification

Signature and seal of the Bidder