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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/ 2817 /2020 Date: 27/11/2020

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 "Measurement Lab, EEE, Prof. I/C, Mr. Bibhuti Prasad Sahoo 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 **4.30 P.M.** of date **21.12.2020**. 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 and their technical specifications are mentioned as below.

Details of the Equipment/Firmware

Sl.No	Name of the Equipment/Firmware /Experiment	Specification	Quantity (No. of units)
1.	**DC/AC Bridge circuits Expt. Panel** Experiment to be performed: Measurement of unknown resistance, inductance and capacitance using bridges and its realizations using	Bridge circuit to include: • Wheatstone's Bridge • Kelvin's Bridge • Maxwell's Bridge • Hay's Bridge • DC Sauty's Bridge • Owen's Bridge • Anderson's Bridge • Shearing Bridge	One Set

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	breadboard or using NI cRIO platforms.	• Wien bridge ✓ To be provided with 2 capacitor decades [100pF to 100uF]. 1 resistor decade [10E to 100mohm], 1 tapped wire wound 10 taps (0.01 ohm) 10k, 10T pot, 1000 ohm pot, fixed resistors of 10 & 4.7 ohm, ✓ Along with inbuilt power supply DC Supply : 5V / 1A. & ± 12V, 1A. 0 to 15V DC (Variable), 100 mA (Isolated), 0 to 30V DC (Variable), 100 mA (Isolated), High Volt DC 15V to 110V, 100mA AC Supply : 12-0-12V AC,150 mA. Short circuit Protected. ✓ Built in Function Generator: O/p Waveform : Sine, Triangle & TTL O/Ps Output Frequency : 1 Hz to 1MHz in 6 ranges, with amplitude & frequency control pots. ✓ O/P Voltage 20Vp-p max. (Sin/TRG) Modulation I/P : AM : - I/P voltage + 5V (100% modulation) O/P - For 0V (min), + 5V (max.) - 5V (Phase reversal of O/P) FM : I/P voltage ± 400mV (+ 50% modulation) ✓ Data Switches (10 No.) & bi-colour LED status indicators 10X2 Nos, for High/Low indication. Pulser switches (2 Nos.) with four debounced outputs - 2No. BNC to 2 channel banana adapter - 2No. 2 / 4 digit 7 segment display with BCD to 7 segment decoder ❖ System to include NextGen USB based MultiDevice Instruments for LabVIEW based analysis- ✓Two-channel USB digital OSCILLOSCOPE (1MΩ, ±25V, differential, 14-bit, 100MS/s, 30MHz) ✓Two-channel ARBITRARY FUNCTION GENERATOR (±5V, 14-bit, 09Mhz) ✓16-channel digital LOGIC ANALYZER (3.3V CMOS and 1.8V or 5V tolerant, 100MS/s)	

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		✓16-channel virtual DIGITAL I/O including buttons, switches, and LEDs – perfect for logic training applications ✓Two input/output digital trigger signals for linking multiple instruments (3.3V CMOS) ✓Single channel VOLTMETER (AC, DC, ±25V) ✓NETWORK ANALYZER – Bode, Nyquist, Nichols transfer diagrams of a circuit. Range: 1Hz to 10MHz ✓SPECTRUM ANALYZER – power spectrum and spectral measurements (noise floor, SFDR, SNR, THD, etc.) ✓DIGITAL BUS ANALYZERS (SPI, I²C, UART, Parallel)	
2	**Linear Variable Differential Transformer Unit** Experiment to be performed: To plot the displacement-voltage characteristics of the LVDT.	**LVDT** • Range: ±50mm or total 100mm (typical) • Sensitivity : 25mV/cm (typical) • Operating frequency : 5KHz±5% • Displacement measurement on a mm scale with fine motion control • Carrier source (internal): 5KHz±5%; 1.5V (nominal) • Built-in 3½ digit DVM for output reading • IC based balanced demodulator circuit • IC controlled internal power supplies • 220V±10%, 50Hz mains operation • Test points should be provided on the kit to measure/observe the signals. • Suitable sized Interconnection cables; Patch cords	One Set
3	**SYNCHRO DEVICES** Experiment to be performed: Study of Synchro-transmitter &	• Synchro transmitter-receiver pair with calibrated dials • Locking system for receiver rotor • Receiver use as control transformer • Built-in balanced demodulator circuit • Panel meter for ac/dc voltages	One Set

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	synchro transformer.	• All internal power from the 220 V/50 Hz mains	
4	**Measurement Of Speed Using Photoelectric Pickup** Experiment to be performed: Speed measurement of DC Motor by none-contact type transducer.	• On-board Display 4digit digital counter for speed(RPM) • Tachogenerator: Electronic • On-board potentiometer for varying speed with ON/OFF switch • On-board photo electric sensor and DC motor with shaft • On-board push button to reset the count • On-board signal conditioning circuit based on op-amps • Test points are provided at various stages to observe the signals and waveforms • Interconnection: 2/4mm banana sockets • DC Supply: Built-in (IC) DC regulated power supplies • 220V ±10%, 50Hz mains operated	One unit
5	**Compensation Design** Experiment to be performed: Find the frequency response of a Lag and Lead compensator.	• Simulated 'uncompensated' system having adjustable damping. Peak percent overshoot MP, variable from 20% to 50%, and steady state error variables from 50% to 0.5% • Compensation network implementation through built-in variable gain amplifier. Gain is adjustable from 1 to 11 • Built-in square and sine wave generators for transient and frequency response studies. Frequency adjustable from 25Hz – 800Hz (approx.) • 220V±10%, 50Hz mains operation	One unit
6	**Relay Control System** Experiment to be performed: To study the characteristic of a relay and analyze the relay control system (Phase Plane).	• Simulated electronic relay using high speed IC's • Simulated 2nd order linear plant. Facility for displaying x and $\dot{x}$ signals • Dead zone variable from 0-600mV (approx.) • Hysteresis variable from 0-500mV (approx.) • Built-in signal sources – sine and square Amplitude : 0-1V (min.) variable Frequency: 10, 20, 40, 80, 100, 200, 400, 800	On unit

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		and 1000Hz • IC regulated internal power supplies • 220V±10%, 50Hz mains operation	
7	**AC servomotor** Experiment to be performed: Study of a two-phase AC servomotor and its transfer function parameters.	Important subsystems of the unit must include • 2-phase a.c. servomotor - 12V/ 50Hz per phase • Small generator for electrical loading system to compute torque • an integrated speed sensor with 4-digit display in r.p.m. • A time-constant measurement circuit with 3-digit display in milli seconds • A three step a.c. source with built-in 3½ digit r.m.s. voltmeter • 3½ digit d.c. panel meter • Voltage regulated internal supplies	One unit
8	**Trainer For P,PI, PID Control system with DC SERVO Motor** **Position control setup** Experiment to be performed: To observe the time response of a second order process with P, PI, PID control and apply PID control to a DC servomotor.	**Basic Resources on Top board** ❖ **Built in power supply** ✓ DC supply +12V,500mA. ✓ 1phase sine reference for cosine firing 30Vpp max. 17Vdc, 500mA unregulated for driving pulse, ✓ Variable DC power supply : 7 to 14V/3A ❖ **Display** A) DPM - 2Nos. i) For Temp. upto 1000C & intensity in Lux (2000) ii) For speed 2000 rpm & voltage upto 20V. B) Analog Meter - 2Nos. i) Centre zero for display of process error (+9V) ii) For MV/SP (0-2.5V) ❖ **Operating voltage** ✓ Switch selectable 220-240Vac, ±10%, 50Hz, 75VA ❖ **Online monitoring / Data acquisition / PID Software :** on Installable (CD) works under XP, WIN7/8/10 PC with parallel port / USB . ❖ **Computer Interface Adapter** ✓ Opto-isolated Adaptor to prevent damage to PC parallel port (25 pin LPT) due to wrong	One set

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		connections. Interfaces through 25 pin M to F cable 1mtr Length. ✓ 4 ADC channels : 0 to 2.5V full scale. ✓ 1 DAC channel : O/P 2.5 V FS. ✓ V to I Function block : Input : 0-2.5Vdc ✓ O/p: 0-20 or 4-20mA, in 100E load Max; ✓ USB IO module to interface 25 pin D connector on CIA panel to USB PC port enclosed in 25 Pin D shell using Type A to mini B cable. **DC Servo Position Control Panel specification:** ✓ PMDC Motor 12V DC, 40-Watt ND RPM 2000 RPM with gear box (Ratio 30 :1) ✓ Loading: Using PMDC Motor @ 12V/5A max. Servo Amplifer with built in 12V/3A power supply.	
9	**Digital Control System** Experiment to be performed: To study digital control of a simulated system using an 8 bit microprocessor	• Second order simulated process (analog process) • Built-in D/A and A/D circuits (8-bit) • 8085 based µP kit as digital controller with user software in 8K EPROM • 16-bit arithmetic for algorithmic calculations • 16 built-in levels of P, I and D gains each. Complete flexibility for the user to develop own software • Square wave test input (internal) • IC regulated internal built-in power supplies • 220V±10%, 50Hz mains operation	One unit
10	**Linear System Simulator** Experiment to be performed: Study of a linear system simulator and learn about linear approximations of a	• To Simulate first, second and third order system of type-0 and type-1 (4 combinations) • Calibrated variable gain amplifier (Resolution 1 : 1000) • Built-in signal sources: Square wave and Triangular • Frequency : 45-90Hz • Amplitude: 0-2.5V approximately • Trigger output for perfectly steady display on CRO	One unit

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	non-linear functions or a system.	• Uncommitted amplifier for phase adjustment • Provision for disturbance inputs • 220V±10%, 50Hz mains operation	
11	Experiment to be performed: Study of feedback characteristic using Amplidyne	ELECTRICAL CONTROL TRAINER MODEL : XPOECT, ✓ Master Unit consisting of computer interface adaptor for monitoring, DPMS, Power Supplies	One unit
12	**Temperature Sensing Trainer with LabVIEW based analysis feature** Experiment to be performed: 1.Study and plot the characteristics of different temperature sensors/ transducers namely RTD, Thermistor and Thermocouples and its calibration with soft temperature sensors using LM 34/35 or AD 220. 2. Study of a Data Acquisition System.	• Instrumentation Amplifier to amplify thermocouple signals • Built in heat bar / mini oven driven by Power Amplifier of sufficient wattage • Temp. selection upto 95 degree C in 5 ranges with ON / OFF closed loop control. ❖ **Different Temperature sensors :** • A. Thermocouple J with room temp. calibration pot. • B. Thermocouple K with room temp. calibration pot. • C. Thermister (100K), • D. RTD PT100, E. IC sensor (LM 34/35 or AD 220) • F. Bimetallic switch ❖ **Built in power supply:** ✓ DC supply +/- 12V,500mA, Variable 7V to 14V @ 3Amp. ✓ Built in function generator ❖ **O/P waveform** ✓ sine, triangular & square, TTL O/P freq. 1Hz to 200KHz in ranges with amplitude & freq. control pots, o/p voltage 10Vpp. ❖ **On board measurement:** ✓ DC voltmeter 2V/20V (1 No) & LED BAR graph with 10 LED indicator to display 0-2.5V or 0-4V input. ❖ **Computer interface DAQ card programmable with LabVIEW:**	One Set

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		✓DAQ USB Device with NI DAQmx Support; ✓DAQ consist of 08 Single ended or 04 Differential Analog Input Channel with 16 bit resolution and 50 kS/s sampling rate input ±10 V, ✓ 02 Analog Output channels with 16 Bit resolution 5 kS/s simultaneous per channel update rate in the rage of ±10 V, ✓ 13 Digital Input/Output line. **Software:** One Application Software to run the experiments in PC_BASED-Mode.	
13	**Bread Board Trainer**	• Bread board: With 1280 tie points & 400 distribution points totalling to 1680 points • with built in power supply: +5V, ±12V, variable 0 to ±12V ❖ **Computer connectivity option through NextGen USB based Multidevice Instruments–** ✓Two-channel USB digital OSCILLOSCOPE (1MΩ, ±25V, differential, 14-bit, 100MS/s, 30MHz) ✓Two-channel ARBITRARY FUNCTION GENERATOR (±5V, 14-bit, 09Mhz) ✓16-channel digital LOGIC ANALYZER (3.3V CMOS and 1.8V or 5V tolerant, 100MS/s) ✓16-channel PATTERN GENERATOR (3.3V CMOS, 100MS/s) ✓16-channel virtual DIGITAL I/O including buttons, switches, and LEDs – perfect for logic training applications ✓Two input/output digital trigger signals for linking multiple instruments (3.3V CMOS) ✓Single channel VOLTMETER (AC, DC, ±25V) ✓NETWORK ANALYZER – Bode, Nyquist, Nichols transfer diagrams of a circuit. Range: 1Hz to 10MHz ✓SPECTRUM ANALYZER – power spectrum and spectral measurements (noise floor, SFDR, SNR, THD, etc.) ✓DIGITAL BUS ANALYZERS (SPI, I²C, UART, Parallel)	One Unit

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		✓Two PROGRAMMABLE POWER supplies (0…+5V , 0…-5V). The maximum available output current and power depend on the Analog Discovery 2 powering choice: 250mW max for each supply or 500mW total	
14	**Speed Transducer Trainer Kit(Using Electromagnetic Pickup)** Experiment to be performed: Speed measurement of DC Motor by none-contact type transducer.	✓ Transducer : Non-Contact type ✓ Motor: 12V, 3000 RPM permanent magnet DC motor with a low power magnet attached with shaft of the motor. ✓ Speed Control: variable with {on/off switch and Potentiometer}. ✓ Electromagnetic pick up dia : 30mm,Cu wound ✓ Signal Conditioner Based on op amps; ✓ Test points should be provided on the kit to measure/observe the signals. ✓ Display:4 digit digital counter for speed(RPM) ✓ Power supply Mains: 230V/50Hz AC circuit &overload protected.	One Set
15	**Smart Data Acquisition and Control Setup with Sensor, Actuator and Peripheral package:** Experiment to be performed: Study the role of various sensors and actuators in measuring physical / electrical parameters or variables and able to distinguish between conventional and smart sensors.	**Complete package of embedded type DAQ based all types of measurement & control** **The features of system are:** ✓ 10 analog inputs, 6 analog outputs, 40 digital I/O lines ✓ Wireless , ✓ Xilinx **FPGA and dual-core ARM Cortex-A9 processor** ✓ Programmable with LabVIEW or C; adaptable for different programming levels **Kit to include:** ✓ LCD display, serial I/F, ✓ Temperature sensor ,3-axis accelerometer ✓ Ambient light sensor , ✓ 3-axis compass,3-axis digital gyroscope ✓ Infrared proximity sensor: 10 cm to 80 cm ,ultrasonic range finder, ✓ GWS Servo: S03TXF STD ,GWS Servo: Continuous rotation S35 STD , ✓ DC motor/gearbox 1:19: Custom 12V motor designed for Digilent robot kits ,	One Set

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		✓ Motor Adapter for NI myRIO: Compatible with gear motors and servos ,Bluetooth interface , ✓ Digital potentiometer ,16-button keypad ✓ IC25LC040A Serial EEPROM ,UART Crossover Cable, ✓ Pmod Cable kit: 6", 6-pin Pmod cable , Pmod Cable Kit: 6", 12-pin Pmod cable , MTE Cable: 4-pin to 2x2-pin MTE cable , ✓ 6-pin Headers: 6-pin header and gender changer (5- pack) , ✓ 2x6-pin Headers: 2x6-pin header (5-pack) • **Linear system with actuator control (with Stepper motor)**	
16	Experiment to be performed: Calibration of DC Milli-Ammeter by a DC Potentiometer	AVO Meter , with 100nA MC meter Lamp, Relays, 4 Cells, standalone Expt. panel with built in Power supply	One
17	**Digital Storage Oscilloscope**	• Bandwidth:100 MHz, • No. of Channels-2,Sampling rate-1GSa/s, • Maximum input-400V(peak ac+dc), Record length-2 Mega points, • High Resolution TFT LCD display 2 mV/Div to 10V/div of vertical range, • 5ns/div to 50s/div of time base range 400 wfm/s of Waveform Update rate Memory-16Kpts, • Resolution;8 bit, • USB 2.0 host port on front panel easy data storage and for easy connection to PC	Four
18	**Digital Multimeter**	• Count: 4000 • AVG responding • Voltage: DC: 1000 volts; AC: 1000 volts; DC Accuracy: ± 0.5% + 3 digit; AC Accuracy: ± 1% + 3 digit • Current: DC: 10 amps; AC: 10 amps; DC Accuracy: ± 1.5% + 3 digit; AC Accuracy: ± 1.5% + 3 digit • Resistance: 40 M ohm; Resistance Accuracy: ± 1.5% + 3 digit	Two

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		• Capacitance: 1000 µF; Capacitance Accuracy: ± 5% + 5 digit • CAT III 600 volts safety rating • 6" or better display with bright white backlight • Voltage, resistance, continuity, capacitance measurement • Input terminal for AC and DC current measurements upto 10 A current • Diode test, data hold, min/max • calibration certificate	

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 Surendra Sai 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 - 02/12/2020 at 05.00 PM

b) Last date and time for Receipt of bids - 21/12/2020 up to 4.30 PM

c) Time and date of opening of Tender & Technical bid 22/12/2020 at 10.30 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

27.11.2020

REGISTRAR

VSSUT, Burla

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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.

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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.

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3.5 GST clearance certificate up to **date** where applicable.

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.

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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 The price of the each item shall be quoted as per the prescribed Price Schedule Format at **Annexure-I** along with price break up of custom duty, Excise Duty, CST, Packing, Forwarding and Handling charges, Insurance charges, ET, Freight up to destination including unloading, GST, commissioning including testing and training with total price per item at **FOR** destination. The bidders are required to submit the individual price of each item as indicated in the schedule of requirements.

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

4.4 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.**

4.5 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.

5.4 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

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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.

5.5 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.

5.6 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, and other levies payable on the raw materials and components, job contract shall be included in the total price.
- 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.

5.7 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.

5.8 EMD

All bidders are required to submit **EMD ₹ 40,570/- 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 (₹).

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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.

5.9 **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.

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5.10 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.

5.11 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.

5.12 BID OPENING

5.13 The ***Purchaser*** will open all bids, in the presence of bidder's representatives who choose to attend at 22/12/2020 at 10.30 AM at the Office of the **"The Registrar, Veer Surendra Sai University of Technology, Burla".**

5.14 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.

5.15 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.

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5.16 **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 software etc. 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.**

5.17 **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.**

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5.18 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.

5.19 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.

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- **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.

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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 20 (twenty) 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.

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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.

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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.

27.11.2020

REGISTRAR

VSSUT, Burla

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ANNEXURE-I

Format for Price Scheduled

Sl.No.	Description of Item and Model	Quantity	Basic Unit Price
01	**DC/AC Bridge circuits Expt. Panel** Bridge circuit to include: • Wheatstone's Bridge • Kelvin's Bridge • Maxwell's Bridge • Hay's Bridge • DC Sauty's Bridge • Owen's Bridge • Anderson's Bridge • Shearing Bridge • Wien bridge ✓ To be provided with 2 capacitor decades [100pF to 100uF]. 1 resistor decade [10E to 100mohm], 1 tapped wire wound 10 taps (0.01 ohm) 10k, 10T pot, 1000 ohm pot, fixed resistors of 10 & 4.7 ohm, ✓ Along with inbuilt power supply DC Supply : 5V / 1A. & ± 12V, 1A. 0 to 15V DC (Variable), 100 mA (Isolated), 0 to 30V DC (Variable), 100 mA (Isolated), High Volt DC 15V to 110V, 100mA AC Supply : 12-0-12V AC,150 mA. Short circuit Protected. ✓ Built in Function Generator: O/p Waveform : Sine, Triangle & TTL O/Ps Output Frequency : 1 Hz to 1MHz in 6 ranges, with amplitude & frequency control pots. ✓ O/P Voltage 20Vp-p max. (Sin/TRG) Modulation I/P : AM : - I/P voltage + 5V (100% modulation) O/P - For 0V (min), + 5V (max.) - 5V (Phase reversal of O/P) FM : I/P voltage ± 400mV (+ 50% modulation) ✓ Data Switches (10 No.) & bi-colour LED status indicators 10X2 Nos, for High/Low indication. Pulser switches (2 Nos.) with four debounced outputs - 2No. BNC to 2 channel	**01 Set.**	

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	banana adapter - 2No. 2 / 4 digit 7 segment display with BCD to 7 segment decoder ❖ System to include NextGen USB based MultiDevice Instruments for LabVIEW based analysis- ✓Two-channel USB digital OSCILLOSCOPE (1MΩ, ±25V, differential, 14-bit, 100MS/s, 30MHz) ✓Two-channel ARBITRARY FUNCTION GENERATOR (±5V, 14-bit, 09Mhz) ✓16-channel digital LOGIC ANALYZER (3.3V CMOS and 1.8V or 5V tolerant, 100MS/s) ✓16-channel PATTERN GENERATOR (3.3V CMOS, 100MS/s) ✓16-channel virtual DIGITAL I/O including buttons, switches, and LEDs – perfect for logic training applications ✓Two input/output digital trigger signals for linking multiple instruments (3.3V CMOS) ✓Single channel VOLTMETER (AC, DC, ±25V) ✓NETWORK ANALYZER – Bode, Nyquist, Nichols transfer diagrams of a circuit. Range: 1Hz to 10MHz ✓SPECTRUM ANALYZER – power spectrum and spectral measurements (noise floor, SFDR, SNR, THD, etc.) ✓DIGITAL BUS ANALYZERS (SPI, I²C, UART, Parallel)		
02	**Linear Variable Differential Transformer Unit** • Range: ±50mm or total 100mm (typical) • Sensitivity : 25mV/cm (typical) • Operating frequency : 5KHz±5% • Displacement measurement on a mm scale with fine motion control • Carrier source (internal): 5KHz±5%; 1.5V (nominal) • Built-in 3½ digit DVM for output reading • IC based balanced demodulator circuit	**01 Set**	

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	• IC controlled internal power supplies • 220V±10%, 50Hz mains operation • Test points should be provided on the kit to measure/observe the signals. • Suitable sized Interconnection cables; Patch cords		
03	**SYNCHRO DEVICES** • Synchro transmitter-receiver pair with calibrated dials • Locking system for receiver rotor • Receiver use as control transformer • Built-in balanced demodulator circuit • Panel meter for ac/dc voltages • All internal power from the 220 V/50 Hz mains	**01 Set**	
04	**Measurement Of Speed Using Photoelectric Pickup** • On-board Display 4digit digital counter for speed(RPM) • Tachogenerator: Electronic • On-board potentiometer for varying speed with ON/OFF switch • On-board photo electric sensor and DC motor with shaft • On-board push button to reset the count • On-board signal conditioning circuit based on op-amps • Test points are provided at various stages to observe the signals and waveforms • Interconnection: 2/4mm banana sockets • DC Supply: Built-in (IC) DC regulated power supplies • 220V ±10%, 50Hz mains operated	**01 Set**	
5	**Compensation Design** • Simulated 'uncompensated' system having adjustable damping. Peak percent overshoot MP, variable from 20% to 50%, and steady state error variables from 50% to 0.5% • Compensation network implementation through built-in variable gain amplifier. Gain is adjustable from 1 to 11 • Built-in square and sine wave generators for	**01 Set**	

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	transient and frequency response studies. Frequency adjustable from 25Hz – 800Hz (approx.) • 220V±10%, 50Hz mains operation		
6	**Relay Control System** • Simulated electronic relay using high speed IC's • Simulated 2nd order linear plant. Facility for displaying x and $\dot{x}$ signals • Dead zone variable from 0-600mV (approx.) • Hysteresis variable from 0-500mV (approx.) • Built-in signal sources – sine and square Amplitude : 0-1V (min.) variable Frequency: 10, 20, 40, 80, 100, 200, 400, 800 and 1000Hz • IC regulated internal power supplies • 220V±10%, 50Hz mains operation	**01 Set**	
7	**AC servomotor** Important subsystems of the unit must include • 2-phase a.c. servomotor - 12V/ 50Hz per phase • Small generator for electrical loading system to compute torque • an integrated speed sensor with 4-digit display in r.p.m. • a time-constant measurement circuit with 3-digit display in milli seconds • a three step a.c. source with built-in 3½ digit r.m.s. voltmeter • 3½ digit d.c. panel meter • Voltage regulated internal supplies	**01 Set**	
8	**Trainer For P,PI, PID Control system with DC SERVO Motor Position control setup** **Basic Resources on Top board** ❖ **Built in power supply** ✓ DC supply +12V,500mA.	**01 Set**	

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	✓ 1phase sine reference for cosine firing 30Vpp max. 17Vdc, 500mA unregulated for driving pulse, ✓ Variable DC power supply : 7 to 14V/3A ❖ **Display** B) DPM - 2Nos. i) For Temp. upto 1000C & intensity in Lux (2000) ii) For speed 2000 rpm & voltage upto 20V. B) Analog Meter - 2Nos. i) Centre zero for display of process error (+9V) ii) For MV/SP (0-2.5V) ❖ **Operating voltage** ✓ Switch selectable 220-240Vac, ±10%, 50Hz, 75VA ❖ **Online monitoring / Data acquisition / PID Software :** on Installable (CD) works under XP, WIN7/8/10 PC with parallel port / USB . ❖ **Computer Interface Adapter** ✓ Opto-isolated Adaptor to prevent damage to PC parallel port (25 pin LPT) due to wrong connections. Interfaces through 25 pin M to F cable 1mtr Length. ✓ 4 ADC channels : 0 to 2.5V full scale. ✓ 1 DAC channel : O/P 2.5 V FS. ✓ V to I Function block : Input : 0-2.5Vdc ✓ O/p: 0-20 or 4-20mA, in 100E load Max; ✓ USB IO module to interface 25 pin D connector on CIA panel to USB PC port enclosed in 25 Pin D shell using Type A to mini B cable. **DC Servo Position Control Panel specification:** ✓ PMDC Motor 12V DC, 40-Watt ND RPM 2000 RPM with gear box (Ratio 30 :1) ✓ Loading: Using PMDC Motor @ 12V/5A max. Servo Amplifer with built in 12V/3A power supply.		
9	**Digital Control System** • Second order simulated process (analog process) • Built-in D/A and A/D circuits (8-bit)	**01 Set**	

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	• 8085 based μP kit as digital controller with user software in 8K EPROM • 16-bit arithmetic for algorithmic calculations • 16 built-in levels of P, I and D gains each. Complete flexibility for the user to develop own software • Square wave test input (internal) • IC regulated internal built-in power supplies • 220V±10%, 50Hz mains operation		
10	**Linear System Simulator** • To Simulate first, second and third order system of type-0 and type-1 (4 combinations) • Calibrated variable gain amplifier (Resolution 1 : 1000) • Built-in signal sources: Square wave and Triangular • Frequency : 45-90Hz • Amplitude: 0-2.5V approximately • Trigger output for perfectly steady display on CRO • Uncommitted amplifier for phase adjustment • Provision for disturbance inputs • 220V±10%, 50Hz mains operation	**01 Set**	
11	**Study of feedback characteristic using Amplidyne** ELECTRICAL CONTROL TRAINER MODEL : XPOECT, ✓ Master Unit consisting of computer interface adaptor for monitoring, DPMS, Power Supplies	**01 Set**	
12	**Temperature Sensing Trainer with LabVIEW based analysis feature** • Instrumentation Amplifier to amplify thermocouple signals • Built in heat bar / mini oven driven by Power Amplifier of sufficient wattage • Temp. selection upto 95 degree C in 5 ranges with ON / OFF closed loop control.	**01 Set**	

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	❖ **Different Temperature sensors :** • A. Thermocouple J with room temp. calibration pot. • B. Thermocouple K with room temp. calibration pot. • C. Thermister (100K), • D. RTD PT100, E. IC sensor (LM 34/35 or AD 220) • F. Bimetallic switch ❖ **Built in power supply:** ✓ DC supply +/- 12V,500mA, Variable 7V to 14V @ 3Amp. ✓ Built in function generator ❖ **O/P waveform** ✓ sine, triangular & square, TTL O/P freq. 1Hz to 200KHz in ranges with amplitude & freq. control pots, o/p voltage 10Vpp. ❖ **On board measurement:** ✓ DC voltmeter 2V/20V (1 No) & LED BAR graph with 10 LED indicator to display 0-2.5V or 0-4V input. ❖ **Computer interface DAQ card programmable with LabVIEW:** ✓DAQ USB Device with NI DAQmx Support; ✓DAQ consist of 08 Single ended or 04 Differential Analog Input Channel with 16 bit resolution and 50 kS/s sampling rate input ±10 V, ✓ 02 Analog Output channels with 16 Bit resolution 5 kS/s simultaneous per channel update rate in the rage of ±10 V, ✓ 13 Digital Input/Output line. **Software:** One Application Software to run the experiments in PC_BASED-Mode.		
13	**Bread Board Trainer** • Bread board: With 1280 tie points & 400 distribution points totalling to 1680 points • with built in power supply: +5V, ±12V, variable 0 to ±12V	**01 Set**	

Vals

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	❖ **Computer connectivity option through NextGen USB based Multidevice Instruments–** ✓Two-channel USB digital OSCILLOSCOPE (1MΩ, ±25V, differential, 14-bit, 100MS/s, 30MHz) ✓Two-channel ARBITRARY FUNCTION GENERATOR (±5V, 14-bit, 09Mhz) ✓16-channel digital LOGIC ANALYZER (3.3V CMOS and 1.8V or 5V tolerant, 100MS/s) ✓16-channel PATTERN GENERATOR (3.3V CMOS, 100MS/s) ✓16-channel virtual DIGITAL I/O including buttons, switches, and LEDs – perfect for logic training applications ✓Two input/output digital trigger signals for linking multiple instruments (3.3V CMOS) ✓Single channel VOLTMETER (AC, DC, ±25V) ✓NETWORK ANALYZER – Bode, Nyquist, Nichols transfer diagrams of a circuit. Range: 1Hz to 10MHz ✓SPECTRUM ANALYZER – power spectrum and spectral measurements (noise floor, SFDR, SNR, THD, etc.) ✓DIGITAL BUS ANALYZERS (SPI, I²C, UART, Parallel) ✓Two PROGRAMMABLE POWER supplies (0…+5V , 0…-5V). The maximum available output current and power depend on the Analog Discovery 2 powering choice: 250mW max for each supply or 500mW total		
14	**<u>Speed Transducer Trainer Kit(Using Electromagnetic Pickup)</u>** ✓ Transducer : Non-Contact type ✓ Motor: 12V, 3000 RPM permanent magnet DC motor with a low power magnet attached with shaft of the motor. ✓ Speed Control: variable with {on/off switch and Potentiometer}.	**01 Set**	

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	✓ Electromagnetic pick up dia : 30mm,Cu wound ✓ Signal Conditioner Based on op amps; ✓ Test points should be provided on the kit to measure/observe the signals. ✓ Display:4 digit digital counter for speed(RPM) ✓ Power supply Mains: 230V/50Hz AC circuit & overload protected.		
15	**<u>Smart Data Acquisition and Control Setup with Sensor, Actuator and Peripheral package</u>** **Complete package of embedded type DAQ based all types of measurement & control** **The features of system are:** ✓ 10 analog inputs, 6 analog outputs, 40 digital I/O lines ✓ Wireless , ✓ Xilinx **FPGA and dual-core ARM Cortex-A9 processor** ✓ Programmable with LabVIEW or C; adaptable for different programming levels **Kit to include:** ✓ LCD display, serial I/F, ✓ Temperature sensor ,3-axis accelerometer ✓ Ambient light sensor , ✓ 3-axis compass,3-axis digital gyroscope ✓ Infrared proximity sensor: 10 cm to 80 cm ,ultrasonic range finder, ✓ GWS Servo: S03TXF STD ,GWS Servo: Continuous rotation S35 STD , ✓ DC motor/gearbox 1:19: Custom 12V motor designed for Digilent robot kits , ✓ Motor Adapter for NI myRIO: Compatible with gear motors and servos ,Bluetooth interface , ✓ Digital potentiometer ,16-button keypad ✓ IC25LC040A Serial EEPROM ,UART Crossover Cable,	**01 Set**	

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	✓ Pmod Cable kit: 6", 6-pin Pmod cable , Pmod Cable Kit: 6", 12-pin Pmod cable , MTE Cable: 4-pin to 2x2-pin MTE cable , ✓ 6-pin Headers: 6-pin header and gender changer (5- pack) , ✓ 2x6-pin Headers: 2x6-pin header (5-pack) • **Linear system with actuator control (with Stepper motor)**		
16	**Calibration of DC Milli-Ammeter by a DC Potentiometer** AVO Meter , with 100nA MC meter Lamp, Relays, 4 Cells, standalone Expt. panel with built in Power supply	**01 Set**	
17	**Digital Storage Oscilloscope** • Bandwidth:100 MHz, • No. of Channels-2,Sampling rate-1GSa/s, • Maximum input-400V(peak ac+dc), Record length-2 Mega points, • High Resolution TFT LCD display 2 mV/Div to 10V/div of vertical range, • 5ns/div to 50s/div of time base range 400 wfm/s of Waveform Update rate Memory-16Kpts, • Resolution;8 bit, • USB 2.0 host port on front panel easy data storage and for easy connection to PC	**Four**	
18	**Digital Multimeter** • Count: 4000 • AVG responding • Voltage: DC: 1000 volts; AC: 1000 volts; DC Accuracy: ± 0.5% + 3 digit; AC Accuracy: ± 1% + 3 digit • Current: DC: 10 amps; AC: 10 amps; DC Accuracy: ± 1.5% + 3 digit; AC Accuracy: ± 1.5% + 3 digit • Resistance: 40 M ohm; Resistance Accuracy: ± 1.5% + 3 digit • Capacitance: 1000 µF; Capacitance Accuracy: ± 5% + 5 digit • CAT III 600 volts safety rating • 6" or better display with bright white backlight • Voltage, resistance, continuity, capacitance measurement	**Two**	

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	• Input terminal for AC and DC current measurements upto 10 A current • Diode test, data hold, min/max • calibration certificate		
19		(+) Freight & Insurance charges if any	
		(+) GST	
		(+) Installation & Commissioning charges, if any	
		(+) Any other charges (if applicable)	
		Grand total F.O.R VSSUT Burla	

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. In case of discrepancy between unit price and total prices, THE UNIT PRICE shall prevail.
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

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ANNEXURE-II

WARRANTY MAINTENANCE CONTRACT AGREEMENT.

THIS AGREEMENT made the.....day of ....., 20___ between the **"The Registrar, Veer Surendra Sai 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.

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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:

Bibhuti Bhusan Sahoo.
Prof I/C,
Measurement Lab, EEE

C/P -70

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 there 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 letterhead 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 sign the contract can only sign the contract/execute the agreement.

Vale

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C/P-69

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

Bibhuti Prasad Sahoo.
Asst Prof,
Measurement Lab, EEE

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ANNEXURE-V

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

Bid Sl No. of the item	Tender specification	Bidders Specification with make and model no (Enclose manufactures catalogue / brochure for each item)	Deviation if any With university specification

Signature and seal of the Bidder

Bibhuti Bhusan Sahoo
Prof. I/C, Measurement Lab
EEE Dept.