



# Central University of Orissa

(Established Under the Act of Parliament, 2009)

Landiguda, Dist.Koraput, Odisha. Pin.: 764 021.

06852-288209, 288238, Fax.06852-288225

Ref.:CUO/Admn./Instruments& Equipments/47

Dt.09.11.2017

## NOTICE INVITING TENDER

The University desires to procure **Instruments and Equipments** for Central University of Orissa, Landiguda, Koraput, Odisha. Sealed Quotations are invited for supply of the required Instruments and Equipments from manufacturers / authorized dealers. The sealed quotations may be submitted on or before 06.12.2017 by 15.00Hrs. as per the terms and conditions prescribed.

For further details please log on to our website: [www.cuo.ac.in](http://www.cuo.ac.in).

**Sd/-**  
**Vice-Chancellor**

## **TERMS & CONDITIONS:**

### **I. ESSENTIAL QUALIFICATION:**

The tenderers shall fulfill the following eligibility criteria, failing which their quotations will be summarily rejected:

- a. The tenderer must possess valid License, Registration etc. issued by the Competent Authority as applicable.
- b. If the tenderer is the authorized dealer / sole distributor of the items, the Certificate to this effect should be attached.
- c. The tenderer must have satisfactorily completed:
  - i. One Order of Rs.1.00 Lakh or more
  - ii. Two Orders of Rs.0.50 lakh each or more issued by any Govt./ Autonomous/ PSU Organization (Central or State) for supply of same or similar item / services during the last 03 Financial Years (i.e. 2014-15, 2015-16 and 2016-17) and the Current Financial Year.

Note: (i) The supply in progress and supply which is not satisfactorily completed will not be considered; (ii) Supply executed in any private organization will not be considered.

- d. The total turnover of the tenderer shall not be less than Rs.10.00 lakhs during the last 03 Financial Years (2014-15, 2015-16 and 2016-17) and the Current Financial Year.
- e. The tenderer must deposit Earnest Money (EMD) @ 2% of the Tender Value for the item quoted along with their tender in the form of Demand Draft drawn in favour of Central University of Orissa payable at Koraput.
- f. The tenderer must deposit the cost of tender document of Rs.500.00 (Rupees Five hundred only) in the form of demand draft drawn in favour of Central University of Orissa payable at Koraput. The cost of the tender document is non-refundable.
- g. The tenderer must possess his own Bank Account, PAN and G.S.T No.

## **II. DOCUMENTS TO BE ENCLOSED**

**The tenderer shall submit copies of the following documents along with the tender, failing which their quotation will be summarily rejected:**

1. Copy of registration / license issued by the Competent Authority.
2. Completion Certificate issued by the authority with reference to Sl.No.C above consisting of the following details:
  - i. Description of items supplied
  - ii. Purchase Order No. & Date
  - iii. Value of Purchase Order
  - iv. Date of commencement of supply
  - v. Date of completion of supply
  - vi. Quantity supplied
  - vii. Whether supply completed or not
3. Copy of income tax returns and / or annual accounts of the last 03 Financial Years.
4. Copies of Bank Account, PAN, GST Registration Certificate.
5. Demand Draft of Rs...../- (Rupees ..... only) drawn in favour of Central University of Orissa payable at Koraput towards value of EMD @2% of the Tender Value.
6. Demand Draft of Rs.500.00 (Rupees Five hundred only) towards cost of tender document drawn in favour of Central University of Orissa payable at Koraput which is not refundable.
7. Certificate of dealership / distributorship as applicable.

## **III. INSTRUCTIONS TO THE BIDDER:**

1. Two Part Bidding : The tenderer shall submit their bids by two part bidding: Technical Bid and Price Bid.

Technical Bid shall contain the technical specification of the items to be supplied and the Price Bid shall contain the price of the items to be supplied and taxes if any. The price shall be quoted in INR.

2. Bid Opening Date and Time : The tenderers may send their quotations by speed post or registered post or in person only, addressed to the Dy. Registrar, Central University of Orissa, Landiguda, Koraput, Odisha – 764 021 so as to reach the University on or before 06.12.2017 by 15.00Hrs. Super-scribed as "Tender for Supply of Instruments and Equipments" Ref. No. CUO/Admn./Instruments& Equipments/47 dt.09.11.2017". The bids will be opened at 15.30 hrs on the same day in the presence of representatives of the bidders if any.
3. The bids sent through normal post or courier or Fax or e-mail shall not be considered.
4. Central University of Orissa, Koraput reserves the rights to accept / reject any offer in full or in part without assigning any reason thereof.
5. The blank bid documents may be downloaded from the University Website [www.cuo.ac.in](http://www.cuo.ac.in)
6. Bids must be valid for 120 days from the date of opening of tender.
7. Delivery Period: The items shall be supplied, installed and commissioned within 30 days from the date of issue of Purchase Order. Delayed supply will attract levy of penalty/liquidated damages.
8. Penalty: If the bidder fails to deliver the goods or perform the services by the specified date, penalty at the rate of 1% per week of the total Contract / Purchase Order value subject to the maximum of 10% will be deducted.
9. Payment: 100% payment will be released after satisfactory supply, installation and commissioning of the instruments and equipments.
10. Security Deposit (Performance Security Deposit): The successful tenderer shall deposit @5% of the total purchase / contract value as Security Deposit within 07 days from the date of issue of Purchase Order, in the form of Demand Draft issued by any Nationalised Bank, drawn in favour of Central University of Orissa payable at Koraput. The same shall remain with the University till two months after the completion of warranty period and will be returned without any interest.
11. Installation & Warranty: The tenderers / bidders shall extend comprehensive on-site warranty of at least 01 year from the date of successful installation of goods against any manufacturing defects. The goods supplied shall be free from all defects and shall be of the highest quality and material.

Any defect arises to the goods under warranty, shall be replaced free of cost by the tenderer. Further, the University shall have the right to recover the cost of inconvenience caused to the University for failure to provide uninterrupted service of the supplied goods during the warranty period.

12. Settlement of Disputes: In the event of any dispute or differences between the Central University of Orissa and the bidder, arising out of non-supply of material or goods, not found as per specifications or any other cause whatsoever relating to the supply or purchase order, before or after the supply has been executed, shall be referred to the Vice-Chancellor, Central University of Orissa, Koraput who may decide the matter himself or may appoint Arbitrator under the Arbitration and Conciliation Act, 1996. The decision of the Arbitrator shall be final and binding on both the parties. All disputes shall be subject to jurisdiction of courts at Orissa only.
13. Return of EMD: The EMD of the unsuccessful bidders / tenderers will be returned within 15 days after finalization of the tender and issue of Purchase Order to the successful tenderer. The EMD of the successful tenderer will be returned on submission of Security Deposit of the required value.
14. Condition of goods: The bidder / tenderer shall supply the goods in good condition without any defect whatsoever to the satisfaction of the university. Any deviation in the material and the specifications from the accepted terms is liable to be rejected and the suppliers need to replace the rejected goods free of cost in the specified form to the satisfaction of the University.
15. For further information / clarification with regard to specification of Instruments and Equipments, please contact Dr.S.K.Palita, Associate Prof.(Bio.) on his e-mail: [skpalita@gmail.com](mailto:skpalita@gmail.com) and Dr.Jayant K Nayak, Asst.Prof.(Anthro) on his e-mail: [jayanta.naik@rediffmail.com](mailto:jayanta.naik@rediffmail.com) for supply to Biodiversity and Anthropology Departments respectively. Only e-mail inquiries will be entertained.

Sd/-  
Vice-Chancellor

**BIDDERS' PROFILE**

1. Name of the Tenderer/ Bidder :
2. Full Address of the tenderer / bidder :
3. Contact details of tenderer / bidder :
  - a. Telephone No.
  - b. Mobile No.
  - c. Fax No.
  - d. E-mail id
4. Details of Earnest Money Deposit :
  - a. Value of DD
  - b. D.D. No. & Date
  - c. Issuing Bank
5. Details of cost of tender document :
  - a. Value of D.D.
  - b. D.D. No. & date
  - c. Issuing Bank
6. List of Documents enclosed :

Sl. No.	Details of document		Whether photocopies of the documents enclosed (please √tick)
1.	License / Registration No.		Yes / No
2.	Dealership Distributorship Certificate No.		Yes / No
3.	Details of Purchase Orders, Completion Certificate (Name of the organization, value, work / supply completion date)		Yes / No
4.	Income Tax Return	2014-15 Rs.	Yes / No
		2015-16 Rs.	
		2016-17 Rs.	

5.	Audited Balance Sheet & Profit and Loss Account Annual turnover during last 03 Financial Years	2014-15	Rs.	Yes / No
		2015-16	Rs.	
		2016-17	Rs.	
6.	Bank Account No. Bank Name & Branch			Yes / No
7.	PAN No.			Yes / No
8.	GST Reg. No.			Yes / No

7. Validity period of the Bid / Quotation:

8. Additional information, if any proposed to be furnished by the tenderer:

Certified that all the terms and conditions of tender document are accepted.

Date :

Authorized Signatory

Place :

Full name :

Designation:

Seal:



## CENTRAL UNIVERISTY OF ORISSA, KORAPUT

### BILL OF QUANTITIES

#### List of Instruments / Equipments for Anthropology

Sl No	Name	Unit	Qty	Rate Rs.	Amount Rs.
1	<p>PCR System</p> <ul style="list-style-type: none"> <li>• Interchangeable blocks—go from low to high throughput</li> <li>• Three experiments at once with three independently controlled blocks</li> <li>• Wi-fi-enabled and remote connected</li> </ul> <p>Simulation modes for seamless transition from other systems Block format: 3 x 32, 0.2 ml independent control Max block ramp ragte: 6.00oC/sec. Max sample ramp rate: 4.40C/sec. Temperature accuracy: + 0.25 oC (35 – 99.9 oC) Temperature range: 0 oC to 100.0 oC Temperatur uniformity:</p>	No	1		
2	<p><b>UV-VISIBLE DOUBLE BEAM SPECTROPHOTOMETER</b></p> <p>Optical Design: Double Beam with sample &amp; reference cuvette positions;            Czerny-Turner Monochromator            Spectral Bandwidth: 1 nm            Light Source: <b>Xenon flash lamp, 3-year warranty</b>            Detector: Dual Silicon Photodiodes            Scan Ordinate Modes: Absorbance, % Transmittance, % Reflectance, Kubelka-Munk, log (1/R), log (Abs), Abs*Factor, Intensity            Resolution: &gt;1.6(peak-to-valley ratio)            Wavelength Range: 190 –1100 nm            Wavelength Accuracy: ± 0.8 nm (full range) ± 0.5 nm (546.11 nm mercury line)            Wavelength Reproducibility: less than 0.1 nm (546.11 nm mercury line, SD of 10 measurements)            Scanning Speed: &lt;1 to 6000 nm/min; continuously variable            Slew Speed: 31,000 nm/min            Data Intervals: 10, 5, 2, 1, 0.5, 0.2, 0.1 nm            Photometric Range: &gt; 3.5 Abs            Photometric Accuracy: 0.5 A: ± 0.004A; 1A: ± 0.006A; 2A: ± 0.010A; (440 nm; traceable neutral density filters)            Noise: 0A: less than 0.00015 A; 1A: less than 0.00050 A; 2A: less than 0.00080 A; (260 nm, RMS)            Drift: &lt; 0.0005 A/hr (500 nm, 1 hour warm-up)            Stray light: less than 1% T at 198 nm (KCl), less than 0.05% T at 220 nm (NaI), less than 0.05% T at 340 nm (NaNO<sub>2</sub>)            Baseline flatness: ±0.0010 A (200-800 nm; smoothing)            Keypad: Sealed Membrane            Operating System: Microsoft Windows XP, Windows 7            Dimensions: 62.2 x 48.6 x 27.9 cm (24 x 19 x 11 in)            L x W x H            Weight: 14.4 kg (32 lb)            Electrical Supply: 100 – 240 V, 50 – 60 Hz</p> <p><b>Software Features:</b></p> <ul style="list-style-type: none"> <li>• Software control available in English, French, German, Italian,</li> </ul>	No	1		



	<p>Spanish, Polish, Portuguese, Russian, Japanese and Chinese language</p> <ul style="list-style-type: none"> <li>• Live Display offers walk-up simplicity for real time single wavelength measurements or quick identification of a sample peak</li> <li>• Next-generation Quantification package makes quantitative analysis straight forward</li> <li>• Advanced Fixed wavelength analysis with graphical data display and user defined limits</li> <li>• Integrated calculations provide more data per measurement in Scan, Fixed and Quant</li> <li>• Wavelength scanning application with advanced tools for peak analysis and spectral processing</li> <li>• Advanced kinetics features including multi-stage measurement, temperature ramping and comprehensive data fitting options</li> <li>• Automated file export and e-mailing of data Seamless paper-based reporting with user defined parameters</li> </ul> <p>Workbook and template scheme makes data organization easy  Rectangular Quartz Cell Lidded 10 mm  Power Cord Indian 250v  <b>To be supplied with Pentium I7 computer, 1TB HDD, 8 GB RAM, Colour laser printer, 1 KVA Online UPS with 1 hour back up</b></p>				
<b>3</b>	<p><b>COOLING MICRO CENTRIFUGE</b></p> <p><b>Rotor Supplied: 24x1.5/2.0 ml.</b>  with Click Seal bio-containment lid, 230V, 50/60 HZ .</p> <p>Max RCF = <b>17000 x g</b>  Max speed = <b>13,300 rpm</b>  Max noise level = 50 dBA  Time set range = <b>1min-99min</b>, 1 min  increments + HOLD mode  <b>Temperature range = Set from -9°C to +40°C</b></p> <p>Dimension HxWxD mm(IN)= 330x295x445  (12.9 x 11.6 x 17.5)  ELECTRICAL REQUIREMENT= 230V 50/60Hz</p>	<b>No</b>	<b>1</b>		
<b>4</b>	<p><b>NON COOLING CENTRIFUGE</b></p> <p>Easy lid lock, step less speed regulator, safety fuse, elegant front panel, speed meter and 0-60 minutes timer.  Max speed : 5250 rpm  Max rcf : 3900 g  Supply 230 Volts, single phase, 50 Hz  Swing out head with polypropylene tubes: 16 x 15 ml</p>	No	<b>1</b>		
<b>5</b>	<p><b>ELECTROPHORESIS SYSTEM</b></p> <p><b>VERTICAL GEL ELECTROPHORESIS</b></p> <p><b>MINI FORMAT VERTICAL ELECTROPHORESIS(4 GEL)</b>  No. of gels: 1-4  Casse cassette size: Precast 10 x 8.3cm  Glass plate size:  short plate : 10.1 x 7.3 cm  Spacer plate: 10.1 x 8.2 cm  Total buffer volume for 4 gels: 1000ml  Typical run time: 35-45 mint.</p>	Set	<b>1</b>		

<p>10 well,1.00mm Thickness;4-gel system Includes 5 combs, 5 sets of glass plates,2 Casting stands, 4 casting frames, sample loading guide, electrode assembly, companion running module, tank, Lid with power cables, mini cell buffer dam</p> <p><b>MINI FORMAT VERTICAL ELECTROPHORESIS(2 GEL)</b> No. of gels: 1-2 Casse cassette size: Precast 10 x 8.3cm Glass plate size: short plate : 10.1 x 7.3 cm Spacer plate: 10.1 x 8.2 cm Total buffer volume for 2 gels: 750ml Typical run time: 35-45 mint. 10 well,1.00mm Thickness;2-gel system Includes 5 combs, 5 sets of glass plates,1 Casting stands, 2 casting frames, sample loading guide, electrode assembly, companion running module,tank, Lid with power cables, mini cell buffer dam</p> <p><b>LARGE FORMAT VERTICAL ELECTROPHORESIS SYSTEM</b> No. of gels: 1-4 Gel size: 16 x 16 cm Glass plate size: Inner plate : 20 x 16 cm Outer plate : 20 x 18.3 cm Spacer length: 18.3 cm Upper buffer volume: 350ml <b>Typical run time:</b> Without cooling : 4 hours With cooling : 2.5 hours Should include: central cooling core with gaskets, lower buffer chamber, lid with cables, 2 sets of glass plates, clamps, upper buffer dam, casting stand with gaskets, levelling bubble, instructions and alignment card.</p> <p><b>POWER PACK:</b> Constant voltage and constant current output and Constant power. The capability to pause and resume the run voltage: 10-500 volt Current: 0.01-2.5A Power : 1-500 watt Timer : 1 min to 99hr 59 min. Volt Hour control: 99,000 volt hour Output terminal: 4 set in parallel Automatic cross over Power Operating Mode with automatic crossover No. of output jacks: 04 (four) sets in parallel. Auto power recovery after power failure and no load detection capabilities should be available. Wireless Run Data Transfer (through IR device) optional Display: 128 x 64 pixel, back lit graphics LCD Stores 9 methods, each with up to 9 steps No load detection, sudden load change detection Ground leak detection, over load/short circuit detection Over voltage detection etc. In put voltage: 198-264 Volt.</p>				
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	<p><b><u>HORIZONTAL ELECTROPHORESIS SYSTEM</u></b></p> <p><b>Mini Sub cell GT</b>  Cell size: 9.2 x 25.5 x 5.6cm  Ready Agarose Gel Accommodated: Yes  Sample Through put : 8 – 30  Base buffer volume : 270 ml  Buffer circulation  Gel Tray Size: 7 x 10 cm  Supplied with gel caster, UVTPT Tray 10 x 7 cm, combs: 8 &amp; 15 well</p> <p><b>Wide Mini Sub cell GT with Gel Castro</b>  Cell size: 17.8 x 25.5 x 6.8cm  Ready Agarose Gel Accommodated: Yes  Sample Through put : 10 – 60  Base buffer volume : 650 ml  Buffer circulation  Gel Tray Size: 10 x 15 cm  Bromophenol Blue Migration  Supplied with gel caster, UVTPT Tray 10 x 15 cm, combs: 20 &amp; 15 well</p> <p><b>MAXI SUB CELL SYTEM</b>  Up to 30 samples can be resolved over a distance of 25cm. <b>Using 4 rows of combs, the cell can run up to 120 samples.</b>  Cell size: 18 X 40.5 X 9.4  Sample Through put : 1-120↑  Base buffer volume : ~1 L  Buffer circulation : NO  Gel Tray Size : 15 X 25 cm  <b>To be Supplied with gel caster, UVTPT Tray 15 X 25 or 15 x 20 cm, 15 well and 20 well combs.</b></p> <p><b><u>POWER PACK</u></b></p> <p><b>BASIC POWER SUPPLY</b>  Constant voltage and constant current output.  The capability to pause and resume the run  Voltage: 10-300 volt  Current: 4-400 mA  Power : 75 watt  Timer : 1 min to 99hr 59 min.  Output terminal: 4 set in parallel, LCD display</p>				
6	<p>-20 Deep Freezer</p> <p>Capacity- 344 Liters  Width-23 inches  Depth- 23 inches  Hight-73 inches  Temp. range-17C to -24C  With Locking Facility  Deforst –Manualy  No of Baskets/Shelves-8  No of Door-1</p>				

**List of Instruments / Equipments for Dept of Bio Diversity and Conservation of National Resources**

Sl No	Name of instrument and code	Unit	Qty	Rate Rs.	Amount Rs.
1	<p><b>Atomic Absorption Spectrophotometer</b></p> <p>Technical Specifications:</p> <ul style="list-style-type: none"> <li>• The system should be fully automated computer controlled double beam with D2 background correction system.</li> <li>• Photometer of high light-gathering power with quartz-coated wide-range optics.</li> <li>• <b>Wavelength range: 180 to 900 nm.</b></li> <li>• <b>Focal length 270 mm.</b></li> <li>• <b>Holographic grating with 1800 lines/mm.</b></li> <li>• <b>Reciprocal linear dispersion 1.5 to 2 nm/mm</b></li> <li>• Band width: Variable bandwidth from 0.1nm to 2.0 nm. Automatic selection</li> <li>• <b>Wide range PMT detector</b></li> <li>• <b>Instrument should show Performance Guarantee <math>\geq 0.90</math> Abs for 5ppm Standard Cu Solution with RSD <math>&lt; 0.5</math> %.</b></li> <li>• Burner Type: Titanium venturi adjustable sample intake with Air-cooled premix 100mm slot for Acetylene (fuel) Air (Oxidant) &amp; 50mm slot for Acetylene (fuel) and Nitrous Oxide (one). Burner movement through computer with auto height adjustment</li> <li>• Automated wavelength scan, adjustment and setting of wavelength.</li> <li>• <b>Lamp turret with fully automatic alignment of up to 6 lamps or more with dedicated power supplies for each lamp.</b></li> <li>• Auto adjustment of lamp position, lamp and pre-heating current.</li> <li>• Safety circuits for cooling water, inert gas, excess furnace temperature</li> <li>• Quadline Deuterium background correction with optimized optical beam and moveable polarizer for maximum energy throughput.</li> <li>• Hollow cathode lamps: Single Element Data coded HCL lamps – 10 nos. (as per the application including heavy metal)</li> <li>• Hydride Generation System (for elements such as As and Hg) having the facility of continuous flow vapour with minimum of four channel peristaltic pump and operates automatically under data station control.</li> </ul>	No	1		

	<ul style="list-style-type: none"> <li>• AAS software for device control and data analysis.</li> <li>• N2O regulator with heater (imported)</li> <li>• Air Compressor with filter &amp; moisture trap (imported)</li> <li>• Latest configuration Branded PC with Laser jet Printer – 01 set.</li> <li>• Argon Gas cylinder – 01 no.</li> <li>• C2H2 Gas cylinder – 01 no.</li> <li>• N2O Gas cylinder – 01 no.</li> <li>• Regulator for Argon and C2H2 Gas cylinder</li> <li>• Stainless Steel Ducting Hood with Exhaust Fan &amp; Ducting facility.</li> <li>• 3KVA Branded UPS for 30 mins back up.</li> <li>• List of installations of same particular instrument with user certificate in last three years.</li> </ul>				
2	<p>CHNS ANALYZER</p> <p>Fully automated computer controlled element analyzer capable of rapid quantitative determination of elements viz. Carbon (C), Hydrogen (H) and Nitrogen (N) in wide array of organic matrices, soils, feed, plant samples etc.</p> <p>The instrument should have following features:</p> <ol style="list-style-type: none"> <li>1. Handle variety of sample types like solid, liquid, volatile and viscous samples</li> <li>2. Sample size: 0.01 mg to 1000 mg or more</li> <li>3. Sample Combustion: High temperature combustion unit with temperature control upto 1100°C and the combustion unit must ensure complete combustion of sample in oxygen stream. The system should have facility for mixing of combustion gases and prevent ash from affecting combustion.</li> <li>4. Detection: Thermal conductivity detector singly or in combination with any other suitable detector for independent detection of C, H, and N.</li> <li>5. Analytical measuring range: 0.02-100%.</li> <li>6. Accuracy: &lt; 0.3%.</li> <li>7. Analysis time: 8 min or less for CHN.</li> <li>8. Auto sampler: Automatic loading of samples with 30 or more positions in a single tray</li> <li>9. Carrier gas: preferably Helium.</li> <li>10. Software: Window based operating software controlling the instrument operations, recording data, performing calculations, diagnostic recording like leak testing and condition monitoring, and manage calibration procedures</li> <li>11. Sample Analysis Kit : CHN kits for 1000 samples analysis should be quoted</li> <li>12. Gas requirements : Ultra high purity He and O<sub>2</sub> Gas cylinder with regulator – 01 Each</li> <li>13. Weighing requirement: Micro analytical balance for weighing the sample with at least 1µg readability</li> <li>14. Branded PC with Laser Jet Printer (B/W) – 01 Set</li> </ol>	No	1		

	15. 5 KVA on line UPS with 30 Battery back-up – 01 Set				
3	Plant Efficiency Analyzer (Chlorophyll Fluorescence Meter)  <u>Parameters measured by Handy-Pea:</u> Fo , Fm, Fv, Fv/Fm ,Tfm , JIP Test and OJIP analysis. <u>Specifications:</u> Control Unit. Dimensions: 170 (L) x 85 (W) x 40mm (D). Weight: 565gms. Operating Conditions: 0-40°C Non condensing humidity. Battery: 3 rechargeable (Ni-MH) 3.6V 1.8Ahr. Battery Charger: Integral switch mode charger 8-13.5V input (nominal 12V input). Battery Life: Typically 8 - 9 hours when performing 1 second recordings at 120 measurements /hr. Display: 8 line x 20 character LCD display. Upload user-defined, repeatable experimental protocols for automatic field Execution. Interchangeable sensor unit cables with lengths of up to 20 meters. Windows® data transfer & analysis software. Leaf Clips	No	1		
4	Soil testing equipment (Sieve)  Brass 8" Diameter 4.75 and 1.18 MM, 600MIC, 425MIC, 300MIC, 150MIC, 75 MICRON, LID AND COVER	Ps/SIZE	1		
5	Tanco PLT-231 (A) Grytory Table Top Sieve Shaker  Type : Sieve Shaker Model No. : PLT-231 (A) Features: It can accommodate up to 6 sieves of 8" Dia. Mainly used for grinding of material which are not gummy or fibrous. The adjustable Post can hold 75 to 135mm Dia mortar	No	1		
6	SAMPLING AUGER  Blade type (post hole type) and Helical type (Screw type). Robust construction Rust proof Sturdiness	No	2		
7	Sedgewick rafter slide (S 52)  A 1 ml counting cell 45mm long, 20 mm wide, 1 mm thick. Precision rectangular brass cell is bonded to 1" x 3" (25mm x 75mm) glass slide. Supplied with 2 extra cover glasses and plastic case. Meets ALPHA and "Standard Methods" specifications.	No	20		
8	RUBBER CORK  Temperature: Withstand -40°C to +230°C 10cm diameter	No	5		
9	Oxygen Reduction Potential Meters  ORP measurement from -999 to 999mv with a resolution of 1mv, /-4mv accuracy, <ul style="list-style-type: none"> <li>• Automatic electronic self-calibration and data validation,</li> <li>• Simulated analog bargraph display of ORP reading change,</li> <li>• Waterproof floating case</li> </ul>	No	1		
10	Pond Aeration System  PPA-DD-9 DISK TYPE 9 INCH	No	6		
11	Soil hydrometer	No	2		

	<ul style="list-style-type: none"> <li>• ASTM 152 H scale graduated to read in grams per liter (g/L) of suspension</li> <li>• Range of -5 to +60g/L in 1g/L divisions at 68°F (20°C)</li> <li>• Total length: 11" (280mm). Complies with ASTM D422; AASHTO T88</li> </ul>				
12	<p>Automatic Nitrogen / Protein Estimation System (ISO 9001:2015 Certified &amp; CE Certified)</p> <ul style="list-style-type: none"> <li>• KEL PLUS Automatic Macro (250ml) Block Digestion System Model KES 12L R TS: KEL PL US Superior Automatic Autosequencing Twelve Place PC Compatible Regular Series Macro Block Digestion System with Touch Screen Display (Suitable for plants, soils, water, food &amp; feed, Fertilizers &amp; pesticides samples)</li> <li>• KEL PLUS Automatic Scrubber System Model KEL VAC VA: Fully Automatic Four Stage Acid Neutralizer Scrubber with micro intelligent micro processor based with digital display of time</li> <li>• KEL PLUS Automatic Distillation System Model CLASSIC DX : KEL PLUS Microprocessor Based Fully Automatic Autosequencing PC compatible Distillation System with inbuilt software with added safety requirements to fulfill GLP &amp; CE Norms</li> <li>• Digital Burette Titration System Motor driven Digital Burette with Programming facility to show dosed volume and set volume</li> </ul>	No	1		
13	<p>BOD meter</p> <ul style="list-style-type: none"> <li>• Extended DO range up to 50 ppm and 600% saturation</li> <li>• Built-in barometer</li> <li>• Salinity, pressure and temperature compensation</li> <li>• Backlit, graphic LCD display</li> <li>• Calibration reminder</li> <li>• Log on demand (400 samples)</li> <li>• Auto HOLD</li> <li>• GLP features</li> <li>• PC connectivity via USB</li> </ul>	No	01		
14	<p>Nikon Forestry Pro Hypsometer Laser Range Finder</p> <ul style="list-style-type: none"> <li>• Powerful, multi-use rangefinder by Nikon</li> <li>• Measures existing actual distance, horizontal distance, height, angle, and vertical separation</li> <li>• Also features three-point measurement</li> <li>• Internal and external LCD display panels; external displays all results simultaneously, while internal displays only selected results</li> <li>• Two measurement modes with Target Priority Switch System - First Target Priority Mode and Distant Target Priority Mode</li> </ul>	No	02		
15	<p>Aristo Insulated icebox 14 Ltr</p> <ul style="list-style-type: none"> <li>• Strong Handle With Assured Durability Handy Portability.</li> <li>• An Easy To Carry Insulated Ice Box To Beat The Heat</li> <li>• Insulated, keep contents chilled for 12 hours.</li> <li>• Available in Red Or Blue colors (colors may vary depending on availability)</li> <li>• Package Contents: 1-Piece Chiller Ice Box</li> </ul>	No	02		
16	<p>Mr. Light 2100 Rechargeable LED Flashlight (Range: 2400 mtrs)</p>	No	2		

	<ul style="list-style-type: none"> <li>• Range: 1300 mtrs</li> <li>• Battery Type: 2SC</li> <li>• Output: 300 lumens</li> <li>• Technology: MC2 Technology</li> <li>• Runtime: 2.5hours</li> <li>• Machined air craft Aluminum alloy case</li> <li>• Bright cool daylight color beam</li> </ul>				
17	Professional Multifunction Military Army Metal Sighting Compass High Accuracy Waterproof Compass Green Color <ul style="list-style-type: none"> <li>• Waterproof and shakeproof</li> <li>• Reference table to estimate distance and scope</li> <li>• Sighting window with sighting line</li> <li>• This compass with luminous display inside, convenient night clearly viewing</li> <li>• Size: 65*53*26mm; Material: Metal and glass</li> </ul>	No	02		
18	Bosch BT150 Professional Tripod (Black) <ul style="list-style-type: none"> <li>• Tripod Thread: 0.25 inches</li> <li>• Working Height: 52 to 147 centimeters</li> <li>• Robust lightweight aluminum construction, easy adjustment of heights using adjustment crank</li> <li>• Swivel, adjust and tighten for steady applications</li> <li>• Locking Mechanism: Yes</li> <li>• Package Contents: Tripod and detachable mounting base</li> </ul>	No	2		
19	SLIDE CALIPER  Tiny deal cb 30118 stainless steel digital vernier caliper with LCD display	No	3		
20	Dispersion cup of soil hydrometer Stirring Apparatus  Gilson company, INC	No	2		
21	Titrette digital bottle top burettes  Mfr. No. - Brandtech, 4760261 Measuring range - 50 ml volume, accuracy: 0.06% Volume - 50 ml	No	2		
22	Bottle Top Dispensers <ul style="list-style-type: none"> <li>• Housing Material: Plastic</li> <li>• Panel Size: 19 Inch LCD</li> <li>• Bottle Volume: 3.6L</li> <li>• Standard Color: White</li> <li>• Life (Hrs): 50000</li> <li>• Power Supply: 100-240V AC</li> </ul>	No	5		
23	Soil Water Potential Meter  Use the WP4C to measure water potential in 5 to 10 minutes. Range: -0.1 to -300 MPa*	No	1		



24	<p>Micro centrifuge (REMI- RM 03 Plus)</p> <p>Rotor capacity- 12 place closed rotor with metal safety lid Maximum speed- 15000 rpm / 15596 g Display- Large Backlit LCD display Imbalance Detection- with auto cut – off Noise level- &lt; 60 dB (BLDC) Brushless DC motor Time setting- 1 to 999 mins Speed/ time setting- 500 to 15000 RPM / Min-Sec timer Dimensions( W*D*H) in mm- 230 x 262 x 131 mm Rotors and adaptors (include in standard pack)- 12 place x 1.5/2.0 ml microtubes Reduction Adaptors for 0.2 ml microtubes Reduction Adaptors for 0.4/0.5 ml microtubes PCR Strip Rotor (2 x 8 x 0.2 ml with metal safety lid)</p>	No	1		
25	<p>Soxhlet apparatus PELICAN</p> <p>Soxhlet Extraction Apparatus (with glass parts) Ideal heater for the extractors of Soxhlet and other types. This apparatus is suitable to heat Soxhlet flasks of 50-500ml capacity. It consists of mild steel sheet housing, two vertical and one horizontal rod with adopters and clamps to hold the glass parts. To work on 220/230 AC supply. With individual energy regulator (Hot Plate and Mantel Type) for 3 tests.</p>	No	1		
26	<p>Digital Shaking water bath</p> <p>These <u>Water bath Shakers</u> have wide applications in Biotechnology, Micro-Biology, Chemistry, Quality Control and other life sciences laboratories.</p> <p>The units are double walled with exterior body and inner chamber of stainless steel having effective insulation in between. The stainless steel bath has size of 355 mm (W) x 300 mm (D) x 165 mm (H).</p> <p>A special pyramid type cover provided avoids evaporation of water and makes condensed water to fall back in the bath. A cock is provided to facilitate draining of Bath contents.</p> <p>The removable stainless steel tray houses lotus clamps for variety of flask capacities. Standard unit supplied with tray accommodating 12 flasks x 100 ml., while trays with the following capacity are available optionally.</p>	No	1		
27	<p>Hot plate Thermo scientific S28432</p> <p>Hertz 50/60Hz Temperature Range 540°C (Max Temperature) Dimensions (L x W x H) 13 x 8.2 x 3.8 in. (33 x 20.8 x 9.7cm) Electrical Requirements 100-120V 50/60Hz Includes 1 power cord Voltage 100-120V Top Plate Material Ceramic Surface Area (English) Heating 7.25 x 7.25 in. Surface Area (Metric) Heating 18.4 x 18.4cm</p>	No	2		
28	<p>Mini fogger machine</p>	No	1		

	Body & Tank: 304 Grade Stainless Steel Used Liquid Tank Capacity: 4 Litre Of Chemical Storage Motor: 20000 RPM Motor				
29	Vertical electrophoresis apparatus  Biometra's Model V16-2 is a simplified system for electrophoresis of one or two 17 × 15 cm (W × L) vertical gels simultaneously. It is only available for the US market (unit is not CE certified). The apparatus is designed for the separation of analytical and semi-preparative quantities of proteins, up to 40 samples on 17 × 15 cm polyacrylamide (PAGE) gels, 0.8 mm, 1.5 mm or 3 mm thick. The V16-2 is the system of choice for laboratories with medium sample throughput but the need of long running distances or large sample volumes (up to 4,000 µl).	No	1		
30	Horizontal Electrophoresis apparatus  Owl™ A2 and A5 Large Gel 24-slot Rapid Load UVT Gel Trays Description- 24 slot rapid load UVT gel tray with (24) 18 well combs For use with- A2 system Item description- with (24) 18 well combs No. Of slot- 24µl Load multiple samples with Thermo Scientific™ Owl™ A2 and A5 Large Gel 24-Slot Rapid Load UVT Gel Trays.(Horizontal )	No	1		
31	Spare rotor for cooling centrifuge REMI- C24BL  12×50ml Falcon tube with rotor	No	1		
32	Mini spinner  Speed: 10000rpm Sample capacity: 8× 1.5ml/0.5ml/0.2ml centrifuge tube	No	1		
33	Online UPS - 30 KVA	No	2		
34	High capacity inverter - 30 KVA	No	2		
35	GRS Densitometer  To determine basic canopy coverage percentage of an area, equally distribute sampling points along a linear transect. At each point, level up the densitometer and peer through the mirror sight to determine if the point is canopy covered. After completing the transect, divide the number of points with canopy coverage by total number of points sampled. The resulting figure is the percentage of canopy coverage for that area.	No	1		
36	Olympus Binocular 10 x 25 WP II  Full featured binocular model with waterproof sealing and the folding design makes it perfect for taking with you. The closest focusing distance of 1.5m gets you up close to insects and flowers.	No	1		
37	Ricoh Pentax Papilio II 8.5X21 Binocular( WWF Series)  <ul style="list-style-type: none"> <li>Type: Porro Compact, Objective Lens Diameter: 21 mm</li> <li>Close focus to 50cm for macro observation, unique in the market</li> <li>High Quality BaK4 prism to enhance transmission and resolution</li> </ul>	No	1		

38	<p>Forestry Suppliers Spherical Crown Densimeters</p> <p>Brand: Forestry Suppliers MPN: 43887 UPC: 0758182224751 UNSPSC: 27111800 Forestry Suppliers Spherical Crown Densimeter, Convex Model A.Helpful when establishing spacing standards in forest thinning and determining light requirements for regeneration. Both models feature a mirror reflector engraved with a cross-shaped grid of 24 quarter-inch squares to delineate a plot overhead. Slightly offset convex model when using so your head does not appear in grid. Walnut instrument case is 3" x 3". Built-in leveling bubble. Operating instructions included.</p>	No	1		
39	<p>Insect Stretching Board</p> <p>Board adjustable along the support to obtain desired width for different size insects. Board top &amp; groove fitted with 8 mm thick EVA sheet. Groove adjustable from 0 to 12mm with the help of fine fly-nuts. Material used is teakwood and finished in spirit polish. Size 35 × 12cm.</p>	No	2		
40	<p>Professional Butterfly Net (15-inch Aerial Extra-soft) Net, extends to 54-inches</p> <p>Professional Butterfly Net (15-inch Aerial) Net with extendable 23-54-inch handle, has a 15-inch nickel plated collapsible hoop with reinforced heavy duty sail cloth band and a bag depth of 33-inches</p>	No	2		
41	<p>Entomological Pin</p> <ul style="list-style-type: none"> <li>• Size minutent: 15mm × 0.30 mm</li> <li>• Size 0: 38 mm × 0.35 mm</li> <li>• Size 1: 38 mm × 0.40 mm</li> <li>• Size 2: 38 mm × 0.45 mm</li> <li>• Size 3: 38 mm × 0. 50 mm</li> <li>• Size 4: 38 mm × 0.55 mm</li> <li>• Size 5: 38 mm × 0.60 mm</li> </ul>	packet Each size	2		
42	<p>Insect Killing Jar</p> <p>Insect Killing Jar, Glass with bakelite screwing cap and absorbent plaster in base. Without chemical</p>	No	2		
43	<p>WEATHER METER (KESTREL METER 3500)</p> <ul style="list-style-type: none"> <li>• Barometric pressure, Altitude, Relative, humidity,Heat stress index, Dewpoint,Wet bulb temperature etc.</li> </ul>	No	1		
44	<p>ZEISS Stereo- microscope (Stemi 508 doc)</p> <p>ZEISS Stereomicroscope Stemi 508 doc with Trans illumination Base 300 and LED Double Spot with camera attachment.</p>	No	1		
45	<p>Night Vision Equipment</p> <p>Night Owl NOIGM3X-IC</p>	No	1		
46	<p>Digital Voice Recorder (For recording wildlife sounds)</p> <p>Tascam DR-40- Rs 25000 or Zoom H4N</p>	No	1		
47	<p>Spotting Scope</p> <p>Bushnell ELITE 20-60x 80mm ITEM NUMBER: 780008</p>	No	1		

48	Spotting Scope Bushnell Camera Adapter for Elite Spotting Scope	No	1		
49	Spotting Scope Bushnell Universal digiscoping bracket	No	1		
50	Spotting Scope Vanguard Endeavor HD 82S	No	1		
51	Spotting Scope Vanguard PA-202 Digiscoping Adaptor for Endeavor HD82S	No	1		
52	Digital Camera NIKON COOLPIX P900	No	2		
53	DSLR CANON EOS 70D Kit II(EF-S18-135 IS STM)	No	1		
54	DSLR LENS CANON TELEPHOTO ZOOM LENS- EF 100-400mm f/4.5-5.6L IS USM	No	1		
55	Tripod Manfrotto 055 kit - alu 3-section horizontal column tripod + ball head	No	1		
56	Tripod Manfrotto 055 carbon fibre 3-section tripod, with horizontal column + Midi Ball Head with RC2 (498RC2)	No	1		
57	Binocular Steiner Cobra series 8X42	No	1		
58	Binocular Nikon Sporter series 8X42 or 10X42	No	1		
59	Sigma plot 13 Software (10 users) Specification	No	1		
60	HPLC  The HPLC system should have of the following minimum specification should be upgradable with additional accessories without changing any existing accessories up to LCMS/MS  1. <b>Pump :</b> - 01 no. Quaternary Gradient Pump (4 solvents) with built in 4 channel vacuum degasser Flow rate range : 0.001–10 mL/min with 0.001ml/min Increment Flow rate accuracy : ±0.1% Flow precision : < 0.05% RSD <b>Pressure range : 9,000 psi or higher for entire flow rate range</b> Solvent rack and solvent bottles (at least four) also to be quoted.  2. <b>Detector:</b> <b>Variable Wavelength UV-VIS Detector</b> - 01 no.	No	1		

	<p>Data Collection Rate: single wavelength up to 100 Hz</p> <p>Noise, Single Wavelength: &lt; <math>\pm 3.5 \mu\text{AU}</math></p> <p>Drift: &lt; <math>1 \times 10^{-4} \text{ AU/Hr}</math></p> <p>Linearity: &lt;5% RSD (typically &lt;3% RSD) at 2.5 AU</p> <p>Light Source: deuterium lamp, tungsten lamp with temperature control for both lamps</p> <p>Wavelength Range: 190 -900 nm;</p> <p>Wavelength Accuracy: <math>\pm 1 \text{ nm}</math> at over lifetime of the detector</p> <p>Wavelength Repeatability: <math>\pm 1 \text{ nm}</math></p> <p>Optical Bandwidth: 6 nm at 254 nm</p> <p><b>3. Manual Injection – 01 no.</b>  <b>Manual Injection Valve analytical/micro</b>, with kit to mount to 20 <math>\mu\text{L}</math> sample loop and mounting bracket &amp; injection syringe.</p> <p><b>4. Column with Guard Column – C18 and C8 Column with Guard Column</b></p> <p>5. Branded PC with Laser Jet Printer (B/W) – 01 Set</p> <p>6. 2 KVA on line UPS with 30 <b>Battery back-up</b> – 01 Set</p> <p>7. <b>Sample Preparation Accessories - Nylon &amp; PVDF syringe filler of 0.22u of both 13mm &amp; 25mm- 100 nos.</b></p>				
61	Simple Dissecting Microscope Olympys	No	5		