# Director of Agriculture
## Bihar, Patna

### *Invitation of Tender*

Sealed bid of tender is invited only from ISO /BIS certified manufacturers or their authorized dealers for the purchase of essential equipments/ instruments for Quality Control Laboratory, situated at Muzaffarpur/Bhagalpur for ICP-OES / Karl Fisher Tritator / Calibrated Weight / Bottle Top Dispenser / Conductivity Meter / Digital Burette / Electronic Weighing Balance / Top Pan Balance / Flame Photo Meter / Heavy Duty Fume Hood / Hot Air Oven / Magnetic Stirrer / Hot Plate / Kjehdahl Digestions And Distillation Unit / Nitrogen Analyzer / Muffle Furnace / Ph Meter / Rotary Shaker / Vacuum Pump / Water Double Distillation Unit / Water Purification System / BOD Incubator / Hot Air Oven / Muffle Furnace / Laminar Air Flow equipments.

Tender details are available on website :- www.prdbihar.org and http://krishi.bih.nic.in

Pre bid conference is schedule on 04.12.2014 at 12.00 noon. Bids, complete in all respect should reach in the office of Deputy Director of Agriculture (Quality Control) Bihar, Mithapur, Patna-800001 latest by **14:00 hours on 09.12.2014** . The bids will be opened in the office chamber of the Chairperson of the Purchase Committee (Director Agriculture, Bihar, Patna) at **15:00 hours on 09.12.2014** Bidders themselves or their representatives may attend the meeting. For any other information bidders can contact on 9471831318.

Director of Agriculture,
Bihar, Patna.

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Bids, complete in all respect should reach in the office of Deputy Director of Agriculture (Quality Control) Bihar, Mithapur, Patna-800001 latest by **14:00 hours on 09.12.2014 .** The bids will be opened in the office chamber of the Chairperson of the Purchase Committee (Director Agriculture, Bihar, Patna) at **15:00 hours on 09.12.2014** Bidders themselves or their representatives may attend the meeting.

**Note**:-

1. List of equipment/instruments and their specification with details of Terms & Conditions may be obtained from the office of Deputy Director of Agriculture (Quality Control) Bihar , Mithapur, Patna -800001.
2. Tender details are also available on website :- www.prdbihar.org / http://krishi.bih.nic.in

### *Terms and Conditions*

1. Sealed tenders are invited from ISO/BIS certified manufacturing companies for the items as mentioned below :-

| Sl. No. | Name of Instruments/Equipments | Earnest Money Deposit (EMD) Minimum/equipment | No. of equipment |
|---|---|---|---|
| 1. | ICP – OES | ` 80,000/- | 2 |
| 2. | KARL FISHER TRITATOR | ` 10,000/- | 2 |
| 3. | CALIBRATED WEIGHT (1 mg to 200 gm) | ` 2,000/- | 2 |
| 4. | BOTTLE TOP DISPENSER | ` 1,000/- | 8 |
| 5. | CONDUCTIVITY METER | ` 2,000/- | 2 |
| 6. | DIGITAL BURETTE | ` 1,000/- | 4 |
| 7. | ELECTRONIC WEIGHING BALANCE (INTERNAL CALIBRATION) | ` 2,000/- | 4 |
| 8. | TOP PAN BALANCE | ` 2,000/- | 4 |
| 9. | FLAME PHOTO METER | ` 4,000/- | 2 |
| 10. | HEAVY DUTY FUME HOOD | ` 1,000/- | 2 |
| 11. | HOT AIR OVEN | ` 2,000/- | 2 |
| 12. | MAGNETIC STIRRER WITH TEFLON COATED MAGNETIC BAR | ` 1,000/- | 2 |
| 13. | HOT PLATE | ` 1,000/- | 2 |
| 14. | KJEHDAHL DIGESTIONS AND DISTILLATION UNIT | ` 2,500/- | 2 |
| 15. | AUTOMATIC MICROPROCESSOR BASED NITROGEN ANALYZER- | ` 2,500/- | 2 |
| 16. | MUFFLE FURNACE | ` 2,500/- | 2 |

| | | | |
|---|---|---|---|
| 17. | pH METER (MICRO PROCESSOR BASED) | ` 2,500/- | 2 |
| 18. | ROTARY SHAKER | ` 1,000/- | 2 |
| 19. | VACUUM PUMP WITH 0.5 HP MOTOR (WITH OIL) | ` 1,000/- | 2 |
| 20. | WATER DOUBLE DISTILLATION UNIT (ALL QUARTZ) | ` 1,000/- | 4 |
| 21. | WATER PURIFICATION SYSTEM (R.O BASED) DOUBLE STAGE LEVEL | ` 1,000/- | 2 |
| 22. | BOD INCUBATOR | ` 2,500/- | 1 |
| 23. | HOT AIR OVEN FLOW | ` 2,000/- | 1 |
| 24. | MUFFLE FURNACE | ` 2,000/- | 1 |
| 25. | LAMINAR AIR FLOW | ` 2,000/- | 1 |

**Note** :-

a) No. of equipments may vary according to need and availability of fund.

b) Specification for ICP-OES will be seen on Annexure – I & other will be seen on Annexure – I (A).

2. As per Bihar Financial Rules the tender should be submitted in two bid system (Technical & Financial bids) in separate envelops prescribed **Technical bid (Annexure-II)**, **Financial bid (Annexure -III)** as enclosed. The Technical Bid & Financial Bid should be in **sealed cover separately & put into a bigger envelope,** super-scribed as "Bid for supply of laboratory equipment" addressed in manner given in Para 23 of the terms & conditions. The name & address with contact no. and E-mail Id of the bidder should also be written/ printed on the cover of all the envelopes containing Technical & Financial Bids.

2.1. Technical Bid should contain all the technical details along with proof of specification of the tendered items with **original** brochures & catalogue, ISO/BIS Registration Certificate, Earnest Money Deposit (EMD) & other supporting papers except financial part of tendered item.

2.2. Financial Bid should contain price of the quoted items in the prescribed format (Financial bid form - 2) duly completed in all respect for each item separate sealed envelope of financial Bid is required.

2.3. The bidder has to give presentation before technical committee for this proposal date, time and venue will be communicate later on if required.

3. Bidders are required to be registered in Income Tax Department & in Sales Tax Department of Bihar State also as per state government norms

4. Firms will have to deposit an **Earnest Money Deposit (EMD)** as per details in Para-1 in the shape of crossed **DD/Banker's cheque** in favor of **DEPUTY DIRECTOR OF AGRICULTURE, QUALITY CONTROL, BIHAR, PATNA** payable at **PATNA**. The bid security is remaining valid for a period of 45 days beyond tender opening date.

5. Except successful bidder the EMD will be returned to the Firms after completion of the tender formalities or within 30 days after award of contract.

6. As per Bihar Financial Rules, performance Security Deposit (PSD) @ 5% of ordered Value of the contract will have to be made within 7 days on receipt of the supply order to ensure due performance of the contract by the successful bidders. PSD should remain valid for a period of 60 days beyond the date of completion of all contractual obligation including warranty obligations.

After depositing the PSD the earnest money will be returned to successful bidder. Performance security deposit will be refunded when contract period expires. If the instrument

supplied is/are not working satisfactorily during the contract period & the services provided are inadequate the expenses incurred for repairs & spares will be recovered from PSD or as the case, full deposit may be forfeited.

7. **Conditional tender will not be accepted.**
8. Tender must enclose **Technical Brochure in original** by the firm for the quoted brand items so that required specifications may be confirmed.
9. F.O.R. Price and VAT must be indicated clearly and separately in the Financial Bid Form.
10. In case of any ambiguity & false information found, the tender is liable to be rejected.
11. Quoted rates should be in INR & valid up to six months from the tender opening date.
12. Quoted equipment ICP-OES with minimum **two-years warranty** from date of installation & **additional 3 (three) years AMC with maintenance over warranty period**. In case of authorized dealers/suppliers the documents regarding AMC must be approved and supported by the manufacturer.
13. The manufacturing company should have its own office in India.
14. Tender will not be accepted after the last date & time.
15. Payment will be made only after check up of the product as per specification, proper installation, run and satisfactory demonstration of the same by successful bidder.
16. Bidder will have to arrange training for operation of the instruments/equipments to the concerned technical official free of cost.
17. Price quoted must include all concern essential accessories to the equipments/apparatus etc which also includes all type of taxes applicable as per existing law including installation on turnkey basis.
18. Successful bidders will have to deliver the items within 30 days of supply order received, unless extended. In case of imported items, bidders are expected to mention at the earliest about the delivery period.
19. Bidders are at liberty to withdraw or amend their quotations till the prescribed date and time fixed for submission.
20. No separate intimation will be delivered to the bidders regarding attending the meeting of the Tender Opening Committee.
21. In case of delay or failure in supply, order may be cancelled & PSD forfeited.
22. Undersigned reserves the right of accepting or rejecting of the tender in part, or rejecting any one or all, at any stage without assigning any reason.
23. The Sealed tender complete in all respects will be received at the office of the **Deputy Director of Agriculture, Quality Control Laboratory, Bihar, Mithapur Farm, Patna- 800001 latest by 14:00 hours on 09.12.2014 from the date of publication of this tender.**
24. Technical tenders will be opened at **15:00 hours on 09.12.2014** in the office undersigned (Director of Agriculture, Bihar, Patna).
25. Bidders may remain present himself or send representatives during opening of tenders. Tenders will be opened even if no bidders or their representatives are present.
26. In case of any dispute, the jurisdiction will be Patna district only. The contract will be interpretation under Indian low.

Dy Director of Agriculture,
Quality Control,
Bihar, Patna

Director of Agriculture,
Bihar, Patna.

## Annexure – I

## 1. Specification for ICP-OES

### SPECTROMETER:

1. Bench top design , True simultaneous and background correction reading ICP-OES system using solid-state detector technology.
2. The Instrument must have **an Echelle** polychromator that utilizes **a single charge coupled device (CCD)/charge induced detector (CID)**. The system must utilize a prism cross disperser for higher order resolution. **The resolution** of the system must be **0.007nm** at around **165-215nm**. The entire optical system must been closed in a purged and thermo stated optical enclosure.
3. A system purge of the polychromator for determinations made at wavelengths below 190 nm must be standard. **Nitrogen/ Argon** may be used as purge gasses and the gas flows must be controlled by the system controller.
4. Viewing of the plasma must be computer controlled. System should have dual view.
5. The system must utilize at least carbon and argon emission lines in situ to perform the function for calibration.
6. The instrument must be able to perform determinations across the entire spectrum, both UV and Visible **167-750 nm or more.**

### ICP SYSTEM

1. The instrument must monitor all gas pressures through **mass flow control**. The interlocks must be continuously monitored and if any interlock is interrupted, the plasma is shutdown automatically.
2. Plasma ignition and shut down must be computer controlled and totally automated.
3. The instrument must include a mechanism to eliminate the cool end of the plasma for minimizing self – absorption and physical interference.

### SYSTEM DETECTOR

1. **Solid- state detector** optimized for performance across the entire emission spectrum, anti-blooming protection to enable the simultaneous measurement of trace level analytes in the presence of major matrix constituents.
2. The detector must have Auto –Integration that allows intense and trace signalea to be measured simultaneously.

### RF GENERATOR

1. The solid state RF Generator must run at frequency of 40/27MHZ. The RF Power should be variable from **750-1700 W** or better with capability to use maximum available power.
2. Power output stability should be better than 0.1%
3. The RF generator must have power transfer efficiency into the plasma of at least 75% to eliminate the need of an inefficient secondary matching net work.

**SAMPLE INTRODUCTION SYSTEM**

1. The instrument must include appropriate ICP torch and standard Mein hard nebulizer spray chamber system as a standard with HF resistance spray chamber nebulizer system. System should have capability for analysis of organic solvent as well.
2. The system must include a four channel & more variable speed, controlled peristaltic pump which allows for on- line addition of internal standards.
3. The instrument must include accessories for low detection limits of Mercury and other hydride forming elements.

**SYSTEM SOFTWARE**

1. The instrument system software shall be based on the windows operating system**. It should be compliant ready (21 CFR party levels)**
2. The software shall provide full control of all instrument functions including plasma ignition, gas flows, viewing position, and monitoring of safety interlocks.
3. Software should also have comprehensive wavelength library with indication of preferred line for each element .It should feature automatic identification of possible spectral interferences when selecting wave lengths for analysis and should have search mode for identification of unknown wave lengths.

**PERFORMANCE**

1. The instrument must meet all EPA contract lab required detection limits.
2. The instrument must have analytical linearity in excess of 5-6 orders of magnitude with the ability to use alternate wavelengths that measured simultaneously.

**INSALLATION UTILLITIES**

Vendor should supply factory fabricated chiller re-circulator of appropriate capacity along with the system. The scope of supply should also include branded PC, 30" monitor, laser printer, Argon gas regulator, Nitrogen gas regulator, Fume hood, filters etc…along with suitable capacity UPS for inductive load with built in isolation transformer with 30 minutes back up.,

**MISCELLANEOUS**

1. Tuning solution 100 ml X6 Nos.
2. Sample Kits for aqueous &2 multi –elements standards should quoted as standard.
3. Essential spares for 2 years. (Tourches -5, Neubulizer-2, Peristatic pump tubing-4 sets, Argon dehumidifier-2, Radial mirror-2, Spray Chamber-2 etc...)
4. Ultra pure water system.

**2. Scope of Supply :** Supply, install, training and successful conduct of final acceptance tests at fertilizer testing lab at Bhagalpur/ Muzaffarpur

**3. Inspection & Tests :-**

**3.1 General**

1. The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified here.

2. The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination.

3. Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

4. Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.

5. The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.

6. The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

7. With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent, if any, shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after customs clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/ Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.

8. Before the goods and equipments are taken over by the Purchaser, the Supplier shall supply operation and maintenance Manuals together with Drawings of the goods and equipments built. These shall be in such details as will enable the Purchase to operate, maintain, adjust and repair all parts of the works as stated in the specifications.

9. The Manuals and Drawings shall be in the ruling language (English) and in such form and numbers as stated in the Contract.

10. Unless and otherwise agreed, the goods and equipment shall not be considered to be completed for the purposes of taking over until such Manuals and Drawing have been supplied to the Purchaser.

11. On successful completion of acceptability test, receipt of deliverables, etc. And after the Purchaser is satisfied with the working of the equipment, the acceptance certificate signed by the Supplier and the representative of the Purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the equipment.

**3.2 Manufacturer's Inspection Certificate**

After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications. Manufacturer's test certificate with data sheet shall be

issued to this effect and submitted along with the delivery documents. The purchaser reserves the options to be present at the supplier's premises during such inspection and testing.

**3.3 Acceptance Test**

The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.

In the event of the ordered item failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser. Successful conduct and conclusion of the acceptance test for the installed goods

and equipments shall also be the responsibility and at the cost of the Supplier.

**4. Training:**

Training should be imparted to 2 persons for 5 working days on operation, maintenance and troubleshooting problems.

**5. Warranty:**

The warranty of the equipment should be for a period of 24 months from the date of acceptance along with all accessories and equipment. During the warranty period free upgrades of the soft wares, if any, should be provided.

## Annexure – I (A)

## List of Equipments/Instruments and their specification with details

| | | |
|---|---|---|
| 1. | KARL FISHER TRITATOR | • 16x2 Line Backlit LCD Display<br>• Built in Magnetic Stirrer with soft touch Key Speed Controller.<br>• Rugged Teflon Housing provision for holding Dual Platinum Sensor & Moisture Trap.<br>• Automatic end point detection with Audio Alarm.<br>• Auto Drain Facility for cleaning reaction vessel (optional)<br>• OVER TITER Audio Alarm saves KF Reagent.<br>• Onsite Dispenser Calibration/Validation Facility.<br>• Dispenser is made up to SS-316 for Corrosion Protection & Maintenance Free Operation.<br>• Flushing System for cleaning dispensing path. |
| 2. | CALIBRATED WEIGHT<br>(1 mg to 200 gm) | • Calibrated weight used in Quality Control Laboratory for testing of Fertilizers & Pesticides.<br>• Range – 1 mg to 200 gm.<br>• Stainless Steel.<br>• Calibrated weight must be certified by National Physics Laboratory (NPL) for NABL purpose. |
| 3. | BOTTLE TOP DISPENSER | • Auto cleavable<br>• It should able to with stand with concentrate $H_2SO_4$, HCL, $HNO_3$<br>• Recirculation valve for priming<br>• Three thread adopter and telescopic intake tube<br>• Capacity 5 to 50 ml<br>• Accuracy $\pm$ 0.5%<br>• Dispensing step -1 ml |
| 4. | CONDUCTIVITY METER | • Micro processor/Micro-controller based with ATC Probe and conductivity Cell, Reproducibility: 1µS. |
| 5. | DIGITAL BURETTE | • Digital display : 2 digit after decimal.<br>• Capacity – 50 ml<br>• Suction capacity per rotation – 5 ml<br>• Operating temp range – 0 - $45^0$c<br>• Easy calibration<br>• Softly moved piston complete with operating membrane. |
| 6. | ELECTRONIC WEIGHING BALANCE (INTERNAL CALIBRATION) | • Capacity : 210 g /42g<br>• Readability : 0.1mg/0.01mg<br>• Repeatability : 0.0001/0.00002 g.<br>• Stability time : 3 Sec. to 4 Sec<br>• Fully digital calibration with internal calibration.<br>• Operating temp. : $5^0$c -40 $^0$c |
| 7. | TOP PAN BALANCE | • Capacity - 610 g<br>• Readability - 10 mg.<br>• Repeatability - 0.01g<br>• Linearity - 0.02 g<br>• Stability time period – 1-2 seconds<br>• Operating temperature - $5^0$c – $40^0$c<br>• Calibration - External calibration |
| 8. | FLAME PHOTO METER | • System for the measurement for alkali and alkaline earth metals (only Sodium, Potassium, Calcium and Lithium) in the environmental samples, using the technique of flame photometry, comprising of an aspirator unit, oil free compressor, burner unit, filters and photo detector.<br>**Technical Specifications**<br>• **Instrument response/Sensitivity**<br>**Measuring Range** : 0 to 1999<br>**Elements analyzed** : $Na^+$, $Ca^+$ $K^+$, and $Li^+$<br>**Sodium** : Up to 100 units for 2 ppm or less<br>**Potassium** : Up to 100 units for 1 ppm or less |

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|---|---|---|
| | | **Accuracy & Reproducibility** : less than ± 2%<br>**Sensitivity** : $Na^+$ & $K^+$ = 0.5 ppm<br>$Ca^+2$ = 5ppm<br>Li+ = 2 ppm<br>**Linearity** : less than ±1% at midpoint with 3 ppm $K^+$ set at 100<br>• **Display** : At least 3 digit LCD<br>• **Detector** : Photo conductive cell<br>• **Filters** : Metal interference for Sodium, Potassium, Calcium and Lithium.<br>• **Power Requirement** : 230 ± 10V, 50 Hz AC<br>• **Aspiration Rate** : 3 to 6 ml/min.<br>• **Accessories** : suitable voltage stabilizer & UPS<br>• **Warranty : 5 years comprehensive warranty** |
| 9. | HEAVY DUTY FUME HOOD | **Construction:-**<br>Upper part Chamber<br>Size Internal : L -5feet x W 2-2.5 feet x D 4-5feet<br>**Working surface**<br>SS-316 sheet with granite stone<br>**Upper Chamber material construction**<br>Double wall construction. Outside wall be Grade Mild Steel sheet with epoxy paint or wooden frame. Inner wall will be made of 316 Grade Stainless Steel Sheet, FRP Sheet or P.P. Sheet both wall connected with asbestos sheet continues Air Flow system.<br>**Glass Door :**<br>Single vertical sliding conceal type door. Balance with counterpoised system is operated by steel cable.<br>**Motor:**<br>1 H.P. 1400 RPM single phase 220 volts AC<br>**Ducting :** Dia- 8.0 inch, rigid P.V.C. pipe height as required<br>**Blower**: Centrifugal Blower of Delving Type.<br>**Suction :** 1200- 2000 Cfm<br>**Flooring :** working table covered with Granite stone or tiles<br>**Electric Arrangement :** 1x15 amp and 1x15 amp plug point. One push type starter, Indicator lamps and one 40 W tube light placed at the slant top from outside.<br>**Power supply :** 220/230 volt AC, single phase 50 Hz AC |
| 10. | HOT AIR OVEN | • Temperature range: $50^0$c– $300^0$c ±$1^0$c<br>• Resolution - $1^0$c<br>• Accuracy - ± $1^0$c<br>• Inner Size - 455mm × 455mm × 605mm<br>• Capacity - 125 liter<br>• Electronics : Digital temperature controller-cum-indicator based digital display of temperature<br>• 3 adjustable stainless steel selves.<br>• Triple walled 65 mm gap between the walls filled with high quality glass wool.<br>• Inner Chamber made of 304 Grade stainless steel.<br>• Outer surface of mild steel powder coated<br>• Motorized air circulating and temperature regulator and power light Handle – Stainless Steel<br>• Power : 220/230 Volt A.C |
| 11. | MAGNETIC STIRRER WITH TELFON COATED MAGANETIC BAR | • Rotating magnetic field variable speed stirring action<br>• Automatic bi-directional stirring with variable time interval.<br>• Accurate stepless speed control allows smooth variation up to 1200 rpm.<br>• Small Teflon coated magnetic paddle<br>for 500 ml – 7x15 mm in length(1 Packet) &<br>for 2000 ml – 9x35 mm length (1 Packet)<br>• Work on 220/230 Volt 50Hz A.C |
| 12. | HOT PLATE | • Size: 30×45×15cm (12"×18"×6")<br>• Continuous Heating up to $350^0$c.<br>• Digitally controlled temperature.<br>• Power : 220/230 Volt A.C<br>• Body enamel painted. |

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| 13. | KJEHDAHL DIGESTIONS | • Kjeldahl heating assembly set of Six for digestion without glass part.<br>• Heavy duty heaters with 6 electric Nicrome heating elements. (Capacity–750 watt) with individual on /off switch.<br>• Individual Energy regulator for each heating element.<br>• Epoxy coating /corrosion resistant top and body. |
| 14. | AUTOMATIC MICROPROCESSOR BASED NITROGEN ANALYZER | • ISO certified Fully Automatic Microprocessor controlled sequencing Nitrogen Analyzer Unit.<br>• Built in safety systems for user protection and alarms for reagent availability to eliminate errors.<br>• Auto Intelligent run of 8 Programmable Steps.<br>• Auto door open warning indication.<br>• Automatic Reagent Level Sensor with Indication and Alarm for Reagents (Boric Acid, Alkali , KMno4)<br>• Nitrogen level: 0.1 to 100 mg Nitrogen.<br>• Nitrogen Reproducibility: ≤1% RSD.<br>• Fully automatic water level Monitoring<br>• Steam Generator.<br>1. High grade Stainless steel non corrosive steam Generator.<br>2. Non corrosive Nylocast Tube Rest, External water level view window, over temperature sensor with auto cut off feature.<br>• Cooling Condenser.<br>• Power - 220-230 v single phase 50 Hz A.C.<br>• Provision for future up gradation for Connectivity Auto Titrator.<br>• Standard RS 232 Connectivity kit with USB port. |
| 15 | MUFFEL FURNACE | • ISO Certified MNF & Marketing Company – NS-EN ISO : 9001 : 2000<br>• Quick heating type, light in weight.<br>• Temperature maximum : $1150^0$C<br>• The furnace is insulated with ceramic fiber blanket of high density.<br>• The hinged type door insulated with ceramic fiber to avoid heat loss from door.<br>• Digital temperature controller-cum-indicator<br>• Size inside : 200mm×200mm × 300mm(H x W x D)<br>• Outer dimension: 635mm×635mm × 455mm(D x H x W)<br>• Power: 3 KVA, 220-230 v single phase 50 Hz A.C.<br>**Accessories** :-<br>• Collecting pans & plate made up of ceramic to protect furnace bottom suitable for above size Muffle furnace - Two pairs.<br>• Laboratory tongs (500 mm length) - Two pairs.<br>• Heat resistance gloves - Two pairs. |
| 16. | pH METER (Micro processor Based) | • Micro processor/Micro-controller based with ATC Probe and combined electrode, 3 point calibration. |
| 17. | ROTARY SHAKER | • Rotary type shaking machine for 25 no. 250 ml conical flasks electrically operated variable speed controlling device. |
| 18. | VACUUM PUMP WITH 0.5 HP MOTOR (WITH OIL) | • Double stage , Capacity 100 lit/min<br>• 0.5 HP motor at the speed of 400 RPM<br>• Oil sealed pump should be made up of high grade cast iron fitted with heavy steel base plate and V-belt pulley.<br>• Moist air-trap on the pump and vacuum pressure gauge with regulator and non- return valve. |
| 19. | WATER DOUBLE DISTILLATION UNIT (ALL QUARTZ) | • Type – Double stage<br>• Type of condenser – Quartz<br>• Type of Boiler – Quartz<br>• Output - 2.5 liter / hours<br>• Electronic dual cut-off. with optical beam sensor and water softener for boiler feed as accessories equipment<br>• Vertical panel mounted<br>• Work on 220/230 volt AC<br>• Suitable heat exchanger or chiller required |
| 20. | WATER PURIFICATION SYSTEM (R.O BASED) DOUBLE STAGE | • |

| | | |
|---|---|---|
| | LEVEL | |
| 21. | BOD Incubator | • Capacity-280 litre<br>• Internal size-W 570mmXD550mmXH 875mm<br>• Ambient temp.- 5°-50°C<br>• Variation in temp-±0.5°C<br>• Double wall, Inside anodized aluminium/stainless steel and outside mild steel sheet painted in epoxy powder coating<br>• Hydraulic type thermostat.<br>• Inside air circulation system<br>• Adjustable stainless steel metal shelves<br>• Inside chamber and shelves shall be made of rust free stainless steel<br>• Transparent unbreakable acrylic transparent door inside<br>• Interior illumination with 60 cm length 3 number fluorescent tube<br>• Separate on/off switch for tubes and minimum temp. From 10°C to 50°C when all tubes are on<br>• Electronic digital temp. controller –cum-indicator with sensitivity of 0.1°C<br>• Humidity control from 55% to 95% by humidistat |
| 22. | Hot air oven | • Temp. range 50°C to 300°C<br>• Resolution 1°C<br>• Accuracy ±1°C<br>• Inner size – 455mmX 455mm X 605mm<br>• Capacity – 125 litre<br>• Digital temperature controller-cum-indicator<br>• 3 adjustable stainless steel selves<br>• Triple walled 65 mm gap between the wall filled with high quality glass wool<br>• Inner chamber made of 304 Grade stainless steel<br>• Outer surface of mild steel powder coated<br>• Motorized air circulation and temperature regulator |
| 23. | Muffle furnace | • Temperature maximum 800°C<br>• Inside size – 200mm X200mm X300mm (DHW)<br>• Digital temperature controller-cum-indicator<br>• Furnace is insulated with ceramic fibre blanket of high density<br>• Hinge type door insulated with ceramic fibre<br>• Accessories 2 pair each of heat resistant gloves, lab tongs 500 mm length, collecting pans & plate made up of ceramic to protect furnace bottom |
| 24. | Laminar air flow | • Horizontal laminar flow<br>• Inside size – 1200 X 600 X 600 mm (LWD)<br>• High efficiency particular air (HEPA) filters retaining all air born particle of size 0.3 micron<br>• Attachment of UV light made on Duro board (wood)<br>• Acrylic glass door<br>• Balanced blower provide good amount of air flow on full surface of HAPA filter<br>• Blower is fitted with ¼ HP ISI marked pump<br>• Complete area of cabinet are illuminated by fluorescent light<br>• Cabinets are made of best quality 19 mm DURO board which is termite & insect proof<br>• Cock for gas or vacuum line & exhaust fan<br>• Working space shall be of mica top and side panels are transparent acrylic 8 mm thick<br>• Complete structure made of stainless steel of 304 grade quality. |

Annexure -II

# Technical Bid Form

1. Tender No. - : Due Date - ……
2. Tendered Article (Serial No.) : ..../..../..../..../..../..../..../..../....
   (For which bid is submitted)
3. Name and Address of Bidding Firm : ……
4. Type of firm (Solo Proprietor/Private Ltd/ : ……
   Partnership/Co-operative/Public Co.) …..……
5. ISO/BIS Certificate of Mnf. firm : ……
   (Certificate enclosed)
6. Name and Designation of the : …….
   person signing the bid
7. Mobile/Land Line Number & E-mail Id : ……
8. Earnest Money Deposit Details : ……
9. Sale Tax/VAT Registration Certificate No. : ……
   of the tenderer (Copy enclose)
10. PAN Number/GIR No. & year of Registration : ……
    (Copy enclosed)
11. Authorized dealer/Distributor : ……
    (Copy of certificate issued by
    manufacturing company enclosed)
12. Audited Annual Gran turnover (2013-14) : ……
    (Copy enclosed)
13. Year-wise amount of supply order : ……
    of similar items executed in last three years
    (copy of supply orders/invoices enclosed for each)
14. Technical Specification supported by printed
    literature of the manufacturer given all details
    of conformity and Non conformity of any,
    Additional feature if any with support. : ……
15. Terms and Condition of contract mentioned : ……
    in the invitation bid are ACCEPTABLE/
    NON-ACCEPTABLE
16. Deviation in Terms and conditions/
    specifications if any : ……
17. Capacity in which bid is signed by the Bidder : ……
    (PARTNER/DIRECTOR)
18. Details for each quoted items

| Sl. No | Details of Item | | | | Specification Required (as per tender) | Actual Specification of the offered item | Remarks |
|---|---|---|---|---|---|---|---|
| | Sl. No. | Name of Item | Model/ Make No. | Brand Name | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | | | | | |

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Signature of Authorized Signature
Name & Add. in Block Letters

.....
Place & Date.

Annexure -III

# Financial Bid Form

1. Tender No. - : Due Date - …….....
2. Tendered Article (Serial No. & Name) :- …….....…….....
3. Name and Address of Bidding Firm :- …….....…
4. Financial Details for each quoted items :-

| Item No. | Details of Item Quoted Price & Taxes | | | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | Sl. No | Model/ Make No. | Brand Name | Price of Item (FOR) | Bihar Sales Taxes (Vat) | Price inclusive VAT (6+7) | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | | | | | |

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Signature of Authorized Signature
Name & Add. in Block Letters

.....
Place & Date.

Annexure -IV

# Format for Authorization Letter

To,

Director of Agriculture,

Bihar, Patna.

Sir,

We hereby authorize ..... to submit a Bid and subsequently participate and sign the contract submitted against the Ref. :-..... . We hereby accept his decision taken, if any in this regard.

(Signature for and on behalf of the company)

Place :- .....

Date :- .....

Annexure -V

# Format for Undertaking

## UNDERTAKING

1. I/We undertake that I/We have carefully studied all the terms and conditions and understood the parameters of the proposed supplies of the Quality Control Laboratory, Patna and shall abide by them.
2. I/We also undertake that I/We have understood "Parameters and Technical Specification for making the supplies" mentioned in Annexure-I of the Tender dated - ..... and shall make the supplies strictly as per these "Parameters and Technical Specification for the supplies".
3. I/We further undertake that the information given in this tender is true and correct in all respect and we hold the responsibility for the same.

(Signature of Bidder with stamp of the firm)

Date :- .....