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College of Agriculture
Odisha University of Agriculture and Technology,
Bhubaneswar, Odisha-751003

E mail: deanca@ouat.ac.in

No. 796 /CA, Date: 20.02.2024

TENDER NOTICE

Sealed tenders are invited on behalf of OUAT from reputed stakeholders/companies/consultancy agencies for Supply, Installation, Running and Accreditation of Laboratory for Pesticide Residue and Heavy Metal Analysis of Soil, Water and Rice Grains by NABL on Turnkey Basis at central instrumentation facility (CIF), OUAT, Bhubaneswar. The tender documents with details of the terms and conditions and important information can be obtained from the OUAT website www.ouat.ac.in from date 20.02.2024. The sealed tender document containing technical and financial bid along with the non refundable tender fee and EMD as specified in the tender document should reach Dean, College of Agriculture, OUAT, Bhubaneswar office by speed post/ courier on or before date 06.03.2024 (5.00 pm). The technical bid and the financial bid are to be submitted separately in sealed cover. The technical bids will be opened on date 07.03.2024 at 11.00 am and financial bids of the successful technical bidders will be opened on date 12.03.2024 at 11.00 am.


20/2/24

DEAN, CA Cum Chairman PMT

Tender No: 01/CA/NABL/2024; Date: 20.02.2024

**ODISHA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
BHUBANESWAR**



Tender Document for

Supply, Installation, Running and Accreditation of Laboratory for Pesticide
Residue and Heavy Metal Analysis of Soil, Water and Rice Grains by NABL on
Turnkey Basis

At

Central Instrumentation Facility (CIF),
OUAT, Bhubaneswar, Odisha-751003

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Tender No: 01/CA/NABL/2024; **Date:** 20.02.2024

ODISHA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BHUBANESWAR

NOTICE INVITING TENDER

Tender for Supply, Installation, Running and Accreditation of Laboratory for Pesticide Residue and Heavy Metal Analysis of Soil, Water and Rice Grains by NABL on Turnkey Basis

About Odisha University of Agriculture and Technology, Bhubaneswar, Odisha

In 1960, a decision was taken to establish an Agricultural University in Odisha in the pattern of the Land Grant Colleges of USA and Dr. Ide P. Trotter joined the Utkal Krishi Mahavidyalaya on 1st April, 1960, as a consultant in Educational Administration. President Elmer Ellies of the University of Missouri visited the Agriculture and Veterinary Colleges of Odisha in 1961 and had discussion with the State Government for establishment of the Odisha University of Agriculture and Technology. In 1961, the Legislature of the State of Odisha enacted the Odisha University of Agriculture and Technology Act, 1961 (Odisha Act 20 of 1961) with the object of establishing and incorporating a University of Agriculture and Technology for the agricultural education of the people of the State. The University took its birth on 24th August, 1962 when it was inaugurated by Prof. John K. Galbraith, the then U.S. Ambassador in India. The University came into operation from 1st February, 1963, when the two Govt. managed Colleges, the Utkal Krushi Mahavidyalaya and the Odisha College of Veterinary Science and Animal Husbandry with their staff were transferred to the University. This Act passed in 1961, was later repealed in 1965 by the Odisha University of Agriculture and Technology Act, 1965 (Odisha Act, 17 of 1965) which came into force from the 3rd November, 1965.

The Odisha University of Agriculture and Technology, is functioning with triple mandates of teaching, research and extension education in agriculture and allied area. The University imparts U.G. and P.G. education on agriculture, horticulture, veterinary science & animal husbandry, agricultural engineering, community science, forestry science, fishery science, basic science, bioinformatics, computer applications and agribusiness management through 10 constituent colleges, one centre for post graduate studies and 10 agro-polytechnic centres. The university undertakes research and extension activities in all the 10 agro-climatic zones of the State for generation and dissemination (transfer of technology) of location specific technologies to enhance agricultural production of the State. Strong research infrastructures with well equipped central instrumentation facility (CIF) are fulfilling the research requirement of students and faculties.

1. Critical Date Sheet

S. No.	Particulars	Important Dates	Time	Tender Processing Fee (Rs)	EMD (Rs)
1.	Issue of Tender documents	20.02.2024	5.00 pm	10,000/- (+18% GST)	2% of the quoted value
2.	Pre-bid Meeting at Meeting Room / Through VC	26.02.2024	4.00 pm		
3.	Start date for submission of bids	20.02.2024	5.00 pm		
4.	Last date & time for submission of tender	06.03.2024	5.00 pm		
5.	Date & time of opening of Technical Bids	07.03.2024	11.00 am		
7	Publishing of technically qualified Bidders	11.03.2024 (5.00 pm)			
8	Date & Time of Financial Bid opening	12.03.2024 (11.00 am) (Technically qualified bidders)			

2. Scope of Work

The bidder shall be responsible for Supply, Installation, Running and Accreditation of Laboratory for Pesticide Residue and Heavy Metal Analysis of Soil, Water and Rice Grains by NABL on Turnkey Basis at CIF, OUAT, Bhubaneswar with 3 years onsite Guarantee/Warranty for their supplies. The list and technical specifications of laboratory equipments (with all accessories) are specified at **Annexure –III** of this tender document.

In House Laboratory Requirements

- Layout plan including emergency preparedness of the laboratory with the positioning of the equipments keeping in view of NABL criteria utilizing floor space area of two numbers (35 ft x 25 ft and 25 ft x 25 ft).
- Environmental conditioning of the laboratory including Temperature & Humidity.
- Electrical points and their amperage to meet the electrical load of the equipments along with backup power supply for the equipments.
- Water connection in the laboratory to the required points.
- Gas connection/ pipelines installation for the instruments in the Laboratory.
- Furniture (for placement of equipments and for sitting purposes of the analysts including working table for wet lab with provision of water sink and hood), covered storage racks for glasswares, plastic wares, and other required reagents.
- Adequate light, Ventilation as per national guidelines.
- Appropriate provision for placement of gas cylinder at suitable place.

- Provision for Fire alarms, Smoke detectors in laboratory and at critical suitable place.
- Provision for two numbers of computer desktops for official uses in the laboratory
- For high ended equipments, separate dry laboratories and for sample processing one separate wet laboratory is to be established with all accessories to run it properly.

Human Resources

- ✓ Human resources will be provided by the host Institution (OUAT, Bhubaneswar) as per the requirements for NABL accreditation.

Criteria for selection of Equipments

- ✓ Identification/ Selection of equipments shall be done strictly as per technical specifications prescribed in the tender document.

List of matrices

1. Soil
2. Water
3. Rice grains

Parameters to be tested

1. Pesticides (107 numbers) may be more in future
2. Heavy metals (31 numbers) may be more in future

List of pesticides to be tested:

SI No	Pesticides	SI No	Pesticides
1	Acephate	24	Dimethoate
2	Acetamiprid	25	Dimethomorph
3	Atrazine	26	Dinotefuran
4	Azoxystrobin	27	Dithiocarbamates
5	Bendiocarb	28	Emamectin benzoate
6	Beta cyfluthrin	29	Ethion
7	Bifenthrin	30	Etofenprox
8	Buprofezin	31	Ethylene oxide (ETO)
9	Captan	32	Fenazaquin
10	Carbendazim	33	Fenpropathrin
11	Carbofuran	34	Fenpyroximate
12	Chlorantraniliprole	35	Fenvalerate
13	Chlorfenapyr	36	Fipronil
14	Chlorothalonil	37	Flonicamid
15	Chlorpropham	38	Flubendiamide
16	Chlorpyrifos	39	Fluopicolide
17	Chlorpyrifos methyl	40	Fluopyram
18	Clothianidin	41	Flusilazole
19	Cymoxanil	42	Fluvalinate
20	Cypermethrin	43	Glyphosate
21	Deltamethrin	44	Hexaconazole
22	Dicofol	45	midacloprid
23	Difenoconazole	46	Indoxacarb

SI No	Pesticides	SI No	Pesticides
47	Iprobenphos	70	Pyriproxyfen
48	Iprovalicarb	71	Quinalphos

49	Isoprothiolane	72	Spinosad
50	Cyhalothrin	73	Spiromesifen
51	Malathion	74	Spinetoram
52	Mandipropamid	75	Spirotetramat
53	Metalaxyl	76	Tebuconazole
54	Methamidophos	77	Thiacloprid
55	Methomyl	78	Thiamethoxam
56	Monocrotophos	79	Thiodicarb
57	Myclobutanil	80	Thiophanate Methyl
58	Novaluron	81	Triadimefon
59	Omethoate	82	Tricyclazole
60	Penconazole	83	Trifloxystrobin
61	Pendimethalin	84	Alachlor
62	Permethrin	85	Aldicarb
63	Phenthoate	86	Aldrin
64	Pretilachlor	87	Benomyl
65	Profenofos	88	Carbaryl
66	Propargite	89	Chlorobenzilate
67	Propiconazole	90	Chlordane
68	Pymetrozine	91	Chlorfenvinphos
69	Pyraclostrobin	92	Diazinon

SI No	Pesticides	SI No	Pesticides
93	Dichlorvos	101	HCH& its isomers
94	Dieldrin	102	DDT & its isomers
95	Endosulfan	103	Methyl Parathion
96	Endrin	104	Phorate
97	Parathion	105	Phosphamidon
98	Fenarimol	106	Triazophos
99	Fenthion	107	Tridemorph
100	Heptachlor	--	---

List of heavy metals to be tested

SI No	Heavy metals	SI No	Heavy metals
1	Cu	17	Mg
2	Al	18	Mn
3	Zn	19	Be
4	Ba	20	Bi
5	B	21	Co
6	Fe	22	Ga
7	Ag	23	In
8	Pb	24	K
9	Hg	25	Li
10	As	26	Na
11	Se	27	Rb
12	Ni	28	Sr
13	Mo	29	Ti
14	Cd	30	U
15	Cr	31	V
16	Ca	-	-

Quality Management System Required As Per ISO 17025:2017 Version (for NABL accreditation of the Laboratory)

Sl. No.	Activity
1	Development of Quality Manual
2	Framing of Quality Policy
3	Development of Quality System Procedure
4	Preparation of Standard Operating Procedure
5	Conducting of Proficiency test
6	Conducting of Internal audit
7	Knowledge of Management Review and Its Related Documents
8	Procurement of CRM
9	Procurement of Chemicals
10	Procurement of Glassware
11	Procurement of Gases for Running Approved Instruments
12	Method Validation & Verification
13	Measurement of Uncertainty
14	Calibration of Equipments
15	Development of History Card for Instruments
16	Development of Work Instruction Manual
17	Storage and Handling of Incoming and Disposal of Samples
18	Application of Decision Rule
19	Procedure for Compliance of Non Conformities of Observations by Filling CAPA
20	Intermediate Checks
21	Instrument Operating Procedures
22	Training <ul style="list-style-type: none"> • Training Calendar • Training Schedule • Effectiveness of Training • ILC /Blind test/ Retest for Efficiency of the Chemist/Analyst
23	AMC of Equipments/Instruments for 3- 4 years (Annexure-III)
24	Developments of Forms and Formats for Relevant Activity Including Sampling Data Sheets

3. Period for Supply of Items

- i. The supply of item shall be required to be made within 30-45 days for indigenous equipment from the issue of Purchase Order/ Supply order and 60 days for imported equipment. The schedule of supplies, installations, commissioning of all equipment should be given in the technical bid.
- ii. The supplied material should be numbered by using good quality paint in the following format: (Tender No.)/ Sl.no.
- iii. After the supply of equipments as mentioned in the Annexure-III, the bidder has to execute its installation & commissioning including necessary civil work, electrical work, plumbing work (water, gas, air etc as applicable), at the designated site in the location(s), CIF, OUAT, Bhubaneswar. The cost of the same shall not be paid extra and it should be included in price of the respective equipment.
- iv. After the installation & commissioning of equipment/instrument, the supplier/OEM/Vendor has to provide application training to user at CIF, OUAT, Bhubaneswar for minimum period of fifteen working days about operations,

maintenance, information about Do's & Don'ts as well as trouble shooting & all other areas which are necessary for smooth functioning of equipment/instrument shall be provided. No extra cost shall be paid to the successful bidder for imparting this training.

- v. After the installation & commissioning of equipments, minimum three trials are mandatory on minimum capacity and two trials on maximum capacity on suitable intervals of each equipment to check smooth functioning of all the equipments. In case of unsuccessful trials, the supplier has to extend further trials until satisfaction. No extra cost shall be paid for the raw materials etc., for these trials. Expenditure towards electricity & water shall be borne by the CIF, OUAT, Bhubaneswar.

4. Pre-Qualifying Eligibility Criteria

The tenderers must fulfill the following eligibility criteria: -

- i. The bidder shall have sound experience in setting up of laboratory for analysis of water, soil and rice grains or related food. The laboratory may be of his own or other clients which includes all the state of art instruments/equipments for analysis of pesticides and heavy metal. The bidder shall have NABL accredited laboratory in any one of the above stated matrix.
- ii. The bidder shall have minimum three year experience in the operation of NABL, MOEF, ISO 9001, ISO 14001 and ISO 45000:2018 accredited/approved laboratory in testing water, soil and food. Preference shall be given to the bidder who has set up the laboratory with the grant in aid from the Ministry of Food Processing Industry (MOFPI)/RKVY/Govt. of India for setting up laboratory in Odisha specifically in and around Bhubaneswar.
- iii. The average annual financial turnover during the last 3 financial years ending on 31st March of the previous financial year (2022-23) should be at least Rs. 15.00 Cr. Copies of audited balance sheet of 2020-21, 2021-22, 2022-23 to be attached as documentary proof.
- iv. The bidder is also required to enclose at least 01 successful satisfactory supply/work order either OF ITS OWN OR OTHER CLIENT for installation Certificate/Completion Certificate/Performance Certificate for work in Food/ Environmental/ Microbiological testing in last 03 years ending 2023-24.
- v. In case of supplier or Authorized Dealer/distributor of a reputed foreign or Indian manufacturing company, the bidder has to enclose appropriate registration and OEM/dealership letter/certificate.

5. Bidding Procedure

5.1. A pre-bid Meeting will be held at 4 pm on 26.02.2024 through online mode by the Dean, College of Agriculture, Bhubaneswar, wherein the queries of interested stakeholders will be clarified. The bidders may contact the Dean, College of Agriculture, Bhubaneswar for the link.

5.2. Site Visit: The interested parties may request for a site visit to the project site of, CIF, OUAT, Bhubaneswar. The, Dean, College of Agriculture, Bhubaneswar will facilitate such visit on a date mutually convenient.

5.3 Bids shall be submitted by speed post/ courier only.

5.4 Bidding Application must be accompanied by the following:-

A. Technical Bid

The following documents, duly signed and stamped, are to be furnished by the Bidder along with Technical Bid as per the tender document:

- i. Proof of permanent address of the firm/Agency/Bidder.
- ii. Proof for payment of Tender Document Cost Rs.10,000/- (Tender Fee (Non-refundable) in form of demand draft in favor of Comptroller, OUAT, Bhubaneswar.
- iii. Earnest Money Deposit (EMD) amounting to Rupees 2% of the quoted value (Refundable without any interest) in the form of Demand Draft in favour of Comptroller, OUAT payable at Bhubaneswar are to be enclosed with the Technical Bid, failing which the tender will be summarily rejected. The Application Processing Fee is not refundable. The EMD of the non-qualified bidders shall be returned without any interest.
- iv. "Bid Security Declaration", if required needs to be submitted as per the format attached at Annexure- VI, accepting that if they withdraw or modify their bids during of validity etc., their bid shall be rejected and they will be suspended for next one year.
- v. The tenderers who are currently registered and, also, will continue to remain registered during the tender validity period as Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) or with National Small Industries Corporation, New Delhi shall be eligible for exemption from EMD. In case the tenderer falls in this category, it should furnish copy of its valid registration details (with MSME or NSIC, as the case may be)
 - a) The MSE's Bidder to note and ensure that nature of services and goods/items manufactured mentioned in MSE's certificate matches with the nature of the services and goods/items to be supplied as per Tender. Such bidders will submit proper Udyog Adhar Certificate with specified validity and relevant service category.
 - b) Traders/resellers/distributors/authorized agents will not be considered for availing benefits under PP policy 2012 for MSEs as per MSE guidelines issued by Ministry of MSME.
- vi. A complete list of clients, whom such analytical equipment were supplied in past including clients from Govt. /Semi Govt. /Autonomous Bodies/PSUs Institutions/ Private entity/ MSME/ served during last three years with Name, Telephone No, etc along with copies of supply order, may be closed.
- vii. Copies of supply order, completion certificate, as per eligibility criteria.
- viii. Details of Bank Account of Bidder i.e. Account No., IFSC Code, MICR No., Bank Name and address
- ix. Copy of PAN/TAN/TIN/GST, Registration number, if any.
- x. Copies of Income Tax Return of last 3 financial years (2020-21, 2021-22, 2022-23).
- xi. Copies of audited balance sheet for the 3 financial years (2020-21, 2021-22, 2022-23).
- xii. Copy of last 6 months bank statement
- xiii. An authorization letter from the firm in favor of the person signing the tender documents.
- xiv. An attested copy of the certificate of registration/incorporation pertaining to the legal status of the Bidder/Firm/Agency.
- xv. An undertaking to the effect that the Agency/Firm has not been black listed in India and Abroad (Annexure-V).
- xvi. The bidder will be required to give an undertaking on Non-Judicial Stamp Paper (Rs 100/-) that he will supply the goods in accordance with specifications of the supply/work order. At any stage, if it is found that the substandard/deviation from the specifications/ design/ quality has been made by him, he is liable for penalty and

legal action.

- xvii. Tender document with Annexure – I to Annexure V duly signed and stamped on each page as acceptance of the terms and condition laid down by the OUAT, Bhubaneswar.

Caution: All the bidders are specifically informed that while submitting tender, must ensure that signed documents as indicated in the tender documents are mandatory, otherwise tender will be similarly rejected and no second opportunity will be given to submit shortfall documents. In case of less bids, Institute has liberty to invite shortfall documents.

B. Financial Bid

- i. The rates should be only in INR up to F.O.R (Freight on Road) destination basis up to (Location of NABL Lab) including imported equipment
- ii. Clear mention of rate and amount of taxes, packaging, insurance, forwarding, handling and any other levies.
- iii. Pre-requisite item (civil work, electrical work, plumbing work etc.) and its cost..

6. Evaluation Procedure

Tender will be evaluated in following manner:

- i. With regard to the matching of technical specifications of individual equipment, a deviation up to $\pm 10\%$ may be considered by the Technical Evaluation Committee (TEC) on the recommendation of the user without compromising with the quality and its major functioning. In this regards, TEC decision shall be final.
- ii. The participating firm/agencies/bidders may be called for presentation before Technical Evaluation Committee on the date and time, as prescribed by the committee. The eligible agencies may be called through phone/email.
- iii. The financial bids of the technically qualified bidders will only be opened.
- iv. The financial bids of the technically non-qualified bidders will be returned as such.

7. The Award of Work / Supplies

The bid of agency quoting lowest for the overall turnkey execution as per the scope of work in their financial bid, i.e. L-1 bidder will be accepted as the successful bidder. Supply order will be placed to the successful tenderer/ bidder by the authorized signatory of the institution. Contract, will be signed with the successful bidder after issue of Letter of Award and receipt of Letter of Acceptance from the successful bidder. In case of only one applicant/bidder, another 15 days will be given to encourage fresh participation from other bidders. At the end of the extended period, if no other fresh bidder participated, then the single bidder will be considered for award of work.

8. General Terms& Conditions

- i. In case, after Pre-bid meeting (wherever applicable) any modification(s)/addition(s)/deletion(s) or any alternation in the requirement(s)/ specification(s) etc is required, the same will be published on the Host Institutes' Website-ouat.ac.in within the next 5 days. Therefore, all the bidders are advised to visit our website before filling/submitted their tenders. No separate advertisement/information will be published in this regard in the Newspapers or any other location or any other mode of communication will be adopted.
- ii. The successful bidder will submit the Performance Security@5% (as per O.M.

8952/F-FIN-COD-MISC-0007-2019 of Govt. of Odisha, dt 18-03-2021) of supply order in the form of Demand Draft in the name of Dean, College of Agriculture, Bhubaneswar within 15 days of the receipt of Work Order. The validity of Performance Security should be 90 days more than the warranty period and it will be retained during the entire period of Warranty as Security Deposit and will be returned after the satisfactory completion of the Warranty period without interest within three months after expiry of warranty period.

- iii. EMD/Performance Security of successful bidder may be forfeited, if the bidder withdraws or amends or derogates from the tender in any respect.
- iv. This tender is valid upto 180 days from the issue of tender notification.
- v. In case the item(s) are fabricated/ finished in the campus, the Contractor/Agency shall ensure the protection of their items at site from fire, floodwater, moisture etc. or any kind of damage at their cost.
- vi. The OUAT, Bhubaneswar will not compromise with the quality & standard of the material. At any stage, if it is found that bidder has supplied inferior quality or different specification than as specified in the supply order, payment shall be withheld till the supplier replace the defective/inferior machine/equipment/instrument. In case the bidder fails to fulfill all the obligations as laid down in this tender document, then payment shall be held up and performance security may be forfeited.
- vii. The supplier will provide at least two years on-site guarantee, and under guarantee period all the damages shall be repaired/replaced by the supplier at their cost and risk. If equipment has any manufacturing defects, the same will be preferably replaced from another one, or repaired up to client satisfactions. No sub-standard material steel will be accepted.
- viii. The rates quoted by the bidder shall be complete for supply and placing of the finished items as per the specification(s) and shall be inclusive of all applicable tax, duties loading, unloading, packing, transportation and installation etc and nothing extra/additional shall be payable on these rates.
- ix. In any case, if tenders are not opened due to any reason, the Tender documents, processing Fee and EMD shall be returned to all bidders.
- x. Conditional Tender will not be accepted.
- xi. Tender without, tender Fees, EMD/Bid Security Declaration will be summarily rejected.
- xii. The Institute can ask any clarifications & documents at any stage of the procurement depending upon the circumstances to ascertain quality of material used in manufacturing of items.
- xiii. All the documents attached with the technical bid should be properly tagged, numbered, signed and stamped by the competent authority.
- xiv. EMD shall be forfeited in the following cases:-
 - a. If the Bidder withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
 - b. If the bidder having been notified of the acceptance of his tender by the Buyer during the period of its validity, fails to supply, install and commission the equipments
 - c. If the Bidder fails to furnish the Performance Security
 - d. If the Bidder fails to sign the agreement.
 - e. Fails to respond to queries by the OUAT, Bhubaneswar.
- xv. If a tender, either the Indian agent on behalf of the Principal/ OEM (Original Equipment Manufacturer) or Principal/ OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
- xvi. If an agent submits bid on behalf of Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product. While submitting the bids, CVC guidelines may take due care.

- xvii. Two agents simultaneously shall not submit bid on behalf of same principal/OEM for same items/ products. Otherwise the EMD may be forfeited

9. Terms and Conditions for Equipments

- i. All equipment should be compatible with proper voltage supply. Electrical wiring for interconnection of the equipments upto main supply point should be facilitated by the bidder/supplier.
- ii. Electrical section, pipe, valve should match the specification of the equipments. All components of electrical fittings should be as per the Indians standard/ ISO standards.
- iii. The equipment shall consist of all accessories, consumables for testing and toolbox in all respects to be provided to run the equipment smoothly.
- iv. All equipments should be supplied and installed at site by the supplier. Any requirement of unloading, lifting etc. will be arranged by the suppliers.
- v. All transport charges for shifting, fitting will be borne by the bidder.
- vi. Any other necessary provisions required for satisfactory operation of the laboratory will be arranged by the supplier/bidder.
- vii. The make and model of the equipments should not be more than 5 years old.
- viii. The supplier company/OEM must ensure that the equipments are NABL certified before supply.
- ix. The bidder has to produce a letter from that NABL accredited/approved laboratory in charge stating that, the make and model of the equipments used in that NABL accredited laboratory are functioning perfectly since last two years.
- x. AMC of Equipments/Instruments should be for 3-4 years. (Annexure-III)
- xi. For equipments like GC-MS/MS and UPLC-MS/MS, one technician/operator for each must be provided along with the equipment for a period of one year effective from the date of successful installation.

10. Payment

The payment will be made as under:

- i. 50% after supply of complete items on site.
- ii. 40% after installation, testing and successful trial.
- iii. 10% amount will be retained as performance security until the completion of warranty period and NABL accreditation of the laboratory and will be returned without interest within three months after expiry of warranty period.
- iv. TDS @2% (CGST/SGST/IGST as the case may be) shall be deducted and deposited into the supplier's account as per Govt rule.

11. Bank Guarantee

The bidder has to submit a bank guarantee of 5% of the quoted value (Rs) in form of deposit. This will be returned back to the bidder after completion of 4 years warranty period without any interest. If the equipments fail to work, then this amount will be forfeited.

12. Prices

- i. The Price to be quoted F.O.R. (Freight on Road) Destination only and it's should be inclusive of taxes, freight, Packing, Transit, Installation, Insurance, Inspection Charges etc. through the prices to be mentioned separately.
- ii. Demurrage charges if any will be borne by the supplier only.
- iii. Prices charged by the supplier for goods delivered and services performed under the contract shall not be higher than the price quoted by the supplier in his bid.
- iv. Prices will be fixed at the time of issue of purchase order as per taxes and statutory duties applicable at that time.

- v. In case of reduction of taxes and other statutory duties during the scheduled delivery period, purchaser shall take into account the deduction in these taxes/duties for the supplies made from the date of enactment of revised duties/taxes.
- vi. In case of increase in duties/taxes during the scheduled delivery period, the purchaser shall revise the prices as per new duties/taxes for the supplies, to be made during the remaining delivery period as per terms and conditions of the purchase order.
- vii. Any increase in taxes and others statutory duties/levies after the expiry of scheduled delivery date or award of contract/work order shall be to the supplier account. However, benefit of any decrease in these taxes/duties shall be passed on to the purchaser by the supplier.
- viii. The agency may quote rates of Imported Equipment in INR only including customs duty and clearing charges etc.
- ix. Odisha University of Agriculture and Technology, Bhubaneswar is registered with the Department of Scientific and Industrial Research (DSIR Regn. No. TU/V/RG-CDE (421)/2021, dated 25-02-2022 valid up to 31.08.2025) for purposes of availing Custom Duty exemption and IGST-SGST exemption and it is expected that the registration may be renewed. The applicable amount of customs duty/ GST for our University against DSIR certificate should be mentioned in the financial bid
- x. Odisha University of Agriculture and Technology is a non-profit, non-commercial premier institute engaged in teaching, research at undergraduate, postgraduate and PhD level and as such, we do not have any commercial license. GST identification number of our university is 21AAAJO0250C1Z1
- xi. The authority (OUAT) reserves the right to accept or reject any/all tenders without assigning any reason(s).
- xii. Tenders not on the prescribed Performa (attached), without requisite details, EMD and Processing Fee and received after the closing date/time of tenders and tenders with any rider will summarily be rejected. Canvassing in any form will be viewed seriously and if any tendered is found to be resorting to such practices the tender of such firm will be rejected.

13. Settlement of Dispute

Suits, if any arising out of the contract shall be filed by either party in a court of law to which the jurisdiction of the High Court of Odisha extends.

14. Withholding of Payment

In the event of the Selected Agency's failure to submit the Bonds, Guarantees and Documents, supply the deliverables etc as specified in the Contract, the Buyer may at his discretion, withhold any payment until the completion of the Contract.

15. Right of Acceptance of Offer

The Buyer reserves the right to accept or reject any offer without assigning any reason thereof. The Buyer does not pledge itself to accept the lowest or any other tender.

16. Negotiations

Normally there will be no post tender opening negotiations and it would be only on exceptional circumstances, if considered necessary. This shall be held only with the Agency

which is evaluated as L-1 bidder after evaluation of financial bids, as indicated above. Under no circumstance, the financial negotiation shall result into an increase in the price originally quoted by the Agency.

17. Competent Authority's Right to Vary Items/Activities at the Time of Award

The Competent Authority shall have the right to make any alterations, omissions, additions or subtractions in items/services at the time of award of contract. The Competent Authority will give such intimation to the successful Bidder, and additional cost/deduction in the Bid prices, based on the price schedule submitted by him, will be worked out with the Bidder. In case, the Bidder does not agree for such alterations, the Competent Authority will be free to award the contract to the next eligible Bidder.

18. Applicable Law and Jurisdiction

This contract, including all matters connected with this contract, shall be governed by the India laws, both substantive and procedural, for the time being in force and shall be subject to the exclusive jurisdiction of High Court of Odisha, if required.

19. Insurance and Medical

- i. It shall be the responsibility of the agency to insure their staff and equipment against any exigency that may occur while carrying out the project/laboratory activities. Agency will also take insurance cover for third party liability, which might occur due to damages caused to their manpower, equipment etc. The buyer shall not be responsible for any such damages.
- ii. Medical facilities (as per law) for professional including insurance of the professional related to the project/laboratory will be provided by the Agency.

20. Indemnification

- i. The Seller/bidder shall indemnify and hold the Buyer harmless against all third party claims of infringement of patent, trade mark of industrial design rights arising from use of the stores supplied or any part thereof.
- ii. Agency shall at times indemnify and keep the buyer indemnified against all claims/ damages etc. for any infringement of any Intellectual Property Rights (IPR) while providing its services under this contract.
- iii. Agency shall at all times indemnify and keep buyer indemnified against any claims in respect of any damages or compensation payable in consequences of any accident or injury sustained or suffered by its (Agency) employees or caused by any action, omission or operation conducted by or on behalf of Agencies.
- iv. Agency shall at all times indemnify and keep buyer indemnified against any and all claims by employees, workman, suppliers, agent(s) employed engaged or otherwise working for Agency, in respect of their wages, salaries, remuneration, compensation or the hike.
- v. All claims regarding indemnity shall survive the termination or expiry of the contract.

21. Force Majeure

- i. Should any force majeure circumstances arise, each of the contracting party shall be excused for the non-fulfillment or for the delayed fulfillment of any of its contractual obligations, if the affected party within 14days of its occurrence informs in a written form the other party.

- ii. Force majeure shall mean fires, floods, natural disasters or other acts such as war, turmoil, strikes, sabotage, explosions, and quarantine restriction beyond the control of either party.

22. Penalty for Use of Undue Influence

- i. The Seller/vendor will undertake that he has not given, offered or promised to give, directly or indirectly any gift, consideration, reward, commission, fees brokerage or inducement to any person in service of the Buyer or otherwise in procuring the Contracts or forbearing to do for having done or for borne to do any act in relation to the obtaining or execution of the Contract or any other Contract with the OUAT, Bhubaneswar for showing or forbearing to show favor or disfavor to any person in relation to the Contract or any other Contract with the OUAT, Bhubaneswar.
- ii. Any breach of the aforesaid undertaking by the seller or any one employed by him or acting on his behalf (whether with or without the knowledge of the seller) or the commission of any offence by the seller or anyone employed by him or acting on his behalf, as defined in Chapter IX of the Indian Penal Code, 1860 or the Prevention of Corruption Act, 1988 or any other Act enacted for the prevention of corruption shall entitle the Buyer to cancel the contract and all or any other contracts with the seller and recover from the seller the amount of any loss arising from such cancellation. A decision of the buyer or his nominee to the effect that a breach of the undertaking had been committed shall be final and binding on the Seller.
- iii. Giving or offering of any gift, bribe or inducement or any attempt at any such act on behalf of the seller towards any officer/employee of the buyer or to any other person in a position to influence any officer/employee of the Buyer for showing any favour in relation to this or any other contract, shall render the Seller to such liability/ penalty as the Buyer may deem proper, including but not limited to termination of the contract, imposition of penal damages, forfeiture of the Performance Guarantee and refund of the amounts paid by the Buyer.

23. Right to Variation Clause

To take care of any change in the requirement during the period between issue of Tender and conclusion of contract, Buyer reserves the right to increase or decrease the quantity of the required deliverables without any change in the terms & conditions and prices quoted by the Seller. While concluding the contract, the quantity can be accordingly increased or decreased at the same terms of conditions.

24. Modification and Withdrawal of Bids

The bidders may modify or withdraw his bid after submission provided that the written notice of modification or withdrawal is received by the Buyer prior to the deadline prescribed for submission of bids. A withdrawal notice may be sent by Email but is to be followed by a signed conformation copy by post not later than the deadline for submission of bids. No bid shall be modified after the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and expiry of the period of specified bid validity. Withdrawal and modification of bid during this period will result in forfeiture of Bidder's Bid Security.

25. Liquidated Damages (LD)

In the event of the seller's failure to submit the Bonds/Guarantees/ Documents or/and supply/perform the items/services as per Delivery schedule specified in the contract, the Buyer may, at his discretion, withhold any payment until the completion of the contract. The buyer may also deduct LD to the sum of 0.5% of the contract price of the delayed/undelivered stores/ services mentioned above for every week of delay or part of a week, subject to the maximum value of the Liquidated Damages being not higher than 10% of the value of delayed stores/services.

26. Cancellation of the Contract

The OUAT, Bhubaneswar shall have the right to terminate the Contract, arising out of finalization of this tender, in part or in full in any of the following cases:

- i. The delivery of the material or start of works is delayed for causes not attributable to Force Majeure for more than 10 days after the scheduled date of delivery.
- ii. When both parties mutually agree to terminate the contract. At any stage without assigning any reason thereon.

27. Clarification on Bid Documents

Bidder requiring any clarification to this Tender Document shall attend the Pre-bid meeting on the date notified by Buyer. Also the bidders may send their queries to the Buyer via email not later than 2 days prior to the Pre-bid meeting on the following email Address:

Dean, College of Agriculture, OUAT, Bhubaneswar, Odisha

Email: deanca@ouat.ac.in

Tender Form (Technical Bid)

(To be submitted by the Tenderer on their letter head. All Columns must be filled in. Relevant documents in relation to these must be enclosed with the technical bid. The bid will be examined on the same.)

S.N.	Particulars	Details (to be filled by the bidder)	Enclosure page no.
1	Name of Firm with address, mobile/phone no. & e-mail.		
2	Proof of permanent address		
3	Type of Firm (Proprietor/ Partnership/ Pvt. Ltd./ Public Ltd.		
4	Registration Number (Copy to be enclosed)		
5	Year of Incorporation of the agency (copy to be enclosed) along with the latest registered address of corporate office.		
6	Tender fee details (Amount, DD no., Bank Name, date)		
7	EMD details (Amount, DD no., Date, Bank name, date) or		
8	Bid security declaration, if required		
9	Udyog Adhar No, if applicable		
10	NISC Documents, if applicable		
11	ISO or any other certificate in details		
12	GST Registration(Copy to be enclosed)		
13	PAN No. (Copy to be enclosed)		
14	Undertaking on Non-Judicial Stamp Paper (Rs 100/-) that bidder will supply the goods in accordance with specifications of the supply/ work order		
15	Undertaking y authorized signatory indicating that the bidder/firm/supplier has not blacklisted by any Govt./PSU/Organization.		
16	Income Tax Return for a) Financial year 2020-21 b) Financial year 2021-22 c) Financial year 2022-23		
17	Bank Account detail a) Account Number b) Type Of Account c) Bank Name d) Branch Address e) IFSC Code		
18	Last Six month bank statement		
19	Annual Turnover of the company in Lakhs of Indian Rupees during last three years. (Copy to be enclosed or certificate issued by CA) a) Financial year 2020-21 b) Financial year 2021-22 c) Financial year 2022-23		
20	Length of relevant experience in years		
21	Please enclose list indicating ie. Purchase order, name		

	of buyer and organization, details of work, amount of contract/purchase, phone no. and email address of the buyer. Please also enclose performance certificate.		
22	A complete list of clients including clients from Govt./Semi Govt./Autonomous Bodies/PSUs Institutions served during last five years with Name, Telephone No, etc along with copies of supply order.		
23	The bidders should attach successful satisfactory completion certificates issued by the clients (during last 5 years) as documentary evidence in support to above eligibility criteria. The certificate should contain date of start, date of completion; value on completion etc.		
24	Business Details		
25	An authorization letter of the firm in favor of the person signing the tender documents.		
26	Tender document with Annexure-I to Annexure -VI duly signed and stamped on each page as acceptance of the terms and condition aid down by OUAT		

The above documents must be enclosed with proper pagination.

Signature.....
Name.....
Address.....
Mobile:.....

Date:-

Seal of firm.

FINANCIAL BID**List of Equipments/Instrument as Per NABL or FSSAI Guideline**

Sl. No.	Description of Item	Qty	Unit			
1	ICP-MS (with all accessories)	01 Nos.				
2	Water purifier	01 Nos.				
3	Micro wave digestion system	01 Nos.				
4	UPLC-MS/MS (with all accessories)	01 Nos.				
5	GC MS/MS (with all accessories)	01 Nos.				
6	Deep freezer	01 Nos.				
7	Refrigerator	01 Nos.				
8	UV Spectrophotometer	01 Nos.				
9	High sensitive analytical balance	01 Nos.				
10	Muffle furnace	01 Nos.				
11	Incubator	01 Nos.				
12	Hot air oven	01 Nos.				
13	Centrifuge (high speed)	01 Nos.				
14	Shaker	01 Nos.				
15	Water bath	01 Nos.				
16	pH meter	01 Nos.				
17	Conductivity meter	01 Nos.				
18	Robot couple High Speed Blender	01 Nos.				

Date:**Signature of Bidder with Stamp**

List of Equipment with Specification for NABL Lab, CIF, OUAT, Bhubaneswar**Technical Specification of Equipments****1. INDUCTIVELY COUPLED PLASMA MASS SPECTROMETER (ICP-MS)****Application:**

Inductively coupled plasma mass spectrometry (ICP-MS) is used detect metals and several non-metals in a diverse range of food matrices at higher concentration, trace and ultra-trace (ppm, ppb, &ppt) levels It can detect different isotopes of the same element, which makes it a versatile tool in Isotopic labeling.

Specification	Requirement
System	<p>The system should have</p> <ul style="list-style-type: none"> • Computer controlled fully automatic ICP-MS system • Simultaneous multi-elemental analysis in ppm, ppb and ppt levels with required sensitivity and stability of diverse range of food and water samples • The system should be a space saving, compact model that can fit into allocated lab space with all the sub- systems and accessories. • Corrosion-resistant exteriors should be provided • Model number of the equipment proposed to be supplied to be clearly mentioned
Sample Introduction system	<p>The system should have</p> <ol style="list-style-type: none"> a. Nebulizer: Concentric Micro mist Nebulizer or Cyclonic glass spray chamber with low sample flow rate b. Spray Chamber: Pettier cooled spray chamber with an operating temp range from -5°C to +20°C or better to handle wide range of organic solvents c. System should come with Ar gas dilution capability with 100X dilution to handle samples containing TDS of $\geq 25\%$. d. Peristaltic pump: Low pulsation high precision peristaltic pump with minimum of Three separate channels which can be controlled through the software. e. The system should have at least two dedicated gas channels to use varied collision/ reactions gases like He, O₂/H₂/NH₃ as per system requirement for effective removal of interferences in challenging sample matrices
Plasma	<p>1.RF Generator</p> <ol style="list-style-type: none"> a. Computer controlled Radio Frequency Generator (Solid State): operating between 27 or 34 MHz Impedance Matching: Auto-tuning to get maximum coupling efficiency b. RF range from 500-1600 watts (or more) variable capability for efficient and superior ionization when changed from aqueous samples to organic samples with automatic impedance matching. <p>RF Generator</p> <p>2.Torch: Easy mountable single piece quartz torch with shield torch a. Torch movement should allow for complete computer control and auto tunable in x-y-z directions with independent movements in the three directions. b. Provision for Auto-alignment of the torch after routine maintenance with a reproducibility better than 0.1 mm in xy-z directions</p> <p>3 Plasma Gas Control:</p> <ul style="list-style-type: none"> • Should have at least 3 Mass Flow Controllers (AMFC) or equivalent PC Controller for control plasma, auxiliary makeup, carrier gases.

	<p>Gases used should be controlled with mass flow controller and fully computer controlled.</p> <ul style="list-style-type: none"> • Argon gas dilutor or equivalent technology must be quoted along with the main instrument.
Ion Extraction Interface	<p>The system should have</p> <ol style="list-style-type: none"> Standard Ni sample and skimmer cones with suitable orifice diameters to suit all application and to prevent clogging and minimize signal drift. It should be easily mountable and dismountable. Scope of supply of standard (Nickel) and optional (Platinum) cones should be clearly specified. (for any alternate material, bidder would need to prove sensitivity) Lens/ extraction cones or equivalent should be easy to maintain
Ion Focusing System	<p>The system should have</p> <ul style="list-style-type: none"> • Ion focusing system with efficient mechanism for removing all neutrals and photons from the Ion path. • Cell offering three modes of operation: Standard Mode, Collision Cell Mode and Reaction. Should have the flexibility to run all three modes in single run. • Switching of reaction and collision gases will be through software and automated. Unit will have the flexibility of applying both (collision, and reaction) gases using single method for removal of interferences. Mass Cut off facility or equivalent technology should be there to remove unwanted polyatomic interferences formed due to free atoms. • A reaction cell should be provided for poly atomic interference removal with Helium, Oxygen/ Hydrogen/ NH₃ mode as per system requirement. <p>Vendor should attach published application note where O₂ or any other gas is used to remove interference on Arsenic as per system requirement.</p> <p>Vendor should attach international published application notes for Arsenic analysis as per FSSR (2011), EU/USFDA where O₂ or any other suitable gas is used to remove interference for As analysis</p>
Quadrupole Assembly	<p>The system should have True Hyperbolic Profile Quad</p> <ol style="list-style-type: none"> Quadrupole Mass Analyzer: A Quadrupole mass analyzer to provide effective ion transmission, superior resolution and abundance sensitivity. Mass range: 5-260 amu or above RF Frequency: Fully Digital RF generator with frequency 2-3 MHz Abundance sensitivity: <ol style="list-style-type: none"> Low Mass Side: $\leq 5 \times 10^{-7}$ High Mass side: $\leq 1 \times 10^{-7}$ Scan Speed: Greater than >3000 amu/s or more Mass stability: $< \pm 0.05$ amu over 8 hours of continuous operation. Resolution: Variable from 0.5 u to 1.0 u or better, user definable
Ion Detector assembly	<p>The system should have</p> <ol style="list-style-type: none"> Solid State dual stage dynode discrete over 10 orders or more magnitude of linear dynamic range in a single continuous scan Minimum dwell time / integration time of 100 μs (in both pulse count and analog modes). Dual-stage detector assembly should come as a standard with the system.
Vacuum System	<p>The system should have</p> <ol style="list-style-type: none"> Efficient Vacuum system with turbo molecular pump and single

	<p>external rotary pump for fast pump down and simple maintenance.</p> <p>b. In the event of vacuum failure, the entire vacuum system is to be automatically back-filled by inert gas to preserve the cleanliness of the system or an alternate system</p>
Performance Specifications	<p>Guaranteed sensitivity specifications will be considered (To be demonstrated during Demo): Typical sensitivity values will not be considered</p> <p>Detection Limit ng/L (ppt)</p> <ul style="list-style-type: none"> • Low mass (Be⁹/Li): ≤0.5 • mid mass Y/In/Co⁵⁹ ≤0.1 • High Mass U/Tl/Bi : ≤0.1 <p>Sensitivity (M cps/mg/L)</p> <ul style="list-style-type: none"> • Low mass (Be⁹ / Li) : ≥50 • Mid Mass In/Y : ≥150; • High Mass U/Tl/Bi : ≥80 <p>a. Should be able to analyze Cu, AL, Zn, Ba, B, Fe, Ag, Pb, Hg, As, Se, Ni, Mo, Cd, Cr, Ca, Mg, Mn, Be, Bi, Co, Ga, In, K, Li, Rb, Na, Sr, Ti, U, and V (but not limited to these elements) at a concentration of 0.05 ppb with RSD of < 5% at standard conditions.</p> <p>b. Oxide ratio (%) CeO/Ce<1.5 %</p> <p>c. Double charged ratio < 3 %</p> <p>d. Isotope-ratio Precision: 1% RSD</p>
Water Chiller	The system should have a suitable re-circulating chiller changer of internationally reputed company for plasma component cooling.
Auto Sampler	<p>The system should have</p> <ul style="list-style-type: none"> • Highly effective auto sampler compatible with operation along with ICP- MS without user intervention. • Auto sampler with minimum 200 vials holding capacity with 500 nos. of 15 ml capacity tubes (as consumable). • Programmable complete with inert PTFE coated probe with PTFE inner tubing. • All accessories, racks, bottles, tubing assembly, waste container, dust cover etc.
System Controller and Operating System	<p>The system should have</p> <ol style="list-style-type: none"> a. Software control for automatic data acquisition and processing. b. Mass spectrometer tuning and calibration auto and manual c. Data Validation (IQ/OQ/PQ for Software) d. Self-diagnostics with option to set routine maintenance check alerts to raise alarms when preventive maintenance is due. e. Multi element analysis capability f. Remote diagnostics g. Software should control plasma, MS and other accessories like auto sampler h. The system software shall support the following calibration curve fit modes for Quantitative analysis: <ol style="list-style-type: none"> i. Linear least squares. ii. Weighted linear least Squares iii. Linear forced-through-zero least squares. iv. Quantitative analysis including external calibration, additions calibrations, method of standard additions, and semi quantitative analysis. i. On-line help with quick steps to reference entire instrument user manual.
PC with Printer	<ul style="list-style-type: none"> • Latest processor (Minimum Intel core i7 processor), 2.0 GHz

	<p>or more, 19" or more LCD/TFT Monitor, 1 TB HDD, SSD Read/Write, 16 GB RAM, 4 USB Port or higher configuration for use with the above system to be provided.</p> <ul style="list-style-type: none"> • Reputed Branded automatic Laser jet printer should be provided
Exhaust unit	Exhaust unit for the ICP-MS has to be supplied along with the System
Standards with minimum expiry of one/two years	<ul style="list-style-type: none"> • Pure Analytical NIST traceable single element standard solutions 100 ppm (Minimum pack or 100 ml each whichever is lower) for Cu, AL, Zn, Ba, B, Fe, Ag, Pb, Hg, As, Se, Ni, Mo, Cd, Cr, Ca, Mg, Mn, Be, Bi, Co, Ga, In, K, Li, Na, Rb, Sr, Ti, U, and V should be supplied • Multi element Calibration NIST traceable standards for ICP-MS - one set
Power Supply	The system should have UPS (minimum 20 KVA) of suitable rating with voltage regulation, spike protection and minimum 60 minutes back up for the supplied equipment.
Startup package and Library	A startup package for 100 samples Operation kit comprising all required items pump tubing, transfer tubing etc. for startup/regular operation of instrument Give the Detection limits (DL) chart for Cu, AL, Zn, Ba, B, Fe, Ag, Pb, Hg, As, Se, Ni, Mo, Cd, Cr, Ca, Mg, Mn, Be, Bi, Co, Ga, In, K, Li, Na, Rb, Sr, Ti, U, and V (but not limited to these elements. Provide for as many elements as vendor can) and give the conditions at which the DLs are measure. Methods library for all food matrixes, related software's and user manuals to be provided. All Calibration certificates for ISO 17025 (NABL) accredited laboratory
Operating manuals, service manuals, other manuals	<p>Should provide:</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language Maintenance chart for all of the components in ICP-MS system • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided • Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	4 years warranty, after satisfactory installation and working and CMC for a period of 2 years post warranty.
Training	The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction.
Spares and Accessories	<p>The following Items, but not limited to, has to be supplied along with the equipment</p> <ul style="list-style-type: none"> • Peristaltic pump tubing-sample intake – 100 No's • Peristaltic pump tubing-Drain – 100 No's • Tubing – Auto Sampler to Peristaltic Pump – 25 No's • Micro mist nebulizer – 5 No's • Plasma Torch – 5 No's • Ni Sampling Cone – 4 No's and Pt Sampling Cone – 2 No's • Ni Skimmer Cone – 4 No's and Pt Skimmer Cone – 2 No's • Vacuum Pump oils – 5 L • Argon Gas Cylinders-6 • Gas cylinder for Collision cell gases – Helium-1 • Gas cylinder for Reaction cell gases -Oxygen/Hydrogen/ Ammonia (> 99.99 % pure or pre-mixed as per system requirement), whichever is applicable for individual system for elimination of interference species along with 3 stage Gas pressure regulators for each cylinder. • Gas purification panel for Argon, Helium, Oxygen/ Hydrogen with

	appropriate plumbing. Optional: Any other accessory as felt required for the proper functioning of the equipment.
Quality Requirement	<ul style="list-style-type: none"> • Product certification: CE / US FDA / BIS certified. • Quality Certification: ISO certified. • Should provide calibration certificates from NABL accredited agency every year during warranty & CMC period. Calibration cost will have to be borne by the supplier. • Equipment should be FDA / CE certified or equivalent standard of repute. It should be ISO 9001:2000 or other equivalent • All calibration certificates must be from ISO 17025: 2017 certified laboratory
IQ/PQ/OQ	On site IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument
After sales service/ Post warranty	<p>Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number;</p> <p>Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed.</p> <p>Terms and conditions for the comprehensive AMC, after the warranty period has to be specified.</p>
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

2. WATER PURIFIER

Application: Ultrapure water purification system is required for purification of water and making it free of contaminants that interfere with microbiological analysis. An ultrapure water system is equipped with ultra-filters to remove endotoxins, DNase and RNase left over from bacteria destroyed by UV, resulting in extremely low total organic carbon (TOC) and having a resistance of up to 18.2 MΩ/cm.

Specifications	Requirements
General	<ul style="list-style-type: none"> • Compact, Wall mountable/bench top system for microbiology /molecular biology/LC-MS/MS grade water applications. • Should deliver ultra-pure product water by point of use dispenser with flexible dispenser, volumetric dispensing and auto shut off facility.
Quality of water	<p>Should deliver Type I /Ultra-pure as per International specifications as follows:</p> <ul style="list-style-type: none"> • Electrical Resistivity Min. 18.2 MΩ/cm @ 25°C • Conductivity 0.055 μS/cm compensated to 25°C • TOC level (system with UV lamp) <5 ppb • Flow rate >1 lit/ min • Bacteria <1 CFU/100ml • Particulates (size >0.22 μm) <1/mL • Sodium (ppb) <1 • Chloride (ppb) <1 • Total Silica (ppb) <3

Storage	System should come with an inbuilt storage system of 5-8 L to store consistently high-quality pure water for prolonged period and prevent contamination by ambient air.
Feed water	Should have separate feed water (Potable tap water) specific purification cartridge and application specific polishing cartridge
Control display	Should have calibrated meters for continuous monitoring and display of water quality parameters: Product water resistivity / conductivity both compensated and non-compensated mode, product water temperature, Alarms for product water resistivity greater or below set point
	Should have display for maintenance: sanitization, exchange purification cartridges, activation of fast flush, depressurization, air purge etc.
Consumable	Must Quote separately for consumables (cartridges, filters etc.) for ONE YEAR for trouble free working.
Validation	For validation vendor should having its own capability with their own company trained service engineer to perform validation. No third part validation will be entertained. One validation at the time of installation should be done by company personnel.
Operating manuals, service manuals, other manuals	Should provide: - <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	3 years after satisfactory installation and working excluding consumable parts and accessories.
Training	The supplier should provide comprehensive training to users on operation of the instrument and application support on site as per specifications.
Accessories	All cartridges, filters, pump or any such item which is /are essential for Installation and functioning/operating the equipment.
UPS	UPS/Stabilizer as required for functioning of the equipment.
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Suppliers should have ISO 13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601-General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety
IQ/PQ/OQ	Onsite IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument.
After sales service/Post warranty	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. Visits and unlimited breakdown calls by service/application support, engineers should attend immediately without fail. Should carry out yearly PM with at least one PM kit Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified.

Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

3. MICROWAVE DIGESTION SYSTEM

Application: Microwave digestion is a common technique used for elemental analysis. It is used to digest the food samples.

Requirement	Specification
General	The instrument should have a superior pressure venting so as to prevent any loss of volatile metals and should have homogeneous microwave field to avoid sample burning
System	Microwave digestion system should have temperature and pressure monitoring system The system should be software controlled. Different types of rotors available for the digestion of the different type samples should also be quoted. Necessary consumables and maintenance parts should also be quoted to run instrument trouble free
Instrument Design	The system should be a stand alone work station and should have <ul style="list-style-type: none"> • The System should have the feature of simply choose a method and it automatically recognizes the vessel type, counts the vessels and determines all of the parameters necessary for a fast, complete digestion • Should have provision that user can set the desired parameters for digestion • Should have Automatic Microwave power application depending on the load • Autosensing of temperature and pressure inside the vessel • Be capable of processing different amounts of samples (from 0.3 g upto 10 g) in the same run assuring the same conditions Of temperature and pressure
Display	The Instrument should have the high-resolution, colour touch screen, acid resistant, LED/LCD screen should serve as controller and display Should be provided training videos for sample preparation vessel assembly, system use, and maintenance Should have Data management–Easy access to stored methods, real-time data and results of past runs Should be able to display the detailed methods, graphs of temperature and power against time and temperature of individual vessels.
Interlocks	The system should have good inter locking system for safety and cavity door.

Rotor & Vessel Assembly	<p>High pressure and high temperature rotor with at least 15 PTFE vessels, work station & torque wrench.</p> <p>Vessels on the rotor should be segmented for easy use. Maximum Temperature capacity of vessel up to 300°C</p> <p>Pressure capacity of vessel up to 100 bar (1500 psi)</p> <p>Vessel volume should be: One set for vessels of volume between 10 to 15 ml, and one set for vessels of volume ≥ 100 ml, Vessel Material- PTFE-TFM</p> <p>Number of Vessel:</p> <p>a) 36 Nos. of 10 to 15 ml made of PTFE / TFM / Quartz / PFA</p> <p>b) 12 Nos. of 100 ml made of PTFE / TFM</p> <p>Every vessel must have a vent-and-reseal spring to safely release the pressure in case of overpressure.</p> <p>Burst-disk membrane or self-releasing / continuous venting device are not suitable due to very low performance.</p>
	<p>Safety shield should be of PEEK reinforced with glass fibre</p> <p>Must be supplied with digestion vessel racks and suitable accessories for the handling of two sizes of digestion vessels.</p>
Magnetron	<p>Dual Magnetron system with rotating microwave diffuser for homogenous microwave power distribution in the cavity.</p> <p>Microwave frequency should be 2450 MHz and installed power should be 1900W minimum (two magnetrons minimum 950W each) and should provide the temperature needed (300°C) for difficult samples</p>
Microwave Cavity	<p>The cavity should be made of non-magnetic Rugged high-grade 316 solid steel cavity / stainless-steel housing with PTFE plasma coating applied at 350°C for corrosion resistance.</p> <p>Also, all hardware should have 5-layer protective coating for the resistance from acid, alkali and corrosive gases.</p> <p>The Cavity should be constructed with the vessel assembly during a run should be visible from outside.</p>
Hardware & Safety	<ol style="list-style-type: none"> a. 18/8 stainless steel housing with multi layer PTFE coating with a large flange with 36 mm ID. Additional multiple ports on the side walls of the microwave cavity b. Protected against acids and solvents with polymer coating on both inner and outer surfaces c. Self-resealing pressure responsive and explosion resistant door to ensure d. maximum safety even in case of over pressure release e. Door completely made of 18/8 stainless steel. Glass door is not acceptable due to safety reasons f. Independent door safety inter locks to prevent microwave emission g. Built-in exhaust system located above the microwave cavity and separated from the electronics to prevent corrosion h. Magnetron protection from reflected microwave power i. Continuous and PID-controlled microwave emission at all power levels

Sensors	<ol style="list-style-type: none"> 1. Temp sensor should be integrated in the system for monitoring & controlling each vessel and cavity temp. Temperature of each vessel should be displayed 2. The software should automatically reduce the microwave power in case of over temperature avoiding sample loss 3. Automatic Pressure control: should have a pressure sensor which has a total capability of up to 500 psi automatically control the pressure. It should be possible to remove the pressure device at a high pressure. The Vessels should act as self-regulators of pressure.
Control: User interface	<p>Software must allow the user to edit, save and run multistep unlimited number of methods (minimum 2000)</p> <p>The software must control all parameter online and display temperature, time and power directly on the terminal/computer. The control terminal should have high resolution LED/LCD Acid Resistant display.</p> <p>Touch screen: Should have provision for manual programming storage apart from pre-installed program.</p> <p>Continuous display of temperature and power inside the reaction vessels is required.</p>
Output	<ol style="list-style-type: none"> 1. One (1) parallel Centronix for external printer (HP Deskjet series) 2. Three (3) RS-232 serial ports for connecting PC (for data base reporting and programming of the unit), balance and service check
Computing	Embedded dedicated PC (most recent processor), 22" Full HD LED Monitor, Laser Printer dual side printing
Certificates Performance and safety standards (specific to the device type); Local and/or international Supplier/ Manufacturer	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO-13485 certification. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC61010-1, IEC61010-2-40 for safety • GLP-validated software for controlling the system Mustbe ISO certified for quality.
Operating manuals, service manuals, other manuals	<p>Should provide</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs should be adequately displayed.
Warranty	3 years warranty, after satisfactory installation and working excluding consumable parts and accessories.
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer.
Training	The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction.
UPS / Stabiliser	Suitable stabilizer or on-line UPS(10KVA) to support the instrument.

Quality Requirement	<ul style="list-style-type: none"> • Product certification: CE/FDA/BIS certified. • Manufacturer and Supplier should have ISO 13485 certification. • Should provide calibration certificates from NABL accredited agency every year during warranty & CMC period. Calibration cost will have to be borne by the supplier. • Electrical safety conforms to the standards for electrical safety IEC60601-General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • GLP-validated software for controlling the system
IQ/PQ/OQ	On site IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument
After sales service/ Post warranty	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. Visits and unlimited breakdown calls by service / application support, engineers should attend immediately without fail. Should carry out yearly PM with at least one PM kit Comprehensive AMC cost / rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified.
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

4. ULTRA PERFORMANCE LIQUID CHROMATOGRAPHY–TANDEM MASS SPECTROMETER (UPLC-MS/MS)

Application: Ultra Performance Liquid chromatography–mass spectrometry (UPLC–MS) HPLC separations with detection using a mass spectrometer. UPLC-MS/MS qualitative and quantitative estimates food contaminants (Pesticides, Mycotoxins, antibiotics etc) residues analysis, metabolomics etc.

A complete system of a liquid chromatogram and triple quadrupole mass spectrometer

Specification	Requirement
Mass Stability	0.1Da over 24 hours (please provide graphical data)
Dynamic range	Should be 5 orders of magnitude or better

Mass analyzer	<p>Quadrupole Analyzer:</p> <ul style="list-style-type: none"> • The instrument should be configured with a quadrupole mass filter for the efficient transmission of ions in MS mode and selection of precursor ions for MS-MS analysis. • The Quadrupole mass range 5-3000 m/z or better • The Analyzer should have more than one aspect for the efficient ion separation and must be automatically adjusted to desired resolution: (0.50 Da, 0.75 Da or 1.00 Da FWHM). • The system hardware must be augmented by powerful and sophisticated onboard instrument artificial intelligence features such as: <ul style="list-style-type: none"> ○ The status of critical components must be reported by a dashboard to prepare for and anticipate downtime. ○ The system should incorporate a secondary reinjection logic that encompasses functions such as carryover detection, detection above the upper LOQ (Limit of Quantification), and fast screening capabilities. ○ An integrated automated/guided approach is expected to be provided, with the objective of expediting the fine-tuning and development of methods. ○ It should encompass the utilization of artificial intelligence - PSO for the purpose of exploring the multidimensional parameter space for the best optimization of the system.
Sensitivity	<p>Lower detection and highest sensitivity</p> <ul style="list-style-type: none"> •ESI positive Ion Sensitivity: The signal/noise ratio for 1pg of Reserpine should be 8,50,000:1 or better to meet the LOQ of 1/10th MRL or better, in MRM mode of reserpine at the transition m/z609–m/z195 (Proof document/ application note to be closed along with technical tender document). •ESI negative Ion Sensitivity: The signal/noise ratio for 1pg of Chloramphenicol should be 8,50,000:1 or better, in MRM mode of Chloramphenicol at the transition m/z321–m/z152 (Proof document/application note to be enclosed along with technical tender document) <p>IDL should be 4fg or lower and should be mentioned on the datasheet of the instrument along with confidence value used to determine it.</p>
Scan speed	Should have the scan speed of 18,500 amu/sec or better for both the quadruples
Collision Cell	A curved and Tapered collision cell. Specially designed collision cell to allow use of very low DWELL Times (0.5 msec) without sacrificing sensitivity and Eliminate Cross talk to enable Multiple MRM Transition Studies within a single run. MS and MS/MS to be performed in single run.
MRM Acquisition rate	500MRM data points per second to analyze 400-500 pesticides in single run
Ionization	<ul style="list-style-type: none"> • Electrospray with Concentric Gas Flow for Nebulization to cover flow rates from 2ul/min. to 2000 ul/min • APCI source: A dedicated APCI source must be provided as standard with the instrument. The user should be able to switch ESI and APCI without using any tools.

Source Interface	<p>Dual Orthogonal off-axis spray (Electrospray) or any other equally efficient technology capable of avoiding interference from solvents and other extraneous matter.</p> <p>Interface should maintain cleanliness of ion optics and capable of handling large batches of complex samples.</p> <p>Capable of handling large batches of complex sample matrix like Animal feeds, Fish and fishery products, poultry and poultry products, Honey, Milk and Milk products, Agriculture products (Fruits &Vegetables) etc. over along period of time without performance degradation Cleaning of source should be done without venting the system and facility to vacuum interlock.</p> <p>Interface capable of ambient temperature operation and without complex apertures to maintain structural integrity of thermally labile and fragile molecules.</p>
Integrated Fluidic Device(to minimize space and tubing)	<p>An infusion device must be integral to the instrument or equivalent and must be controllable from the instrument software. Atleast 2 user-changeable sample vials should be built into the system to allow tuning and calibration solutions to be in fused into the probe via the switching valve.</p>
Polarity switching time	<p>+ve/-ve polarity switching time between alternate MRM scans should be 25 m sec or better with supporting documents</p>
Vacuum System	<p>Robust high efficiency vacuum system with minimum maintenance and utility with low noise level. Vacuum read backs Must be digitally monitored and controlled through software to ensure fail-safe operation in the event of power failure.</p> <p>All accessories required for the proper functioning of the vacuum system should be supplied.</p> <p>Fore line pump: Oil free Scroll type pump with arrangements of AUTO- ON after Power auto age. / or equivalent</p> <p>High vacuum pump must be Turbo molecular pump: 250 L/Sec or</p>
Gas Control	<p>All gases must be controlled by the software.</p>
Operating modes	<p>✓Mass spectrometer should have the following scan options: ✓Full scan Selected Ion monitoring / recording (SIM/SIR) ✓Production scan ✓Precursor ion scan ✓Neutral loss scan ✓Multiple Reaction Monitoring (MRM) ✓MS and MS/MS in a single injection with matrix background Monitoring or equivalent.(Proof document/application note To be enclosed along with technical tender document with onsite verification) ✓ Simultaneous full scan and MRM or better (Optional)</p>
Detector	<p>A high sensitivity, high through put detect or with zero dead time, low noise and high accuracy at low level detections.</p> <p>An off-axis High Energy Dynode Electron Multiplier detector Detector must operate in both positive and negative ion modes. Capable of switching polarity rapidly. Should have a better long Life.</p>

Nitrogen Generator	Should be supplied with the system alongwith the trouble-free inbuilt compressor and appropriate capacity reservoir which should be sufficient to deliver the gases (purity > 99.5%) required to run the system. Should be complete with all necessary accessories with Two Years comprehensive warranty with at least one Preventive maintenance along with PM kit each year.
Vacuum Manifold with compatible	Minimum 10cartridgesextractionatone time Minimum 250 cartridges for different analytes in water
SPE Cartridge	250 Quechers kit for fruits and vegetable samples, 250 Kits for fruits and vegetables with fats and waxes and 250 kits for pigmented fruits and vegetables. These should be able to help in sample prep for Pesticides, antibiotics etc. Minimum 250 cartridges for different analytes i.e pesticide residues, antibiotic residues etc
Liquid Chromatograph	The complete system and the MS should be controlled by the single software
Liquid Chromatography System	Quaternary solvent System with Auto sampler, Column Oven, C18 & C8 RP Columns. The complete system and MS should be controlled by single software. The system should have the capability to operate the column range from sub 2um particles. •Pump: Binary Pump, high pressure mixing Capable of switching between four solvents Vacuum degassing capability for all channels Operating Flow Rate Range to be 0.010 to2.000 mL/min,in 0.001mLincrements. Effective System Delay Volume <400ul,independentofsystem backpressure (with standard mixer) Plunger Seal Wash Integral, active, programmable Maximum Operating Pressure 18,000psi at up to1mL/min Composition Accuracy +/- 0.5% absolute(full scale) Composition Precision 0.15% RSD or +/- 0.04 min SD, whichever is greater, based on retention time Flow Precision0.075%RSD or +/- 0.02 Flow Accuracy+/- 1.0% (0.500-2.00mL/min) •Auto sampler Number of Sample:132 vials or more sample rack capability with cooling facility from 4-40 deg. Injection Volume Range 0.5 – 20 uL, in 0.1 uL increments, partial or full loop mode, ▽ Injection VolumeRange0.1 – 20 uL, in 0.1 uL increments, partial or full loop mode Injection Precision<0.3% RSD, Sample Carry over<0.005%or<2.0nL,whicheverisgreater (with dual wash). Column Temperature Control 5 deg.C above ambient to 65 deg.C, 0.1deg.C increments. Total system (including pump &Auto sampler) should be capable of operation at 18000psi.

List of columns with Specification	C-18, 2.1 x 150 mm x 1.7 µm with suitable Guard column-1 no C-18, 4.6 x 250 mm x 5 µm with suitable Guard column-2 nos C-8, 4.6 x 250 mm x 5 µm with suitable Guard column-1 no Phenyl-Hexyl 2.1mm x 100 x, 3µm or equivalent HILIC column with Guard column- 1no
System Controller and Operating system	The complete system and the MS should be controlled by the single software
System controller	<ul style="list-style-type: none"> • Software must be Multitasking type. It must acquire and process the data simultaneously • Application manager must be compatible with data of full scan, SIM/SIR or MRM. •Data Acquisition, Peak Integration,Calibration,Quantification And QC calculations must be fully automated. •The Quantification method editor must be viewable in page view or spreadsheet. •Application manager must allow to monitor the molecular ion And upto 04(four)Confirmatory ions or better. •Mustbecapableofperformingthefollowingfunctionsandshouldbeupgradable: •Work station must be able to control the MS, acquire,store, Process and reproduce the data by the same computer. •Work station must be able to control LC, Detector and auto sampler. •It must be able to regulate the gas pressure and flow during The data acquisition and append to the relevant data file. •Software must have automated calibration and Quantitative optimization. •Automated MS to MS/MS switching during a single run with user selectable criteria • Perform alternating positive/negative scans in one run. Automated Quantitation and reporting of acquired samples. • Data may be processed as it is being acquired •This application software must flag samples in the browser report when: <ul style="list-style-type: none"> a.the ion ratios fall out-with the user-defined values b. the maximum blank acceptance level (userinput) has been exceeded c.the maximum concentration limit(user input) has been exceeded d.the concentration is below the reporting concentration limit (user input) e.the concentration falls below the minimum recovery% level (user input) f.the concentration falls above the maximum recovery% level (user input) g.the coefficient of determination for a calibration curve falls below a user-set level h.QC samples fall outside a user-defined number of standard deviations from the mean i.the peak of the compound of interest falls below a user defined S/N ratio <p>Software should have the database of compounds (pesticides, Antibiotic residues).</p> <p>The Data base should contain Molecular formula,Monoisotopic mass, Parent ion, Conevoltage (V), Production 1, Collision energy(eV),</p>

Calibration Standards	<ul style="list-style-type: none"> •Two sets each NIST or other traceable standards for all the Pesticides, Mycotoxins, antibiotics as per FSSAI requirement with a minimum expiry period of two years
Spares and accessories	<ul style="list-style-type: none"> a. LC-MS/MS startup kit should be supplied as standard. b. All required traceable standards for Mass calibration and tuning, HPLC calibration should be provided c. Vacuum pump oil, etc. and any other material required to make the instrument functional should be provided. d. Standard Tool kit should be provided for Instrument maintenance e. Reputed highly branded solvent filtration unit with oil less vacuum pump and required accessories. f. SPE unit with 10 or more channels with Vacuum Pump g. Rotary Concentrator
PC with Printer	<ul style="list-style-type: none"> •Minimum Intel core i5/i7processor or better, 2.0Ghz or more, 19"ormoreLCD/TFT Monitor, 1TB HDD/SSD, 8GBRAM or more,4USB Portor higher configuration for use with the above system to be provided. •Reputed Branded automatic back to back colour Laser jet printer should be provided
List of spares	<ul style="list-style-type: none"> •Provide a list of recommended spares and consumables along With their source and budgetary prices. •Operation kit comprising all required items for startup/regular Operation of instrument. • Complete methods library with MRMs of Mycotoxins, Veterinary drugs, Pesticides, antibiotics with instrument method details and SOPs, related software's and user manuals to be provided. •Maintenance chart for all of the components in LC-MS/MS system.
Pre installation Requirements	Provide all essential pre installation requirements and utility requirement for LC-MS/MS
Operating manuals, service manuals, other manuals	<p>Should provide:-</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language •List of equipment and procedures required for local calibration And routine maintenance • Service and operation manuals to be provided •Operation and maintenance manual for each unit in both hard Copy and softcopy. • Service manual with set of required tools for each system/unit • Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs would be adequately displayed.
Warranty	4 years warranty, after satisfactory installation and working and CMC for a period of 2 years post warranty.
Training	The supplier will have to carryout successful Installation at the laboratory premises (wherever the system must be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system for one week. one week training on method development of pesticide Residues.
UPS	The system should have UPS (minimum20KVA) of suitable rating with voltage regulation, spike protection and minimum60 minutes back up for the supplied equipment

Quality Requirement	<ul style="list-style-type: none"> • Product certification: CE/USFDA/BIS certified. • Quality Certification :ISO certified. <p>Should provide calibration certificates from NABL accredited agency every year during warranty & CMC period. Calibration cost will have to be borne by the supplier.</p> <ul style="list-style-type: none"> • Equipment should be FDA/CE certified or equivalent standard
IQ/PQ/OQ	On site IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument
After sales service/ Post warranty	<p>Contact details of manufacturer, supplier, and local service agent to be provided, including toll free/ Landline Number; Should have a good after sales service/technical support</p> <p>Capable of reaching at short notice the places where instrument is installed.</p> <p>Visits and unlimited breakdown call by service/application support, engineers should attend immediately without fail.</p> <p>CMC for a period of 2 years shall be included.</p> <p>Terms and conditions for the comprehensive AMC, after the warranty period has to be specified</p>
Compliance statement	<p>The quotes should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature.</p> <p>This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	Payment only after installation, validation and performance demonstration

5. GAS CHROMATOGRAPHY–TANDEM MASS SPECTROMETER (GC-MS/MS)

Application: Gas chromatography–mass spectrometry (GC-MS) is an analytical method that combines the features of gas-chromatography and mass spectrometry to identify and quantify different substances such as pesticides, fatty acids, PAHs and PCBs.

A complete system of a gas chromatograph and triple quadrupole mass spectrometer

Requirement	Specification
GC System	<p>A compact high-sensitive GC-MS/MS system suitable for the analysis of Organochlorine pesticides, Organophosphorous pesticides, Synthetic Pyrethroids, PCBs and VOCs in food products and water at <1 ppb level with user friendly software. The system should have a Triple Quadrupole geometry, capable of carrying out MS and MS/MS experiments.</p>

Column Oven	<p>The system should have</p> <p>All temperature and time functions are controlled by and are shown on the touch-screen display.</p> <ul style="list-style-type: none"> • Temperature: Operating Range Ambient+4°C to 450°C • Heating rate: from 50 to 450°C within 5min. • Cooling down rate: from 45⁰ to 50 °C in less than 4min. • Temperature programming facility. • Ramps: minimum 20 ramps with 21 plateaus or more • Maximum inlet temperature ramp rate: 120°C/minute or better for all voltages • It should have a retention time locking facility. • It should have a touch screen interface built into the system with USB access. • Intelligent features like EMF, etc. should be built into the system. • Retention time locking feature without using any external calibrants must be available. If any external calibrants are needed, the vendor must provide at least 100 vials of the standard.
Column	<ul style="list-style-type: none"> • Dimensions: 30m x 0.250mm x 0.25µm • HP-5MS/DB-1MS or equivalent (02 no.) • DB-5/HP-5 or equivalent (01 No) • DB1301 or equivalent (01 No)
Inlet	<p>The system should have</p> <ul style="list-style-type: none"> • Multimode Injector (MMI) along with Programmable Temperature Vaporizer (PTV) • Temperature ramped split/split-less and large volume injection modes. • Temperature programming of up to 5 ramps or more at up to 800 °C/min or higher with fully EPC /equivalent. • Electronic pressure/flow control. • Pressure setting range 0 to 100psi or more
Auto Sampler	<p>The system should have</p> <ul style="list-style-type: none"> • Internal standard addition • Auto inject or/sampler for Liquid injector (minimum 150 vials) and HS with minimum 45 sample vials capacity • Capable of handling large volume injection with syringe size from 0.5 to 250µl. • Completely programmable from software.
Back flush	<p>The system should have pre, post and mid column back flush to remove unwanted components/contaminants/high boilers.</p>
MS/MS System	<p>The system should have</p> <ul style="list-style-type: none"> • Mass range: Quadrupole 10 to 1000 amu or better. • Mass resolution: minimum 0.7 (width that half height). • Mass axis stability: ±0.1 amu over 24 hours or more • Linear Dynamic range: minimum 6th order of magnitude. • Scan rate (electronic): 20000 amu/sec or better

	<ul style="list-style-type: none"> • Ionization modes: EI (Electron ionization) and CI (Chemical ionization) modes Ion source should have heating capacity of 350°C or more. • A self-cleaning source must be available with the system. In case a self-cleaning module is not available, the vendor must quote a spare ion source to use while cool down and cleaning of existing source. • CI: must be capable to operate with different reagent gasses & electronic flow control for reagent gasses. • Collision cell gas pressure must be electronically/Software controllable. • Collision energy must be variable. <p>Scan Modes:</p> <ol style="list-style-type: none"> i. Should be able to do Scan, SIM, MRM/ SRM, Parent ion scan, Production Scan, and Neutral loss scan-time segment based. ii. Simultaneous Full Scan-SIM or Full Scan/ MRM or SRM whenever required. iii. SRM/MRM Speed: minimum of 800 MRM/sec iv. Minimum MRM dwell time of 0.5 milliseconds or better. <ul style="list-style-type: none"> • Installation checkout sensitivity must be better than— • Instrument detection limit: 0.5 fg or less octafluoronaphthalene (OFN) • EI MRM Sensitivity: 1 µL of 100 fg/µL Octafluoronaphthalene (OFN) should produce the following minimum signal-to-noise for the transition from m/z 272 to m/z 222: 30,000:1 or better on 30 mt. column. • Turbomolecular pump: Air cooled turbomolecular pumps, Rotary vane fore-line pumps supporting the turbo-molecular vacuum pump • Software controlled auto-tune or manual-tune to enable quick start-up for quantitative analysis. • Independently heated GC /MS interface. • Extended dynamic range Electron Multiplier or off-axis high-energy detector with configuration to direct the charged ion of interest away from the neutrals with long life and better sensitivity. • The instrument supplier has to demonstrate that the machine is suitable for the analysis of Organo-chlorine pesticides, Organophosphorous pesticides, Synthetic Pyrethroids, PCBs and VOCs in Fish, vegetables and water at <1 ppb level.
System Controller And Operating System	<ul style="list-style-type: none"> • Should have capability to run the mass spectrometer in all the modes specified in Scan mode. • Data acquisition, integration, calibration, quantification and QC calculations must be automated • Manual and Auto tune options should be provided. • Automatic MRM/SRM method Development • Library searching facility with latest Licensed NIST Library • Pesticides and environmental pollution database. MRM Database for minimum 800 GC molecules

	<p>Quantitative analysis-Qualitative analysis</p> <ul style="list-style-type: none"> • Imports information directly from the acquisition method • Provides a curve-fit assistant to test all fits and statistics on curve quality • Integrates with an automated, parameter-free integrator that uses an oval algorithm, optimized for triple Quadrupole data • For fast method development, this software is used to quickly review the qualitative aspects of the data, such as the optimum precursor to product ion transitions. • Qualitative Analysis program to present large amounts of data for review in one central location. • Extract chromatograms • View and extract peak spectra • Subtract background • Integrate the chromatogram • Find compounds
PC with Printer	<ul style="list-style-type: none"> • Minimum Intel core i5/i7 processor, 2.0Ghz or more, 19" or more LCD/TFT Monitor, 500GB HDD, SSD Read/Write, 8GB RAM or higher, 4 USB Port or higher configuration for use with the above system to be provided. • Reputed Branded automatic back to back colour Laser jet printer should be provided
Gas cylinders and Regulators	<ul style="list-style-type: none"> • Installation kit must be included. • Required gas cylinders and regulators (with requisite certificate) for Helium and Argon or Equivalent (2 each), • Required Gas regulators and gas purification systems should be provided, installed and commissioned for all the gases used in the instrument including gas tubing, manifold
Sample Preparation Kits	<p>QuEChERS Kits (250 no. each) for Pesticides etc in following matrices: Water, Soil, Rice Grains, High fat containing food High Water content food Highly Pigmented foods</p>
Spares and Accessories to be supplied	<p>Following Accessories and Consumables</p> <ul style="list-style-type: none"> • Sample injector: <ul style="list-style-type: none"> ▪ Syringe for liquid injection (5 no. each) ▪ For HS syringe (5 no. each) ▪ Airtight syringe (for manual injection) (2 no. each) • Auto sampler vials: 1000 vials with screw cap. • Headspace vials (10/20ml): 500 vials with cap • Crimper and De-capper

	<ul style="list-style-type: none"> • Column Ferrules-injector end and interface end(20No.each). • Septa for injector (100No.). • Appropriate nuts to fit capillary columns to the injector and MS interface (10 each). • InletlinerforSplitless,Split(withglass/quartzwoolattoptimumposition) and PTV (with glass/quartz wool at optimum position)(10No. each) • O-ring for injector liner (10No.) • EI Filaments (2No.) • CI Filaments (1No.) • Column cutter (1No.) • Oilmist trap for pump (2 No.). • Tool kit.
UPS	The system should have UPS (minimum 10 KVA) of suitable rating with voltage regulation, spike protection and minimum 60 minutes backup for the supplied equipment.
Additional Items	<ul style="list-style-type: none"> • Operation kit comprising all required items for startup/regular operation of instrument. • Firm should also quote all essential pre-installation requirements and utility requirement for GC-MS/MS. • Operation and maintenance manual for each unit in both hard copy and soft copy. • Service manual with set of required tools for each system/unit. • Methods library for all food matrixes, related software's and user manuals to be provided. • Provide maintenance chart for all of the components in GC-MS/MS system. • It should Monitor GC and MS resources: injection counter, operation times, and electronic logs to aid planned maintenance. • It should have convenient access to pertinent consumables part numbers • It should have the facility for rapid venting of the MS • It should have an Eco-Friendly Operation with User-scheduled sleep/wake mode to save carrier gas and power. • There should be a touch screen display on GC Instrument. • It should have a touch screen interface built into the system with USB access. • It should have integrated Calculators like a Vapor volume calculator, solvent vent calculator, method translator, etc. • This system should be equipped with all columns, sample prep accessories and other items needed to perform Dioxin and Furans analysis. The vendor should deploy the method at site.
Pre-Installation Requirements	<ul style="list-style-type: none"> • Provide all pre-installation requirements
Operating manuals, service manuals, other manuals	<p>Should provide</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language •Service and operation manuals to be provided <p>Advanced maintenance tasks documentation, if any.</p>

Warranty	4 years warranty, after satisfactory installation and working and CMC for a period of 2 years post warranty.
Training	The supplier will have to carryout successful Installation at the laboratory premises (wherever the system has to be installed) and Provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
UPS	Suitable on –line UPS (10 KVA)to support the instrument.
Quality Requirement	<ul style="list-style-type: none"> • Product certification's/USFDA/BIS certified. • Quality Certification: ISO certified. • Should provide calibration certificates from NABL accredited agency every year during warranty & CMC period. Calibration cost will have to be borne by the supplier. • Equipment should be FDA/CE certified or equivalent standard of repute. It should be ISO 9001:2000 or other equivalent <ul style="list-style-type: none"> • All calibration certificates must be from ISO17025:2017certified laboratory
IQ/PQ/OQ	On site IQ,OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument
After sales service/Post warranty	<p>Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number;</p> <p>Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed.</p> <p>Visits and unlimited breakdown calls by service/application support, engineers should attend immediately without fail.</p> <p>Should carryout yearly PM with atleast one PM kit</p> <p>Terms and conditions for the comprehensive AMC, after the warranty period has to be specified</p>
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found Submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

6. DEEP FREEZER (-20⁰C)

Application: Deep freezers are used to store samples, reagents & kits, reference materials at low temperature i.e. around -10 °C to -30 °C.

Specification	Requirements
Type	Vertical
No of Door	Single
Position of Door	Front
Type of Insulation	PUF
Frost Free	Yes
Type of Cooling	Direct
Castor	Heavy Duty Lockable
Capacity	: 250 L or higher
Shelves/Drawers	Sealed 5-7 pullout drawers / shelves of different sizes that can be adjusted for storage flexibility
Material of Chamber Interior	Stainless steel, preferably 304 grades
Material of Chamber Exterior	Stainless steel, preferably 304 grades
Door Material	Stainless steel, preferably 304 grades
Finish	Powder coated exterior finish
Temperature Range	-10 °C to -30°C
Temperature Uniformity in Degree Celsius	±3 °C or less
Temperature Stability of System in Degree Celsius	±3 °C
High Quality Door Seals	Yes
Lockable Outer and Inner Lids	Yes
Control	Fully programmable microprocessor controlled with membrane keypad and eye level control panel
Display	Easy to read, LED control panel and alarm status with integrated diagnostics
Acoustic Safety alarms	Should be equipped with for High/low temperature, door ajar and malfunction alarms, sudden power failure, system failure and battery low
Temperature History	Data logger for temperature and temperature history which can be downloaded via a USB port Yes
Should Have Battery Back Up for The Display and Security Lock for The Display	Yes
Refrigerants	CFC-Free, HCFC-Free non inflammable refrigerants
CO ₂ cylinder should be supplied with freezer for backup	Yes (Optional)
Operating manuals, service manuals, other manuals	Should provide <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided • Advanced maintenance tasks documentation, if any.

Warranty of complete unit	3Year from the date of satisfactory functioning
Warranty of stabilizer in years	3 Year
Warranty of compressor in years	10 years or more
Service Support	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/Land line Number; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
Voltage Stabilizer	Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC60601-General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC61010-1, IEC 61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/international bodies
IQ/PQ/OQ	On site IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument
After sales service/Post warranty	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. Visits and unlimited break down calls by service/application support, engineers should attend immediately without fail. Should carry out yearly PM with at least one PM kit Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

7. REFRIGERATOR

Application: A refrigerator is used for storing reference material, standards, buffers and other reagents media etc.

Specifications	Requirement
Material	Stainless steel
Capacity	Approx.600 liters and above
Adjustable Shelves	Tempered glass shelves 05 No.
Temperature Range	Digital display and temperature controls Refrigerator +2 ° to +8 °C Freezer -20 °C
Audio alarm	Alarm is door is ajar for long
Inner body	Rust Free Material
Refrigerant	CFC/HCFC Free
Frost Free	Inbuilt Voltage Stabilizer Door Glass Heater for special heated front glass that enhances visibility and prevents unhygienic condensation Warranty 2years and Life time on motor
Doors, Door Lock & Interior light	Side by side doors with High/Low cut along with timer delay
Temperature Control	Same Temperature: Top to Bottom Microprocessor based Temperature Controller with Digital Display
After sales service/Post warranty	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. Visits and unlimited breakdown calls by service/application support, engineers should attend immediately without fail. Should carry out yearly PM with at least one PM kit Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified.
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will Result in disqualification.
Payment	Payment only after installation, validation and performance demonstration

8. UV-VIS SPECTROPHOTOMETER

Application: UV-VIS The system should be capable to measure the all colorimetric based parameters in food and water samples as per FSSAI requirements including Enzyme assays, Kinetic assays and scans.

Specifications	Requirement
System	A fully automated spectrophotometer with double beam optics with pre-programmed applications using conventional quartz /glass/plastic cuvettes with all the required accessories.
Operation keys	<ol style="list-style-type: none"> 1. Instrument should operate immediately after switch on with no warming up time 2. Should be automatically programmed with on-board touch screen & soft keys 3. Capable to store method with analysis: >100 method programs on the instrument, >1000 results with data, evaluation results and used parameters.
Optical Design	<ul style="list-style-type: none"> • Double Beam with sample and reference cuvette positions; Czerny-Turner Monochromatic/Holographic grating with sealed optics • Reference Compartment Should accommodate cells up to 10 mm path length as standard feature
Light Source	(1) Halogen lamp for Visible range (2) Deuterium Lamp for UV range, light source should be auto automatically selected as per wavelength required.
Detector	Silicon Photodiode dual detector/PMT
Scan Ordinate Modes	Absorbance, % Transmittance, % Reflectance
Resolution	0.1 nm or better.
Wavelength Range	180 –1100 nm
Wavelength Accuracy	± 0.3 nm or better for entire range
Wavelength Repeatability	± 0.1 nm or better
Scanning Speed	Selectable Variable wave length scan rate 10 nm/min to 2500 nm/min or
Spectral Band width	Variable - (0.1/0.2/0.5/1/2/5) nm
Photometric Range	Absorbance = - 4.5 to 4.5 Abs or better. Transmittance & reflectance 0 to 80000 % or better.
Photometric Accuracy	0.5A: ± 0.004 A; 1A: ± 0.006 A; 2 A: ± 0.010A; (440 nm; Trace able neutral density filters)
Stray Light	Max. 0.005% (220 nm NaI) or better, Max. 0.005% (340,370 nm NaNO ₂) or better Max.1% (198 nm KCl) or Better
Noise	0.00005Abs RMS(500 nm) or better
Drift	<0.0005 A/hr (500nm, 1-hour warm-up)
Base line flatness	± 0.0005 Abs or better

Application Soft ware	<p>Compatible Software should be user friendly & simple for data handling with feature like easy to use report publisher, online help and answer wizard, GLP & audit trail and fully compatible with Windows.</p> <p>System built in features such as real time display of concentration, time scan, photometric mode, single/multi-wavelength, capability for event recording (e.g., addition of reagents)</p> <p>Software should have built in</p> <ol style="list-style-type: none"> a. Methods: <ul style="list-style-type: none"> • Absorbance with one or more wavelengths, • Scans, Nucleic acids, Proteins, OD600, • Evaluation: via factor, standard and calibration curve • Dual wavelength with subtraction and division evaluation b. Method dependent evaluation: <ul style="list-style-type: none"> • Absorbance, concentration via factor and standard • Concentration via standard series using Linear regression, Non linear regression with 2nd and 3rd degree polynomials • Sp line analysis, • Linear interpolation (point to point evaluation) • Absorbance allocation via subtraction and division • Ratio 260/280, 260/230, Molar concentration and total yield for nucleic acids. <p>The software should be 21CFR part 11 compliant.</p>
Accessories and spares	<ul style="list-style-type: none"> • One pair each of 0.5, 1 and 3-ml quartz cuvettes 10 mm path length • One pair each of 0.5, 1, and 3 ml glass cuvettes 10 mm path length • Cuvette holder • Deuterium Lamp • Halogen lamp • Holmium oxide glass filters for wavelength calibration. • NIST traceable Potassium dichromate
Computer and printer	<p>Latest configuration factory set branded PC system with 22-23" Full HD Monitor with printer –B/W – duplex- laser-legal, A4- 1200dpi-up to 21 ppm –capacity with network card</p>
UPS	<p>Suitable UPS with 60mins backup power</p>
Calibration	<p>Certificate from an ISO17025 accredited lab spectral calibration.</p>
Compliance	<p>IQ/OQ/PQ of instrument and Software should be provided along with document</p>
Operation and training component	<ul style="list-style-type: none"> • The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction.

Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO13485 certification. • Electrical safety conforms to the standards for electrical safety IEC60601-General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC61010-1, IEC 61010-2-40 for safety
Supplier/Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Recommendations or warnings	<ul style="list-style-type: none"> • Any warning signs would be adequately displayed
Warranty	<ul style="list-style-type: none"> • Warranted for 3 years after satisfactory installation and working excluding consumable parts and accessories.
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;
Operating manuals, service manuals, other manuals	<ul style="list-style-type: none"> • Should provide 2 sets (hard copy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation, if any; • Certificate of calibration and inspection.
After sales service/Post warranty	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; • Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. Visits and unlimited break down calls by service/application support, engineers should attend immediately without fail. • Should carry out yearly PM with at least one PM kit Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified.
Compliance statement	<p>The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and Acceptance that any incorrect or ambiguous information found submitted will result in disqualification.</p>
Payment	<p>Payment only after installation, validation and performance demonstration.</p>

9. HIGH SENSITIVE ANALYTICAL BALANCE (Capacity Max 200 g)

Application: An analytical balance is used to measure mass to a high degree of precision and accuracy. It is most often found in a laboratory setting and is used for accurate weighing. Balances should be housed in a draft-free location on a vibration free bench. Some modern balances have built-in calibration masses to maintain accuracy.

Specification	Requirement
Capacity	200 g/ 210 g/ 220 g
Least count	0.0001 g (.01mg)
Readability	0.01 mg (0.00001 gm) / 0.1 mg (0.0001 gm)
Repeatability(Standard deviation)	0.03 mg
Linearity	± 0.2 mg or better
Response time	Less than 30sec
Stabilization(typical and fast)	Approx. 4.0 sec (0.1 mg) / 15sec(0.01 mg)
Weighing pan	<ul style="list-style-type: none"> • a) Circular • b) Single Pan Top • c) Grid type • d) Eccentric load deviation 0.2/0.25 mg
Minimum over all diameter of pan	8-10 cm
Tare facility	Yes
Calibration(internal)	<ul style="list-style-type: none"> • Fully automatic, time/temperature controlled internal calibration • Should be capable to adjust itself • Must be provided with calibration certificate by an agency accredited by NABL or with traceable to International Standard.
Balance leveling	Balance should indicate immediately as & when it is required to be leveled and Should have the facility for horizontal plane calibration (mercury bubble adjustment), if not otherwise available.
Weight Box traceable to international standards	<ol style="list-style-type: none"> 1. 1mg -200 g, E2 (1 no) 2. Accuracy class acc. to OIMLR111: E2 3. Nominal mass value: 1 mg to 200 g. Up to 500 mg as wire weights 4. Susceptibility: 0.002– 0.004 5. Material: special steel, non-magnetizable, density 8.0g/cm³, highly corrosion-resistant, knob weights highly polished and laser marked, in wooden case.
Operational requirements	<ul style="list-style-type: none"> • Digital display: Back lit display with soft touch screen operation along with accessibility to date and time etc. • To have inner adjustable draft shield • Glass draft shield with flexible configuration for left/right hand operation • Weighing with automatic and manual start and provision for data interface the manufacturer to provide the specification data needed to facilitate calculation of uncertainty <p>Optional: Printer should be available with USB port for data transfer.</p>

Environmental factors	<ul style="list-style-type: none"> • Safety for electromagnetic compatibility • Permanent shock absorption facility
	<ul style="list-style-type: none"> • Capacity of operating in temperature range -5 °C to 45 °C and relative humidity of 80%
Supplier / manufacturer	Must be ISO certified for quality.
Service contract clauses, including prices	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached.
Operating manuals, service manuals, other manuals	Should provide: - User, technical and maintenance manuals in English language. List of procedures required for local calibration and routine maintenance. Service and operation manuals to be provided. Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	3 years warranty after satisfactory installation and working excluding consumable parts and accessories.
Training	The supplier to carry out successful Installation at the laboratory premises(whenever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
Back-up rechargeable battery	Back-up battery for use of equipment during power shut down.
Quality Requirement	Should be FDA/CE/BIS approved product. Manufacturer and Supplier should have ISO13485 certification under ISO 9001 for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) Certified to be compliant with IEC61010-1, IEC61010-2-40 for safety. Should have necessary certification for safety and quality standards from national/ international bodies.
IQ/PQ/OQ	On site IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument
After sales service/Post warranty	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. Visits and unlimited breakdown calls by service/application support, engineers should attend immediately without fail. Should carry out yearly PM with at least one PM kit Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified.
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its

	Authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

10. MUFFLE FURNACE

Application: A muffle furnace generates the high-temperature up to 1200 °C and turns the sample into ash. The chemical composition can be determined easily after determining the ash content. It is the best way to determine the quality and levels of silica of the food products.

Specification	Requirements
Inside Chamber Volume	<ol style="list-style-type: none"> 5 L or better With lift door with hot surface facing away from the operator and swing aside door at the front
Furnace construction	<ol style="list-style-type: none"> Double shell steel case with cooling fan to keep outside case cool High purity alumina fiber insulation for max. energy saving
Temperature Range	900 -1600 °C
Standard Working Temperature	1200 °C
Temperature accuracy	+/-1.0 °C
Heating element	The chamber section should be heated by six to eight Super Kanthal Molybdenum disilicide heating elements (Super 1800 grade MoSi2) suspended in a chamber made of high temperature refractory fiber lined with a combination of ceramic fibre blankets
Heating rate	The furnace should be of fast heating type with the maximum attainable temperature should reach as a ramp function in less than one hour.
Thermocouple	Pt. Pt. Rh. Thyristor controller will be provided along with the furnace to measure the temperature with Recrystallized alumina sheath & connecting holder complete set.
Temperature Control	<ul style="list-style-type: none"> PID automatic and programmable power control with necessary safety features Over-temperature limiter with adjustable cut-out temperature for thermal protection class 2 in accordance with EN60519-2 as temperature limiter to protect the furnace and load
Cooling Fan/Air Circulation	Attached with Furnace, provided inside the control unit to protect Costly component
Maximum power	Up to 8 KW
Accessories to be supplied	Al ₂ O ₃ Sample Plate 1 pcs Al ₂ O ₃ Furnace Door Block 1pcs Protection Glove 2pairs Crucible Clip 1 pair Crucibles 6pcs
Calibration Certificate	From ISO17025/NABL accredited laboratory
Installation, training and commissioning	Vendor must ensure satisfactory installation and commissioning of the system.

Operating manuals, service manuals, other manuals	Should provide <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided • Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	3 years warranty after satisfactory installation and working excluding consumable parts and accessories.
Training	The supplier will have to carry out successful Installation at the laboratory premises (wherever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	Provide list of all essential spares and accessories
UPS	UPS/Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC60601-General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC61010-1, IEC61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/ international bodies
IQ/PQ/OQ	On site IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument
After sales service/ Post warranty	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; • Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. • Visits and unlimited break down calls by service/application support, engineers should attend immediately without fail. Should carry out yearly PM with at least one PM kit • Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

11. INCUBATOR

Application: Dry bath incubation with heating or cooling for routine use in enzyme assay protocols as well as solubility studies with precise temperature control and with interchangeable modular blocks to accommodate various size tubes.

Specifications	Requirements
General	1 Compact unit for mixing with heating & cooling feature with all the required accessories and parts and with Anti-spill technology and flexibility for different exchangeable blocks and provided with all accessories required to make it fully operational
Mix function	Short mix and interval mix function
Top	Thermo top to prevent condensation & maintain temperature homogeneity
Temperature Controller	PID Digital
Operating Temperature Range	4-100 °C
Temperature accuracy	≤1 °C or better
Maximum Heating Rate	6 °C per min or better
Maximum Cooling Rate	2.5 °C per min or better
Mixing speed range	300-3000 rpm
Display	Simultaneous display of set and actual time and temperature
Heating blocks	For 0.2 mL,0.5 mL and 96-microtiter plates
Accessories	Exchangeable Blocks for 1.5 ml tubes 5 ml tubes 15 ml tubes 50 ml tubes CryotubesPCR 384plates 12 mm tubes 1.5 ml vials 2ml 1.5-2mlcryo tubes
Power requirements	230 V / 50 Hz– 230V/60Hz
Accessories	Provide all the accessories
Operating manuals, service manuals, other manuals	Should provide: - • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs would be adequately displayed.
Calibration certificate	Calibration certificate from ISO17025 for three different temperatures from ISO 17025 certified laboratory
Warranty	3 years warranty after satisfactory installation and working excluding consumable parts and accessories.
After sales service/Post warranty	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/Landline Number. Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. Visits and unlimited breakdown calls by

	service/application support, engineers should attend immediately without fail. Should carry out yearly PM with at least one PM kit Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified
Training	The supplier should provide comprehensive training to users on operation of the instrument and application support on site as per specifications.
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
UPS/Stabilizer	Suitable rating UPS/Stabilizer
Quality Requirement	Should be FDA/CE/BIS approved product. Manufacturer and Supplier should have ISO13485 certification under ISO 9001 for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) Certified to be compliant with IEC61010-1, IEC61010-2-40 for safety
IQ/PQ/OQ	On site IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument.
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will Result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

12. HOT AIR OVEN

Application: Hot air ovens are used in the lab to determine the moisture content of food products and for drying glassware.

Specification	Requirements
Size	Inner Volume 200–250 L
External Body	Mild Steel with powder coated
Internal Chamber	Stainless Steel 304 Grade
Insulation	Mineral Wool/Ceramic Wool
Door	<ul style="list-style-type: none"> • Inner: Stainless Steel 304 Grade • Outer: Powder coated Mild Steel • Self-closing magnetic lock having door sealing material suitable to high temp
Adjustable Shelf	2–3 Perforated Stainless-Steel shelves (Removable) 304 Grade
Shelf Rest Pitch	30 mm
Temperature Range	37 °C to 300 °C
Least Count	0.1 °C
Temperature Accuracy	± 0.5 °C or better

Temperature Uniformity	±2 °C or better
Heating Element	Nichrome wire/ KanthalA1
Time to attain Maximum Temperature	Approximately 90 minutes
Control Panel	Door mounted Digital LCD display for set temperature, attained temperature, set time, heating ON/OFF
Preset Timer	<ul style="list-style-type: none"> • With buzzer • Digital display of time • Leastcount-1minute
Circulation Method	Blower
Power Source	220-240V, Single phase
Exhaust Port	30mm ID on opposite side walls
Safety Device	<ul style="list-style-type: none"> • Self-diagnosis function including over shoot / under shoot of temperature and over current protection • Audio Visual alarm for door opening after 2 minutes
Optional Requirements	<ul style="list-style-type: none"> • Dot Matrix Printer interface • Temperature chart recorder • PLC Controller • Audio/ visual alarm • Extra shelves • Heating Thermostat • Manufacturer calibration certificate for three different temperature points from ISO17025/NABL accredited laboratory
Operating manuals, service manuals, other manuals	<p>Should provide:</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided • Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs would be adequately displayed.
Warranty	3 years warranty after satisfactory installation and working excluding consumable parts and accessories.
Training	The supplier will have to carry out successful Installation at the laboratory premises (wherever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction.
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached.
UPS	Suitable on-line UPS (10 KVA) to support the instrument.
Quality Requirement	<ul style="list-style-type: none"> • Product certification: CE/USFDA/BIS certified. • Quality Certification: ISO certified. • Should provide calibration certificates from NABL accredited agency every year during warranty & CMC period. Calibration cost will have to be borne by the supplier. • Equipment should be FDA/CE certified or equivalent standard of repute. It should be ISO 9001:2000 or other equivalent • All calibration certificates must be from ISO17025:2017 certified laboratory.

IQ/PQ/OQ	Onsite IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument.
After sales service/ Post warranty	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; • Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. • Visits and unlimited break down calls by service/application support, engineers should attend immediately without fail. • Should carry out yearly PM with at least one PM kit • Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous Information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

13. CENTRIFUGE (HIGH SPEED)

Application: A Multi-functional, general purpose high speed bench top cooling centrifuge used for sedimentation of samples with easy lift and safety lid Centrifuge is used for sedimentation of particles.

Specification	Requirement
Base Unit	<ul style="list-style-type: none"> • Table top cooling centrifuge with maintenance free brushless motor and have low access height • LCD Digital Display of time, speed and Temperature and run conditions • Compatible with all fixed angle and swinging bucket rotors • Automatic rotor recognition facility • Automatic imbalance detection and cut-off • Should be programmable with easy preset programs for fast temperature for pre-cooling and short spin. • Should have motorized lid lock system
Temperature Range	-5 °C to 30 °C
Speed	Maximum speed: 20000 RPM (with no load)
Rotors	<ul style="list-style-type: none"> • Fixed Angle Rotor for <ul style="list-style-type: none"> • 50 ml bottles • 15ml Falcon tube • 1.5-2.0 mL Eppendorf tubes and adaptors for 0.2- and 0.5-mL tubes/ Eppendorf • Rotor for 2.0 mL Eppendorf tubes (12 places or better) with RPM 20000 • Deep-well microplates rotor Two 96 well plates for swing out type with RPM 3500 • Swing out rotor:

Accessories	Bottles, falcon tubes, adapters etc One set of Other items (rotors/adapters) required for improving the applicability/system performance should to be quoted as optional
Power Requirement	220 V to 240 V- 50 Hz voltage stabilizer is required, it should be supplied along with the unit
Voltage stabilizer	Suitable voltage stabilizer to be provided
Certificates Performance and Safety Standards	Should have necessary certification for safety and quality standards from national/ international bodies Optimum safety according to national and international regulations (IEC 1010)
Supplier/ Manufacturer	Must be ISO and CE certified for quality
Warranty	3 years warranty after satisfactory installation and working excluding consumable parts and accessories.
Operating manuals, service manuals, other manuals	Should provide:- <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation, if any.
Payment	Payment only after installation, validation and performance demonstration.

14. SHAKER

Application: Laboratory shaker are used to agitate samples and they are ideal for laboratory working on cell culture, cell aeration and solubility experiments.

Specifications	Requirements
Shaker requirements	<ul style="list-style-type: none"> • Single knob selects all operating conditions and quickly Triple-eccentric counter balanced drive • Acceleration circuit to prevent sudden start and stop should be available • Programmable controller offering up to 4 modes of timer and parameter control for reduced user intervention. • Timer 0.1 to 99.9 hours or continuous mode • UV germicidal lights. • Noise less operation
Shaking Speed range	25 to 400 rpm with ± 2 rpm accuracy
Temperature range	20 °C below ambient to 80 °C with accuracy of ± 0.1 °C and stability of ± 0.2 °C at 37 °C
Shaking orbit	approx. 25 mm
Display	Large, easy to read LCD display screen
Audible and Visible Alarm	Should indicate when speed deviates more than 5 rpm or temperature deviates more than 1°C from set point, and when timer operation has expired.
Overall dimensions	Minimum 62 x 75.4 x 82 cm (W x D x H)

Accessories	<p>1. Universal Platform of at least 45 x 45 cm having capacity to holds assortment of various size of flask sizes up to 2 Ltrs and test tube racks.</p> <p>2. System should be supplied with 125 ml clamps (10Nos.), 250ml clamps (5Nos.), 500 ml clamps (05Nos.), 1000 ml (02 Nos.) and 2000 ml (01- 02Nos)</p> <p>3. Test tube rack for 20x50 ml tube-1 no and test tube rack for 42x15 ml tubes-1 no</p>
Operating manuals, service manuals, other manuals	<p>Should provide: -</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs would be adequately displayed
Warranty	3 years warranty after satisfactory installation and working excluding consumable parts and accessories.
Training	Training of personnel After supply, training on instrument operation and troubleshooting etc., to be given to all laboratory personnel.
UPS	UPS/Stabilizer as required for functioning of the equipment
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC60601-General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC61010-1, IEC61010-2-40 for safety
IQ/PQ/OQ	IQ/OQ/PQ of instrument and Software should be provided along with document
After sales service/ Post warranty	<p>Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number;</p> <p>Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. Visits and unlimited breakdown calls by service/application support, engineers should attend immediately without fail.</p> <p>Should carry out yearly PM with at least one PM kit</p> <p>Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified</p>
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.

Payment	Payment only after installation, validation and performance demonstration.
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15. WATER BATH (ULTRASONIC)

Application: Used for cleaning fitters, mixing, homogenization, dissolving and dispersion of particles in solvents.

Specifications	Requirements
Tank capacity	5 liter or more (along with lid cover & drain valve)
Ultrasonic power	50 Hz or more
Ultrasonic frequency	0 to 40 KHz (variable with accuracy ± 2 kHz) (Ultrasonic power and frequency should be variable to form uniform cavitation in tank)
Heating temperature	1 to 100 °C with accuracy ± 1 °C (Temperature should be variable from 1 to 100 °C). Suitable chilling unit should be provided to achieve the desired temperature
Timer	Electronic digital timer (in 'min : sec ~ 00:00' format) with automatic switch on/off
Control panel	Digital indicator & auto-controller for temperature, ultrasonic frequency and electronic digital timer
Material of construction	All parts including accessories should be made of AISI-304/316 or equivalent stainless-steel material
Accessories	SS mesh baskets- 2 Nos Perforated trays - 2 Nos Beaker holder - 2 Nos Conical flask holder-4Nos Test tube holders - 2 Nos. Glassbottleholder-2 Nos. Toolkit, cleaning accessories and spare parts
Operating manuals, service manuals, other manuals	Should provide: - <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs would be adequately displayed
Calibration certificate	Calibration certificate from ISO 17025 for Temperature
Warranty	3 years warranty after satisfactory installation and working excluding consumable parts and accessories.

After sales service/Post warranty	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. Visits and unlimited break down calls by service/application support, engineers should attend immediately without fail. Should carry out yearly PM with at least one PM kit Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified
Training	The supplier should provide comprehensive training to users on operation of the instrument and application support on site as per specifications.
List of Spares and Accessories	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached.
Battery backup	Suitable rechargeable battery/Suitable rating UPS
Quality Requirement	Should be FDA/CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification under ISO 9001 for quality standards. Electrical safety conforms to the standards for electrical safety IEC60601-General requirements (or equivalent BIS Standard) Certified to be compliant with IEC61010-1, IEC61010-2-40 for safety.
IQ/PQ/OQ	On site IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

16. pH METER

Application: For food analysis, pH adjustment of buffers, solvents etc. with a comprehensive range of features and functions, making it suitable for general laboratory, QC and GLP based applications.

Specifications	Requirement
Unit	Consisting of Tri-combination pH/ATC electrode with an electrode holder / arm with smooth movement and protection cover
Working pH Range	0 – 14 pH
pH resolution	± 0.01 pH

Mv	<ul style="list-style-type: none"> • Range 0 ± 1999 • Accuracy ±1mV • Resolution 1 mV
Temperature Compensation	0 to 100 °C with ATC
Temperature	Range -10 to +105 °C Resolution 0.1 °C Accuracy ± 0.5 °C ATC range 0 to 100 °
Calibration Points	<ul style="list-style-type: none"> • Should have 3 stage calibration with auto buffer recognition • NIST traceable buffer set 500 ml each (pH 4.0, 7.0 &9.0).
Alarm	<ul style="list-style-type: none"> • Calibration reminder interval (1 to 999 hrs)
Temperature Compensation	<ul style="list-style-type: none"> • Automatic
Display	<ul style="list-style-type: none"> • Back lit blue LCD with operation icon • digital display with 0.001pH unit readability
Accessories	<ul style="list-style-type: none"> • Extra Electrode • NIST Standard buffer solution (pH 4.0, 7.0, 10.01 x 500 ml for each bottle) • Standard electrode holder • AC/DC Adaptor.
Power	<ul style="list-style-type: none"> • 9V DC
Data storage &Output	<ul style="list-style-type: none"> • Data storage facility and record maximum and minimum value. • RS. 232 C output and supply Data connect or cable.
Documents Certificates Performance and safety standards (specific to the device type); Local and/or international	<ul style="list-style-type: none"> • Manufacturer and Supplier should have ISO13485 certification. • Electrical safety conforms to the standards for electrical safety IEC60601-General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC61010-1, IEC 61010-2-40 for safety • Complete with IQ, OQ, PQ, Documents, Operations and Maintenance manuals
Supplier/Manufacturer	<ul style="list-style-type: none"> • Must be ISO certified for quality
Service contract clauses, including prices	<ul style="list-style-type: none"> • List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee / warranty period should be attached.
Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy and soft-copy)of: <ul style="list-style-type: none"> • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided • Certificate of calibration and inspection
Warranty	3 years warranty after satisfactory installation and working excluding consumable parts and accessories.

Operation and maintenance training	The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on– site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.
After sales service/Post warranty	Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; Should have a good after sales service/ technical support capable of reaching at short notice the places where instrument is installed. Visits and unlimited breakdown calls by service/application support, engineers should attend immediately without fail. Should carry out yearly PM with at least one PM kit Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

17. CONDUCTIVITY METER

Application: The instrument is used to measure conductivity, total dissolved solids (TDS) and temperature of the solution.

Specification	Requirement
Range	Conductivity: 0 μ S/cm – 200 mS/cm; TDS: 0 - 200 g/L or ppt; Temperature: 0 - 100 $^{\circ}$ C
Resolution	Conductivity: 0.01 μ S/cm - 200.0 mS/cm TDS: 0.01 mg/L or ppm to 0.1 μ g/L or ppt; Temperature: 0.1 $^{\circ}$ C
Accuracy	Conductivity: \pm 1 % full-scale; TDS: \pm 1 % full-scale; Temperature: \pm 0.5 $^{\circ}$ C
Calibration	Automatic Standard recognition. User standard one point/ multipoint calibration
Ready Indicator	Should inform when readings are stable
Selectable Cell Constant	Yes
Auto-Ranging	Across 5 Conductivity and TDS ranges Up to 5-point push button calibration
Non-Volatile Memory	Shall hold up to 100 data points

Integral Electrode Holder	Yes
USB port	Yes
Display	LED
Additional Requirements	<ul style="list-style-type: none"> • Conductivity calibration and verification standards that are traceable to certified international standard SRM NIST. • Calibration certificate and inspection
Accessories	<ul style="list-style-type: none"> • Electrode holder • One spare electrode
Operating manuals, service manuals, other manuals	<p>Should provide</p> <ul style="list-style-type: none"> • User, technical and maintenance manuals in English language • List of equipment and procedures required for local calibration and routine maintenance • Service and operation manuals to be provided. Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs should be adequately displayed
Warranty	3 years warranty after satisfactory installation and working excluding consumable parts and accessories.
Training	The supplier will have to carry out successful Installation at the laboratory premises (wherever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part Numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
Battery back-up	Suitable rechargeable battery
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Suppliers should have ISO13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC61010-1, IEC61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/ international bodies
IQ/PQ/OQ	Onsite IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument
After sales service/ Post warranty	<p>Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number;</p> <p>Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed.</p> <p>Visits and unlimited break down calls by service / application support, engineers should attend immediately without fail.</p> <p>Should carry out yearly PM with at least one PM kit</p> <p>Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified.</p>

Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

18. Robot couple High Speed Blender (Blixer V3)

Application: The blixer combines the features of two well-known appliances: the cutter and the blender/mixer. It turns products into texture modified foods.

Specification	Requirement
Motor	Industrial induction motor for heavy duty, built on ball bearing for silent running, stainless steel motor shaft, no belts and brushes, polycarbonate motor base
Wattage	750 W
Voltage	Single phase
Speed(s)	3000 rpm
Intensity (Amp)	230 V/1 50 Hz – 5.5
Pulse	Yes
Motor base	Polycarbonate motor base
Bowl	3.7 L stainless steel with soft touch handle for a firm and secure grip
Lid	Polycarbonate see through lid, Rubber seal to prevent liquid overflow
Blade(s)	Stainless steel fine serrated blades
Equipped with	Blixer arm for easy handling and cleaning
Quantities processed (kg)	0.3-2.0
Number of 200 g portions	2 to 10
Net weight (kg)	12
Gross weight (kg)	13
Dimensions (L x W x H) mm	240 x 305 x 445
Operating manuals, service manuals, other manuals	Should provide <ul style="list-style-type: none"> •User, technical and maintenance manuals in English language •List of equipment and procedures required for local calibration and routine maintenance •Service and operation manuals to be provided. Advanced maintenance tasks documentation, if any.
Recommendations or Warnings	Any warning signs should be adequately displayed
Warranty	At least 10 years for motor and 5 years for other parts
Training	The supplier will have to carry out successful Installation at

	the laboratory premises (wherever the system has to be installed) and provide on-site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction
List of Spares and Accessories	List of all spares and accessories (including minor) with part
Battery back-up	Numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached
Quality Requirement	<ul style="list-style-type: none"> • Should be FDA/CE/BIS approved product. • Manufacturer and Suppliers should have ISO13485 certification under ISO 9001 for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard) • Certified to be compliant with IEC61010-1, IEC61010-2-40 for safety • Should have necessary certification for safety and quality standards from national/ international bodies
IQ/PQ/OQ	Onsite IQ, OQ of instrument along with document to be provided & supplier to assist till satisfactory PQ of instrument
After sales service/ Post warranty	<ul style="list-style-type: none"> • Contact details of manufacturer, supplier and local service agent to be provided, including toll free/ Landline Number; • Should have a good after sales service/technical support capable of reaching at short notice the places where instrument is installed. • Visits and unlimited break down calls by service / application support, engineers should attend immediately without fail. • Should carry out yearly PM with at least one PM kit Comprehensive AMC cost/rate for 3 years after warranty shall be quoted. Terms and conditions for the comprehensive AMC, after the warranty period has to be specified.
Compliance statement	The quote should also include a compliance statement vis-à-vis specifications in a “tabular form” clearly stating the compliance and giving justification, if any supported by technical literature. This statement must be signed, with the company seal, for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification.
Payment	Payment only after installation, validation and performance demonstration.

**TENDER CONDITIONS ACCEPTANCE LETTER
(To be given on Company Letter Head)**

Date:

To,

Sub: Acceptance of Terms & Conditions of Tender

Tender Reference No:

Name of Tender / Work: Supply, Installation, Running and Accreditation of Laboratory for Pesticide Residue and Heavy Metal Analysis of Soil, Water and Rice Grains by NABL on Turnkey Basis at CIF, OUAT, Bhubaneswar

Dear Sir,

1. I/Wehavedownloaded/obtainedthetenderdocument(s)fortheabovementioned Tender/Work from the web site(s)namely:_____

as per your advertisement, given in the above mentioned website(s).

2. I / We hereby certify that I / we have read entire terms and conditions of the tender documents from Page No. 01 to (including all documents like annexure(s), schedule(s), etc .), which form part of the contract agreement and I / we shall abide hereby the terms / conditions / clauses contained therein.

3.The corrigendum(s) issued from time to time by your department/ organizations too have also been taken into consideration, while submitting this acceptance letter (if applicable).

4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality/entirety.

5. In case any provisions of this tender are found violated, your department/ organization shall be at liberty to reject this tender/bid including the forfeiture of the full said Earnest MoneyDepositabsolutelyandweshallnothaveanyclaim/rightagainstdeptt.insatisf action of this condition.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

UNDERTAKING

To,
The Dean, College of Agriculture,
OUAT, Bhubaneswar

Sir,

1. I/we the undersigned, certify that I/we have gone through the terms and conditions mentioned in the tender documents and undertake to complywiththem.
2. It is further certified that our firm has not been blacklisted by any agency in India or abroad.
3. We will supply the goods in accordance to the specifications of the work order. At any stage, if it is found that the substandard /deviation from the specifications/ design/quality has been made by us, we shall be liable for penalty and legal action.

Dated:

SIGNATURE OF THE TENDERERWITHSEAL

NAMEOFTHETENDERERWITHADDRESS

NOTE: Certificate as per above must be submitted only on non-judicial stamp paper of Rs. 100/- (Rs One Hundred Only)

Bid-Securing Declaration Form

Date:

Bid No.:

To

(insert complete name and address of the bidder)

I/ We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We;

a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or

b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

c) I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of

(i) The receipt of your notification of the name of the successful Bidder; or

(ii) Thirty (30) days after the expiration of the validity of my/our Bid.

Signed:

(insert signature of person whose name and capacity are shown) in the capacity of (insert legal capacity of person signing the Bid Securing Declaration).

Name: (insert complete name of person signing he Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of:

**(Insert complete name of Bidder) Dated on _____ day of _____
(Insert date of signing)**

Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)