

Request for Quotations

Land O'Lakes Venture37

On behalf of and in support of

United States Department of Agriculture, Bangladesh Trade Facilitation Project

RFQ Number:	BTF-2024-PROC-0005
RFQ Title:	Procurement of Laboratory Equipment
Date Issued:	17 April 2024
Issuing Office:	Land O'Lakes Bangladesh
Closing Date:	30 April 2024

This Request for Quotation (RFQ) is issued as part of the Bangladesh Trade Facilitation Project (BTF) being implemented by Land O'Lakes Venture37, with funding from the United States Department of Agriculture (USDA). The purpose of this procurement is to source technical laboratory equipment for installation at one or more Government of Bangladesh food and chemical testing laboratories, including the Bangladesh Standards and Testing Institution (BSTI) and the Department of Fisheries (DoF) and to introduce new technologies and procedures enabling the agencies to comply with the international best practices. The details of the requirements and the terms and conditions for the procurement are given below.

Refer to Annex 1 for the Supplier Specifications and Price Submission Form. Annex 2 for Technical Specifications of General Laboratory Equipment. And Annex 3 for Technical Specification of Ion Chromatography (IC)

Bidders may bid on one, more than one, or all laboratory equipment specified in this RFQ.

1) Item and Quantity:

Sl.	Item Name	Quantity
01	Nano Drop UV-VIS Spectrophotometer	1
02	Real Time PCR (RT-PCR)	1
03	Multi-Purpose Refrigerated Centrifuge	1
04	Digital Ultrasonic Cleaner	1
05	Orbital Shaker	1
06	Block Heater with Digital display	1
07	Homogenizer with Digital display	1
08	Ultra-low Temperature Freezer	1
08	Gradient Thermal Cycler	1
09	Semi-Automatic Precision Microtome	1
10	Multi-Channel Micropipette set	1
11	Single Channel Micropipette set	1
12	Acid Dispenser	1
13	Electronic Analytical Balance	1
15	Water Purification System (Ultrapure)	1
16	Ion Chromatography (IC)	1

Please refer to attachments, **Annexes 1-3**, for detailed specifications and requirements.

2) Delivery and Installation Point:

The laboratory equipment, except the Ion Chromatography machine, should be delivered to the premises of BSTI, in Tejgaon, Dhaka. The Ion Chromatography machine should be delivered to DoF Quality Control Laboratory, Savar.

3) Technical Specifications:

The lab equipment shall be **Brand New** as per specifications attached as **Annex 2 & 3**. The instruments must not be manufactured or assembled before 1 year of issuing work order. Manufacturing certificate including equipment serial number, brand name, and manufacturing date from manufacturer must submit with equipment.

4) Conformity with Technical Specifications/Terms

- a) Bidders may bid on one, more than one, or all laboratory equipment specified in this RFQ.
- b) Quotation should conform to the attached specifications and should be suited to Bangladesh conditions.
- c) Original Manufacturer's Authorization shall be attached at the time of submission of tender document by bidder.
- d) The supplier shall have at least 01 (one) manufacturer certified competent engineer and at least 01 (one) manufacturer certified competent application expert. Manufacturer certified engineer and application expert details shall be submitted with the tender document.
- e) Supplier shall submit their valid ISO 9001:2015 certificate along with Manufacturer's valid ISO and CE certificate. The product must be EU- CE certificate/Japan Quality Assurance Organization (JQA) / US-FDA approved certified.
- f) A fully illustrated set of technical literature in English (original) must be included with tender documents.
- g) Proof of manufacture and country of origin should be submitted as verification of origin of the laboratory instrument(s) during supply. The supplier must provide original operation and/or service manual and certification documents during supply of the instrument.
- h) Manufacturer office and service center with competent engineer shall be in Bangladesh.
- i) After-sales service and maintenance support, and the availability of spare parts should be clearly stated.
- j) Tenderer shall have minimum 5 years of overall experiences in the supply of laboratory equipment. Tenderer should submit min 2 (two) work experience certificate of similar supply in Government/non-government/private entity in Bangladesh.
- k) Tenderer should submit up to date Trade license 2022-2023, TIN and Income Tax Clearance Certificate, Vat/ 13 Digit BIN Registration Certificate and bank solvency certificate along with tender documents.
- l) For Ion Chromatography, Real Time PCR and Gradient Thermal Cycler - Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) shall be carried out by the manufacturer / supplier according to the international standards within 30 days of supply of the equipment at customer site. Commissioning must include all software and hardware installation to operate the equipment.
- m) Training: At least 3 weeks application and service training must be provided for Ion Chromatography, Real Time PCR, Gradient Thermal Cycler at the customer site during and after installation. The training shall be sufficient for smooth running of the equipment. At least one method validation shall be performed at the laboratory. Chemicals, reagents, reference materials necessary for the above test shall be supplied at their (bidders') own cost.
- n) Preventive Maintenance Plan: The supplier shall submit yearly preventive maintenance plan during the 2 years' warranty period and take necessary action as per corrective action procedure/breakdown maintenance whenever required.
- o) Warranty and after sale support service: The warranty period of the equipment will be minimum 2 (two) years from the date of installation and commissioning of the machine at the user site. The supplier shall submit the warranty card and ensure that all materials, equipment and accessories are new and fit for the intended purpose. During warranty period the cost-of-service engineer/technical expert, travel, and

spare parts (including electronic and electrical), are provided by the supplier at their own cost. The repair/maintenance work shall be carried out within 48 hours after getting request from the user.

5) Cost Breakdown:

- Unit price of each piece of laboratory equipment. Please summarize the price offered in the format shown at Annex 1: Supplier Specifications and Price Submission Form.
- Cost of transport, shipping, and/or technical support (if not included in price of equipment).
- Any Taxes, VAT, duties should be shown separately.

Annex 1: Supplier Specifications and Price Submission Form

6) Price:

Price quoted must be in Bangladesh Taka (BDT) and must be net, less any discount offered, and should include costs of transportation to specified delivery point (Clause 2). Please summarize the unit prices and total cost offered in the format shown at Annex 1: Supplier Specifications and Price Submission Form.

7) Validity

Prices offered in the quotation must be firm and **valid for 30 days** from the closing date of the RFQ. ***No increase in price will be considered after closing of the RFQ.***

8) Delivery Date:

The equipment is expected to be delivered **within 90 days** of award of the purchase order. State firm delivery date. If the equipment is not available ex-stock, state expected availability.

9) Inspection

Land O'Lakes Venture37, BTF will inspect the equipment prior to delivery.

10) VAT/Taxes

All applicable taxes, VAT, duties, levies, export clearances/licenses and any other incidental cost in the country of origin shall be borne by the supplier.

11) Payment

Payment will be made in Bangladesh Taka via electronic fund transfer. Terms will be negotiated with final payment subject to receipt of items, inspection, and receipt of all supporting documents delivered in good order by the seller.

12) Guarantee/ Warranty

The supplier shall provide standard manufacturer's warranty/guarantee against any/all defects in workmanship and materials.

13) Award of Purchase Order

Award of Purchase Order will be made to the bidder achieving the highest overall score based on the following criteria and point distribution.

Rated Criteria Category	Weighting
Lowest Price Offer	20
Quality Assessment	30
Estimated Time to Deliver	10
Extended Warranty	20
Preventative Maintenance Plan/ Servicing Facilities	20
Total Points	100

14) Right to Cancel Solicitation and Reject Offers.

Land O'Lakes reserves the right to accept or reject any offer or cancel or reissue this RFQ without assigning any reason.

15) Submission of Quotation:

The successful vendor must meet the technical requirements specified in this RFQ and provide a quotation, technical details, and information about the supplier's service and maintenance offerings. Submissions should include a manufacturer's brochure and/or specifications sheet describing the equipment being offered. The quotation also should include an expected delivery date, pricing, and explain after-sales support plan. All offers and technical materials should be in English.

- i. Submit quotation by *email: rhalder@landolaekes.com*
Attn: Recardo Halder / Telephone: +880 1302011858
- ii. Email quotations should indicate **BTF-2024-PROC-0005** in the subject line.
- iii. Quotation must have supplier's complete name and address and the RFQ number and title. Quotations should be addressed to:
*Land O'Lakes Venture37,
Bangladesh Trade Facilitation Project,
Concord Bilkis Tower, 40/6 Madani Avenue,
Gulshan-2, Dhaka-1212.*
- iv. Quotation should consist of:
 - 1) Your price offers. **(Annex 1)**
 - 2) Specifications of the equipment with necessary manufacturer authorization
 - 3) Complete technical literature for the equipment, including specifications, instructions, and any other key details about the product.

17) Expenses Relating to Submission of Quotation

Issuance of this RFQ in no way obligates Land O'Lakes Venture37 to award a purchase order and bidders will not be reimbursed for any costs associated with the preparation of a bid. All preparation and submission costs are at the bidder's expense.

18) Confirmation:

Please acknowledge receipt of this RFQ and indicate your intention to bid.

Thank you for your interest in this bid.

Sincerely,

Michael J Parr,
Project Director, Bangladesh Trade Facilitation
Country Director, Land O'Lakes Venture37

Annex 1: Supplier Specifications and Price Submission Form

Laboratory Equipment and Instruments for installation at one or more Government of Bangladesh food and chemical testing facilities located greater Dhaka.

Sl.	Item Description	Qty.	Required Specification	Supplier Offered Specification	Delivery Time	Price (BDT)
01	Nano Drop UV-VIS Spectrophotometer	1	As per Annex 2			
02	Real Time PCR (RT-PCR)	1	As per Annex 2			
03	Multi-Purpose Refrigerated Centrifuge	1	As per Annex 2			
04	Digital Ultrasonic Cleaner	1	As per Annex 2			
05	Orbital Shaker	1	As per Annex 2			
06	Block Heater with Digital display	1	As per Annex 2			
07	Homogenizer with Digital display	1	As per Annex 2			
08	Ultra-low Temperature Freezer	1	As per Annex 2			
08	Gradient Thermal Cycler	1	As per Annex 2			
09	Semi-Automatic Precision Microtome	1	As per Annex 2			
10	Multi-Channel Micropipette set	1	As per Annex 2			
11	Single Channel Micropipette set	1	As per Annex 2			
12	Acid Dispenser	1	As per Annex 2			
13	Electronic Analytical Balance	1	As per Annex 2			
15	Water Purification System (Ultrapure)	1	As per Annex 2			
16	Ion Chromatography (IC)	1	As per Annex 3			
					Total Cost without VAT	
					VAT Amount	
					Delivery Cost (if not included)	
					TOTAL COST	

Annex 2: Technical Specifications of General Laboratory Equipment

SL	Equipment Name	Description	Qty
01	Nano Drop UV-VIS Spectrophotometer	<p>Nano Drop UV-VIS Spectrophotometer Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan / Singapore</p> <p>Application: Nucleic acids concentration and purity: dsDNA, RNA, ssDNA, Protein A280: BSA, IGG, lysosome and custom proteins, Protein assays: BCA, Bradford, Modified Lowry for protein standard curve protocols, OD 600: Optical density at 600 nm and cells/mL calculation for cell cultures, More assays: Customized protocols using factor, standard curve and UV-Vis method.</p> <p>Technical Specifications:</p> <ul style="list-style-type: none"> • Sample Volume: 1 µL minimum volume • Pathlength: 0.03 -1.0 mm • Light Source: Xenon flash lamp • Wavelength Range: 190 to 1000 nm • Spectral Resolution: 1.5-2.0 nm • Absorbance Range: 0 to 400 A or better • Detection Range: dsDNA: 2 to 20,000 ng/µL. • Display : Color touch screen • Data Port: 1 USB Type-A front port for USB flash drive • Footprint Dimensions (W x D x H) mm: 206 x 333 x 166 • Power Adapter Input: AC 100-230 V, 50/60 Hz; <p>Terms and Conditions:</p> <p>Certified Technical personnel for service: The supplier / manufacturer shall have at least 01 (one) manufacturer certified engineer and at least 01 (one) manufacturer certified application expert.</p> <p>Certification: Manufacturer’s valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality Assurance Organization approved certified.</p> <p>Original Manufacturer’s Authorization shall be attached at the time of submission of tender document by bidder.</p> <p>Installation and validation: shall be carried out by the manufacturer according to the international standards within 30 days of supply of the equipment.</p>	1

SL	Equipment Name	Description	Qty
		<p>Training: Application training must be provided to the users.</p> <p>Warranty: The warranty period of the equipment will be minimum 2 (two) years from the date of installation and of the machine at the user site. Warranty card from the manufacturer shall be submitted.</p> <p>After Sales service: The supplier shall provide all labor, transportation, and related expenses for after sales service for the maintenance and repair of the products during warranty period.</p> <p>Catalogue in English: Full manufacturer’s catalogue must be supplied in English.</p>	
02	Real Time PCR System (RT-PCR)	<p>Real Time PCR System (RT-PCR) Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan / Singapore</p> <p>System specifications</p> <ul style="list-style-type: none"> • Sample capacity (wells): 96 • Reaction volume: 10–150µL (recommended), 1µL minimum • Run time: Less than 30 minutes • Calibration: Factory calibrated for common qPCR chemistries • Max. block ramp rate: 5- 6°C/sec • Avg. sample ramp rate: 3- 4°C/sec • Plate compatibility: Semi-skirted or un-skirted with optical seal film (any brand) • Color compatibility: Frosted, transparent or white plastic • Tube compatibility: Low-profile tubes with Optical Strip Caps and 8 or 12-well stripped and single tubes • Working environment: Ambient temperature 0–30°C and humidity up to 85% • Electrical specifications: Electric power: 100–240 VAC, 8A; Consumption: 0.8kW (800 Watts) • Manufacturing location: Made in California, USA • Size (W x H x D): 12" x 17" x 20" (30.5 x 43.2 x 50.8 cm) • Weight: 50 lbs (22.7 kg) <p>Performance specifications</p>	1

SL	Equipment Name	Description	Qty
		<ul style="list-style-type: none"> • Applications and Uses <p>Viral RNA detection, compatible with the SARS-CoV-2/COVID-19 assays ,Quantitative and qualitative gene expression analysis by relative quantitation(ΔCq) or normalized expression ($\Delta\Delta$Cq), miRNA analysis, Genetic mapping , Genetic fingerprinting , NGS library quantification, Pathogen detection and quantification, Quantitative measurement of gene copy number, Gene expression analysis , Multiple-file gene expression analysis for comparison of an unlimited number of Cq values, Gene deletion analysis, SNP Genotyping , Allelic discrimination , GMO detection, Forensic studies, Template quantitation, Food analysis, Cancer phenotyping, Linkage analysis, End-point analysis</p> <p>Dye compatibility SYBR Green, EvaGreen, FAM, VIC, JOE, HEX, CAL Fluor 540, CAL Fluor Orange 560, ROX, TAMRA, TEX615, Quasar 670, CAL Fluor Red 610, Cy5, LIZ, Mustang Purple, Cy5.5, Quasar 705</p> <p>Custom dye/chemistry: Yes Chemistry capability: Fast/Standard Multiplexing: Up to 6 targets Dynamic range: 10 logs Detection sensitivity: 1 copy of amplified DNA Sensitivity (resolution): Detect differences as small as 2-fold in target quantities in singleplex reactions Durability: Stress tested to 1,000+ repeated experiments Research applications: Quantitative and qualitative gene expression analysis, miRNA analysis, genetic mapping, genetic fingerprinting, NGS library quantification, 6 channel multiplex ability, pathogen quantification</p> <p>Thermal performance</p> <ul style="list-style-type: none"> • Temperature uniformity: $\pm 0.2^{\circ}\text{C}$ • Temperature accuracy: $\pm 0.1^{\circ}\text{C}$ • Temperature range: 4.0–99.9$^{\circ}\text{C}$ • Temperature gradient: 30.0–99.9$^{\circ}\text{C}$ • Programmable span: 1- 40$^{\circ}\text{C}$ • Cooling rate: 2$^{\circ}\text{C}/\text{sec}$ • Lid temperature range: Heats up to 105$^{\circ}\text{C}$ • Thermal element: 6 Marlow Peltiers • Block set up: Up to 12 thermal gradient temperature zones <p>Optical modules</p> <ul style="list-style-type: none"> • Detection channels: 6 (Six) 	

SL	Equipment Name	Description	Qty
		<p>Standard channels</p> <ul style="list-style-type: none"> ✓ Channel 1: Excitation 475 ± 14 nm and Emission 524 ± 12 nm ✓ Channel 2: Excitation 527 ± 10 nm and Emission 565 ± 12 nm ✓ Channel 3: Excitation 537 ± 13 nm and Emission 583 ± 11 nm ✓ Channel 4: Excitation 572 ± 7.5 nm and Emission 623 ± 12 nm ✓ Channel 5: Excitation 623 ± 12 nm and Emission 676 ± 18.5 nm ✓ Channel 6: Excitation 655 ± 7.5 nm and Emission 711 ± 12.5 nm <p>Excitation (light source): LED</p> <ul style="list-style-type: none"> ✓ Detection method: Fiber optic system + CMOS ✓ Acquisition speed: 16 well simultaneous scan • Calibration: Onboard analytics and sensors confirm operation of mechanical, thermal and optical components prior to running • Device management: Device name, date & time, serial number and software version • Output file type: .AZD • On board memory: 32GB equivalent to 20,000 experiments • Connectivity <p>Connection types: USB, Ethernet, Wi-Fi, external PC Remote access: Monitor and run protocols remotely, access files from personal PC Manager Analysis Software: Analysis modes: qPCR with dye/SYBR, qPCR with probe, Allele Discrimination with probe and Comparative Quantitation Analysis types: Standard curve, absolute and relative gene expression, SNP genotyping, presence/absence, HRM Post-run summary: View Statistical data in the form of charts, curves and graphs. Easily export a complete and easily customizable report of the qPCR experiment Plate mapping: Intuitive plate map design that allows users to assign well ID as Standards, Unknowns, Calibrators, Negative Control, NTC etc Operating system compatibility: Windows Compatibility: Easily Copy/Paste data or graphs onto Paint, Microsoft Office or other supported applications as needed. Export data in MS-office, PDF or in MIQE preferred RDML (1.0, 1.1, 1.2) format.</p>	

SL	Equipment Name	Description	Qty
		<p>Accessories:</p> <ul style="list-style-type: none"> • Laptop, Core i5 -12th Generation • 3 KVA Online 15 min Backup. • Starter Kit <p>Terms and Conditions:</p> <p>Certified Technical personnel for service: The supplier/manufacturer shall have at least 01 (one) manufacturer certified engineer and at least 01 (one) manufacturer certified application expert. Manufacturer certified engineer and application expert details shall be submitted with the tender document.</p> <p>Certification: Manufacturer’s valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality Assurance Organization approved certified.</p> <p>Original Manufacturer’s Authorization shall be attached at the time of submission of tender document by bidder.</p> <p>Installation, Testing and Commissioning: Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) shall carry out by the manufacturer according to the international standards within 30 days of supply of the equipment at customer site. Commissioning must include all software and hardware installation to operate the equipment.</p> <p>Training: At least 3 weeks application training of the users at the customer site during and after installation. The training shall be sufficient for the smooth running of this equipment.</p> <p>Warranty: The warranty period of the equipment will be a minimum of 2 (two) years from the date of installation and commissioning of the machine at the user site. Both supplier and manufacturer must have ISO certificate.</p> <p>Preventive Maintenance Plan: The supplier shall submit yearly preventive maintenance plan during the 2 years’ warranty period and take necessary action as per corrective action procedure/breakdown maintenance whenever required.</p> <p>Calibration: The supplier shall be responsible for calibration of the item during the warranty period (2 years’) from manufacturer.</p> <p>After Sales service: The supplier shall provide after sales service for the maintenance and repair of the products during warranty period. Manufacturer should have service support office in Bangladesh with factory trained certified engineers.</p> <p>Catalogue in English: Full manufacturer’s catalogue must be supplied in English.</p>	

SL	Equipment Name	Description	Qty
03	Multi-purpose Refrigerated Centrifuge	<p>Multi-purpose Refrigerated Centrifuge Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan / Singapore</p> <p>Description:</p> <ul style="list-style-type: none"> • Metal housing and lid, Viewing port in the lid, Powered lid lock, Lid dropping protection, Emergency lid lock release, Stainless steel chamber, Automatic rotor recognition, Brushless drive, Error display, Imbalance switch-off, Backlit panel with actual values of all parameters, Auditory message after completion of the centrifugation run. • IvD-conform according to directive 98/79/EC • Impulse key for short cycle mode, easy operation with keypad and control knob, impulse key for short cycle mode, 9 program memories for more individuality, 9 individual acceleration and deceleration stages. <p>Technical Specifications:</p> <ul style="list-style-type: none"> • Speed: Max. RPM 18,000 min⁻¹ • Max. RCF 24,000 -30,000 or better • Temperature control, infinitely variable: -20 to +40 °C • Max. capacity: 48 x 1.5 / 2.0 ml, 6 x 50 ml • Running time: 1 sec – 99 min, ∞ continuous run, • short cycle mode (impulse button) • Power : 220 V 50Hz & 850VA • Noise level : 55- 60 dB (A) with rotor <p>Rotor Specification:</p> <p>a) ANGLE ROTOR, 24-PLACE for 24 x 2.0 & 1.5 ml</p> <ul style="list-style-type: none"> • Max. RPM : 18,000 min⁻¹ • Max. capacity 24 x 2 ml • Angle 45° <p>Vessels:</p> <ul style="list-style-type: none"> • Capacity in ml : 1.5 • Radius in mm: 87 • Vessels per rotor : 24 <p>b) ANGLE ROTOR, 6-PLACE for 50 ml & 15 ml</p> <ul style="list-style-type: none"> • Max. RPM :6,000 min⁻¹ • Max. capacity: 6 x 50 ml • Angle : 35° • Max. noise level : 59 dB (A) <p>Vessels:</p> <ul style="list-style-type: none"> • Capacity in ml:15 • Ø x L in mm: 17 x 120 • Max. RCF: 3,824 • Radius in mm: 95 • Adapter • Boring Ø x L in mm: 17 x 98 	1

SL	Equipment Name	Description	Qty
		<ul style="list-style-type: none"> • Vessels per rotor: 6 <p>Accessories:</p> <p>Rotor 1: 24 x 1.5/2.0 mL</p> <p>Rotor 2: 6 x 50.0 mL</p> <p>Terms and Conditions:</p> <p>Certified Technical personnel for service: The supplier/manufacturer shall have at least 01 (one) manufacturer certified engineer for installation and servicing.</p> <p>Certification: Manufacturer’s valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality 01Assurance Organization approved certified. Original</p> <p>Manufacturer’s Authorization shall be attached at the time of submission of tender document by bidder. Must have ISO certificate for both manufacturer and suppliers.</p> <p>Installation and validation: shall be carried out by the manufacturer according to the international standards within 30 days of supply of the equipment.</p> <p>Training: Application training must be provided to the users.</p> <p>Warranty: The warranty period of the equipment will be minimum 1 (one) year with additional 1year warranty from the date of installation and of the machine at the user site. A warranty card from the manufacturer shall be submitted.</p> <p>Calibration: The supplier shall be responsible for calibration of the item every year during the warranty period from an ISO/IEC 17025:2017 accredited calibration laboratory.</p> <p>After Sales service: The supplier shall provide after sales service for the maintenance and repair of the products during warranty period. Manufacturer should have service support office in Bangladesh with factory trained certified engineers.</p> <p>Catalogue in English: Full manufacturer’s catalogue (user/technical/maintenance manual) must be supplied in English.</p>	
04	Digital Ultrasonic Cleaner	<p>Digital Ultrasonic Cleaner</p> <p>Brand: To mention by bidder</p> <p>Model: To mention by bidder</p> <p>Origin: USA/ EU/UK / Japan</p> <p>Technical Specification:</p> <ul style="list-style-type: none"> • Frequency Output (Hz): 40000 • Capacity (Liters):6-10 	1

SL	Equipment Name	Description	Qty
		<ul style="list-style-type: none"> • Power (VAC): 230 • Power (Hz): 50 • Frequency Output (KHz): 40 • Display: LED • Time and temperature :Yes <p>Terms and Conditions:</p> <p>Certified Technical personnel for service: The supplier/manufacturer shall have at least 01 (one) manufacturer certified engineer for installation and servicing.</p> <p>Certification: Manufacturer’s valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality 01Assurance Organization approved certified. Original</p> <p>Manufacturer’s Authorization shall be attached at the time of submission of tender document by bidder. Must have ISO certificate for both manufacturer and suppliers.</p> <p>Installation and validation: shall be carried out by the manufacturer according to the international standards within 30 days of supply of the equipment.</p> <p>Training: Application training must be provided to the users.</p> <p>Warranty: The warranty period of the equipment will be minimum 1 (one) year with additional 1year warranty from the date of installation and of the machine at the user site. A warranty card from the manufacturer shall be submitted.</p> <p>Calibration: The supplier shall be responsible for calibration of the item every year during the warranty period from an ISO/IEC 17025:2017 accredited calibration laboratory.</p> <p>After Sales service: The supplier shall provide after sales service for the maintenance and repair of the products during warranty period. Manufacturer should have service support office in Bangladesh with factory trained certified engineers.</p> <p>Catalogue in English: Full manufacturer’s catalogue (user/technical/maintenance manual) must be supplied in English.</p>	
05	Orbital Shaker	<p>Orbital Shaker Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan / Singapore Features:</p>	1

SL	Equipment Name	Description	Qty
		<p>Platform has six rubber cushioned horizontal securing bars with quick release handles & including flasks, bottles and beakers. & following Erlenmeyer flasks or bottles: 12 x 250ml or 9 x 500ml or 4 x 1000ml or 2 x 2000ml. Built-in digital timer.</p> <p>Technical Specification</p> <ul style="list-style-type: none"> • Shaking action: Orbital • Platform dimensions (w x l): 300-350 x 300-350 5mm • Speed range: 30 to 300 rpm • Orbit / amplitude : 16-20 mm • Digital Display : Yes • Maximum load :10kg • Electrical supply: 220 -230V, 50Hz. <p>Terms and Conditions:</p> <p>Certified Technical personnel for service: The supplier/manufacturer shall have at least 01 (one) manufacturer certified engineer for installation and servicing.</p> <p>Certification: Manufacturer’s valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality 01Assurance Organization approved certified. Original</p> <p>Manufacturer’s Authorization shall be attached at the time of submission of tender document by bidder. Must have ISO certificate for both manufacturer and suppliers.</p> <p>Installation and validation: shall be carried out by the manufacturer according to the international standards within 30 days of supply of the equipment.</p> <p>Training: Application training must be provided to the users.</p> <p>Warranty: The warranty period of the equipment will be minimum 1 (one) year with additional 1year warranty from the date of installation and of the machine at the user site. A warranty card from the manufacturer shall be submitted.</p> <p>Calibration: The supplier shall be responsible for calibration of the item every year during the warranty period from an ISO/IEC 17025:2017 accredited calibration laboratory.</p> <p>After Sales service: The supplier shall provide after sales service for the maintenance and repair of the products during warranty period. Manufacturer should have service support office in Bangladesh with factory trained certified engineers.</p> <p>Catalogue in English: Full manufacturer’s catalogue (user/technical/maintenance manual) must be supplied in English.</p>	

SL	Equipment Name	Description	Qty
06	Block Heater with Digital display	<p>Block Heater with Digital display Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan Technical Specification:</p> <ul style="list-style-type: none"> • Number of blocks: 2 or better • Display : LED • Heat output: 450 W or better • Heating temperature range: Room temp. +5° -100 °C or better • Temperature display: yes • Resolution: 0.1°C • Accuracy (37°C): < ±1°C • Accuracy (100°C): < ±1°C • Stability (37°C): < ±1°C • Stability (100°C): < ±0.15°C • Heat up time 25-100°C (min): 7 • Minimum timer: 1 min • Maximum timer: 99hr 59min • Electrical supply: 220-230V 50 Hz <p>Terms and Conditions: Warranty: The warranty period of the equipment will be minimum 1 (one) year with additional 1year warranty from the date of installation and of the machine at the user site. A warranty card from the manufacturer shall be submitted.</p> <p>Installation and validation: shall be carried out by the manufacturer according to the international standards within 30 days of supply of the equipment.</p> <p>After Sales service: The supplier shall provide after sales service for the maintenance and repair of the products during warranty period. Manufacturer should have service support office in Bangladesh with factory trained certified engineers.</p> <p>Catalogue in English: Full manufacturer’s catalogue (user/technical/maintenance manual) must be supplied in English.</p>	1
07	Homogenizer with Digital display	<p>Homogenizer with Digital display Brand: To mention by bidder Model: To mention by bidder</p>	1

SL	Equipment Name	Description	Qty
		<p>Origin: USA/ EU/UK / Japan / Singapore</p> <p>Technical Specifications:</p> <ul style="list-style-type: none"> • Sample Size (mL): 0.05 to 100 • Speed (rpm): 5000 - 30000 • Wattage (Output): 125 • Power (VAC): 220-230V /50Hz <p>Accessories: Homogenizer Probe, Plastic Tip, 0.25 to 50 mL, Hard Tissue; 25/PK (Applications include large volume emulsions, suspensions, and dispersions for liquid/liquid or solid/liquid) Process between 0.25 to 50 mL & Polycarbonate Material. Tip Diameter (mm):7, Min Sample Size (ml): 0. 25.</p> <p>Terms and Conditions:</p> <p>Warranty: The warranty period of the equipment will be minimum 1 (one) year with additional 1year warranty from the date of installation and of the machine at the user site. A warranty card from the manufacturer shall be submitted.</p> <p>Installation and validation: shall be carried out by the manufacturer according to the international standards within 30 days of supply of the equipment.</p> <p>After Sales service: The supplier shall provide after sales service for the maintenance and repair of the products during warranty period. Manufacturer should have service support office in Bangladesh with factory trained certified engineers.</p> <p>Catalogue in English: Full manufacturer’s catalogue (user/technical/maintenance manual) must be supplied in English.</p>	
08	Ultra-Low Temperature Freezer	<p>Ultra-Low Temperature Freezer (-80°C)</p> <p>Brand: To mention by bidder</p> <p>Model: To mention by bidder</p> <p>Origin: USA/ EU/UK / Japan / Singapore</p> <p>Overall Specifications Fast, dual Direct cooling, Microprocessor Controller, PT100 Sensor, USB and RS-232 Port, SUS304 Inner chamber, Natural low GWP, hydrocarbon, CFC free , high/low temperature alarm, power-off failure, abnormal voltage, sensor error, filter screen check, controller failure, low battery, condenser malfunction, high ambient temperature, door ajar, Perfect for COVID-19 vaccines, critical material storage in biorepositories, medical research facilities, BSL4 labs, hospitals, or anywhere valuable samples need to be stored safely , Sample security: 2 cores, 2 refrigeration systems, 2 control commands for compressors Frost free: interlocking gasket design and heated door seal reduce frost accumulation on the inner compartment doors , Only freezer aware of its own environment with smart, self-monitoring features, Lockable, ergonomically designed door</p>	1

SL	Equipment Name	Description	Qty
		<p>handle for easy and secure access , Best insulation: combining vacuum insulation panels with high-efficiency dual-layered insulated inner doors ensures longest cold retention and recovery times.</p> <p>Technical Specification:</p> <ul style="list-style-type: none"> • Freezer capacity: 425 L (15 cu ft) • Temperature range : –86 to –40 °C (–123 to –40 °F) • No. of shelves: 3 • Capacity for 2-in boxes: 288 • Display: 7-inch color touch screen • Internal Dimensions (W x H x D): 61 x 118 x 57.5 cm • External Dimensions (W x H x D): 90 x 194 x 94 cm • Power: 420 watts, 2.6 amps & 220 VAC, 50 Hz <p>Terms and Conditions:</p> <p>Certified Technical personnel for service: The supplier/manufacturer shall have at least 01 (one) manufacturer certified engineer and at least 01 (one) manufacturer certified application expert. Manufacturer certified engineer and application expert details shall be submitted with the tender document.</p> <p>Certification: Manufacturer’s valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality Assurance Organization approved certified.</p> <p>Original Manufacturer’s Authorization shall be attached at the time of submission of tender document by bidder.</p> <p>Installation, and validation carry out by the manufacturer according to the international standards within 30 days of supply of the equipment.</p> <p>Training: The training shall be sufficient for the smooth running of this equipment.</p> <p>Validation: the supplier shall be responsible for validation certificate every year during the warranty period from ISO17025:2017 accredited calibration laboratory.</p> <p>Warranty & after sale support service: The warranty period of the equipment will be a minimum of 2 (two) years from the date of installation and commissioning of the machine at the user site. Manufacturer should have service support office in Bangladesh with factory trained certified engineers.</p>	

SL	Equipment Name	Description	Qty
		<p>Preventive Maintenance Plan: The supplier shall submit yearly preventive maintenance plan during the 2years' warranty period and take necessary action as per corrective action procedure/breakdown maintenance whenever required.</p> <p>Catalogue in English: Full manufacturer's catalogue must be supplied in English</p>	
09	Gradient Thermal Cycler	<p>Gradient Thermal Cycler (96 x 0.2 ml) Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan TECHNICAL SPECIFICATIONS:</p> <ul style="list-style-type: none"> • Format: Single block • Block Options: 96 well format • Maximum heating rate: 3- 4°C per second • Block temperature range: 10°C to 100°C (4°C final hold) • Temperature accuracy : ± 0.25°C • Gradient: Yes • Gradient range : 1- 30 °C • Maximum number of programs stored: 1000 • Maximum fan noise: 50dB • Software platform: Android • Program interface: HD • Data transfer: USB port: Yes <p>Terms and Conditions:</p> <p>Certification: Manufacturer's valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality Assurance Organization approved certified.</p> <p>Original Manufacturer's Authorization shall be attached at the time of submission of tender document by bidder.</p> <p>Installation, Testing and Commissioning: Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) shall carry out by the manufacturer according to the international standards within 30 days of supply of the equipment at customer site. Commissioning must include all software and hardware installation to operate the equipment.</p> <p>Training: At least 3 weeks application training of the users at the customer site during and after installation. The training shall be sufficient for the smooth running of this equipment.</p> <p>Warranty: The warranty period of the equipment will be a minimum of 2 (two) years from the date of installation and commissioning of the machine at the user site. Both supplier and manufacturer must have ISO certificate.</p> <p>Preventive Maintenance Plan: The supplier shall submit yearly preventive maintenance plan during the 2 years' warranty</p>	1

SL	Equipment Name	Description	Qty
		<p>period and take necessary action as per corrective action procedure/breakdown maintenance whenever required.</p> <p>Calibration: The supplier shall be responsible for calibration of the item during the warranty period (2 years') from manufacturer.</p> <p>After Sales service: The supplier shall provide after sales service for the maintenance and repair of the products during warranty period. Manufacturer should have service support office in Bangladesh with factory trained certified engineers.</p> <p>Catalogue in English: Full manufacturer's catalogue must be supplied in English</p>	
10	Semi-Automatic Precision Microtome	<p>Semi-Automatic Precision Microtome Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan / Singapore Technical Specification:</p> <ul style="list-style-type: none"> • Slice thickness range: 0.5 µm to 100 µm (3 µm to 5 µm best slicing effect) • Trimming section range: 1 µm to 600 µm • Horizontal specimen stroke: 20 mm • Vertical specimen stroke: 55 mm • Maximal slice section: 50×45 mm • Specimen retraction: 20 µm • Slip precision: ± 5 % • Section thickness setting: <ul style="list-style-type: none"> ✓ 0.5 to 5 µm, in 0.5 µm increment ✓ 5 to 20 µm, in 1 µm increment ✓ 20 to 60 µm, in 5 µm increment ✓ 60 to 100 µm, in 10 µm increment • Trimming thickness setting: <ul style="list-style-type: none"> ✓ 1 to 10 µm, in 1 µm increment ✓ 10 to 20 µm, in 2 µm increment ✓ 20 to 50 µm, in 5 µm increment ✓ 50 to 100 µm, in 10 µm increment ✓ 100 to 600 µm, in 50 µm increment <p>Terms and Conditions:</p> <p>Authorization: Original manufacturer's authorization letter on letter head pad submitted with tender documents.</p> <p>Specific Instruction: Instrument must be brand new & manufacture or assemble date must be within one year of</p>	1

SL	Equipment Name	Description	Qty
		<p>issuance of work order. Manufacturing date and serial number of the equipment also to be provided.</p> <p>Certified Technical personnel for service: The supplier/manufacturer shall have at least 01 (one) manufacturer certified engineer and at least 01 (one) manufacturer certified application expert. Manufacturer certified engineer and application expert details shall be submitted with the tender document.</p> <p>Certification: Manufacturer’s valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality Assurance Organization approved certified.</p> <p>Installation, Testing and Commissioning: Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) shall carry out by the manufacturer according to the international standards within 30 days of supply of the equipment at customer site. Commissioning must include all software and hardware installation to operate the equipment.</p> <p>Training: Application training must be provided at the customer site during and after installation. The training shall be sufficient for the smooth running of this equipment.</p> <p>Warranty & after sale support service: The warranty period of the equipment will be a minimum of 2 (two) years from the date of installation and commissioning of the machine at the user site.</p> <p>Preventive Maintenance Plan: The supplier shall submit yearly preventive maintenance plan during the 2 years’ warranty period and take necessary action as per corrective action procedure/breakdown maintenance whenever required.</p> <p>Calibration / Validation: The supplier shall be responsible for calibration or validation of the item during the warranty period (2 years’).</p> <p>Catalogue in English: Full manufacturer’s catalogue (user/technical/maintenance manual) must be supplied in English.</p>	
11	Multi-Channel Micropipette set	<p>Multi-Channel Micropipette Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan KEY FEATURES</p> <ul style="list-style-type: none"> • Autoclavable: Yes • Number Of Channels: 8 • Tip Ejector: Yes 	1

SL	Equipment Name	Description	Qty
		<ul style="list-style-type: none"> • Color Code: Yes • Description: Multi-Channel Pipettor <p>a) <u>Channels 8 Specifications for 0.5 to 10 uL</u></p> <ul style="list-style-type: none"> • Increments (µL): 0.1 • Accuracy (%): ±1.5 • Precision (%): ±1.50 <p>b) <u>Channels 8 Specifications for 30 to 300 uL</u></p> <ul style="list-style-type: none"> • Increments (µL):1 • Accuracy (%): ±0.8 <p>c) <u>Channels 8 Specifications for 5 to 50 uL</u></p> <ul style="list-style-type: none"> • Increments (µL): 0.5 • Accuracy (%): ±1.0 <p>Terms and Conditions:</p> <p>Accessories (Should be supply with the system):</p> <p>Pipette holder - 1no</p> <p>Warranty: Minimum 01 (One) Year after supply.</p> <p>Calibration: The supplier shall be responsible for calibration of the item every year during the warranty period from an ISO/IEC 17025:2017 accredited calibration laboratory.</p> <p>Catalogue in English: Full manufacturer’s catalogue must be supplied in English.</p>	
12	Single Channel Micropipette set	<p>Single Channel Micropipette set</p> <p>Brand: To mention by bidder</p> <p>Model: To mention by bidder</p> <p>Origin: USA/ EU/UK / Japan</p> <p>Includes: Pipettor, calibration/disassembling tool, color coding drops and remover tool, silicon grease, and sample tips.</p> <p>Features:</p> <ul style="list-style-type: none"> • Autoclavable : Yes • Tip Ejector: Yes • Color Code :Yes • Adjustable-Volume Single <p>a) <u>Specifications for 0.1 to 2.5 uL</u></p> <ul style="list-style-type: none"> • Increments (µL): 0.1 • Accuracy (%): ±2.5 • Precision (%): ±1.60 <p>b) <u>Specifications for 0.5 to 10 uL</u></p> <ul style="list-style-type: none"> • Increments (µL) 0.1 • Accuracy (%) ±1.0 • Precision (%) ±0.80 <p>c) <u>Specifications for 5 to 50 uL</u></p> <ul style="list-style-type: none"> • Increments (µL) 0.5 • Accuracy (%) ±0.6 	1

SL	Equipment Name	Description	Qty
		<ul style="list-style-type: none"> Precision (%) ± 0.30 <p>d) <u>Specifications for 10 to 100 uL</u></p> <ul style="list-style-type: none"> Increments (μL) 1 Accuracy (%) ± 0.8 Precision (%) ± 0.15 <p>e) <u>Specifications for 20 to 200 uL</u></p> <ul style="list-style-type: none"> Increments (μL) 1 Accuracy (%) ± 0.6 Precision (%) ± 0.15 <p>f) <u>Specifications for 100 to 1000 uL</u></p> <ul style="list-style-type: none"> Increments (μL) 5 Accuracy (%) ± 0.6 Precision (%) ± 0.20 <p>g) <u>Specifications for 500 to 5000 uL</u></p> <ul style="list-style-type: none"> Increments (μL) 50 Accuracy (%) ± 0.5 Precision (%) ± 0.15 <p>h) <u>Specifications for 2000 to 10000 uL</u></p> <ul style="list-style-type: none"> Increments (μL) 100 Accuracy (%) ± 0.6 Precision (%) ± 0.20 <p>Accessories (Should be supply with the system):</p> <p>Micropipette tips 1000pcs,</p> <p>Pipette holder - 1no.</p> <p>Terms and Conditions:</p> <p>Warranty: Minimum 01 (One) Year after supply.</p> <p>Calibration: The supplier shall be responsible for calibration of the item every year during the warranty period from an ISO/IEC 17025:2017 accredited calibration laboratory.</p> <p>Catalogue in English: Full manufacturer's catalogue must be supplied in English.</p>	
13	Acid Dispenser	<p>Acid Dispenser (Bottle Top) Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan / Singapore Features:</p> <ul style="list-style-type: none"> Excellent chemical compatibility and precise dispensing Easy to use with simple, quick volume adjustments Dispenser is in 0.1 mL scale increments Wetted materials: FEP, PTFE, borosilicate glass Autoclavable: Yes 	1

SL	Equipment Name	Description	Qty
		<ul style="list-style-type: none"> • New, improved version of PD2R <p>a) <u>Specifications for 1 ml to 10 ml</u></p> <ul style="list-style-type: none"> • Division (mL): 0.2 • Accuracy: $\pm 0.5\%$ • Reproducibility: $\pm 0.1\%$ <p>b) <u>Specifications for 2.5 ml to 30 ml</u></p> <ul style="list-style-type: none"> • Division (mL): 0.5 • Accuracy: $\pm 0.5\%$ • Reproducibility: $\pm 0.1\%$ <p>c) <u>Specifications for 5 ml to 60 ml</u></p> <ul style="list-style-type: none"> • Division (mL): 1 • Accuracy: $\pm 0.5\%$ • Reproducibility: $\pm 0.1\%$ <p>d) <u>Specifications for 0.5 ml to 5 ml</u></p> <ul style="list-style-type: none"> • Division (mL): 0.1 • Accuracy: $\pm 0.5\%$ • Reproducibility: $\pm 0.1\%$ <p>Terms and Conditions:</p> <p>Warranty: Minimum 01 (One) Year after supply.</p> <p>Catalogue in English: Full manufacturer's catalogue (user/technical/maintenance manual) must be supplied in English.</p>	
14	Electronic Analytical Balance	<p>Electronic Analytical Balance (Four significant number) Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan / Singapore Technical Specifications</p> <ul style="list-style-type: none"> • Maximum Capacity: 220 g • Minimum Display: 0.1mg • Pan Size: 90-100 mm • Linearity: ± 0.2 mg • Repeatability (standard deviation): ≤ 0.1 mg • Response time: Approx. 3.0 seconds • Calibration weight : Built –in • Communication: RS232; USB • Display : LCD • Four Site Glass Door • Minimum Display : 0.1 mg 	1

SL	Equipment Name	Description	Qty
		<ul style="list-style-type: none"> • Pan Construction: Stainless Steel • Power AC Adapter: Included • Stabilization Time: 2-3 s <p>Terms and Conditions:</p> <p>Certified Technical personnel for service: The supplier/ manufacturer shall have at least 01 (one) manufacturer certified engineer and at least 01(one) manufacturer certified application expert.</p> <p>Certification: Manufacturer’s valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality Assurance Organization approved certified.</p> <p>Original Manufacturer’s Authorization shall be attached at the time of submission of tender document by bidder.</p> <p>Installation and validation: shall be carried out by the manufacturer according to the international standards within 30 days of supply of the equipment.</p> <p>Training: Application training must be provided to the users.</p> <p>Warranty & after sale support service: The warranty period of the equipment will be minimum 2 (two) years from the date of installation and of the machine at the user site. Warranty card from the manufacturer shall be submitted.</p> <p>Calibration / validation: The supplier shall be responsible for calibration of the item every year during the warranty period from an ISO/IEC 17025:2017 accredited calibration laboratory.</p> <p>After Sales service: The supplier shall provide all labor, transportation, and related expenses for after sales service for the maintenance and repair of the products during warranty period.</p> <p>Catalogue in English: Full manufacturer’s catalogue must be supplied in English.</p>	
15	Water Purification System (Ultrapure)	<p>Water Purification System (Ultrapure) Brand: To mention by bidder Model: To mention by bidder Origin: USA/ EU/UK / Japan</p>	1

SL	Equipment Name	Description	Qty
		<p>Technical Specifications:</p> <ul style="list-style-type: none"> ▪ Resistivity: Approx. 18 MΩ.cm ▪ Conductivity: 0.056 μS/cm or better ▪ Production flow rate: 3-4 L/h ▪ Total Organic Carbon (TOC): < 5 ppb or better ▪ Particulates (size > 0.22 μm): < 1 particulate/mL ▪ Micro-Organisms: < 0.1 CFU/ml ▪ Integrated 8 - 6 -Liter reservoir ▪ Power: 100-250 VAC, 50-60 Hz. <p>Feed water Requirements need to be mentioned details specification by bidder.</p> <p>Accessories (will be Included):</p> <ul style="list-style-type: none"> ▪ Cartridges <p>Express 20 Final filter (1/box)</p> <p>Terms and Conditions:</p> <p>Authorization: Original manufacturer's authorization letter on letter head pad submitted with tender documents.</p> <p>Specific Instruction: Instrument must be brand new & manufacture or assemble date must be within one year of issuance of work order. Manufacturing date and serial number of the equipment also to be provided.</p> <p>Certified Technical personnel for service: The supplier/manufacturer shall have at least 01 (one) manufacturer certified engineer and at least 01 (one) manufacturer certified application expert. Manufacturer certified engineer and application expert details shall be submitted with the tender document.</p> <p>Certification: Manufacturer's valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality Assurance Organization approved certified.</p> <p>Warranty & after sale support service: The warranty period of the equipment will be minimum 2 (two) years from the date of installation and of the machine at the user site. Warranty card from the manufacturer shall be submitted</p> <p>Installation, Testing and Commissioning: Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) shall carry out by the manufacturer according to the international standards within 30 days of supply of the equipment at customer site. Commissioning must include all software and hardware installation to operate the equipment.</p>	

Annex 3: Technical Specification of Ion Chromatography (IC)

1 (one) unit IC for the analysis of Anions, Cations, and Histamines (Biogenic Amines) In fish products

Requirement	Technical Specification
General Features	<p>The system should be capable of running suppressed and non-suppressed conductivity detection.</p> <p>The system should be upgradeable in the near future by adding on various detectors like UV-Vis, Electrochemical / Amperometric detector, ICP-MS, etc.</p> <p>Compatible with Auto Sampler for high sample throughput.</p> <p>10 years guaranteed availability of spare parts counting from the time an instrument series is discontinued.</p> <p>The System should be operated without any gases.</p>
IC System	Metal-free IC system, Compact system with modular design
Intelligent system Component	<p>Intelligent technology is integrated in the following system components, among others:</p> <ul style="list-style-type: none"> • iPump • iDetector • iColumn
Detectors Compatibility	<p>Compatible with</p> <p>Conductivity detection</p> <p>UV/VIS detection</p> <p>Amperometric detection</p> <p>ICP-MS</p>
Conductivity Detector	<p>Conductivity measurement range: 0 – 15,000 $\mu\text{S}/\text{cm}$. or better</p> <p>Temperature constancy $<0.001\text{ }^\circ\text{C}$ or better</p> <p>Electronic noise $<0.1\text{ nS}/\text{cm}$ (at 1 $\mu\text{S}/\text{cm}$) or better</p> <p>Baseline noise $<0.2\text{ nS}/\text{cm}$ or better</p> <p>Cell Volume 0.8 μL or better</p>
High-pressure pump	<p>Pump should have the following specifications:</p> <ul style="list-style-type: none"> • Serial dual pistons with two inert check valves. • Flow range : 0.001 to 20.00 ml/min or better • Resolution of flow rate : 1μL or better • Pulsation : Lower than 1% or better • Reproducibility of Eluent flow : $\pm 0.1\%$ or better • Pressure range : 0 – 5000 PSI or better • Flow increments : 0.001 ml/min or better • Pulsation dampener & inline filter for Eluent should be available.
Eluent and Sample Degasser	<p>Organic modifier 0 - 100% (no PFC [perfluorocarbons]) or better</p> <p>Material : Fluoropolymer</p>
Column Oven	<p>Temperature range 0...+80 $^\circ\text{C}$ (ambient temperature +5...+40 $^\circ\text{C}$) or better</p> <p>Stability : $<0.05\text{ }^\circ\text{C}$ or better</p>
Injection Valve	<p>Injection volume:</p> <p>Internal loop 0.25, 1 μL or better</p> <p>Sample loops 1.5, 5, 10, 20, 50, 100, 250, 1'000 μL or better</p>
Suppressors	<p>Suppressor Modules for chemical suppression</p> <p>Type «Micro Packed Bed» suppressor</p> <p>Regeneration STREAM with peristaltic pump</p> <p>Organic modifier 0 - 100% or better</p> <p>Anion Suppressor Warranty must be 10 years from manufacturer & should not be an OEM product</p> <p>CO2 Suppressor : Type CO2 removal with fluoropolymer technology</p> <p>Organic modifier 0 - 100% (no PFC [perfluorocarbons]) to reduce Anion background to $\leq 1\mu\text{S}$ or better</p>

Requirement	Technical Specification
Injection Technique	Pre-installed with full-loop injection; options for integration in the system include: <ul style="list-style-type: none"> • Internal-loop injection • Intelligent Partial Loop Injection «MiPT»
Peristaltic Pumps	Rotational speed 0 - 42 rpm in increments of 6 rpm Shift direction clockwise and counterclockwise
Autosampler	Auto Sampler: 01 Nos Professional Sample Processor processes racks for up to 148 samples with volumes ranging from 500 µL to 500 mL Two-channel peristaltic pump Pump rate 6...90 rpm, adjustable in 15 steps each in both directions of rotation Typical flow rate 0.3 mL/min at 18 rpm; with standard pump tubing Maximum pressure 4 bar (0.4 MPa) Conveyable fluids Clear fluids without solids Tubing materials PVC (Tygon® ST), PVC (Tygon® LFL), PP Swing Head Maximum load Approx. 15 N Swing rate 10...55 angle degrees/sec 858 Professional Sample Proc. – Pump The. Sample rack, sample vessels with stopper
Software	The software permits the inspection, data acquisition, data evaluation and data monitoring as well as report generation of ion chromatographic analyses.
Column for Cation Analysis	Appropriate column and guard column for cation analysis (Na, K, Li, Ca, Mg, NH4) - 01 Nos
Column for Biogenic Amines/Histamines Analysis	Appropriate column and guard column for Biogenic Amines/Histamines (putrescine; cadaverine; histamine and related) Analysis in Fish (export Products) - -- 01 Nos
Column for Anion Analysis	Column for Anions (fluoride, chloride, nitrite, bromide, nitrate, phosphate, sulfite and sulfate)
Other requirements	<ol style="list-style-type: none"> 1) The instrument and the accessories should be of imported origin and total software compatibility of different modules of the system. 2) Brand PC and Laser printer should be supplied with the system 3) Spares for two years should be quoted as optional 4) Power 230 V AC/ 50 Hz
Accessories	(Must be supply with system): High Purity Cartridge: 05 Ion exchange resin cartridge: 05 Pretreatment cartridge: 02 UV lamp: 02
Country of Origin	USA/ EU/UK / Japan / Switzerland / Singapore
Terms and Conditions	<p>Authorization: Original manufacturer's authorization letter on letter head pad submitted with tender documents.</p> <p>Specific Instruction: Instrument must be brand new & manufacture or assemble date must be within one year of issuance of work order. Manufacturing date and serial number of the equipment also to be provided.</p> <p>Certified Technical personnel for service: The supplier/manufacturer shall have at least 01 (one) manufacturer certified engineer and at least 01 (one)</p>

Requirement	Technical Specification
	<p>manufacturer certified application expert. Manufacturer certified engineer and application expert details shall be submitted with the tender document.</p> <p>Certification: Manufacturer’s valid ISO and CE certificate must be submitted. The product must be EU- CE certificate / European Technical Standards / US-FDA / Japan Quality Assurance Organization approved certified.</p> <p>Installation, Testing and Commissioning: Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) shall carry out by the manufacturer according to the international standards within 30 days of supply of the equipment at customer site. Commissioning must include all software and hardware installation to operate the equipment.</p> <p>Training: Application training must be provided at the customer site during and after installation. The training shall be sufficient for the smooth running of this equipment.</p> <p>Method Validation: At least one method validation and 50 test-run shall be performed at the laboratory. Chemicals, reagents, reference materials necessary for the above test shall be supplied at their own cost.</p> <p>Warranty & after sale support service: The warranty period of the equipment will be a minimum of 2 (two) years from the date of installation and commissioning of the machine at the user site.</p> <p>Preventive Maintenance Plan: The supplier shall submit yearly preventive maintenance plan during the 2 years’ warranty period and take necessary action as per corrective action procedure/breakdown maintenance whenever required.</p> <p>Calibration / Validation: The supplier shall be responsible for calibration or validation of the item during the warranty period (2 years’).</p> <p>Catalogue in English: Full manufacturer’s catalogue (user/technical/maintenance manual) must be supplied in English.</p>