



TENDER DOCUMENT

FOR

FOR SUPPLY OF

**Oceanographic scientific
Instruments / chemicals / software /
Accessories**

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TABLE OF CONTENTS

INSTRUCTIONS TO TENDERERS

<i>Clause No.</i>	<i>Description</i>	<i>Page No.</i>
	A. GENERAL	03
IT-1.	Scope of Tender &Source of Funds	03
IT-2.	Eligible Tenderers	03
IT-3.	Cost of Tendering	03
	B. TENDER DOCUMENTS	04
IT-4.	Contents of Tender Documents	04
IT-5.	Clarification of Tender Documents	04
IT-6.	Amendment of Tender Documents	04
	C- PREPARATION OF TENDER	05
IT-7.	Language of Tender	05
IT-8.	Documents Comprising the Tender	05
IT-9.	Sufficiency of Tender	05
IT-10.	Tender Prices, Currency of Tender &Payment	05
IT-11.	Documents Establishing Tenderer's Eligibility and Qualifications	06
IT-12.	Documents Establishing Works Conformity to Tender Documents	06
IT-13.	Tender Security	06
IT-14.	Validity of Tenders, Format and Signing of Tender	07
	D-SUBMISSION OF TENDER	07
IT-15.	Deadline for Submission modification &withdrawal of Tenders	07
	E. TENDER OPENING AND EVALUATION	08
IT-16.	Tender Opening, clarification &Evaluation	08
IT-17.	Process to be Confidential	10
	F. AWARD OF CONTRACT	10
IT-18.	Post-Qualification	10
IT-19.	Award Criteria &Employers Right	09
IT-20.	Notification of Award &Signing of Contract Agreement	11
IT-21.		
	G. TENDERING DATA	12
IT-22.	<u>Tendering data</u> Oceanographic Scientific Instruments / Chemicals / Software / Accessories.	13
IT-23.	Instructions to Tenderers	27
IT-24.	Forms of Tender and Schedules to Tender	30

INSTRUCTIONS TO TENDERERS

(Note: These Instructions along with Tendering Data will not be part of Contract and will cease to have effect once the Contract is signed).

A. GENERAL

IT.1 Scope of Tender & Source of Funds

1.1 Scope of Tender

The Director General as defined in the Tendering Data (hereinafter called "the Employers") wish to receive tenders for the supply of Oceanographic Scientific Instruments / Chemicals / Software / Accessories etc. summarized in the Tendering Data (hereinafter referred to as "the Works").

Tenderers can quote for the complete or partial scope of work.

The bids must be quoted in Pak Rupees on (Free delivery to NIO) and submitted to the undersigned by 16th April, 2018 at 11:00 Hrs.

The tenders will be opened on the same date at 1130 hrs.

1.2 Source of Funds

National Institute of Oceanography

IT.2 Eligible Tenderers

2.1 Tendering is open to all the eligible firms and persons.

IT.3 Cost of Tendering

3.1 The tenderer shall bear all costs associated with the preparation and submission of its tender and NIO will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

B. TENDER DOCUMENTS

IT.4 Contents of Tender Documents

- 4.1 The Tender Documents are those stated below and should be read in conjunction with any Addendum issued in accordance with Clause IT.6.1.
1. Instructions to Tenderers & Tendering Data
 2. Forms of Tender
 4. Specification

IT.5 Clarification of Tender Documents

- 5.1 A prospective tenderer requiring any clarification(s) in respect of the Tender Documents may notify the Project Director NIO at the address indicated in the Tendering Data
- 5.2 The NIO will respond to any request for clarification which it receives earlier than 10 days prior to the deadline for the submission of tenders. Copies of the response will be forwarded to all prospective tenderers, at least 5 days prior to the deadline for submission of Tenders, who have received the Tender Documents including a description of the enquiry but without identifying its source.

IT.6 Amendment of Tender Documents

- 6.1 At any time prior to the deadline for submission of tenders, the Director General may, for any reason, whether at his own initiative or in response to a clarification requested by a respective tenderer, modify the Tender Documents by issuing addendum.
- 6.2 Any addendum thus issued shall be part of the Tender Documents pursuant to Sub-Clause 6.1 hereof, and shall be communicated in writing to all purchasers of the Tender Documents. Prospective tenderers shall acknowledge receipt of each addendum in writing to the Director General.
- 6.3 To afford prospective tenderers reasonable time in which to take an addendum into account in preparing their tenders, the Director General NIO may extend the deadline for submission of tenders.

C. PREPARATION OF TENDERS

IT.7 Language of Tender

- 7.1 The tender prepared by the tender and all correspondence and documents relating to the Tender, exchanged by the tenderer and the NIO shall be written in the English language, provided that any printed literature furnished by the tenderer may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the Tender, the English translation shall govern.

IT.8 Documents Comprising the Tender

- 8.1 The tender prepared by the tenderer shall comprise the following components:
- (a) Covering Letter
 - (b) Form of Tender duly filled, signed and sealed, in accordance with Clause IT.I4.3.
 - (c) Tender Security furnished in accordance with Clause IT.I3.
 - (d) Power of Attorney in accordance with Clause IT 14.5.
 - (e) Documentary evidence in accordance with Clause IT.II
 - (f) Documentary evidence in accordance with Clause IT.I2.

IT.9 Sufficiency of Tender

- 9.1 Each tenderer shall satisfy himself before Tendering as to the correctness and sufficiency of his Tender and of the rates and prices entered in the Price Schedule, which rates and prices shall except in so far as it is otherwise expressly provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper supply of the Oceanographic Scientific Instruments / Chemicals / Software / Accessories.
- 9.2 The tenderer is advised to obtain for himself at his own cost and responsibility all information that may be necessary for preparing the tender and entering into a Contract for execution of the Works.

IT.10 Tender Prices, Currency of Tender and Payment

- 10.1 The tenderer shall fill up the Schedule of Prices (Schedule A to Tender) indicating the unit rates and prices of the Works to be performed under the Contract. Prices on the Schedule of Prices shall be entered keeping in view the instructions contained in the Preamble to the Schedule of Prices.
- 10.2 Unless otherwise stipulated in the Conditions of Contract, prices quoted by the tenderer shall remain fixed during the tenderer's performance of the Contract and not subject to variation on any account.

- 10.3 The unit rates and prices in the Schedule of Prices shall be quoted by the tenderer in the currency as stipulated in Tendering Data.

IT.11. Documents Establishing Tenderer's Eligibility and Qualifications

- 11.1 Pursuant to Clause IT.8, the tenderer shall furnish, as part of its tender, documents establishing the tender's eligibility to tender and its qualifications to perform the Contract if its tender is accepted.
- 11.2 Tenderer/Manufacturer must possess and provide evidence of the experience as stipulated in Tendering Data.

IT.12. Documents Establishing Works Conformity to Tender Documents

- 12.1 The documentary evidence of the Works' conformity to the Tender Documents may be in the form of literature, drawings and data and shall furnish documentation as set out in Tendering Data.
- 12.2 The tenderer shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers, designated by the Employer in the Technical Provisions are intended to be descriptive only and not restrictive.

IT.13 Tender Security

- 13.1 Each tenderer shall furnish, as part of his tender, a Tender Security of 2% of the bid price in Pak. Rupees in the form of a Bank Guarantee issued by a Scheduled Bank in Pakistan in favour of the Employer valid for a period 28 days beyond the tender validity date.
- 13.2 Any tender not accompanied by an acceptable Tender Security shall be rejected by the Employer as non-responsive.
- 13.3 The tender securities of unsuccessful tenderers will be returned upon award of contract to the successful tenderer or on the expiry of validity of Tender Security whichever is earlier.
- 13.4 The Tender Security of the successful tenderer will be returned when the tenderer has furnished the required Performance Security, pursuant to Clause IT.21 and signed the Contract Agreement, pursuant to Clause IT.20.2 & 20.3.

13.5 The Tender Security may be forfeited:

- (a) if a tenderer withdraws his tender during the period of tender validity;
- (b) if a tenderer does not accept the correction of his Tender Price, pursuant to Sub-Clause 16 .4 (b) hereof; or
- (c) in the case of a successful tenderer, if he fail to:
 - (i) furnish the required Performance Security in accordance with

Clause IT.21, or

- (ii) sign the Contract Agreement, in accordance with Clause IT.20.2 & 20.3.

IT.14 Validity of Tenders, Format, Signing and submission of Tender

- 14.1 Tenders shall remain valid for the period of 90 days as stipulated in the Tendering Data after the date of tender opening.
- 14.2 All Schedules to Tender are to be properly completed and signed.
- 14.3 No alteration is to be made in the Form of Tender except in filling up the blanks as directed. If any alteration be made or if these instructions be not fully complied with, the tender may be rejected.
- 14.4 Each tenderer shall prepare Original and number of copies specified in the Tendering Data of the documents comprising the tender as described in Clause IT.8 and clearly mark them "ORIGINAL" and "COPY" as appropriate. In the event of discrepancy between them, the original shall prevail.
- 14.5 The original and all copies of the tender shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign (in the case of copies, Photostats are also acceptable). This shall be indicated by submitting a written Power of Attorney authorizing the signatory Of the tenderer to act for and on behalf of the tenderer. All pages of the tender shall be initialized and official seal be affixed by the person or persons signing the tender
- 4.6 The Tender shall be delivered in person or sent by registered mail at the address toemployer as given in Tendering Data.

D-SUBMISSION OF TENDER

IT.IS Deadline for Submission, Modification & withdrawal of Tenders

- 15.1 Tenders must be received by the NIO at the address/provided in Tendering Data not later than the time and date stipulated therein.
- 15.2 Tenders submitted through telegraph, telex, fax or e-mail shall not be considered.
- 15.3 Any tender received by the Employer after the date and time of tender opening prescribed in Tendering Data will be returned unopened to such tenderer.
- 15.4 Any tenderer may modify or withdraw his tender after tender submission provided that written notice of the modification or withdrawal is received by the Employer prior to the deadline for submission of tenders.

- 15.5 No tender may be modified by a tenderer after the deadline for submission of tenders. Withdrawal of a tender during the interval between the deadline for submission of tenders and the expiration of the period of tender validity specified in the Form of Tender may result in forfeiture of the Tender Security pursuant to Clause IT.13.5(a).

E. TENDER OPENING AND EVALUATION

IT.16 Tender Opening & Clarification and Evaluation

- 16.1 The NIO will open the tenders, in the presence of tenderers' representatives who choose to attend, at the time, date and location stipulated in the Tendering Data.
- 16.2 The tenderer's name, Tender Prices, any discount, the presence or absence of Tender Security, and such other details as the Director General NIO at its discretion may consider appropriate, will be announced by the NIO at the tender opening.

Any Tender Price or discount which is not read out and recorded at tender opening will not be taken into account in the evaluation of tender.

- 16.3 To assist in the examination, evaluation and comparison of Tenders the NIO may at its discretion ask the tenderer for a clarification of its Tender. The request for clarification and the response shall be in writing and no change in the price or substance of the Tender shall be sought, offered or permitted.
- 16.4 (a) Prior to the detailed evaluation, pursuant to Sub-clause IT.16.7 to 16.9, the NIO will determine the substantial responsiveness of each tender to the Tender Documents. For purpose of these Clauses, a substantially responsive tender is one which conforms to all the terms and conditions of the Tender Documents without material deviations. It will include determining the requirements listed in Tendering data.

- (b) Arithmetical errors will be rectified on the following basis:

If there is a discrepancy between the unit price and total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between the words and figures the amount in words shall prevail. If there is a discrepancy between the Total Tender price entered in Form of Tender and the total shown in Schedule of Prices-Summary, the amount stated in the Form of Tender will be corrected by the NIO in accordance with the Corrected Schedule of Prices.

If the tenderer does not accept the corrected amount of Tender, his Tender will be rejected and his Tender Security forfeited.

- 16.5. A Tender determined as substantially non-responsive will be rejected and will not subsequently be made responsive by the tenderer by correction of the non-conformity.
- 16.6 Any minor informality or non-conformity or irregularity in a Tender which does not constitute a material deviation may be waived by NIO, provided such waiver does not prejudice or affect the relative ranking of any other tenderers.
- 16.7 The Director General NIO will evaluate and compare only the tenders previously determined to be substantially responsive pursuant to Sub-clauses IT.16.4 to 16.6. as per requirements given hereunder. Tenders will be evaluated for complete scope of works. The prices will be compared on the basis of the Evaluated Tender Price pursuant to Sub-Clause 16.8 herein below.

(a) Technical Evaluation

It will be examined in detail whether the items offered by the tenderer complies with the Technical Provisions of the Tender Documents. For this purpose, the tenderer's data submitted will be compared with technical features/criteria of the Tendering Data detailed in the Technical Provisions. Other technical information submitted with the tender regarding the Tendering Data will also be reviewed.

(b) Commercial Evaluation

It will be examined in detail whether the tenders comply with the commercial/contractual conditions of the Tender Documents. It is expected that no major deviation/stipulation shall be taken by the tenderers.

16.8 Evaluated Tender Price

In evaluating the tenders, the Director General, NIO will determine for each tender in addition to the Tender Price, the following factors (adjustments) in the manner and to the extent indicated below to determine the Evaluated Tender Price:

- (i) making any correction for errors pursuant to Sub-Clause 16.4 hereof.
- (ii) making an appropriate price adjustment for any other acceptable variation or deviation.
- (iii) making an appropriate price adjustment for Deviations in terms of Payments (if any and acceptable to Director General, NIO).

16.9 Evaluation Methods

Pursuant to Sub-Clause 16.8, Para (ii), and (iii) following evaluation methods for price adjustments will be followed:

- (i) Price Adjustment for Technical Compliance

The cost of making good any deficiency resulting from technical non compliance will be added to the Corrected Total Tender Price for comparison purposes only. The adjustments will be applied taking the highest price quoted by other tenderers being evaluated in detail in their original Tenders for corresponding item. In case of non-availability of price from other tenderers, the price will be estimated by Director General.

(ii) Price Adjustment for Commercial Compliance

The cost of making good any deficiency resulting from any quantifiable variations and deviations from the Tender Schedules and Conditions of Contract, as determined by Director General will be added to the Corrected Total Tender Price for comparison purpose only. Adjustment for commercial compliance will be added to the Corrected Total Tender Prices.

(iii) Price Adjustment for Deviation in Terms: If Payments

Refer to Tendering Data

IT.17 Process to be Confidential

- 17.1 Subject to Clause IT. 16.3 heretofore, no tenderer shall contact the Director General NIO on any matter relating to its Tender from the time of the Tender opening to the time the Contract is awarded.
- 17.2 Any effort by a tenderer to influence Director General, NIO in the Tender evaluation, Tender comparison or Contract Award decisions may result in the rejection of his Tender.

F. AWARD OF CONTRACT

IT.18. Post-Qualification

- 18.1 In the absence of pre-qualification, the Director General NIO will determine to its satisfaction whether the substantially responsive, lowest evaluated tenderer is qualified to satisfactorily perform the Contract.
- 18.2 The determination will take into account the tenderer's financial and technical capabilities. It will be based upon an examination of the documentary evidence of the tenderer's qualifications submitted under Clause IT.11, as well as such other information as the Director General NIO deems necessary and appropriate.

IT.19 Award Criteria & Employer's Right

- 19.1 Subject to Sub-clause IT.19 .2, the Director General NIO will award the Contract to the tenderer whose tender has been determined to be substantially responsive to

the Tender Documents and who has offered the lowest evaluated Tender Price, provided that such tenderer has been determined to be qualified to satisfactory perform the Contract in accordance with the provisions of Clause IT. 18.

- 19.2 Notwithstanding Sub-clause IT.19.1, the Director General NIO reserves the right to accept or reject any tender, and to annual the tendering process and reject all tenders, at any time prior to award of Contract, without thereby incurring any liability to the affected tenderers or any obligation to inform the affected tenderers of the grounds for the NIO's action.

IT.20 Notification of Award & Signing of Contract Agreement

- 20.1 Prior to expiration of the period of tender validity prescribed by the NIO, the NIO will notify the successful tenderer in writing ("Letter of Acceptance") that *his* tender has been accepted.
- 20.2 Within 7 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the NIO will send the successful tenderer the Form of Contract Agreement provided in the Tender Documents, incorporating all agreements between the parties.



TENDER DATA

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G.TENDERING DATA

Brief description of Equipment, Instruments, Accessories& Consumables

PART A

Item No.	Items Description	Quantity
A-1	<p>Polarizing Microscope with camera and grain counter</p> <p>CF160 infinity optics. The highest level of optical quality, operability and stability for polarizing microscopy. Low power consumption 50W light source is brighter than a 100W lamp, reduce heat-induced focus drift and energy consumption. High precision centre able nosepiece and stage with smooth, accurate movement Unique light source design activates greater brightness by optimizing the lamp filament size and improving pupil illumination fulfillment. The latter has achieved by optically expanding the size of light source with a mirror in the lamp house. This has resulted in a 50W light source that is brighter than a 100W lamp.. about 40% brighter with a diasopic illumination</p> <p>Optical System : CF160 infinity Illumination : 12V-50W halogen lamp. 12V-50W DC transformer built-in: Diascopic/episcopic illumination change over switch : Fly—Eyes lens ND8, NCB11 filters built-in <u>Focusing : Coaxial/ coarse Fine Focusing Knob, Focus</u> <u>Stroke: 30mm, Coarse : 14mm/ rotation, Fine ; 0.1mm.</u> Minimum reading ; in-1 μm increment., Eye piece 10x F.o.V 22mm Eye piece tube : P-TT3 Trinocular tube. Intermediate tube : Built in focusable Bertrand lens , moveable from optical path: Conoscopic/ Orthoscopic observation switchable Analyzer buiy-inaccessory plate/ compensator slot. Analyzer 360⁰ rotary dial : Minimum reading angle 0.1⁰ Nosepiece : Centering quientple nosepieces(Detachable) Stage : Top grade dedicated circular graduated stage. Rotatable 360⁰, Horizontally ; can be fixed at a specific position, Graduated360⁰(in 1⁰ increment) click stops each 45⁰, Condenser : dedicated Strain-free swing out type , Polarizer : fixed to the bottom of the condenser holder. With scale marking, Epic-scopic illuminator LV-Uepic-N Universal i/4 Lambda and tint plate, Quartz wedge or Senarmont compensator can be inserted in to intermediate tube. Objectives CFITu Plan Fluor Epic-P 5x, 10x, 20x, 50x, 100x</p> <p>Camera: A high resolution and sensivity journal purpose color camera can be connected with PC or new compact table-style DS-4 A CMOS high density 5.9 megapixel sensor produces high resolution images. USB3.0 data transfer allow fast focusing at high resolution, and easy capture image in all type of observation such as bright field, DIC and face contrast.</p>	01
A-2	<p>Laser Particle Size Distribution Analyzer</p> <ul style="list-style-type: none"> • The equipment with wide dynamic range and capable of measuring particle sizes from 0.04 μm to 1,000 μm • The equipment should capable of measuring particle size distribution in samples such as soil, sand or mud . 	01

	<ul style="list-style-type: none"> Accuracy $\pm 0.6\%$ and a repeatability of $\pm 0.1\%$ for the mean size 	
A-3	<p>GLASSWARE (PYREX) CLASS A</p> <p>1.1. Filtration Assembly (side arm flask/ Filter Flask , funnel and clamps) 01</p> <p>1.2. Funnels 06</p> <p>1.3. Petri dishes 12</p> <p>1.4. Screw cap glass tubes (25ml, 50, ml & 100ml) 02</p> <p>1.5. Desiccators 02</p>	
A-4	<p>LAB CONSUMABLES</p> <p>1.1. Auto pipette (2-20 μl, 10-100μl, 100-1000 μl, 1-5 ml and 1-10 ml) with tips 03</p> <p>1.2. Stand For Pipettes 02</p> <p>1.6. Wash Bottles 05</p> <p>1.7. Ice Box (30 to 40 liter) 02</p> <p>1.8. Glass Fiber Filter Papers (47mm and 25 mm GFF/GFC) 05</p> <p>1.9. Whatman Filter Paper No.40, 540 Or Equivalent 05</p>	
A-5	<p>CHEMICALS</p> <p>Sodium Hydroxide 500 gm</p> <p>Sulphuric Acid (Analytical Grade) 5 Lit</p> <p>Methyl Orange 500 gm</p> <p>Hydrochloric Acid 1 lit</p> <p>Potassium Dichromate 500 gm</p> <p>Barium Sulphate 500 gm</p> <p>Sodium Molybdate 500 gm</p> <p>Hydrazine Sulphate 500 ml</p> <p>Potassiumpermanganate 500 ml</p>	

PART B

Item No.	Items	Qty.
B-1	<p>Coastal Single Point 3D Current Meter Tide Wave and Current recorder</p> <ul style="list-style-type: none"> • Current Speed: (Vector averaged) Range: 0-300 cm/s, Resolution: 0.1 mm/s Mean Accuracy: ± 0.15 cm/s Relative: $\pm 1\%$ of reading Statistic variance (std): 0.3 cm/s • Current Direction: Range: 0 – 360° magnetic Resolution: 0.01° Accuracy: $\pm 2^\circ$ • Tide: Range: 0-60MPa (0-8700psia) Wave max: 1000kPa (145psia) Resolution: <0,0001% FSO Accuracy: $\pm 0,02\%$ FSO • Wave: Sampling rate: 2Hz, 4Hz No. of samples: 256, 512,1024, 2048 • Recording System: Data Storage on SD card • Storage Capacity: ≥ 2GB • Battery: (One Spare battery set) <p>Instrument brand must be well reputed and used by the oceanographers globally with software, user manual and calibration certificate.</p>	01
B-2	<p>Turbidity Gauge Self-recording, for coastal waters upto600m. Accuracy: $\pm 2\%$ Calibrated Range: 0.05 to 3,000 NTU compact, lightweight, and versatile loggers. Equipped with big storage capacity and USB-C download, Optimized for long deployments with high sampling rates. Window based Software Instrument brand must be well reputed and used by the oceanographers globally with software, user manual and calibration certificate.</p>	01

B-3	<p>Tidal Data Analysis software</p> <p>Which creates harmonic constants from tide-gauge data, Which uses the harmonic constants to make tidal predictions Intervals: Regular / Irregular (may include gaps) Source: Automated Tide Gauge / Spreadsheet / Text File Tidal Data: 1D / 2D (Streams) ASCII User Definable Input Format Points Editor: Graphical with zoom, resizable window, mouse point selection. Data Filtering & Glitch Removal: By value, slope, block, interval, averaging. Number of input points: Unlimited</p> <p><u>Analysis</u></p> <p>Harmonic Constituent Analysis: By Matrix Inversion or Least Squares Iteration User Definable Constituents: Individual or Lumped Groups Nodal Modulation: Included Shallow Water Coefficients: Algebraic or Harmonic Methods Number of Tidal Constituents: Unlimited Encryption of Harmonic Constants Power Spectrum Display: using Complex Digital Fourier Transform Operational Audit Log</p> <p><u>Prediction</u></p> <p>Graphics: Resizable, Zoomable, Draggable, Configurable* Tables: HO Style, High & Low Tides, Hourly Tides, Configurable* Day & Month names: User Definable * Tidal Location Names: Support for non-Western Scripts (e.g. Arabic). Tide Table Formats: HTML, PDF* List or Export: High or Low Tides, Tide at Regular Intervals, Highest and Lowest 'N' Exceptional Tides, Lunar Phases, Sunrise-Sunset Times Location Map</p> <p><u>Documentation</u></p> <p>User Manuals Interactive Help File</p> <p><u>System Requirements</u></p> <p>Microsoft Windows Versions XP, 7 (32/64), 8 (32/64), 10(32/64)</p>	01
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PART C

ITEM No. C-1

Zooplankton Net (Complete set)

For coastal and near shore survey to collect zoo plankton (Horizontal/vertical fishing).

Specifications

Length of net bag:	100- 150 cm
Net opening diameter (Ø):	40- 50 cm
Ø of aperture:	40- 50 cm
Mesh size:	200 µm
Sieve material:	MOnyl synthetic tissue
Net mouth ring: Stainless steel ring	(40- 50 cm desirable) with three point bridle
Net bucket (Cod end):	with sieve gauze side window and stop cock (Removable net bucket (screwable desirable))

Accessories:

Spare net:	2
Spare Net bucket (Cod end):	2

Deployed from slow moving/idle boat or ship.

Others:

1. Warranty: 1-3 years.
2. Upgradable system. Quality cum cost method will apply.
3. Installation, calibration, compensation and demonstration will be provided by supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Exclusive distributorship certificate duly signed and stamped from Principal and attested by Chamber of Commerce and/or Embassy of the Manufacturer country.
8. Certificate regarding quality of production for conformity with international standard copy of CE, JIS, ISO etc.
9. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repairs/maintenance services for up to 3 years.

ITEM No. C-2

Phytoplankton Net (Complete set)

For coastal and near shore survey to collect phytoplankton (Horizontal/vertical fishing).

Specifications

Length of net bag:	50 cm
Net opening diameter (Ø):	25 cm
Ø of aperture:	25 cm
Mesh size:	2µm
Sieve material:	MOnyl synthetic tissue
Net mouth ring: Stainless steel ring	(25 cm) with three point bridle
Net bucket (Cod end):	with sieve gauze side window and stop cock

(Removable net bucket (screwable desirable))

Accessories:

Spare net: 2

Net bucket (Cod end): 2

Deployed from slow moving/idle boat or ship.

Others:

1. Warranty: 1-3 years.
2. Upgradable system. Quality cum cost method will apply.
3. Installation, calibration, compensation and demonstration will be provided by supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Exclusive distributorship certificate duly signed and stamped from Principal and attested by Chamber of Commerce and/or Embassy of the Manufacturer country.
8. Certificate regarding quality of production for conformity with international standard copy of CE, JIS, ISO etc.
9. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repairs/maintenance services for up to 3 years.

ITEM No. C-3

Flow meter

Qty: 02

Mechanical Flow meter for horizontal & vertical application with and without back-run stop

Hydraulic pitch : 0.3 m per revolution

Range of counter: 99999 revolutions

Impeller diameter: 75 mm

Others:

1. Warranty: 1-3 years.
2. Upgradable system. Quality cum cost method will apply.
3. Installation, calibration, compensation and demonstration will be provided by supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Exclusive distributorship certificate duly signed and stamped from Principal and attested by Chamber of Commerce and/or Embassy of the Manufacturer country.
8. Certificate regarding quality of production for conformity with international standard copy of CE, JIS, ISO etc.
9. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repairs/maintenance services for up to 3 years.

ITEM No. C-4

Plexi- glass counting trays Qty: 04

BogrovChmberor Standard Counting Chamber

for zooplankton counting and enumeration under dissecting microscope:

clear polycarbonate or plexi-glass material

Dimensions: 1 cm wide serpentine pathway X 10 - 40 ml volume (BC)

OR

80 x 100 (mm) 20 – 25 ml volume (SCC)

Others:

1. Warranty: 1-3 years.
2. Upgradable system. Quality cum cost method will apply.
3. Installation, calibration, compensation and demonstration will be provided by supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Exclusive distributorship certificate duly signed and stamped from Principal and attested by Chamber of Commerce and/or Embassy of the Manufacturer country.
8. Certificate regarding quality of production for conformity with international standard copy of CE, JIS, ISO etc.
9. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repairs/maintenance services for up to 3 years.

ITEM No. C-5

Grab:

Van-Veen type

Material: Stainless steel

Grasping Area: 250 cm²

Overall dimensions: approx.20 x 30 x 60 (cm)

Weight: manageable manually approx. 5-6 kg

Others:

1. Warranty: 1-3 years.
2. Upgradable system. Quality cum cost method will apply.
3. Installation, calibration, compensation and demonstration will be provided by supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Exclusive distributorship certificate duly signed and stamped from Principal and attested by Chamber of Commerce and/or Embassy of the Manufacturer country.
8. Certificate regarding quality of production for conformity with international standard copy of CE, JIS, ISO etc.

9. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repairs/maintenance services for up to 3 years.

ITEM No. C-6

Thermometer Qty: 02
Digital with metallic rod sensor
Accuracy: 0.01 °C
Used in air, liquid (seawater) and soil
Battery with AC/DC Connector

Others:

1. Warranty: 1-3 years.
2. Upgradable system. Quality cum cost method will apply.
3. Installation, calibration, compensation and demonstration will be provided by supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Exclusive distributorship certificate duly signed and stamped from Principal and attested by Chamber of Commerce and/or Embassy of the Manufacturer country.
8. Certificate regarding quality of production for conformity with international standard copy of CE, JIS, ISO etc.
9. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repairs/maintenance services for up to 3 years.

ITEM No. C-7

Burette with stand and ring/ clamp Qty: 03 sets
Class A grade quality Glass Burette, 100 ml (100cc) Capacity
Good quality stand (Steel), three prongClamp holding 100 ml (100cc) glass burettein a safe and secure position
With all accessories.

Others:

1. Warranty: 1-3 years.
2. Upgradable system. Quality cum cost method will apply.
3. Installation, calibration, compensation and demonstration will be provided by supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Exclusive distributorship certificate duly signed and stamped from Principal and attested by Chamber of Commerce and/or Embassy of the Manufacturer country.
8. Certificate regarding quality of production for conformity with international standard copy of CE, JIS, ISO etc.
9. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repairs/maintenance services for up to 3 years.

ITEM No. C-8

Filtration apparatus (25 /47 mm diameter) with aspirator or pump

Filtration apparatus or assembly

With porosity grade 3 sintered glass disc to support 25mm diameter membranes/ sintered glass disc to support 47mm diameter membranes

All borosilicate glass liquid pathway

Funnel 15ml/ 300ml capacity

Support base with sintered glass disc/porosity grade 3 sintered glass disc

Metal retaining clip

Container flask 3-5 litres capacity

Vacuum pump

Equipped with Prote™ overflow, moisture trap with filter cartridge; vacuum regulator; Thermal protection device. No air pollution; maintenance free; without any lubrication, regular oil change and maintenance;

Specification:

Power : AC200-240V

Max. power : 80 W

Max.current : 0.4 /0.5A

Max. vacuum : 106mbar (-680mmHg)

Max. flow rate : 34 l/min

Moisture Trap : Yes

Vacuum Regulator : Yes

Overflow protection : Yes

Motor rotation : 1450 RPM

Horse power : 1/6 HP

Noise level : 52.0 dB

Others:

1. Warranty: 1-3 years.
2. Upgradable system. Quality cum cost method will apply.
3. Installation, calibration, compensation and demonstration will be provided by supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Exclusive distributorship certificate duly signed and stamped from Principal and attested by Chamber of Commerce and/or Embassy of the Manufacturer country.
8. Certificate regarding quality of production for conformity with international standard copy of CE, JIS, ISO etc.
9. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repairs/maintenance services for up to 3 years.

A-2: List of the reagents, chemicals, dyes & others

S. No.	Reagents, Chemicals, Dyes and Others	Quantity
1	MgCl ₂	2Kg
2	Hydrogen peroxide (analytical grade)	2 L (1 litre x 2)
3	Sodium chloride (analytical)	2kg
4	M Endo Broth MF	500gm
5	MFC Agar	500gm
6	<i>E.coli</i> & Total Coliform test kit (complete set with all requirements)	172 pcs
7	Total heterotrophic bacterial count test kit (complete set with all requirements)	172 pcs
8	GF/F Membrane filter 0.45micron,47 mm diameter	200 pcs
9	Membrane filter 0.47 micron,47 mm diameter	300 pcs
10	Membrane filter 0.45 micron, 47mm, gridded surface	300 pcs
11	Membrane filter 0.2 micron, 25 mm diameter	200 s

A-3: List of the equipments, glass wares, plastic wares and others

S. No.	Equipments, glass wares, plastic wares and others	Quantity
1	Plastic Syringe filter units (Autoclavable) 25 mm diameter, 0.2 micron, certified	05
2	Plastic petri plates (Large, medium Small, extra small)	02 Dozen each
3	Glass petri plates (Large)	02 Dozen
4	Glass funnel, class-A, (small & medium)	2 each
5	Glass pipettes, Class-A (1 ml, 5ml)	6 each
6	Watch glasses (medium size)	5 pairs
7	Falcon tubes (50mL)	100 pcs
8	Plastic wash bottles	03
9	PE bottles 250 ml	100pcs
12	Steel sheet (25 cm x 25 cm x 0.2mm)	6 pcs
14	Plastic bottles (100 ml, 500 ml, 1L, 2L, 5L)	06 dozen each

PART D

ITEM D-1, BENCHTOP DIGITAL AUTOCLAVE

Specifications:

Type:	Self-contained, autofill reservoir, in-built water re-circulation
Steam source:	Heaters in chambers
Volume:	63 Liters or better
Operating Temperature:	+105 to +128°C (Sterilization)
Chamber:	Electropolished stainless steel, rust resistant
Usable chamber depth:	600 mm or better
Microprocessor based PID memory	Yes, time, temperature control, real time monitoring control with built in
Pre-post vacuum option:	Yes with pressure gauge
Timer function :	Delayed start and warming mode.
Caster mounted/table stand:	Yes, mandatory
Five position shelf rack:	Three shelves with bottom plate require
Morrison discard container:	Yes
IQ/OQ documentation:	Yes
Power supply:	Single Phase, 230V, 13A, 50/60 Hz
Includes:	All type of compatible power plugs (along with 230 VAC UK plug, 230VAC AU plug, 100VAC & 120VAC US plugs)

Others:

1. Warranty: 1-3 years.
2. Quality cum cost method will apply.
3. Installation, calibration, compensation (all sensors checking), essential checking of heating chamber, advanced maintenance (Housing, module, internal parts, assemblies, functional checking of accessories, electric connections, USB interface, touch screen, evaluation of stored data, software update and temperature verification/adjustment), final test run and demonstration will be provided by principal company/supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Certificate regarding quality of production for conformity with international standards copy ISO etc.
8. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repair/maintenance services up to 3 years.

ITEM D-2, HEAT BLOCKS FOR MICROTUBES

Specifications:

Temperature control range:	ambient -15 to +100°C
Uniformity over the block :	At 37°C \pm 0.1°C, at +60°C \pm 0.2, at +100°C \pm 0.2
Microprocessor Control:	Yes
Heat up time RT to 100°C:	2.5°C/min
Capacity of microtubes:	Adopter for 1 x 96-well PCR plate (0.2mL tube) Adopter for 15 x 0.5mL

Shaking speed: Adopter for 20/24 x 1.5/2.0 mL tubes
250-1500 rpm
Timer with auto-off& audible alarm: 1 min to 96 hours/non-stop,
IQ/OQ documentation: Yes
External power supply: 120/130V
Includes: All type of compatible power plugs (along with 230 VAC UK plug, 230VAC
AU plug, 100VAC & 120VAC US plugs)

Others:

1. Warranty: 1-3 years.
2. Quality cum cost method will apply.
3. Installation, calibration, compensation (all sensors checking), essential checking of heating lid, advanced maintenance (Housing, module, internal parts, assemblies, functional checking of accessories, electric connections, USB interface, touch screen, evaluation of stored data, software update and temperature verification/adjustment), final test run and demonstration will be provided by principal company/supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Certificate regarding quality of production for conformity with international standards copy ISO etc.
8. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repair/maintenance services up to 3 years.

ITEM D-3, CRUSHER

Specifications:

Type: Mini Ball Mill Pulverisette
Function: Suitable for preparing samples for genetic research, for homogenising of active ingredients, milling of pigments or other precious materials, suited for the assessment of biological samples and for cryo-grinding of deep freeze or refrigerated soft samples.
Maximum feed size: 6 mm (1/4")
Final fineness: down to 5µm
Maximum capacity: 5mL

Others:

1. Warranty: 1-3 years.
2. Quality cum cost method will apply.
3. Installation and final test run and demonstration will be provided by principal company/supplier team.
4. Certificate of proof to the effect that the Principal is original Manufacturer OEM of the required goods (major components maintenance etc).
5. Letter from Principal as proof of authorized agents and Supplier work shop is sufficient for giving service back up and maintenance services.
6. Minimum **FIVE YEAR** business history of the quoted items from the date of authorization.
7. Certificate regarding quality of production for conformity with international standards copy ISO etc.
8. Preference will base on past experiences on availability of other accessories/parts/sensors, engineering services after sales/repair/maintenance services up to 3 years.

ITEM D-4, MINI MICROWAVE OVEN

Specifications:

Type:	Countertop Microwave Oven
Size:	0.9 cu ft or better
Power supply:	900W
Time and weight defrost:	Yes
LED display:	Yes
Warranty:	1-3 years

ITEM D-5, AIR CONDITIONER (2.0 TON)

Specifications:

Powerful cooling, work upto 52 °C, auto restart, child lock, easy clean (indoor), Intelligent airflow, evaporator self-cleaning and Power Input: 2376 (W)-Cooling / 2450 (W).

Warranty: 1-3 Years

Installation services/charges will be considered in total price.

ITEM D-6, TOP MOUNT REFRIGERATOR (Capacity: 14.0 Cu. Ft)

ITEM D-7, GLASSWARES, PALSTIC WARES & OTHERS

S.No.	Items	Quantity
1	Marine Agar	1kg
2	Autoclaved Plastic bottles, capped (1L)	50
3	PE bottles, Sterilized, autoclavable (350 ml)	500
4	Brown Plastic bottles (1L), reuse-able	100
5	Falcon Tubes, (50ml)	100
6	Microtube (1.5-2.0ml), sterilized, capped	5000
7	Sterilized Micro-tubes (200 microlitre)	3000
8	Microtube tray or Racks (2ml, 200 ul)	03 each
9	Pipettes tips with filters, pre-sterilized in box packed (0.1-10µl,10-100µl, 100-1000µl, 1000-5000µl	2000 each size tips
10	Reagent bottles, screw capped, Class A, autoclavable (100ml, 250 ml, 500ml, 1000ml)	06 each
11	Glass Beaker, Class A (200 ml, 500 ml, 1000 ml)	06 each
12	Glass Measuring Cylinder class A (10 ml, 100ml)	03 each
13	Graduated funnel, Class A, Capped (1000ml)	01 dozen
14	Glass Conical flask, Class A, screw capped, autoclavable (100 ml & 250 ml)	One dozen
15	Plastic autoclaved petri dishes 100x15mm	100 pcs

PART E

ITEM E-1

Auto titrators with complete operation requirements (for DO & pH/ Alkalinity in seawater and estuarine water)

Auto titrators, complete operation system with piston burette (different volumes), able to deliver aliquot 2 uL, UV light source and detector to measure the change in UV transmission in sample. Platinum temperature sensor. PC Computer with the burette, end point detector.

Metrohm Dosimat or equivalent, Standard equipment for Suitable for marine applications, references to be provided, with methodology.

Warranty: manufacturer's 1-3 yrs

ITEM E-2

MILLI-Q ULTRA PURE WATER PURIFICATION SYSTEM (with storage tank)

Water Specification (Type 1- ASTM, ISO 3696 CLS)

Resistivity at 25 C = 18.2 M Ω .cm

TOC ² = \leq 5 ppb

Particulates (size $>0.22 \mu\text{m}^3$) = < 1 particulate/mL

Bacteria= 0.01 cfu/mL

Pyrogens (endotoxins)= <0.001 EU/mL

RNAases= 1 pg/mL

DNAases= 5 pg/mL

Flow Rate= upto 2 L/min

feed water = potable tap water

certificate of calibration required

Storage tank= 20-30 L capacity

**IT-23. INSTRUCTIONS TO TENDERERS
(CLAUSE REFERENCE)**

INSTRUCTIONS TO TENDERERS (CLAUSE REFERENCE)

23.1 **Name of National Institute of Oceanography and Address**

Director General
National Institute of Oceanography
ST-47, Block-1, Clifton, Karachi-75600 Pakistan
Phones: (92-21) 99251172-8, Fax: (92-21) 99251179, 34166418
E-mail: niopk.gov.pk@gmail.com

23.2 Tender shall be quoted entirely in Pak. Rupees. The items to be imported for this tender should be quoted in Pak Rupees only. The payment shall be made to the supplier in Pak. Rupees.

- a. The tenderer / manufacturer / distributor / supplier have the financial, technical capability necessary to supply Oceanographic Scientific Instruments / Chemicals / Software / Accessories etc.
- b. The Firms shall be liable to supply the requisite items within Ninety days after issuance of supply order(s) at NIO, ST-47, Block-1, Clifton, Karachi, at their own expenses and even at short notice if needed.
- c. If during the currency of the period it is found that sub-standard items or in-genuine are supplied, the contract will be cancelled and Security Deposits will be forfeited and the Firm will also be blacklisted.
- d. The Firms must have Sales Tax Registration Certificate, National Tax Number and Vender Number and have proper offices, shops/stores in Karachi as well as facilities of telephone/fax and email.
- e. Submission of any false statement/documents including concealing of information is likely to disqualify the bidder.
- f. This Institute reserves the right to accept or reject any or all tenders without assigning any reason in accordance with rule 33(1) of PPRA-2004.

23.3 (a) A detailed description of the Works, essential technical and performance characteristic

(b) Complete set of technical information, description data, literature and drawings as required in accordance with Tendering Data, Specific Works Data. This will include but not be limited to a sufficient number of drawings, photographs, catalogues, illustrations and such other information as is necessary to illustrate clearly the significant characteristics such as general construction dimensions and other relevant information about the works to be performed.

23.5 Amount of Tender Security

2% of the quoted price

23.6 Period of Tender Validity

90 days from the date of tender opening.

23.7 Number of Copies of the Tender to be Submitted

One original plus 1 copy.23.8(a) National Institute of Oceanography's Address for the Purpose of Tender Submission

Director General
National Institute of Oceanography
ST-47, Block-1, Clifton, Karachi-75600, Pakistan
Phones: (92-21) 99251172-4, Fax: (92-21) 99251179, 34166418
E-mail: niopk.gov.pk@gmail.com

(b) Warning

DO NOT OPEN BEFORE: 16th April, 2018.

23.9 Deadline for Submission of Tenders

11:00 AM, 16th April, 2018.

23.10 Venue, Time, and Date of Tender Opening

National Institute of Oceanography
ST-47, Block-1, Clifton, Karachi-75600, Pakistan

Time: 11:30 AM

Date: 16th April, 2018.

23.11 Responsiveness of Tenders

- (i) the Tender is valid till required period,
- (ii) the Tender prices are firm during currency of contract.
- (iii) completion period offered is within specified limits,
- (iv) the Tender/Manufacturer is eligible to Tender and possesses the requisite experience,
- (v) the Tender does not deviate from basic technical requirements and
- (vi) the Tenders are generally in order, etc.

**IT-24. FORMS OF TENDER
AND
SCHEDULES TO TENDER**

SCHEDULE - TO TENDER

IT-24. FORM OF TENDER

(LETTER OF OFFER)

To: _____

Gentlemen,

1. Having examined the Tender Documents including Instructions to Tenderers, Tendering Data, Conditions of Contract, Contract Data, Specification, and Addenda Nos. _____ for the supply of the Oceanographic Scientific Instruments / Chemicals / Software / Accessories, we, the undersigned, being a company doing business under the name of and address _____ and _____ being duly incorporated under the laws of Pakistan hereby offer to supply the Oceanographic Scientific Instruments / Chemicals / Software / Accessories and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Tender Price of Rupees (_____) or such other sum as may be ascertained in accordance with the said Documents.
2. We understand that all the Schedules attached hereto form part of this Tender.
3. As security for due performance of the undertakings and obligations of this Tender, we submit herewith a Tender Security in the amount of _____ drawn in your favour or made payable to you and valid for a period of 28 days beyond the period of validity of Tender.
4. We undertaken, if our Tender is accepted, to supply the Oceanographic Scientific Instruments / Chemicals / Software / Accessories comprised in the Contract within the time(s) stated in Contract Date.
5. We agree to abide by this Tender for the period of 90 days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

6. Unless and until a formal Agreement is prepared and executed, this Tender, together with your written acceptance thereof, shall constitute a binding contract between us.

7. We undertake, if our Tender is accepted, to execute the Performance Security referred to in Conditions of Contract for the due performance of the Contract.

8. We understand that you are not bound to accept the lowest or any Tender you may receive.

9. We do hereby declare that the Tender is made without any collusion comparison of figures or arrangement with any other person or persons making a Tender for the Works.

Dated this _____ day _____ Signature _____ in the capacity of _____ duly authorized to sign tenders for and on behalf of

(Name of Tenderer in Block Capitals)

Address:

Witness: