

ICAR-CENTRAL INSTITUTE OF FISHERIES EDUCATION

(University under Sec. 3 of UGC Act, 1956)

Indian Council of Agricultural Research,

Panch Marg, Off Yari Road, Versova, Andheri (West), Mumbai-400061

Tel. No. 022-26361446/7/8

Fax No. 022-26361573

Web Site: www.cife.edu.in



QUOTATION DOCUMENT



QUOTATIONS FOR EQUIPMENTS



ICAR - CENTRAL INSTITUTE OF FISHERIES EDUCATION

(University under Sec. 3 of UGC Act, 1956)

Indian Council of Agricultural Research

Panch Marg, Off Yari Road, Versova, Andheri (West), Mumbai-400061

Tel. No. 022-26361446/7/8, Fax No. 022-26361573 Web Site : www67w.cife.edu.in



F. No.36-67/Master file/18-19/NAHEP-PROJ.

Date: 26.12.2018

The Director, ICAR-Central Institute of Fisheries Education, Ministry of Agriculture and Farmers' Welfare, Government of India, invites most competitive quotations in sealed envelope under National Agricultural Higher Education Project "NAHEP" for the following equipments from the reputed Indian/Foreign manufacturers and/or their accredited/sole authorized distributors/dealers-

Item no. as per the document	Particular	QTY	Item No.	Particular	QTY
1	Blue Light Trans-Illuminator (Delivery at HQ CIFE, NEW CAMPUS)	1	13	Pumps and other accessories (*Package) (Delivery at CIFE-Centre, Rohtak, Haryana)	Please see specification
2	Amino Acid Analyser (Delivery at HQ CIFE, NEW CAMPUS)	1	15	Gradient Thermal Cycler with UPS (Delivery at HQ CIFE, NEW CAMPUS)	2
4	Biochar Kiln (Delivery at CIFE-centre, Rohtak, Haryana)	1	16	Flow cytometer with magnetic cell sorter system (FACS) (Delivery at HQ CIFE, NEW CAMPUS)	1
			18	PIT Tags (Delivery at HQ CIFE, NEW CAMPUS)	2000
5	Fabrication of Ex-Situ Biofloc reactor with Online Monitoring System (*Package) (Delivery at CIFE-centre, Rohtak, Haryana)	1	19	Soil Water Analyser (*Package) i) pH Meter ii) EC meter iii) Portable DO/BOD iv) Refractometer (Delivery at CIFE-centre, Rohtak, Haryana)	1 1 1 1
6.	FRP Tanks and Plastic Pools (*Package) (Delivery at CIFE-centre, Rohtak, Haryana) i) 500 Ltr ii) 1000 Ltr iii) 2000 Ltr iv) 5000 Ltr	10 10 60 10	20	Aerator and Blower (*Package) (Delivery at CIFE-centre, Rohtak, Haryana)	2 4 9
				i) Blower with exhaust volume of 40 Ltrs/Min.	
				ii) Blower with exhaust volume of 80 Ltrs/Min.	
				iii) Paddle wheel aerators	
7	MID and GIS workstation MID GIS (Delivery at HQ CIFE, OLD CAMPUS)	1 4	21	Generator (62.5 KVA) with accessories (Delivery at CIFE-centre, Rohtak, Haryana)	2
9	Digital SLR camera Broadcast video camera and related accessories (Package*) (Delivery at HQ CIFE, NEW CAMPUS)	1 1			
11	Gas Chromatography-Mass Spectrometry (Delivery at HQ CIFE, NEW CAMPUS)	1			

***Package: items to be supplied together as package**

TERMS & CONDITIONS OF QUOTATIONS

1. The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
2. Quotations must be submitted in the original prescribed form separately for each equipment with rates for delivery in the places mentioned in the document duly addressed to the Director, ICAR-CIFE, Mumbai-400061 in a sealed cover super scribing as **QUOTATION FOR EQUIPMENT FOR THE YEAR 2018-2019 UNDER NATIONAL AGRICULTURAL HIGHER EDUCATION PROJECT (NAHEP)** with the Item no. and Name of equipment.
3. All duties, taxes and other levies payable on the raw materials and components shall be included in the total price.
4. In case the date of issued/receipt of opening of quotation is declared as Holiday for unexpected reasons, the quotation will be issued /received/opened on the next working day at the same time. The quotation documents are non-transferable. Director of the institute reserves the right to accept/reject any or all the quotations without assigning any reason thereof.
5. Quotations received **after the DUE DATE and TIME** will not be accepted in any circumstances.
6. Prices for extended warranty for one year and two years should be given separately. However decision about the warranty will be taken by purchaser at later stage.
7. No EMD and Tender fee are applicable.
8. The schedule to the quotation form should be submitted in prescribed format only.
9. Only one quotation should be included in one cover. Where more than one quotation is included in a cover, all quotation so enclosed in one cover will be liable to be ignored.

10. LATEST HOUR FOR RECEIPT OF QUOTATION

Unless otherwise specified in the schedule to quotation, your quotation must reach this office not later than 13.00 hrs. on the date of opening of the quotation. Quotation sent by hand delivery should be put in the quotation box kept in **NAHEP Office, 2nd floor, Room no. 225** located at Yari Road Campus of ICAR-CIFE, not later than 13.00 hrs. on the due date unless otherwise stipulated in the schedule to tender.

11. OPENING OF QUOTATION:

You are at liberty to be present or authorize a representative to be present at the time of opening of the quotation at the time and date as specified in the schedule. The name and address of the representative who would be attending the opening of the quotation on your behalf, should be indicated in your quotation. Please also state the name and address of your permanent representative, if any.

For and on behalf of

**ICAR-Central Institute of Fisheries Education
Panch Marg, Off Yari Road, Versova ,
Andheri (West), Mumbai-400061**

Signature



F. No.36-67/Master file/18-19/NAHEP-PROJ.

Date: 26.12.2018

1. Issue of Quotation Document on	26.12.2018
2. Last date for issue of tender document on	09.01.2019
3. Date of Pre-bid meeting	02.01.2019
4. Acceptance of sealed tenders 13.00 hrs on	09.01.2019
5. Opening of tender at 15.00 hrs on	09.01.2019

Name of the equipment: _____

Item No. : _____

QUOTATIONS FORM HAS TO BE SUBMITTED SEPARATELY IN SEALED ENVELOPES

To,

M/s.

.....

Sub: Supply of Quotation Form - reg.

Dear Sir,

Please find enclosed herewith the quotation form along with detailed specifications for the supply of equipments mentioned in Annexure – 1.

Kindly acknowledge the receipt of the same.

Yours faithfully

Senior Administrative Officer

ICAR - CENTRAL INSTITUTE OF FISHERIES EDUCATION



(University under Sec. 3 of UGC Act, 1956)

Indian Council of Agricultural Research

Panch Marg, Off Yari Road, Versova, Andheri (West), Mumbai-400061
Tel. No. 022-26361446/7/8, Fax No. 022-26361573 Web Site : www.cife.edu.in



F. No.36-67/Master file/18-19/NAHEP-PROJ.

Date: 26.12.2018

(To be returned by Bidders along with the quotation duly completed and signed)

Name of Equipment: _____

Item No. : _____

Sl. No.	Description of Goods	Specifications	Qty.	Unit	Quoted Unit Rate in Rs.	Total Amount	
						In Figures	In Words
	Please refer Annexure - 1	* **	*	*	*		
Total							
Sales Tax							

****Prices for extended warranty for one year and two years should be given separately**

Gross total cost _____ (in figures) (_____
_____ (in words).

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____ (amount in figures) (Rs. _____ amount in words) within the period specified in the Invitation for Quotations.

We also confirm that the normal commercial warranty/guarantee of _____ months shall apply to the offered goods.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

We also confirm that the normal commercial warranty/guarantee of _____ months shall apply to the offered goods.

Supplier

Name : _____

Signature : _____

Date : _____

INVITATION FOR QUOTATIONS FOR SUPPLY OF GOODS UNDER NATIONAL SHOPPING PROCEDURES

To

Dear Sir,

Sub : INVITATION FOR QUOTATIONS FOR SUPPLY OF FOLLOWING EQUIPMENTS

1. You are invited to submit your most competitive quotation for the following goods:-

Brief description of the Goods	Specifications*	Quantity	Delivery Period	Place of Delivery	Installation Requirement if any
Blue light transilluminator		1	30 days	HQ CIFE, NEW CAMPUS	Yes
Amino acid analyser		1	30 days	HQ CIFE, NEW CAMPUS	Yes
Biochar Kiln		1	30 days	CIFE, Rohtak Center, Haryana	Yes
Fabrication of Ex-situ Biofloc reactor		1	30 days	CIFE, Rohtak Center, Haryana	Yes
FRP tanks and plastic pools 500 L 1000 L 2000 L 5000 L		10 10 60 10	30 days	CIFE, Rohtak Center, Haryana	Yes
MID and GIS workstation GIS MID		4 1	30 days	HQ CIFE, OLD CAMPUS	Yes
Pulsed field gel electrophoresis		1	30 days	HQ CIFE, NEW CAMPUS	Yes
Digital SLR camera Broadcast video camera and related accessories		1 1	30 days	HQ CIFE, NEW CAMPUS	Yes
Multiple water analyser		1	30 days	CIFE, Rohtak Center, Haryana	Yes
Gas Chromatography-Mass Spectrometry		1	30 days	HQ CIFE, NEW CAMPUS	Yes
Pumps, blowers and other accessories		Please see specification	30 days	CIFE, Rohtak Center, Haryana	Yes
Gradient thermal cycler		1	30 days	HQ CIFE, NEW CAMPUS	Yes
Flow cytometer with magnetic cell sorter system (FACS)		1	30 days	HQ CIFE, NEW CAMPUS	Yes
PIT tags		2000	30 days	HQ CIFE, NEW CAMPUS	Yes
Soil Water Analyser		Please see specification	30 days	CIFE, Rohtak Center, Haryana	Yes
Aerator and Blower		Please see specification	30 days	CIFE, Rohtak Center, Haryana	Yes
Generator with accessories		Please see specification	30 days	CIFE, Rohtak Center, Haryana	Yes
Mobile app software		1	30 days	HQ CIFE, NEW CAMPUS	Yes

TECHNICAL SPECIFICATION OF ALL EQUIPMENTS:

Item No:1- Blue light transilluminator (To be delivered at HQ CIFE New Campus)

- Shall meet IEC-60601-1-2:2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility or should comply with 89/366/EEC; EMC-directive.
- Illumination should be uniform and not harmful for nucleic acid and proteins.
- Preferred wavelength is in the range of 460-470 nm.
- Should be easily removable preferably with amber shield
- Images formed should be bright and clear
- Instrument should be reliable, durable and long lasting
- Light source – high intensity LED
- Display dimension can be approximately 12 ×17 cm or more
- Filter type- amber
- Power input to be 100-250VAC, fitted with Indian plug
- Voltage corrector/stabilizer of appropriate ratings meeting
- ISI Specifications. (Input 160-260 V and output 220-240 V and 50 Hz
- All media and consumables for setting up and standardization should be provided free of cost.
- Comprehensive warranty and AMC for 3 years (2-year warranty+1 year AMC/One year warranty +two year AMC)

Item No:2- Amino acid analyser (To be delivered at CIFE New Campus)

- Equipment should be able to analyse and determine the total amino acids (free and bound) from serum/feed material/tissue samples with post column derivatization using ninhydrin.
- It should have a dedicated digester for the processing of samples.
- Equipment should follow the chromatographic separation principle.
- Impulse free two piston pumps with drain valve. Flow rate between 0.01 to ≤ 10 ml/min is preferable
- Analytical Column- PEEK column and Peltier heating/cooling system is desired
- Photometry- Detection limit at 400nm and 600nm
- Temperature-Column temperature variable between 25°C and 99°C.
- Auto sampler with injection valve and sample racks.
- The reactor should have an inert material and should be protected from over heating
- Fast and user-friendly data processing with advanced software.
- Required safety systems like automatic shut down or prevention from overheating are preferable.
- Shall meet IEC-60601-1-2:2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility or should comply with 89/366/EEC; EMC-directive.
- Power input to be 220-240VAC, 50Hz fitted with Indian plug.
- Voltage corrector/stabilizer of appropriate ratings meeting ISI Specifications. (Input 160-260 V and output 220-240 V and 50 Hz).
- All media and consumables (amino acid standards etc.) for setting up and standardization should be provided free of cost.
- Warranty: Comprehensive warranty and AMC for 3 years (2 years warranty + 1 year AMC/ one year warranty + two year AMC)

Item No:4- Biochar Kiln (To be delivered at CIFE Centre Rohtak, Haryana)

- Round Type Bio Mass pyrolyzing electrical furnace having 24” diameter and 30” height
- 850 °C Three Phase 440 Volts, 12 kilowatts
- Digital temperature Controller'
- MS Angel frame MS powder coated Installation
- Equipment + Installation and transportation

Item No: 5- Ex-situ Biofloc reactor (To be delivered at CIFE Centre Rohtak, Haryana)

Biofloc reactor fabrication for and associated accessories:

A. Fabrication of biofloc reactor

- Stainless steel Tanks of cylindro-conical shape/ convenient shape (0.5 cu m *2 Nos) attached with mechanical stirrer housed inside a cabinet, drainage and aeration facility within the tanks
- Temperature and pressure to be regulated automatically.
- The inlet for aquaculture sludge supply and outlet for drainage should be at a suitable place to operate.
- Pulsating/ metered pump: 4 Nos attached to the reactor at inlet and outlet (2 each for single reactor).
- Attached floc separator (Solid –liquid separator) for harvesting biofloc once prepared is mandatory (Specifications attached in the accessory section)
- The reactor should have the provision for introducing media and additives
- The suitable sensors should be provided which will be sensing the various important water quality parameters while operating the reactor.
- The lyophilisation unit industrial scale (separate) as an accessory should be supplied along with the system (Requirement and specifications attached).

B. Solid liquid separator:

- Separation of particles from 50-100-micron size
- Mechanical vortexing at low 200 rpm
- Portable in nature
- Can separate the liquid from sludge

Accessories/machineries for biofloc reactor

Lyophilizer: (industrial scale)

- Cylindrical drying chamber size: made of stainless steel with top cover.
- No. of ports in drying chamber: 8 Nos.
- Digital microprocessor based PID temperature controller cum indicator with display
- Manifolds and quick seal valves: 10 Nos including two spares
- Proper sensors for each activity
- Double stage direct drive vacuum pump (pump capacity-100 litres/ min)
- Vacuum level: for -40°C: 0.01 MBAR
- Ice condensing capacity: 4 litres/4Kg
- Fin and tube air cooled condenser
- CFC free refrigerants for refrigeration system

Item No: 6-FRP tanks and plastic pools (To be delivered at CIFE Centre Rohtak, Haryana)

Sl No	Capacity	Numbers
1	FRP tanks 500 Litre	10
2	FRP tanks 1000 Litre	60
3	FRP tanks 2000 Litre	10
4	Collapsible tank 5000 Litre (5 ton capacity- 2.25 m dia x 1.0 m height) <ul style="list-style-type: none">• Plastic portable aquaculture tanks constructed of interlocking tubular structure of non-corrosive HT grade alloy pipes• Running GI wall imported pre-coated sheeting in blue or appropriate coat colour• Non-toxic UV stabilized highly tensile sky blue vinyl lining• Certificate of proof for non-toxicity of lining• Easy to assemble fittings and accessories as required• Party should install the tanks including Govt. taxes, transportation and fitting charges	10

Item No:7- MID and GIS workstation (To be delivered at HQ CIFE Old Campus)

a. Mid Workstation (Mobile workstation) (1 nos.)

- Intel Core i7
- Windows 10 Pro 64-bit operating system
- More than 15" display
- 8.0GB DDR4 RAM
- 1TB Hard Drive Capacity
- 128GB SSD Capacity
- 4GB (GDDR5) Graphics card

b. GIS workstation with UPS (4 nos.)

- Intel Xeon
- Windows 10 Pro 64 bit
- 16.0GB DDR4 RAM
- 2TB Hard Drive
- 4GB Graphics

Item No: 8- Pulsed field gel electrophoresis (To be delivered at HQ CIFE New Campus)

- The system should be complete with power module, electrophoresis cell, cooling module, variable speed pump and accessory kits.
- The system should be supplied with in-built software for protocol optimization
- Auto algorithm & interactive algorithm modes should be provided
- The System should be capable of optimal separation of both plasmid and chromosomal DNA
- System should have a resolution in the range of 100bp to 10Mb
- The operational pulse angle should be in the range of 0-360°
- The system should be operating with Clamped Homogenous Electric field
- Should come with 24 programmable autonomously controlled electrodes.
- Field Inversion asymmetric forward, reverse voltages for superior resolution of small fragments in 100bp-250 kb range
- Switching Range: 50 m sec to 18 hours

- Allowable Voltage Gradients: 0.6 – 9 Volts/cm in 0.1 V/cm increments.
- Multistate mode for resolution in selected fragment size range
- Secondary pulse generation should be possible defined by voltage, frequency, angle and duration.
- The system should be capable of continuing the current run in the event of power failure.
- Appropriate DNA size standards, pulse field certified and casting stand for 14 x 13 cm gel
- The system should be able to operate at 220V, 50 Hz (Indian power conditions)
- System should be supplied with 2KVA online UPS with at least 30mins Back up.
- Two-year warranty should be provided.

Item No: 9- Digital SLR camera (To be delivered at HQ CIFE New Campus)

i. Camcorder (4K)

4K HDR XDCAM

- Product Dimensions: 13 x 29 x 19 cm (approx.)
- Screen Size: 3.5 Inches or more
- Optical Zoom: 12 X, Digital Zoom: 48 X
- Max Resolution: 14 Megapixels or more
- Min Focal Length: 29 Millimeters
- AC/DC compatible, rechargeable

ii. Gimbal

- Lightweight Hand held Gimbal Camera stabilizer
- Package Dimensions: 46 x 39 x 18 cm (approx.)
- Batteries: 3 CR2 batteries required
- For Mirror less and DSLR Cameras
- 3.2 kg Load Capacity
- Full 360° Rotation on All Motors
- Two-Handed Grip & Automatic Tuning via App
- Works with Wireless Thumb Controller

iii. External Hard Drive

4TB Backup Plus USB 3.0 External Hard Drive

- Product Dimensions: 453 x 307 x 83 cm (approx.)
- Memory Storage Capacity: 4 TB
- Flash Memory Installed Size: 4 TB
- Digital Storage Capacity: 4 TB,
- Hard Drive Size: 4 TB
- Hardware Platform Windows
- Interface USB: 256 GB
- Product Dimensions: 3.2 x 0.2 x 2.4 cm (approx.)
- RAM Size: 250 GB or more
- Memory Storage Capacity: 250 GB or more.

iv. SDHC Memory Card: 1 No.

- Product Dimensions: 3 x 0.2 x 2 cm (approx.)
- RAM Size: 250 GB or more
- Memory Storage Capacity: 250 GB or more.

Item No: 10-Multiple water analyser (To be delivered at CIFE Centre Rohtak, Haryana)

- Wave length range: 200-1100 nm
- Lamp source: Tungsten (visible range), Deuterium (UV Range)
- Operating mode: Transmittance, absorbance, concentration
- Wavelength resolution: 0.1 nm
- Wavelength selection: Automatic and based on input
- Scanning speed: 900nm/min with 1 nm Step
- Photometric range: ± 3 Abs
- Spectral band width: 2 nm
- Display: TFT WVGA Color touch
- Programmed methods: To select for 250 parameters
- Sample cell compatibility: Rectangular 10, 20, 30, 50 mm, 100 mm and 1 inch, Round 16 mm and 1 inch
- Operating condition: Compatible for use up to 40 °C and 80% relative humidity
- Data logging: For up to 5000 samples with date and time and sample ID
- Warranty 2 years against any defects

Item No: 11- Gas Chromatography-Mass Spectrometry (To be delivered at HQ CIFE New Campus)

Gas Chromatograph (GC) System

- GC capable of isothermal temperature programming
- Oven temperature controllable from room temp + 4°C to + 450°C
- Temperature program steps more than 18 steps (Cooling Program possible)
- One split/split less capillary column injection unit, which is electronically controlled via EPC/PPC/AFC for Liquid sample.
- Capillary Injector Pressure Range more than 950 kPa / 140 psi
- Capillary Injector Programmable steps more than 5 steps (pressure program possible)
- Capillary Injector Split ratio range more than 9000
- Capillary Injector Maximum Flow Rate more than 1100 ml/min
- The system should have Pressure Program & Column average linear velocity constant while temperature increasing.

Mass Spectrometer (MS)

- The detector over-drive lens to minimize random noise enhancing the Signal to Noise.
- Mass Range of 1.5 to 1050 amu with unit mass resolution over the entire mass range
- Scan speed variable up to 20,000 amu/sec (single scan) with 0.1 amu step resolution in order to obtain reliable spectra for fast eluting peaks
- It must have Electron Impact (EI).
- Detector: Electron multiplier with low noise overdrive lens 8×10^6 (dynamic range)
- It must have a sensitivity of signal to noise ratio > 1500 at M/Z 272 for 1 pg Octafluoro naphthalene (OFN) in EI SCAN
- EI SIM IDL: 100 fg Octafluoro naphthalene: m/z 272 IDL-10 fg
- SIM capability of up to 64 groups of masses, with 128 masses per group time-programmed
- The vacuum system maintained by pump 30 L/min, rotary pump & 190 L/sec-170 L/sec (He) Turbo molecular pump differential exhaust system.
- The filament emission current user-selectable over the range of 5 – 250 μ A.

- The ion-source, the quadrupole and the interface heated independently over a user-selectable temperature range: Ion-source: 140 – 300 °C & Interface: 50 – 350 °C.
- The ion source accessible from the front for easy maintenance without the need to remove the top cover.
- Economy mode for lower running cost with less power consumption & carrier gas reduction in laboratory.

Software

- The Data Processing software 32/64 BIT application software.
- Long file name, drag and drop function fully utilized.
- System start-stop fully automated and controlled via the software
- System supplied with latest original licensed NIST databases.
- The library search software provided as standard capable of searching through libraries simultaneously including the user defined private library.
- Software shall have measurement mode of Scan, SIM, FASST (Simultaneous SCAN / SIM) capability.
- Automatic calculation of Retention Index for target compounds based on n-Alkane and able to carry out mass spectrum similarity Search function with the Retention Index.
- GC-MS software shall have in-built QA/QC function capability.
- Software has energy saving ecology mode facility.

Standard Accessories

- Single Gas Panel for He shall be provided.
- He Gas Cylinder shall be provided.
- 2 Stage Gas Regulator shall be provided.
- Gas Tubing for single gas shall be provided.
- 5KVA UPS with 30 min back up shall be provided.
- The system supply with compatible PC / Monochrome LaserJet Printer.

Item No: 13- Pumps and other accessories (To be delivered at CIFE Centre Rohtak, Haryana)

i. Solar powered blowers for aquaculture

- Number of blowers (2 nos.)
- Total power requirement: (1.5 hp each), 220V single phase
- Noise level: minimum

ii. Other pumps and accessories

- Submersible pump: Number 2, 1 hp each
- Submersible pumps: 0.5 hp each 12 Numbers
- Timers: 6 Numbers
- Plumbing accessories: PVC pipes, to cover (20 x10 m) area on both sides for water lines and airline pipes made of suitable material for covering the entire (20 x 10 m) area
- Plumbing works for tanks of 5 ton each (12 Numbers) for proper air circulation using aero tubes.
- Party should provide aero tubes with the following specifications

i. Aero tube diffusers: Non-clog type diffusers EPDM 200 sq. m coverage

- Application: Aeration in indoor aquaculture tanks
- Wall Thickness. 0.25 inch
- Optimal Air Flow. 0.4 CFM

- The bubble diameter: 20-50 μm
- The air flow: 4-5 cubic meters/HRM
- Applicable water depth and dimension: 5-ton circular Tank X 12 Numbers
- Required dissolved oxygen: 5.5-6.5 ppm
- Compatibility with various types of blowers and diffusers
- Efficiently transfer oxygen in both fresh and salt water.
- Easier to clean – simply rinse the diffuser bars with water

ii. Aero tube disc diffusers (50 Numbers) to be provided

- Non-clog EPDM
- Air output: Not less than 3 cu m per hr per diffuser

Instruction to party

- The location for construction is ICAR-CIFE, Rohtak Centre, Haryana
- Reference of supplies to central and state government aquaculture/agriculture projects in past one year.
- Any major repair work during the said period should be carried out by the party.
- The civil works, transportation cost and the government taxes should be included within the specified amount.

Item No:15- Gradient thermal cycler (To be delivered at HQ CIFE New Campus)

- 96 wellx0.2 ml PCR tubes/one 96 well plate
- Gradient PCR should be capable of testing 6 different temperatures simultaneously across a gradient range of 1-20 and a temperature gradient from 30-99°C, with minimum 0.1°C increment in gradient
- Peltier based heating and cooling,
- Thermo block made of silver
- Should be capable of testing temperatures at Denaturation, Annealing & Extension steps
- Block ramp rate: 5.0 °C/Sec.
- Adjustable ramp rate
- Sample ramp rate: 3 °C/S
- Temperature range 4-99 °C/S
- Temperature accuracy: ± 0.2 °C
- Temperature uniformity: ± 0.3 °C (20-72 °C)
- Gradient technology should ensure identical ramp rates in both gradient and normal operations
- Should have Administrator and user login with or without PIN for enhanced security
- Inbuilt advance scheduling feature for users convenience will be a preference
- Customized programming allows a maximum of 20 steps and 99 cycles
- Programmed templates
- Programmable protocols, storage of minimum 1000 programmes
- Auto Restart facility with user defined time interval when power fails and resumes
- E-mail Notification
- Temperature control modes providing flexibility for different applications
- Adjustable user defined ramp rate to meet sensitive experimental conditions
- Lid temperature range of 33-110°C
- Display: LCD touch screen, about 8.5 inch

- Advanced security features
- Monitor should indicate the step, cycle and remaining runtime during the run
- Minimum two USB ports
- Ethernet port
- Log book function for error messages and new calibration
- Power save Standby function
- Should have calibration certificate from reputed international agencies
- Certificate from reputed organizations or institutions mentioning no hazardous chemicals are present in the instrument
- Compatible UPS should be provided with minimum 1-hour backup
- Minimum 1-year warranty
- AMC terms and conditions beyond the warranty period should be specified

Item No: 16- Flow Cytometer with Magnetic Cell Sorter System (FACS) (To be delivered at HQ CIFE New Campus)

- Easy to use equipment is required with below two lasers 488 nm, blue laser and 633-640 nm red laser.
- System should have four fluorescence detectors and two light scatter detectors (forward & side scatter) with total six parameters measurement capabilities
- All Lasers & their excitation & collection optics should be fixed & pre-aligned.
- Minimum Detectable Particle Size should be 0.5 μm
- System should not require any voltage and gain setting for ease of operation
- System should come with laser module for various fluorochrome selection flexibility with the provided lasers
- System should have events per second at 10,000/eps or more
- System should have Fluorescence Sensitivity at least MESF FITC <75; PE <50
- System should be able to do absolute counting of cells without using any reference bead.
- System should be able to accept many types of manual sample tubes such as 1.5 ml, 2 ml, 5 ml, PCR tubes.
- System should have free license system acquisition & analysis software.
- System should be quoted with latest compatible computer from source with 23 inch full HD monitor
- Instrument must be supplied with magnetic cell sorter.
- Warranty of 1 year should be provided
- Optional upgrade to plate & tube loader
- On-site training and performance demonstration required
- User list & performance certificate from 5 Govt. users should be provided.

Item No: 18- PIT tags (To be delivered at HQ CIFE New Campus)

- Size 12mm x 2.12 mm diameter
- Reading distance up to 10-15 cm
- RFID Transponder for subcutaneous injection to small animal
- ISO 11784/85 as well as ICAR certified

Item No: 19- Soil Water Analyser (To be delivered at CIFE Centre Rohtak, Haryana)

• **pH Meter**

Item	Specifications
pH meter (2Nos)	<ol style="list-style-type: none"> 1. μ controller based pH system with electrode and temperature probe. 2. Auto temperature compensation enabled with 5 point Calibration 3. Resolution limit 0.001 pH 4. Warranty 1 year against Mfg. defect

• **EC Meter**

Item	Specifications
EC meter (2Nos)	<ol style="list-style-type: none"> 1. μ Controller. 2. Conductivity range- 0.1 μS to 200 μS, 3. Conductivity Resoultion - 0.001 μS 4. TDS Range- 0.1 ppm to 100 ppt 5. Temperature Calibration- Auto in Range of (0-100 °C) 6. Warranty 1 year against Mfg. defect

• **Portable DO/BOD**

Item	Specification
Portable DO/BOD meter (Quantity 2 no.)	<ol style="list-style-type: none"> 1. Type: Portable 2. Range: 0-20 ppm 3. DO measurement Resolution: 0.1ppm 4. Accuracy: $\pm 1\%$ of reading 5. Calibration: Two points 6. Temperature Compensation: Automatic in the range of 0 to 50 degree centigrade 7. Salinity compensation: Automatic in the range of 0 to 60 ppt 8. Temperature Resolution: 0.5 °C 9. Display: 1 line 8 character LCD 10. Pressure: Barometric correction 500 to 1499 mm Hg 11. Power: 9 volt battery or mains adaptor 9 – 12 V 12. Warranty: 2 years against MFG defect

• **Refractometer**

Item	Specifications	
Refractometer (Quantity-4)	Scale	Dual scale system (Salinity & Specific gravity)
	Salinity range	0-100 ppt
	Specific gravity	1-1.07
	Measurement accuracy	± 1 ppt or ± 0.001 ppt
	Repeatability	-
	Automatic temperature	10-30°C

	compensation	
	Type	Handle
	resolution	1ppt/0.001ppt
	Supplied with protective storage case & operation manual	

Item No: 20- Aerator and Blower (To be delivered at CIFE Centre, Rohtak, Haryana)

i. Paddle Wheel Aerators (9 nos.)

- Motor: 2 HP, Self-cooling
- Gear box: Cast iron with Bevel gear
- Motor Cover: 100% virgin HDPE with UV resistance
- Impeller: 4-units 100 % virgin PPCP
- Frame: Stainless steel powder coated
- Float: 3-unit 100% virgin
- Rated Power: 1.5 KW
- Phase: 3 phase
- Voltage: 400 V \pm 20 V
- Rated frequency: 50 Hz
- Speed: >1400 rpm

ii. Blower with exhaust volume of 80 litres/minute (4 nos.)

- Rated Voltage (V) - AC100/120/220 - 240
- Power Supply Frequency (Hz)-50/60
- Normal Pressure (kPa)- 14.7
- Exhaust Volume (L/min)- 80
- Power Consumption (W)- 71
- Noise level Dba (1m)- 36
- Weight (kg)-7.0

iii. Blower with exhaust volume of 40 litres/minute (2 nos.)

- Type: Silent
- Rated Voltage
- Normal: AC100/120/220-240 V
- Power Supply Frequency: 50-60 Hz
- Pressure: 12.8 kPa
- Exhaust volume: 40L/min.
- Power consumption: 38 W
- Noise Level: 32 dBA(1m)
- Weight: 5.7 kg

Item No: 21-Generator with accessories (To be delivered at CIFE Centre, Rohtak, Haryana)

i. Engine- Diesel engine, silent

- Liquid cooled
- Electric start
- Four stroke, four cylinders, cold starting, TCI Aspirated
- Compression ignition
- Totally enclosed diesel engine developing 90 BHP at 1500 RPM at NTP.
- The Engine should be suitable for generating set application and fitted with the following standard accessories:
 - Flywheel to suit coupling

- Suitable coupling
- Water cooling arrangement
- Radiator
- Lube Oil Filter
- Lube Oil Pump
- Fuel Pump
- Hoses to fuel tank
- Air Cleaner assembly
- Residential heavy duty silencer
- Engine fitted with low lube oil pressure (LLOP) & high-water temperature (HVVT) Safety devices.
- Fitted with requisite temperature and pressure gauges

ii. Alternator

- 62.5 KVA alternator, at 1500 RPM, 0.8 lagging power factor
- Three Phase 415 Volts suitable for 50 Hz
- H class insulated winding
- The alternator shall conform to IS: 13364, IS: 4722, BS5000, IEC: 34 and suitable for tropical condition

iii. Control Panel

- Fitted inside Canopy, fabricated out of 1.6 mm CRCA Sheet, cubical type, totally enclosed
- Powder Coated
- Control Panel incorporating the following:
 - Sedmac unit comprising:
 - Lube oil Pressure metering & Safety
 - High Water Temperature metering & Safety
 - Fuel Level Gauge in metering & Safety
 - Voltage metering & Safety
 - Ampere metering & Safety
 - Frequency meter metering & Safety
 - Engine RPM metering & Safety & many more metering & Safeties
 - Power metering & Safety
 - Power factor metering
 1. 1 set MCB
 2. 1 set of suitable current transformers
 3. 1 No. Toggle switch and indicating lamps
 4. Input and output terminals for incoming and outgoing

iv. Accessories

- Base frame: Suitable base frame of sturdy design with necessary reinforcement and with in-built diesel tank.
- Fuel Tank: Daily service fuel tank of sheet metal, suitable enough for minimum 8 hours running of DG, complete with drain valve, air vent, inlet, outlet connections and mechanical gauge.
- Battery (1No): 12 V charged make with its leads.

v. Installation

- GI chemical earthing (4 nos.)
- Power cable 70x3.5sqmm: 50 M
- Earthing cable 25x4: 20M
- Foundation 10x4: 1Job

- Unloading D.G set ground floor: 1 Job
- Cable lang and termination charge:1 Job
- 125 amps change over: 1 Nos

Item No: 22- Mobile app software (To be delivered at HQ CIFE New Campus)

Platform

- Android 5.0 and above; iOS 10 and above
- Display orientation Portrait or landscape both
- Small (426dp x 320dp), Normal (470dp x 320dp), Large (640dp x 480dp), X- Large (960dp x 720dp)

Designs

- Application should have built in a way that it is easy to use and navigate.
- All the designs to be provided by the selected agencies.
- All the images and video clips will be supplied by ICAR-CIFE.
- Creative, ideas and design will be the copyright of ICAR-CIFE.

Sharing

- Links for sharing application
- Comments provided by the user on his Facebook/Twitter account shall be provided.

Hosting

- The Web Portal and mobile app will be hosted on a secured server of any government-based agencies.
- The selected agency will provide ICAR-CIFE full access to the application on hosting server.

Standard Technical Requirements

- The mobile App need to alert the user to download the latest version, whichever available.
- The Information Portal and mobile applications should work in all networks irrespective of mobile device make and model.
- If required, the mobile apps should access Geolocation information in case the mobile device supports it.
- User should be able to download the correct version of Information Portal and Android mobile application supported by his/her mobile device.
- While developing Information Portal and mobile application, the selected agency should give preference to the NATIVE ENVIRONMENT (e.g.: SDK android development Kit, IOS SDK, Windows SDK). In case of HYBRID APPLICATIONS, open source tools need to be use and not to any proprietary tools.

Intellectual Property Rights

- The Intellectual Property Rights of the application will rest with ICAR-CIFE. The selected agency will provide the source code of the application to ICAR-CIFE at the time of sign-off .
- The developed application will be the property of ICAR-CIFE, agency shall not sale, lease or share the source code of the app to any other entity.
- ICAR-CIFE shall have the copyright to the design and content of the Information Portal and Android mobile application.

- The entire application along with all programmes, including those meant for statistical reporting, graphics and content developed to achieve the desired functionality, will be intellectual property of ICAR-CIFE.
- It will be the responsibility of the selected agency, both where the contract comes to a natural end, and in case of foreclosure, to: Furnish all information demanded by ICAR-CIFE regarding the existing framework of the application.
- Handover all the old / latest backup code of the Information Portal and Android mobile application to ICAR-CIFE on a CD/DVD/Pen drive/Hard disk.

Address of Delivery location:

- ICAR-Central Institute of Fisheries Education (New Campus), Panch Marg, Off Yari Road, Versova, Andheri (West), Mumbai-400061
- **Centre In charge**
ICAR-CIFE, Rohtak Centre, Lahli, Via Anawal, Rohtak – 124 411, Haryana