भारतीय कृषि अनुसंधान परिषद,
उत्तरपूर्वी पर्वतीय क्षेत्र अनुसंधान परिसर
उमियम, मेघालय –793 103
INDIAN COUNCIL OF AGRICULTURAL RESEARCH
ICAR Research Complex for NEH Region
Umiam, Meghalaya – 793 103

F. No. RC(S)83/2016 **Dated Umiam, the 7th November, 2016**

TENDER DOCUMENT

FOR

PROCUREMENT OF SCIENTIFIC EQUIPMENTS/MACHINERIES UNDER EFC XII Plan (2nd Phase) FOR ICAR, RESEARCH COMPLEX FOR NEH REGION, UMIAM, MEGHALAYA AND ON BEHALF OF ICAR, REGIONAL CENTRES

TENDER No: RC(S)83/2016	:	Date: 7th November, 2016
Date & Time for Submission of Tender	:	29th November, upto 12.30 p.m
Date & time for opening of Tender	:	29th November, 2016, at 2.30 pm.

Total No. of pages 17 (seventeen)

भारतीय कृषि अनुसंधान परिषद,
उत्तरपूर्वी पर्वतीय क्षेत्र अनुसंधान परिसर
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INDIAN COUNCIL OF AGRICULTURAL RESEARCH
ICAR Research Complex for NEH Region
Umiam, Meghalaya – 793 103

F. No. RC(S)83/2016 **Dated Umiam, the 7th November, 2016**

OPEN TENDER

INVITATION OF TENDER IS INVITED FOR PROCUREMENT OF SCIENTIFIC EQUIPMENTS/MACHINERIES UNDER EFC XII Plan (2nd Phase) FOR ICAR, RESEARCH COMPLEX FOR NEH REGION, UMIAM, MEGHALAYA AND ON BEHALF OF ICAR, REGIONAL CENTRES

Sealed bids are invited from the reputed **Manufacturer/ Authorized Dealer/ Government organizations** for supply of Scientific Equipments, having at least 5 (Five) years experience in manufacturing/ marketing/ supply of such Equipments/Machineries by ICAR Research Complex for N.E.H. Region, Umiam, Umroi Road, 793103, Meghalaya and on behalf of ICAR, Regional Centres. The details specification of equipments/machineries is as per Appendix -1.

TERMS & CONDITIONS OF THE TENDER

1. **Cost of Tender paper of Rs. 1000/- (Rupees one thousand) only** (Non – refundable) to be deposited in the favour of the Director, ICAR Research Complex for NEH Region, Umiam – 793103 by means of Demand Draft payable at SBI, ICAR Complex Branch, Umiam. Non – submission of the cost of Tender paper (consolidated) shall lead to non – consideration of the Tender.
2. The Bidders should submit the proposals in two parts:
   I. Technical Bid (Bid –I)
   II. Financial Bid (Bid-II)
3. Technical part should contain all such details as mentioned in the Bid Document.
4. Financial part (BID-II) should contain the financial bid inclusive of all admissible taxes, duties and levies, installation charges, freight charges, Taxes, VAT etc., as may be applicable etc. The rates quoted should be up to ICAR Research Complex for NEH Region, Umiam and Regional Centers i.e FOR Destination for each particular item. The Financial Bid should consist of the Rates, their detailed break –up, etc. Non-compliance of this shall lead to non-consideration of the Bid. The rates must be valid for at least for 1(one) year from the date of quotation.
5. These two parts (BID-I & BID II) should be submitted in separate sealed envelopes. Both envelop should then be sealed in a third envelop **super scribed as "TENDER NO. RC(S)83/2016 dated 7th November, 2016** ***due on 29th November, 2016 FOR*** **PROCUREMENT OF SCIENTIFIC EQUIPMENTS/MACHINERIES UNDER EFC XII Plan (2nd Phase) FOR ICAR, RESEARCH COMPLEX FOR NEH REGION, UMIAM, MEGHALAYA and On Behalf of ICAR, Regional Centres** and addressed to "THE DIRECTOR, ICAR RESEARCH COMPLEX FOR NEH REGION UMIAM, MEGHALAYA-793103".
6. **The Cost of the Tender (consolidated) as well as the Earnest Money (consolidated) in the form of Bank Draft along with all other Technical Details should be**

mandatory kept in the Technical Bid only. Cheque/Bank Guarantee/fixed deposit receipt/ money orders/Cash etc. are not acceptable towards deposit of earnest money.

7. In no case Earnest Money will be accepted after opening of tender.
8. **Details of Earnest Money i.e. draft number and date should be indicated on the cover of the big envelope** otherwise the tender may not be received or opened and returned to the party. All Tenders should be sent by Registered Post. Tenders to be handed delivered should be put in the Tender box, kept in the office chamber of Chief Administrative Officer, ICAR Research Complex for NEH Region, Umiam, Meghalaya-793103 not later than ***12:30 P.M. on 28th November, 2016***. Tenders received after the due date and time shall not be considered under any circumstances.
9. On the date of opening, only Part-I (Technical Bid) will be opened. Part-II (Financial Bid) shall be opened subsequently only of those tender, whose Technical Bid qualifies as per the laid norms of this tender.
10. **Composition of Technical Bid** –
    - **I.** Profile & Track Record of the company
    - **II.** Document in support for Number of years in Scientific Equipments manufacturing/supply.
    - **III.** Document in support of last supply orders.
    - IV. Balance Sheet for last 3 financial years. Annual Turnover, which will be average of last three years on the basis of balance sheet.
    - V. Photo copy of PAN No. issued by Income – Tax Department. Photo copy of Service Tax/sale tax/VAT Registration etc. (If not applicable submit the relevant document).
    - VI. **Non refundable tender Document Fee of Rs. 1000/- in the form of Demand Draft** from any Nationalized Bank drawn in favour of the Director, ICAR, Research Complex for NEH Region, Umiam, Meghlaya payable at State Bank of India, ICAR complex branch (If exempted/relaxed submit the relevant document in support of claim). **Refundable Earnest Money Deposit (EMD) of Rs. 20,000 (Rupees twenty thousand only) in the Form of Demand Draft from any Nationalized Bank, drawn in favour of the Director, ICAR, Research Complex for NEH /region, Umiam, Meghalaya.** (If exempted/relaxed submit the relevant document in support of claim) **The Cost of the Tender paper as well as the Earnest Money along with all other Technical Details should be mandatory kept in the Technical Bid only. Non submission of the Bid Security with quotation shall make the quotation/ bid liable to be rejected.**
    - VII. **Furnishing of related documents like detailed specifications, technical literature, brand name, model and make, catalogue, authorization letter, Dealership Certificate, Manufacturing company registration certificate, product certification, price list (if any) etc. is mandatory, Dealership certificate/Agency Certificate for the manufacturer/ manufacturing firm should be enclosed if the rates are quoted by the Dealers/Agents. Failing which the quotation shall not be considered.**
    - VIII. **KHADC license for trade in Meghalaya only.**
        - **a. The Firm/Agency run by the Non-tribal contractor's /firms/ companies/suppliers/stockiest/banded ware house/Private carriage contractors/Co-operative Societies etc. should produce Trading License issued by the KHADC (Govt. of Meghalaya).**
        - **b. Submission of tender paper does not fall under trade as per the above said act. However, if a Non-tribal becomes a successful bidder he has**

to furnish License issued by the KHADC (Govt. of Meghalaya) before any work involving trade is issued to him.

Further those firm/agency opting for clause "b" above are requested to submit an undertaking mandatorily to this effect along with the technical bids as a certification about their capability of submission of the trade license when ask for, failing which the tender are liable to be rejected/not to be considered at any circumstances. (If not applicable submit the relevant document).

IX. **Up-to-date sale tax certificate, tax clearance, valid registration certificate are mandatory.**

X. Other relevant technical documents/specifications in favour/ claim/ Support of equipments /machines if any may be submitted as additional with the technical bid.

11. **The supply is effected at DGS&D rate contract, wherever is applicable**. The rate should be quoted for list of items as per the tender document.
12. The Buyer shall not be responsible for payment of transit insurance charges.
13. Payment shall be made on actual delivery in good condition and successful installation and demonstration (which should be free of cost and must be completed before payment).
14. In case for Imported goods:
    i. **The price may be quoted in foreign currency and import will be on FOB basis.** However, custom clearance, Inland freight etc. will be the responsibility of the supplier and no separate charges will be paid for that, however, custom duty exemption certificate shall be provided. The supplier should inform well in advance for sending these papers. No demurrage charges will be paid. If the supplier desires, rate in corresponding Indian currency may be quoted. It will be at the discretion of the authority of ICAR Research Complex for NEH Region to accept Indian or Foreign currency prices.
    ii. In case of any custom duty charge, applicable as per Govt. of India's Notification, the same may be paid by the firm which will be reimbursed to the Indian Agent (who should be a registered firm and with DGS&D immediately, subject to the condition that the bill of entry in original along with all relevant papers are submitted immediately, after custom clearance and installation and demonstration of the items. Installation and demonstration should be free of cost.
    iii. **The import & payment will be made by means of Foreign Bank Draft/ Site Draft in case of foreign imported goods.** Performance Bank guarantee of 10% FOB value valid till the end of warranty period should be submitted before the release of the security deposit. All bank charges outside and inside India shall go to the beneficiary's account. Performance bank guarantee of 10% FOB value, valid till the end of warranty period, should be submitted before the release of the security deposit. All bank charges outside and inside India shall go to the beneficiary's account. Draft making charges would go to the beneficiary's account and a scanned copy of the draft, if required, can be sent to the Indian agent by post. Draft would be handed over after successful installation and demonstration which should be completed within 45 days from the date of draft and submission of all documents like bill of entry etc.
    iv. All imported items should be delivered up to destination i.e. all the import should be free of inland freight charges, insurance etc.
    v. **Indian Agency Commission rate and amount should be clearly specified as per rules. IAC, wherever applicable, will be paid in Indian Currency only.**

vi. In case of delay in supply, penalty will be imposed @2% per week, subject to a maximum of 10% of the FOB value

vii. Indian Agents quoting on behalf of their principal must be registered firms with DGS&D .They are also requested to provide necessary authorization letter from their principal along with the quotation.

viii. **ICAR Research Complex for NEH Region, Umiam, Meghalaya, being a Scientific and Research Organization, is exempted from payment of Excise Duty (Certificate to this effect will be provided).**

15. **All Bidders should mandatory give their current, PAN Card No., TDS& other Bank A/C details to enable the office for releasing the dues via e- payment basis.**
16. Performance Bank Guarantee is required for all indigenous items also. For items less than Rs.50, 000, the amount should be 5% of the actual cost of the equipment and for items more than 50,000.00 the amount should be 10% of the actual cost of the equipment. The bank guarantee should cover the entire guarantee/ warranty period which should be of at least one year duration.
17. **The selected tenderers must complete the supply/ installation/ demonstration within 45(forty-five) days from the date of the supply order due to time factor or the said orders shall be treated as cancelled and no further correspondence will be entertained.**
18. The guarantee/ warrantee should be from the date of installation. All guarantee/ warranty services should be attended within a maximum limit of 15 days, failing which, proportionate deductions from the security deposit may be made at the discretion of the Institute.
19. The complete details regarding the Institutions/ Corporations/ Bodies, etc. where the Firm/ Dealer has made the supplies during the last 2/3 years should also be furnished, along with the supply orders.
20. The Bidders should mandatory provide their full Bank Details, PAN Card No. , IFS code No., and TDS so as to ensure e-payment to them directly on satisfactory completion of the Supply.
21. The Director, ICAR Research Complex reserves the right to reject any tender in part or full, without assigning any reason thereof.
22. Legal jurisdiction for all disputes shall be within the purview of the Shillong Court.
23. **The bidders should mandatory sign on every page of the Tender Document, which would show their unconditional acceptance of all the terms and conditions of the Tender Document.**
24. Tenders shall be opened on **29th November, *2016* at 2:30 pm**, ICAR Research Complex for NEH Region, Umiam, Meghalaya – 793103. Interested bidders may attend the opening.
25. If the above mentioned closing /opening day of the tender happened to be non – working date due to Bandh/Strike as any other reasons, the tender will be received & opened on the following working day at the same time except on the 2nd (second) Saturday.
26. Other terms & conditions, as may be decided by the Competent Authority from time to time, depending upon the condition & requirement of the supply. The intimation in this regard, shall be provided well in advance & the bidder/ supplier shall be bound by the said terms & conditions.
27. For any query/ clarification, the undersigned may be approached at:

Contact address:

E-mail: kcjoshiicar@yahoo.in/ aogaicarneh@gmail.com /storesection@yahoo.in

Sd/- S. V. Ngachan
DIRECTOR

Before quoting for the Tender, it is requested to kindly go through the Tender Document thoroughly and abide by all the Terms and conditions given. Non-Compliance of any of the T & C mentioned above, shall lead to non-consideration of the Bid and no request what so ever shall be considered under any circumstances.

APPENDIX- I

Sl. No	Description	Specifications	Qnty.	Destination/ To be supplied at
A.	**For ICAR, Umiam, Meghalaya**			
A.1	**UV/VIS Spectrophotometer**		**1 sets**	**ICAR, Umiam, Meghalaya, Horticulture Division.**
	Wave length range	190 -110nm		
	Spectral band width	1nm (190 to 1100nm)		
	Wave length display	0.1-nm increments		
	Wavelength setting	0.1-nm increments (1-nm increments when setting scanning range)		
	Wave length accuracy	±0.1 nm at 656.1nm D2 ± 0.3nm (190-1100nm)		
	Wavelength repeatability	± 0.1nm		
	Stray light	Less than 0.022% NaI at 220nm, $NaNo_2$ at 340 nm Less than 1.0% KC 1 at 198nm		
	Photometric system	Double beam		
	Photometric accuracy	± 0.002Abs (0.5 Abs) ± 0.004 Abs (1.0 Abs) ± 0.006 Abs (2.0 Abs)		
	Photometric repeatability	Less than ± 0.001 Abs (0.5 Abs) Less than ± 0.001 Abs (1 Abs) Less than ± 0.003 Abs (2 Abs)		
	Baseline stability	Less than 0.0003Abs/H at 700 nm (one hour after light source turned ON)		
	Baseline flatness	Within ± 0.0006 Abs (190 to 1100nm, one hour after light source turned ON)		
	Noise level	Within 0.00005 Abs RMS value (at 700nm)		
	Interface	USB		
	Software	Windows based complete multitasking software suitable software for scanning, quantitative measurements, kinetics etc.		
	Spares	One set of lamps and cuvettes		
	UPS	1 KVA with 30 minutes backup		
	The above equipments should be supplied with CPU, LCD monitor, keyboard and mouse for data capture, storage retrieval and documentation. Computer: Core i5 processor, 2-6 GB RAM, 500 GB Hard Disk space with CD/DVD RW (3^{rd} generation) optical drive, 17" LED screen. Genuine windows 8, Microsoft office 2010 software with antivirus package for one year			
A.2	**PCR**	Ramp rate for either normal and gradient PCR with heated flexilid and silver thermoblock for 96 x 0.2 ml PCR tubes or a 96-well PCR plate. Flexibility for adjustment of lid height to adjust the sizes of the tubes or plates of any make. Capable of testing 12 different temperatures simultaneously with a gradient range 1 to 20^0C. It should be compatible to combine additional blocks/units for ultimate throughput. Thermal sample protection is essential. Ramping rate for heating should not be less than 5^0C, silver block and temperature control range of the block: 4-99^0C, 1- 20^0C gradient range , lid temperature range 30 -110^0C and temperature control speed 5^0C/second.	1 sets	**ICAR, Umiam, Meghalaya, Agroforestry Division**
A.3	**FRP tanks**	Fiber Glass Tank (Circular) with drainout and outflow pipe Capacity: 250 liters	10 Nos.	**ICAR, Umiam, Meghalaya, Fishery Division**
		Fiber Glass Tank (Circular) with drainout and outflow pipe Capacity: 500 liters	10 Nos.	
		Fountain Aerator (1.00 HP motors)	3 Nos	
		Sedgewick-Rafter Counting Cell 45mm long, 20mm wide and 1mm high	2 Nos	
A.4	**Water Pump**	Diesel engine (5. 00HP)	1	

A.5	**Horizontal Electrophoresis System with power pack and set os trays**	Horizontal Electrophoresis includes : Gel Caster to cast gels in the tray without tapping or use the casting gates for casting directly I the cell. Easily remove quick snap electrodes for simple cleaning. UV-transparent clear gel tray with fluorescent ruler. Longer tabs on base for easy removal and reduce buffer spillage, lid cannot be incorrectly positioned. Included casting gates and gel caster for tape-free casting. Wide range of different gel combs available: fixed height drop-in- combs, adjustable height combs preparative combs and multichannel pipet-compatible. Product Contents; Buffer tank, Lid with cables Gel tray 15 x 15 cm , leveling bubble, casting gates, gel caster and power supply Power supply system: Output: 250V, 3.0A, 300W Output range: (programmable): 5-250V, fully adjustable in 1V increments; 0.01-3.0A, fully adjustable in 0.01A increments; 1-300W, fully adjustable in 1W increments Type of output: constant voltage, current or power with automatic crossover Output terminals: 4 pair recessed banan jacks in parallel Timer control: 1 min-99hr 59 min, fully adjustable Pause/resume function: Yes Display: 2-line, 16-character back lit LCD Operating conditions: 0-40^{0}C, 0-95% humidity in absence of condensation Safety compliance: EN61010 EMI: conforms to CE Standards for emissions and immunity class A, Tested only at 230V. TUV EMC certification or equivalent certifications Safety feature: No-load detection, rapid resistance change detection, ground leak detection, overload/short circuit detection, overvoltage protection, over-temperature protection. Input protection: Fuse on hot and neutral. Input power (nominal): 100-120/220-240VAC, auto switching. Dimension: (W X D X H): 25 x 28.5 x 8cm (9.8 s 11.2 x 3.1 in). Weight: 2.0 kg, 4.4 lb **Horizontal gel boxes with power supply** Specification of Electrophoresis Unit:- 1. Gel (W x L cm): 20 x 20 2. Unit (W x L x H cm): 23 x 39.5 x 9 3. Buffer Volume: 1,200 ml. 4. Max sample capacity: 450 5. Supplied Combs: 20 tooth (2 Nos.) and 40 tooth (2 Nos.) (multichannel compatible combs) 6. Gel tray (UV Transparent): 20 x 20 Specification of Power supply: - • Output Voltage/Range/increments: 5 – 500V/1V • Output Current Range/increments: 1 – 800Ma/1Ma • Output Power Range/increments: 300W/1W • Timer: 1 min – 9999 min or continuous • Programmable: 6 steps/30 programmable files • Dimension: 19 x 30.5 x 9.5 cm • Weight: 5.5 lbs/2.5 kg. Input Voltage: 100V – 240V	1 set	**ICAR, Umiam Meghalaya, Plant Breeding Division**
A. 6	**Spectrophotometer small volume**	Type- UV-Vis. Spectral range: 170-850 nm. Sample volume: 0.5 to 2 µl. automatic path length adjustment for high and low concentrations. Fast measurement time. User friendly software (pre-configured methods for determination of DNA, protein and RNA etc. with real-time data export capabilities). Small foot print.	01 Nos.	**ICAR, Meghalaya Plant pathology Division**
A.7	**Elisa reader**	Plate format-96wells. Wave length: ~200-700nm. Detector: Absorbance (with high sensitivity CCD camera). Optical system: filters. Measurement time: ~6seconds. Accuracy and precision:	01 Nos.	

		~1%. Onboard software and thermal printer or with real time data export capabilities. Small foot print.		
A.8	**Water Bath Shaker**	Temperature Range: Ambient +5°C to 99°C Accuracy: ±0.1°C Uniformity: ±0.1°C Control: LED Microprocessor Display: LED RPM: 20 to 200 rpm Speed display resolution: 1 rpm Timer: Up to 999 mins with Alarm Motor: Maintenance-free, brushless Heater: 1200-1500 watts Voltage: 110-120V or 220-230V Safety: Over-temperature and Low water level cut-out Overall, W x D x H: 335mm x 565mm x 270mm approx. Bath Capacity: Minimum 18 L to 24L Max Minimum working depth: 60 mm Standard accessories to be provided: Standard Lid, Universal Tray and flask clamps for 50 ml flasks 1. Warranty: ≥ 24 months 2. Should provide all accessories necessary for its efficient and smooth functioning. Necessary accessories should be quoted as optional. 3. Provide warranty certification, authorization certification, instrument installation, demonstration and time to time service when necessary	**01 nos**	**ICAR, Meghalaya, Centre for Biotechnology**
A.9	**Digestion chamber with fume hood**	•Size should be approx. width 1.5 m x height 2.4m x depth 0.79m. •Thick tempered safety glass vertical-rising sash, and pre-set baffle(s) with flame spread single molded will be preferred. •Inner surface should be of fiber glass lining or similar commendable materials.. •Should have by-pass airflow design, clean sweep airflow opening •Hood should have vapour-proof fluorescent lighting. •Exterior body of hood should have epoxy-coated steel exterior and epoxy worktop to contain the accidental spillage of chemical. •Should preferably have removable front/side panels and front access panels for access to plumbing and electrical wiring. •The scrubber mounted should also be resistant to long term chemical abrasion, weathering and withstand high temperature. It should be compact, designed to absorb obnoxious toxic gases and vapours immediately as they are formed. It should absorb wide range of acids and alkalies, and sho uld also be effective in removing dust and aerosol particles. •The system should meet the national and international safet y standards and should be CE marked. •Socket with switches for exhaust system and fluorescent	**01 no**	**ICAR, Meghalaya, Centre for Biotechnology**

		light; Power point(s) on the panel of the hood. •To work on 220/ 230 volts A.C. Supply. •**Vender should quote FRP/PVC ducting non-Corrosive blower options to make unit complete and ready to work.** • Requirement of space, electrical and water points etc sho uld also be indicated.. • System should be validated at site during installation. 1. Warranty: ≥ 24 months 2. Should provide all accessories necessary for its efficient and smooth functioning. Necessary accessories should be quoted as optional. 3. Provide warranty certification, authorization certification, instrument installation, demonstration and time to time service when necessary		
For ICAR, Regional Centres				
Sl. No	**Description**	**Specifications**	**Qnty.**	**Destination/ To be supplied at**
B. Manipur Centre				
B.1	Air Conditioner Split type	Split type (Capacity: 1.5 tones) minimum 3 star category, rotary compressor; R 290 or equivalent refrigerant air purifier, dust filter, remote control with auto and sleep mode, power 230V, 50hz, single phase sterilizer , stabilizer, Minimum 1 year onsite warranty, servicing/repairing should be done within 24 hrs from intimation	8 Nos.	**ICAR, Manipur Centre**
B. 2	Biometric fingerprint device	High resolution optical finger print scanner (minimum 600dpi); colour LCD display (minimum 3 inches); 32 bit CPU; Authentication through finger print, password and proximity card (approx. 150 Nos. to be printed on one side) with 360^0 authentication angle; authentication OSD; person name and ID display; minimum transaction record of 1,00,000 impression; minimum 3000 user record; enabled with voice guided instruction; data backup through USB and memory card; reporting format in MS excel; daily, monthly and customized reporting options; on board lock control and programmable lock relay time; -10^0C to 50^0C temperature range and upto 90% relative humidity; power source DC or AC or both; CE and FCC Certified; 1 KVA UPS; LAN integration: Desktop PC (Intel i3 processor, 2 GB DDR3 RAM, 500GB HDD, minimum 18 inches monitor, windows 7 or 8 licensed OS); Minimum 1 year onsite warranty; on-site demonstration during installation,	01 no.	
B. 3	Compound digital polarizing microscope	Single compact integrated unit: including cell imaging system, digital camera, computer, high power fluorescence lighting system and LCD display; it should have 3 independent high output LED illuminators with integrated hard coated fluorescence band pass excitation and emission filters for each cube; fluorescence LED light cube must be a single, interchangeable cube can be easily removed and installed; Fluorescence LED illuminators must have a lifetime of 50,000 hours at 100% power. Must automatically recognize which cube is installed and adjust software configuration accordingly; System must be able to accommodate a 4 fluorescence LED light cubes; it should have integrated high-sensitivity monochrome interline CCD camera; system must be able to accommodate a minimum of 5 objectives at once which can be user defined or must include 10x, 20x and 40x phase contrast fluorite objectives; instruments should not require any dark room and has red, green and blue filter cubes; it should have mechanical "glide" stage with X-Y axis fine positioning controls	01 no.	

		interchangeable vessels holders including T-flasks, petri dishes, multiwall plates, microscopic slides and different culture systems; must provide a 1-click RGB channel overlay; system must be able to sequentially acquire a phase contrast image and a fluorescence image with a single mouse click, then overlay them automatically for transfection analysis; time lapse imaging capability with automatic avi. movie creation; manual cell counting capability; system must provide the following output file format: jpg, bmp, tif and png; minimum 2 years onsite warranty; on-site demonstration during installation.		
B. 4	Refrigerated centrifuge	Maximum rotational speed;14,000rpm (speed can be set from 200-14,000rpm in 10 rpm increments). Maximum centrifugal force: 20,800 x g. Temp. range: - 9^0C to + 40^0C. Sample temp.: <4^0 at maximum speed. Simple programming with minimum 35 programs memory with write protection. Automatic rotor recognition with speed limitation for maximum safety. Motorized lid hatch, fast temp. function for fast pre-cooling. Standby cooling for maintaining temperature when centrifuge is not in use. Shut-off option for reduced energy consumption and extended compressor life. Built-in condensate drain to eliminate water accumulation and prevent corrosion. Display shows speed, RCF, time and temperature. Minimum 10 acceleration and braking ramps for sensitive sample material. Power switch at the front of device. Maximum power requirement: 1650W. Maximum dimension (W X D x H): 64 x 55 x 34 cm. maximum weight: 80 kg (without rotor). Fixed angle rotor 30 x 1.5/2ml including aluminum lid, aerosol tight, rotor lid and adapters should be autoclavable. Anodized aluminum for high chemical resistance, Aerosol tight centrifugation option. Fixed angle rotor 6 x 85 ml including lid: Adapter for fixed angle rotor 6 x 85ml for use with 1 tube 15 ml (min. 2 pcs.) Adapter for fixed angle rotor 6 x 85 ml for use with 1 tube 50ml (min. 2 pcs). IEC 1010-2-020 safety standard. Minimum 2 years onsite warranty: onsite demonstration during installation.	01 No.	
B.5	Deep Freezer vertical (-20^0C)	Minimum 170 liters cap. Vertical model: Inner chamber of stainless steel with built-in digital temperature indicator cu, controller having audio visual alarm. Minimum internal dimension (W X D X H) : 500 x 430 x 850 mm. maximum external dimensions W X D X H: 630x 580 x 1320 mm. electrical volts: 220- 240 V, 50 Hz single phase, voltage stabilizer. Minimum 2 years on-site warranty.	01 No.	
B. 6	Orbital Incubator shaker	Digitally controlled. Timer: 0.1 hr up to 999hr 0.1 min upto 999min or continuous. Minimum platform dimension (L x W: 18 x 18 inches (45.7 x 45.7cm). Minimum platform load capacity: 15.9 kgs. Stainless steel chamber, cold-rolled and steel exterior. Maximum size (L X W X H): 33 X 27.5 x 40.5 inches. Triple eccentric drive motor. Temperature range: 15^{0}C below ambient to 80^0C. maximum flexibility for using a mix of different size lab wares on a single platform. Clamps for 250 ml & 500 ml. Erlenmeyer flasks. Minimum 2 years onsite warranty. On-site demonstration during installation.	01 No.	
B.7	Hot Air Oven universal with LED Display & timer/self automatic digital model	Minimum chamber cap. Of 250 liters. Maximum external Dimensions (I X D X H): 600 x 600 x 700 mm. Exterior construction of mild steel plate with heat cured epoxy coating. Interior construction of stainless steel. Minimum chamber gauge 1mm. Aero-dynamic design of air circulation to achieve superior temperature uniformity. Glass inbuilt into the door. High quality mineral wool insulation with woven aluminum barrier without smell and less dust. High efficiency air flow layer insulation construction design to keep outer casing cool. Minimum 2 Nos. wire mesh shelves with chrome plated and adjustable type in 25 mm increment. Seamless round cornered internal chamber for easy cleaning. Sheath heater surrounds blower to achieve	01 No.	

		fast and homogenous heat dissipation throughout the chamber. Digital temp. controller with sensor for precise monitoring & control. High temperature alarm, auto tuning and temp. Calibration function. Seven segment LED display. Over temperature protection. Over current protection. Control accuracy ± 0.1^{0}C. High tempered safety glass window of 5mm. Durable non-contact type switch and relay cut off motor and heater to protect hot air to outside when door open. Temperature range: ambient + 10^{0}C to 250^{0}C. Supply voltage: 230V AC, 50Hz, and Single Phase. Voltage stabilizer. Minimum 1 year onsite warranty.		
C.	**Tripura Centre**			
C. 1	Air Conditioners	Standard split type air conditioner, capacity 1.5 ton. Certification: ISO certified/CE marked/ISI marked product	05 Nos.	**ICAR, Tripura Centre**
C. 2	Autoclave (vertical)	Working steam pressure between 15 to 22 p.s.i (adjustable), double walled units have inner chamber (Boiler), thick stainless steel lid tightened by radial locking system, fitted with joint less neoprene rubber gasket, system should be hydraulically tested up to 40 p.s.i as a safety measure. Fitted with standard accessories such as water indicator, pressure gauge, steam release cock, spring loaded safety valve, pedal lifting device and heating element, S.S basket, cord and plug. Work on 220/230VAC supply. Inner chamber made of SS and outer chamber covered with stainless steel are also fitted with safety wall valve. Capacity of 150 -160 liters. Certification: ISO certified/CE marked/ISI marked product.	01 No.	
C.3	Inverter	Maximum inverter continuous of power 800-1400VA pure sinewave inverter with tall tubular battery of suitable capacity. AC input voltage: 230V + 1%-5V, Battery Voltage: 12V, AC o/P voltage at no load: 220±7V. Certification: ISO certified/CE marked/ISI marked product.	02 nos	
C.4	Laminar Air Flow (Vertical)	Vertical laminar air flow, mild steel cabinet duly epoxy coated , stainless steel table top, side panels are provided of thick transparent acrylic sheets, fitted with pre-filter and is made to pass through highly effective HEPA (High efficiency particular air) minimized vibration from blower, fluorescence lighting, works on 2130/230 volts AC. Supply, Air velocity: between 0.4 to 0.5 mls ±20%, HEPA efficiency pre-filter: 99.997% at 0.3 microns with DOP test washable with an arrestance up to 90% at 5 microns. Light intensity: LUX 900- 1300 Lux, Power supply: 220 V single phase 50 Hz, UV lights attached. Front transparent acrylic door (5mm). Gas/Vacuum, Cock Castor wheels at the bottom. Working Size (6x 2x 2 ft.) Manometer attached built-in UV germicidal light and cock for gas line. Certification: ISO certified/CE marked/ISI marked product.	01 No.	
C.5	Rotary Shaker	Housed a top heavy mild steel base assembly, Suitable for continuous & heavy duty operations, universal platform to accommodate interchangeable clamps of assorted sizes for different capacity of flasks. Platform size 24" x 24". Max. Volume 16 liters. Ma. No. of clamps: 16 (for 1000ml flasks) 25 (for 500ml flask), 36 (for 250ml flask), 49 (for 150ml flask), 64 (for 100ml flask). Provided with a speed regulator from 20 rpm to 300 rpm, digital display of speed with per-setting facility. Automatic restart at present speed in case of power failure. Operates on 220-240V AC, 50Hz, and single phase. Certification: ISO certified/CE marked/ISI marked product.	01 No.	
D.	**Nagaland Centre**			
D.1	Cryocan	Portable Type Capacity:1.5 to 2 litres and 20-25 litres Static evaporation loss rate:0.1 to 0.4 litres per day Static holding time:15-20 days and 60-70 day	02 nos	**ICAR, Nagaland Centre**

		Accessories Cryogloves: Protection against -100 °C to -196 °C,Water resistant and comfortable, Light weight, excellent dexterity Tilting trolly: Roller base to move the can S S Funnel: Suitable for transfer of liquid nitrogen Stainless steel canister with goblets: Suitable for can		
D. 2	Digital water Bath	1. Temperature range ambient +5 °C to 150 °C in 0.1 °C increment. Temperature resolution should be at least 0.1 °C, uniformity ±0.2 °C, and accuracy ± 0.3 °C. 2. Should have microprocessor based temperature controller. 3. The block chamber of different size suitable for centrifuge tube (15 ml and 50 ml) and micro centrifuge tubes of 0.2 ml, 0.5 ml, 1.5 ml and 2.0 ml capacities. 4. Should have LED display for temperature 5. Instrument should be supplied in complete with all respect with required accessories.	01 No.	
D.3	Refrigerated Centrifuge	1. Maximum speed (rpm) 20,000 2. Different types of rotors, suitable for volume range from 1.5 ml to 500ml 3. Temperature range must be (°C): -10 to +40 4. Controls: Microprocessor based, Touch-screen display with set and processed values 5. Memory-based programmed operation 30 programmed operations possible. 6. Refrigeration system : CFC/ HCFC free. 7. Temp. Control Accuracy : ± 2°C of set temperature with timer range from 1-99 minutes. 8. Speed control accuracy : ± 10 rpm 9. Speed control range : 100 to 20,000 rpm 10. RCF calculation RCF integrator, RTC(real time control),over speed detector facility 11. Automatic rotor lock/self-locking system 12. Ambient temperature for operation: 2°C to 40 °C 13. Non Contact imbalance protection 14. Pre cooling chamber 15. Power : 200-240 VAC, 50 Hz, single phase 16. Should be supplied with suitable Voltage Stabilizer. 17. Warranty: Comprehensive 5 years on both machine and rotor from the date of installation directly certified by the manufacturers. 18. In addition during the entire warranty period 2 maintenance service visits by engineers is a must. 19. Safety feature of automatic rotor to avoid damage due to over speed.	01 No.	
D.4	**SPERM QUALITY ANALYZER FOR PIG**	1. Should be able to perform analysis under phase contrast, bright field and multi wavelength for monitoring of the semen parameters like total sperm concentration, motile sperm concentration, progressive motility, motility grading, sperm velocity, morphology, number of total sperm per	1 nos.	

		ejaculate, number of motile sperm per ejaculate, DNA integrity, vitality and droplets count etc. In liquid and frozen semen. 2. Standard software for evaluation of fresh and extended pig semen. 3. Automatic calculations for semen extension and dose determination. 4. The assembly should be equipped with the computer, good quality microscope with 4X, 10X, 40X and 100X objective lenses fitted with adjustable thermo stage for semen evaluation and other hardware's. 5. The system should have thermo stage (room temperature to 45 °C), specimen sperm analyser chamber for pig semen (disposable slides, Mackler's chamber etc.) 6. System should be equipped with suitable objectives for motility and morphology analysis and also capable of digital image acquisition of 1-20 fields. 7. System should be equipped with digital camera along with its software to grab images at a speed of 60 frames per Second. 8. The software should have option for analyzing sperm morphology (proximal and distal droplets, bent and coiled tails) of an individual cell automatically at the time of motility analysis. 9. The system should have the ability/ suitable software to view and store detailed data for individual sperm tracks to be used for validation purpose. 10. The system should be supplied with suitable printer, UPS. The unit should be supplied completely in all respects along with all accessories. **Purpose:** For routine analysis of motility, concentration, morphology, abnormality and vitality of fresh and extended boar semen for use in artificial insemination at ICAR farm and at farmer's field.		
D.5	**UPS (Centralized)**	1. 5KVA Online Ups System with 120-minutes back-up using SMF Batteries (Can run 20-22 Nos. Computer) 2. Warranty: >2 year	1 no	
E.	**Arunachal Pradesh Centre**			
E.1	Autoclave	1. Chamber Size: 500mm (W) x 500 mm (L) x 950mm (H) 2. Electrical Power: 18 KW or sufficient wattage of industrial immersion type water heater to generate steam within a reasonable period of time on 3 phase 440V 50HZ AC supply. 3. Working pressure and temperature: 1.2 to 2.2 Kg/sq.cm at 121 Deg C. 4. Material of Construction Inner chamber, Jacket, Door: SS 316 (5mm – 10mm) 5. Outer Chamber: SS 304 (Insulated properly) 6. Steam Generator: Non corrosive SS/Chromium plated Brass 7. Heater Plate: Brass/Stainless Steel 8. Pipe Line: Complete with SS 9. Stand: Stainless Steel/High quality non corrosive steel 10. Instrumentation: Temperature, Pressure and Vacuum gauges: Steam traps, vacuum driers, water level	1 no.	**ICAR, A.P Centre**

		indicator on steam generator 11. Safety devices: Pressure switch and safety valve, self locking of door when chamber is under pressure Vacuum breaker for jacket Steam generator with gauge glass valves and Low water protection with audio visual indicator. 12. Features: The equipment should have ISI mark on quality 13. Installation: installation shall be done at free of cost. Water inlet and outlet pipe should be done on a turnkey basis. Water connection and drainage outlet will made available in the installation room.		
E.2	Canopy analyzer with data logger	Weight:1.8 Kg • Measuring Thickness: 15 mm max • Measuring Width: 150mm max • Measuring Length: 36 cm • Scanner: 675 nm Laser Diode • Resolution: 0.025mm^2 • Accuracy: ±1% for samples>10cm^2 • Interface: USB 2.0 • Memory Size: 8,000 measurements Display: 16 characters x 2 lines LCD • Scanning Speed: 127mm/second • Battery: 7.2 volt rechargeable NiMH • Battery Capacity: 15 hours • Operating Temperature: 0 - 50°C	1 No.	
E. 3	Deep freezer (-80°C)	Temperature Range: -80°C Design: Horizontal and Vertical Shapes Control Panel: Touch Key Pad w/ LED Display Temperature Regulation: Microprocessor Controlled Alarm Type: Audible & Visible Refrigerant: CFC free refrigerant Construction: Double Walled w/ PUF insulation Door: Solid Door Inner Doors: Single and Double Doors w/ Tempered Glass Cabinet Housing: MS w/ Powder Coating (SS optional) Internal Chamber: Stainless Steel (316 / 304) Optional: - • IQ, OQ & PQ Documentation • Seven days circular chart recorder • RS-232 / RS-485 Interface for Temperature, Time & Date • Chart recorder • Outer chamber Stainless Steel 316 / 304 grades • Caster Wheels • Voltage Stabilizer Power Supply: 220 - 240 Volts Certification: ISO and CE Mark	01 No.	
E. 4	Generator Set	125 KVA , 4K180TA-1, 156 BHP, 100 KW, Phase III, AC voltmeter with selector switch, AC ammeter with selector switch, Vibrating reed frequency Meter, Indicating lamps for SET ON & Load ON, MCCB for short circuit & overload protection, Aluminum bus bars of adequate rating, Provision for bottom entry & exit of power cabling, Set of current transformers, Set of control fuses.	01 no.	
E.5	Millipore water filter	Product water: TOC, ppb:< 30. Product Water Resistivity, MΩ•cm (@25°C): > 5 – 15; > Pure Water > 5. Nominal Permeate Flow: 3L/h. Feed water nature: Tap water. Conductivity, µS/cm:< 0.2.Product water volume:> 5 – 25 L/day; >25 – 100 L/day. Silica removal (%):>99.9. Microorganisms, cfu/ml:<1. System recovery (%): 15. Cartridge used: Progard and RO membrance cartridge. Water quality: Type 2	01 No.	
E. 6	Refrigerated	✓ Rpm: 24000	01	

	Centrifuge with all Heads and Accessories	✓ Capacity: Minimum 1.5 ml x 12 tubes ✓ Display : Lcd Display of Temperature, Rpm, Time and Rotor used ✓ Operating Mode: Rpm or Rcf ✓ Variable Run Time: Timer Set Up for Long Run and also set Time in Hrs and Mins., with alarm at Completion ✓ Temperature range: -10°C to 40°C ✓ Multipurpose rotors: centrifugation rotors for different tubes 1.5/2.0 ml. ✓ System with auto lock facility, with safety for over speed/imbalance/temperature limit or door detector ✓ Automatic functioning of speed and timing Two years warranty if possible.	No.	
E.7	Digital Soil Moisture meter	✓ Measurement Units: Percent volumetric water content ✓ Resolution: 0.1% volumetric water content with electrical conductivity <2ms/cm ✓ Range: 0% to saturation(saturation typically around 50% volumetric water ✓ Battery life: 4 AAA alkaline batteries (approx. 12 month battery life) ✓ Data logger: 3250 measurements without GPS; 1,350 with GPS/DGPS	1	ICAR, A.P Centre Under Flagship programme on temperate Horticulture
F.	**Sikkim Centre**			
F.1	Electronic balance	I. Capacity 210 gm with wind draft shield II. Denver instruments cat No.8248.1 Weighing Range: 120g Readability : 0.01 mg Reproducibility (standard deviation) : 0.02 mg. Linearity: ±0.06mg	02 nos.	**ICAR, Sikkim Centre**
F. 2	Portable leaf area meter	Accurate and non – destructive measurement of leaf area and associated parameters, provide with high resolution scanner and scan board with integral data analysis and image storage. Provide with a multiposition for carrying and handling increased portability and ease of use. Measurement of leaves can be effectively carried out on the scan board or an independent plain surface. Large and high contrast liquid crystal display enables visual confirmation of scanned leaf area together with the measured leaf parameters. Operated by menu driven software and measurements are efficiently displayed in mm, cm or inches. Adjustable contrast control makes the AM300 suit damage, discolor or diseased leaf applications. Store image can be downloaded, in BMP or TIFF formats, into commercially available image analysis software.	01 No.	
F. 3	Autoclave 28 liter	Pressure – 10 to 20 psi (adjustable) ➢ Inner chamber, steam jacket and outer wall – Stainless duly argan arc welded ➢ Space between outer wall and steam jacket is filled with high grade wool to minimize the temperature loss. ➢ The lid is made of stainless steel and closed by radial type closing arrangement. ➢ Fitted with gasket made up of neoprene rubber safety valve. ➢ Drain cock, water inlet, water level indicator, steam release valve, pressure gauze, pedal lifting device and stainless basket. ➢ Complete cord ➢ 200/440V AC supply and supplied without dressing pins. ➢ 300 x 500 3KW----22 liter (small size) and 550 x 750 6KW----98 lit	01 No.	
F.4	Willy mill with different sieves (Grinder)	Sample feed size approximates<1cm, after grinding sample size should be <5µm. System should be applicable for grinding sample like soils, plant materials, tissues and cell etc. Efficient size reduction and homogenization of 2 samples simultaneously. Provision of digital parameter setting.	01 No.	

F. 5	Microscope with photographic attachment	Optical system: UIS2 (Universal Infinity – corrected) Optical system Illumination: Built – in transmitted Koehler illuminator 6V30W halogen bulb. AC100-120V/220-240V 0.85/0.45A 50/60 Hz Focusing: Stage height movement by roller guide (rack & pinion) Stroke per rotation: 36.8 mm Full stroke range: 25 mm Upper limit stopper Tension adjustment on coarse focus adjustment knob Revolving nosepiece: Fixed quintuple nosepiece with inward tilt.	01 No.	
F. 6	Weighing pan balance (1000 kg) for Dairy Unit	SS Platform size: 900*1800 mm. Capacity : 1000 kg. Accuracy: 200 gm.	01 No.	
F. 7	Weighing pan balance (200 kg) for Pig Unit	SS Platform size: 900*1100 mm. Capacity: 300 kg. Accuracy: 50gm.	01 No.	
G.	**Mizoram Centre**			
G. 1	Digital Trinocular Compound Microscope with Camera Image Analyzer Software PC Connected	• Trinocular tube with 30W halogen illumination and camera attachment facility • Mechanical stage movement with roller guide right fitted handle • Observation method: Bright field • Observation tubes: Trinocular • Optics: Green optical system • Zoom ratio: 1:7.5 • Inter – papillary distance: 52 – 75 mm • Magnification range: 8X up to 300X (with auxiliary objective and eye piece) • Trinocular head 35°/45°. Eye piece FN 22 or more, with beam splitter 0/100, 100/0 • Objectives: Plan achromatic, anti fungus • Diascopic Stand with LED illumination, reflecting mirror and Arm Rest and Transparent stage Glass, Manual intensity control • Double Arm Fibre Illumination for Reflected light with LED Light source • 3W LED transmitted and Incident illumination. Power supply 100V-240V • Working distance = 115mm or more • Micrometer for measurement in eye piece • Digital Colour CCD Camera 5MP, CCD Chip, Basic software for image analysis, image enhancement facility and Image adjustments like Gamma correction, shading adjustment, fire Wire camera interface and C – Mount 0.55X Adaptor • The Microscope, Camera and the Software should be from one single manufacturer for better, compatibility, synchronization and support.	01 No.	**ICAR, Mizoram Centre**
G. 2	Digital Burette	• Continuous RS • Volume per turn = 5000 µl • Display = 0.01 to 999.9 ml with 360° rotable discharges tube.	01 No.	
G. 3	Double Distillation Equipment – Quartz Based	Output Cap. (approx) 4 litres/hr. Stage Double stage Distillate quality pH 6.0 – 7.0 Conductivity pS/cm 0.8 – 1.0 Cooling Water Requirement (approx) 2 – 4 ltr/min Power Rating (Total) 6.0 KW	01 No.	
G.4	Cryo – Tank For Liquid Nitrogen	• Capacity: 150 to 200L • Long static hold time (>200 days) • Complete with 2ml vial SS rack (maximum levels to cover	01 No.	

		the entire height of the container) and a suitable roller base. • Optional accessory such as 5ml vial SS rack should be quoted separately		
G. 5	Digital Dry Bath	• Temperature range: Ambient 5 – 150°C • Temperature display: resolution 0.1°C, 4-digit LED • Temperature uniformity: ±0.2°C at 37°C • Temperature accuracy: ±0.3°C • Display – Digital • Facilities – Heating and chilling • Block chamber: Stainless steel Single block unit I standard block Dimension (WxDxH): 20.0 x 29.5 x 8.5 cm • Weight Block capacity" 24 x 0.5ml, 24 x 1.5 ml, 24 x 2.0 ml, or 12 x 15 ml tubes	01 No.	