



INDIAN COUNCIL OF AGRICULTURAL RESEARCH

ICAR RESEARCH COMPLEX FOR N.E.H. REGION, TRIPURA CENTRE

LEMBUCHERRA -799210, TRIPURA

Phone: 0381 2865537; Fax: 0381-2865537

NOTICE INVITING OPEN TENDER

Sealed bids are invited from reputed organization / suppliers for supply and construction/installation of following items (As mentioned in the Annexure I) **at ICAR Research Complex for NEH Region, Tripura Centre, Lembucherra -799210, Tripura** for implementation of the project "Field demonstration of tissue culture raised Sabri Banana in Tripura state", funded by Department of Biotechnology, Govt. of India, New Delhi through Tripura Biotechnology Council; Dept of Science, Technology & Environment, Govt. of Tripura. Sealed quotations may be submitted on or before, 21 February, 2017 up to 3 pm in office of the **Joint Director, ICAR Research Complex for NEH Regions, Tripura Centre, Lembucherra - 799 210, West Tripura**. The detail specifications of the item and terms & conditions etc. are as given below:-

- 1) The consolidate cost of Tender document **Rs.2500/- (Rupees two thousand five hundred)** only (Non Refundable) to be deposited **in favour of the Joint Director, ICAR Research Complex for NEH Region, Tripura Centre** by means of Demand Draft/ Banker's cheque payable at **State Bank of India, College of Agriculture Branch, Lembucherra -799210, Tripura**. Non - submission of the cost of Tender document shall lead to non - consideration of the Tender.
- 2) Each quotation should consist of two Bids, namely "Bid I - Techno - commercial bid" and Bid II - Financial bid". Both must be submitted in two separate envelopes to be sealed, superscribed as 'Bid I or Bid II' and must be put in a single outer main cover. The single outer main cover should be superscript as "**Tender No.RC/TC(C-2)/2013/1500; dated: 2nd February, 2017** for "**Design, construction, testing & commissioning of green house,net house, fertigation unit, generator, water storage tank**" and addressed to "THE JOINT DIRECTOR, ICAR RESEARCH COMPLEX FOR NEH REGION, TRIPURA CENTRE, LEMBUCHERRA- 799210, TRIPURA, INDIA". The bidding firm should mention their complete address at the bottom left corner of the main cover. The cover letter, cost of the Tender and Earnest money for Rs.1.88 lakh/- (Rupees One lakh eighty eight thousand) only alongwith all other Technical details should be mandatorily kept in Techno - commercial Bid (Bid I). The Financial Bid (Bid II) should consist of the Rates, their detail break - up etc as mentioned at Annexure I and II. Non-compliance of these shall lead to non-consideration of the Bid. Financial bids of technically acceptable firms shall only be considered for further evaluation. The sample format for submitting Techno - commercial Bid and Financial bid are given in Annexure - I and II. Checklist of Bid document is attached as Annexure III and mandatory undertaking by firm is attached as Annexure III. In addition to Annexure IV Bidder has to give an additional undertaking (on a Non-judicial Stamp Paper worth Rs.100) duly notarized (as per Annexure-IV) that:
 - i. (a)I/ We have not been blacklisted during last three years by any Govt. Department/ Govt. Autonomous Body/ Institution, etc.;
 - ii. (b) I/ We have not submitted any fake/ forged certificates/documents and later, if any such 'Certificates/ Documents' found to be fake/forged or contains wilful wrong/ incorrect information; suitable legal action may be initiated against me/ us/ agency besides 'forfeiture of Earnest Money Deposit' and 'Blacklisting' etc.

- iii. (c) I/ We shall not withdraw my/ our bid after opening of Technical Bid and if done so, the Joint Director, ICAR Research Complex for NEH Region, Tripura Centre shall be authorized to forfeit the EMD submitted by me/us.

- 3) **All Tender should be sent through Registered Post. Tenders to be hand delivered should be put in the Tender Box, kept in the office of the Joint Director, ICAR Research Complex for NEH Region, Tripura Centre, Lembucherra - 799210. Bid document sent through Email shall not be considered.** The tender should reach to the office on or before 21 February, 2017 up to 3.00 PM. Tenders received after due date and time shall not be considered under any circumstance.
- 4) The Firm should have minimum experience of 8 years of designing, installing and operations of similar works for Institute/Govt. Organizations. Furnishing of related documents like detailed specifications, technical literature, product certificate, company registration certificate/trade registration certificate, complete supply details of the last 3 years, minimum five similar Work Orders with completion certificate etc. is mandatory, failing in which the quotation shall not be considered.
- 5) Dealership /Authorization certificate from the principal firm should be enclosed if the rates are quoted by the dealers/agents.
- 6) Sales tax certificate, tax clearance (up to date), valid CST/VAT registration certificate, last 3 years financial standing etc. should be enclosed.
- 7) The rates quoted should be up to installation site (Door delivery). The quoted rate should be in Indian Rupees. The rates must be valid for a minimum period of one year from the date of quotation.
- 8) Price quoted (in INR) must be given per unit including all packing, forwarding, delivery charges, construction and installation charges, permissible taxes, duties, VAT etc. as may be applicable. The Joint Director, ICAR Research Complex for NEH Region, Tripura Centre, Lembucherra, shall not be responsible for payment of transit insurance charges. If needed, necessary Road Permit will be provided by the Institute.
- 9) The bidder must have 'PAN Card' in the name of the agency concerned. All bidders should mandatorily give their valid PAN Card No. (Photocopy of the PAN card to be enclosed), along with the copies of 'ITR for last three financial years (i.e. 2013-14, 2014-15 and 2015-16). TAN (if any) and Bank A/C details (Name, Account No., Bank, Branch, IFSC Code and MICR Code etc.) along with the bid to enable the office for releasing the dues via e – payment.
- 10) The bidder must submit the attested copies of 'TIN Number' & 'Service Tax registration number'
- 11) The bidder having SE-1B CRISIL rating, will be given preference. The certified documentary proof of the same must be enclosed.
- 12) The bidder should have minimum Turnover of Rs.8.00 Crores in every year in last three financial years. The bidder(s) has to submit the copies of the audited Balance Sheets and Profit & Loss A/c for last three (03) financial years i.e. 2013-14, 2014-15 and 2015-16, duly certified by the registered Chartered Accountant.
- 13) Bidder must submit the "Solvency Certificate" for value up to Rs.5.00 Crores for execution of the said project.
- 14) The Firms shall have to deposit an earnest money of Rs.1.88 lakh/- (Rupees one lakh eighty eight thousand only) in the form of Demand Draft drawn in favour of the Joint Director, ICAR Research Complex for NEH Region, Tripura Centre, Lembucherra - payable at State Bank of India, College of Agriculture, Lembucherra branch, as bid security along with the quotation. The cost of tender as well as the earnest money along with all other Technical Details should be mandatorily kept in the Techno commercial Bid only. Non - submission of the earnest money with bid document shall make the quotation liable to be rejected. The earnest money of non - successful bidder will be refunded after bids are finalized. Government agency and firm registered with Central Purchase Organization, National Small Industries Corporation and Ministry of Micro, Small and Medium Enterprises are exempted from depositing earnest money. Bidder claiming such exemption must enclose relevant certificate/documents.
- 15) The firm must have ISO - 9001 : 2008 and ISI Certificate for Greenhouse and accessories

- 16) The successful Bidder has to deposit Performance Bank Guarantee (10% of the Supply order amount). The bank guarantee should cover the entire guarantee/warranty period which should be of at least one year duration. The Earnest Money will be refunded and payment will be released only after receipt of Performance Bank Guarantee
- 17) The construction and installation should be completed in time and with F.O.R. destination/ door delivery. The selected bidder must complete the supply/ installation/ demonstration within the stipulated time limit to be mentioned in the supply order. Supply to be made by at supplier's risk otherwise specified. In case the firm fails to execute the construction / installation within the time limit, the bid security would stand forfeited and the supply order shall be deemed to be withdrawn without any notice.
- 18) The guarantee/warranty should be from the date of installation/completion. Minimum one year warranty certificate has to be invariably furnished.
- 19) No advance payment/ part payment shall be made against the order. No additional charges above the quoted price shall be entertained. Payment shall be made on successful installation and demonstration (which should be free of cost and must be completed before payment) by the firm/dealer, followed by verification & certification by the concerned official. Bill in triplicate should be submitted to the Joint Director, Tripura Centre for release of the final payment after successful completion of work.
- 20) All bidders shall give an undertaking as given in Annexure IV on their official letter head duly signed along with official seal that they fully and unconditionally agree to abide by all the terms & conditions which, if needed, may be modified at the discretion of the Competent Authority in supply order, for which confirmation from the supplier shall be taken. Non - submission of the undertaking may lead to rejection/non consideration of the tender.
- 21) The bidders should mandatorily sign on every page of the Tender Document, which would show their unconditional acceptance of all the terms and conditions of the Tender Document.
- 22) Before furnishing any document, the bidder may undertake a visit to the site to analyze the site conditions and scope of work etc., at their own cost. ICAR, Tripura Centre will provide assistance to show the site.
- 23) The bidders shall arrange & maintain at their own cost all materials, T&P, security (for their man/materials), storage for material and facilities for worker for executing the work.
- 24) The Institute does not pledge itself to accept the lowest or any other tenders. The institute is also not bound to accept the tender in whole and Institute has right to accept the tender in parts. The tenderers are however, at liberty to tender for the whole or any portion of it or to state in the tenders that the rates quoted shall apply only if the tenders are considered fully. Other conditional tenders will not be accepted.
- 25) In case the successful company aborts from the offer within the validity of offer, the earnest money will be forfeited. Similarly, if successful company fails to commence the work within mutually agreed days from the date of issue of award letter, the amount of earnest money will here also be forfeited besides blacklisting the firm.
- 26) Time allowed for the work shall be strictly followed otherwise the vendor shall be liable to pay compensation at the rate of 1.5% of the tendered value of the work for 'per week of delay' on the part of the vendor subject to a maximum of 10% of the total tendered value of work. The decision of the Director/Joint Director about the delay shall be final and binding.
- 27) However, for any reason beyond the control of the vendor (due to unforeseen circumstances or natural calamities) the extension of time can be granted by the Joint Director, ICAR Research Complex for NEH Regions, Tripura Centre, Lembucherra- 799 210, West Tripura upon application by the company in writing. No claim for any compensation during the extended period shall be entertained and the ICAR Research Complex for NEH Region, Tripura Centre's decision shall be final.
- 28) Land required for the job shall be made available by ICAR, Tripura Centre at their cost. However, necessary piping, valve, wiring, cabling, lamps, switches & sockets, main switches, halogen/tube light fitting and tapping from existing line/connection including labour have to be arranged by the bidder at their own cost.
- 29) All materials brought at site shall be for this project only; not for other projects, if it is for some other project, prior approval needs to be taken from the concerned scientist.

- 30) The bidder shall be solely responsible for any accident/medical/health related liability/compensation for the personnel deployed by it at ICAR Tripura Centre. The ICAR Tripura Centre shall have no liability in this regard.
- 31) The personnel provided by the company will not claim to become the employees of ICAR Tripura Centre and there will be no Employee and Employer relationship between the personnel engaged by the company and ICAR Tripura Centre.
- 32) It may here be noted; that the entire staff and labour of the vendor will follow all the security instructions issued by the ICAR Tripura Centre from time to time.
- 33) The bidder should supply the entire material of good quality as per specification mentioned in the tender documents.
- 34) On completion of all work, vendor shall remove all surplus materials & leave the site in a broom clean condition, failing which the same shall be done at vendor's risk & cost.
- 35) The work shall be guaranteed for at least 3 years from the date of actual completion of the work for material, workmanship and perfect functioning & maintenance of the all units installed.
- 36) The vendor shall ensure compliance of all statutory laws & bye laws of the central Govt./ State Govt./Municipal authorities related to the employment of their staff and all obligations under Minimum Wage Act, Workman Compensation Act, Provident Fund & Miscellaneous Provision Act, Bonus Act & Contract Labour Act 1970 etc. ICAR Tripura Centre will not be responsible for such purposes in anyway.
- 37) The Director, ICAR Research Complex for NEH Region, Umroi Road, Umiam, Meghalaya 793103 reserves the right to reject any tender in part or full without assigning any reason thereof. The decision in this regard shall be final for any aspect of the contract and binding on all parties
- 38) Disputes arising, if any will be settled by mutual consultation and in case of failure of settlement dispute shall be referred to the sole arbitrator to be appointed by the Director, ICAR Research Complex for NEH Region, Umroi Road, Umiam, Meghalaya 793103. The decision of the sole arbitrator so appointed shall be final and binding on both the parties. Otherwise, all dispute arising related to this contract will be settled in the Court of Law at Agartala, Tripura and verdict of the Court of Law shall be binding to both the parties.
- 39) Tender shall be opened on 22 February, 2017 at 11.00 AM in the office of the Joint Director, ICAR Research Complex for NEH Region, Tripura Centre, Lembucherra -799210. Interested bidders or their authorized representative(s) may attend the opening. No enquiry or unlawful pursuance about the quotations will be entertained.
- 40) If the above mentioned closing and opening day of the tender happens to be non-working day, the tender will be received and opened on the following working day at the same time.
- 41) Other terms and conditions, as may be decided by the Competent Authority will be intimated from time to time, depending upon the conditions and requirement of the supply. The intimation in this regard shall be provided well in advance and the bidder/ suppliers shall be bound by the said terms & conditions.
- 42) For any query/clarification, the undersigned may be approached at (Email) icartripura.jd@gmail.com on any working day (10.00 am to 4.00 pm).
- 43) The selected tenderers must complete the supply/installation/demonstration within 60 (Thirty) days from the date of supply order due to time factor or the said orders shall be treated as cancelled and no further correspondence will be entertained.
- 44) Please read the instructions carefully and enclosed all the relevant documents along with bid so that quotation is accepted by the Institute.

Sd/-
Joint Director
Tripura Centre

Detail Specification/ number / unit etc of items to be supplied and installed

S. No.	PRODUCT TECHNICAL DETAILS	UNITS																																	
1	<p>AEROPONIC GREENHOUSE FACILITY</p> <table border="1"> <thead> <tr> <th align="center">Main Particulars of Area</th> <th align="center">Dimension</th> <th align="center">Units</th> </tr> </thead> <tbody> <tr> <td>Total Area of Greenhouse</td> <td align="center">200 m²</td> <td align="center">01 No.</td> </tr> <tr> <td>Size</td> <td align="center">25m. × 8m. (L × W)</td> <td></td> </tr> <tr> <td>Bay width</td> <td align="center">8 m.</td> <td></td> </tr> <tr> <td>Length</td> <td align="center">25 m</td> <td></td> </tr> <tr> <td>Width</td> <td align="center">8 m</td> <td></td> </tr> <tr> <td>Side Height (minimum)</td> <td align="center">2.74 m</td> <td></td> </tr> <tr> <td>Centre Height (minimum)</td> <td align="center">3.65 m</td> <td></td> </tr> <tr> <td>Design/Shape</td> <td align="center">Arc</td> <td></td> </tr> <tr> <td>Double Door Room</td> <td align="center">2.1m x 2.1m x 2.43m (L</td> <td align="center">1 No.</td> </tr> <tr> <td>Doors</td> <td align="center">1.9m x 0.91m (tall & wide)</td> <td align="center">2 Nos.</td> </tr> </tbody> </table>	Main Particulars of Area	Dimension	Units	Total Area of Greenhouse	200 m ²	01 No.	Size	25m. × 8m. (L × W)		Bay width	8 m.		Length	25 m		Width	8 m		Side Height (minimum)	2.74 m		Centre Height (minimum)	3.65 m		Design/Shape	Arc		Double Door Room	2.1m x 2.1m x 2.43m (L	1 No.	Doors	1.9m x 0.91m (tall & wide)	2 Nos.	02 Complete Sets
Main Particulars of Area	Dimension	Units																																	
Total Area of Greenhouse	200 m ²	01 No.																																	
Size	25m. × 8m. (L × W)																																		
Bay width	8 m.																																		
Length	25 m																																		
Width	8 m																																		
Side Height (minimum)	2.74 m																																		
Centre Height (minimum)	3.65 m																																		
Design/Shape	Arc																																		
Double Door Room	2.1m x 2.1m x 2.43m (L	1 No.																																	
Doors	1.9m x 0.91m (tall & wide)	2 Nos.																																	
Sl. No.	PRODUCT TECHNICAL DETAILS	UNITS																																	
1.	<p>STRUCTURE:</p> <p>Frame: All galvanized steel is used and design as per IS875 standards to take withstand of wind speed 120 km. /hour.</p> <p>End wall and side wall framing Aluminum corner trims, aluminum ridge bar and Galvanized gutter trim Brackets & fasteners as required to assemble frame.</p> <p>1) Pipe:Pipes sections to be used for different Structural Member will be as below or equivalent :</p> <p>a) Columns: 80 mm × 50 mm in 2mm thick hot dip galvanized pipe.</p> <p>b) Trusses: Bottom cord 32mm x 2mm; Truss Members 48mm × 48mm 2mm;Bracing 25 mm, pipe; structural member will be fitted with zinc plated nuts & bolts without welding.</p> <p>c) Purlins: 32 mm × 2mm thick.</p> <p>2) All G.I pipes are galvanized.</p> <p>3) Nuts and other metallic parts: This includes all the elements required for joining and water tighten components (such as fittings, clamps, screws and nuts plated against corrosion).</p>	1 Complete Set																																	
2.	<p>DOUBLE DOOR ROOM:</p> <p>A) Double Door Room- of size 2.1m x 2.1m x 2.43m (L ×W×H) covered with 6mm thick polycarbonate sheet.</p> <p>B) Sliding Door:Size: 1.9m × 0.91m long & wide, normally lockable made with clear 6mm polycarbonate glazing, top & bottom tracks, jambs, flashings & installation hardware - 2 nos.</p> <p>C) Air Curtain with auto on/off when door opening /closing at main entry.</p>	1 No. 2 Nos. 1 No.																																	

	<p>3. CLADDING:</p> <p>Roof, front wall, end wall, & sidewalls of the Greenhouse-sets and double room for rigid covering. 6mm thick clear multiwall polycarbonate sheet, Aluminum Profile, EPDM gasket, Silicon sealant, and accessories. Roof and Side wall covers by 6mm, UV stabilized clear polycarbonate sheet (make GE Sabic/Bayer) details are giving below:</p> <table border="0" style="width: 100%;"> <tr> <td style="padding-left: 20px;">Sheet thickness</td> <td style="padding-left: 100px;">6mm</td> </tr> <tr> <td style="padding-left: 20px;">Structure</td> <td style="padding-left: 100px;">2 TS</td> </tr> <tr> <td style="padding-left: 20px;">Approx. Weight g/m²</td> <td style="padding-left: 100px;">1300</td> </tr> <tr> <td style="padding-left: 20px;">Light Transmission</td> <td style="padding-left: 100px;">81%</td> </tr> <tr> <td style="padding-left: 20px;">K Valve</td> <td style="padding-left: 100px;">3</td> </tr> </table> <p><u>Detail of Thermo clear sheet</u> Impact resistant, energy saving, multiwall polycarbonate sheet. It features a propriety surface treatment which provide almost total resistant against degradation caused by UV radiation in sunlight. The Thermo clear sheet should carry a Ten year limited warranty against discolorations, loss of light transmission, and / or loss of strength due to weathering.</p> <p>Impact Strength: Sheet has outstanding impact performance over wide temperature range -40°C + 120°C and also after prolonged outdoor exposure.</p> <p>Hail simulation: As a roof and side glazing material polycarbonate sheet is subjected to the extremes of weathers storms, hail stones, wind, and snow fall and ice formation. Under these conditions the product should be unbreakable and is able to accommodate the subsequent temperature changes to conditions without breaking or buckling.</p> <p>Light Transmission: Visible light region 380-780nm 82% Near Infra-red region 780-1400nm 82-20% Middle Infra vix region 1400-3000 62-0% Polycarbonate sheet is treated with exclusively antifungal treatment to enhance the life of sheet.</p>	Sheet thickness	6mm	Structure	2 TS	Approx. Weight g/m ²	1300	Light Transmission	81%	K Valve	3	1 Complete Set	
Sheet thickness	6mm												
Structure	2 TS												
Approx. Weight g/m ²	1300												
Light Transmission	81%												
K Valve	3												
	<p>4. SHADING SYSTEM:</p> <p>A) External shading: 75% shading net (agro shade net) with rolling arrangement connecting pipe etc. can be rolled when not required.</p> <p>B) Internal shading: Reflective, thermal-aluminium-screen silver with a manually operated expanding & retracting mechanism inside the green house</p>	1 Complete Set											
	<p>5. COOLING SYSTEM:</p> <p>A) 1.5mH × 8m.W × 100mm thick evaporative cooling pad complete with:</p> <ul style="list-style-type: none"> - All necessary framing material of Aluminum required supporting distribution & returning piping. - Gutters, down spout end caps & drip pan, plumbing kit, pump 220 volt - 1 phase 50 cycles, Drilled PVC piping cap, pad retainer, all suspension hardware. - Metal flashings as required to seal pad to vent opening, 4" thick evaporative cooling pad material. - Pad Area: 8m. W × 1.5m H × 100mm thick(w × h × Thickness) <p><u>Construction Material :</u></p>	1 Complete Set											

	<p>Aluminum Profiles: Tray Sides, Top Etc. Plastic Profiles: Water Distribution tray. Cooling Media: 100mm thick celdek 7090/500 At velocities of 1 to 3 M/s to give efficiency from 60 to 95%. Filtration: 25 to 55mm viscous filter for 30 m efficiency. Miscellaneous: Fasteners, Galvanized, Rivet- Aluminum. Water storage Tank: PVC Tank 500 liters. Pump: 1 HP Mono block (reputed brand) B)Slow Speed Axial Flow Fan: 36" single speed belt driven exhaust fan 1 hp, 220V, 50 cycles, 1 phase) 14,000 CFM each. Cooling system detail: By this system temperature lowers by 10°C±2°C from outside when outside maximum humidity 62% of low and temperature 35°C or above whole cooling system based on CT 5000 Technology.</p>	2 Nos.	
6.	<p>LIGHT: A) Photosynthetically Active Radiation Lamp, specific action spectra lamps for photosynthesis with electronic gear for research. B) LED' one no will be fitted inside the buffer room for visibility during dark time.</p>	12 Nos. 1 No.	
7.	<p>HEATING SYSTEM: Biotech Heat Convectore 2.5 KW. Complete uniform heat circulation system so that the heat can be blown in the complete area. Special heat convectore system to maintain required temperature.</p>	1 Complete Set	
8.	<p>AEROPONIC SYSTEM Growing tunnels: 10.2m x 0.46m x 1.4m(LxWxH) <u>Description</u> A. Tunnels made of Galvanized RHS pipe (38 mm x 38 mm) B. It is designed to withstand 20 Kg weight approx/sq. m. C. It is covered with 200 micron Black & White UV Stabilized poly sheet. D. Width of Sheet =As required E. Fogging system for nutrients& fresh water spray heavy duty motor with screen filter, fogging nozzles, pipes, polymer water tank. F. CC Coving under growing tunnels for collect/drain water.</p>	06 Nos benches	
9.	<p>FERTIGATION UNIT: Complete Automated Fertigation unit / system which can run without electricity, can be installed directly in the water supply line The water should activate the system, which takes up the required percentage of concentrate directly as set by the user from the container and injects it into the water. <ul style="list-style-type: none"> • Inside the system, the concentrate is mixed with the water, and the water pressure forces the solution downstream. • The dose of concentrate will be directly proportional to the volume of water entering the system, regardless of variations in flow or pressure, which may occur in the main line. • The system should be very easy to operate and very efficient in performance. • Adjustable injection rate of nutrients </p>	1 Complete Set	

	<ul style="list-style-type: none"> • Integrated by-pass system of turning product injection on and off. • Concentrated ingestion of nutrients possible in the system • Nutrient Dosages, flow of water and other options available, additional support for fixed or mobile installations should be available <p>Various options allow adapting the technology to adapt to specific needs.</p>		
10.	<p>CONTROL PANEL FOR AUTOMATION:</p> <p>Monitor Panel including Light, Temperature & Humidity Control System. Details of Microprocessor based Monitor Panel should have the following:</p> <p>a) Technical feature of Photoperiodic Timer</p> <ul style="list-style-type: none"> - Cycle: 24 hrs minimum ON/OFF period 30 minutes. - Accuracy: ± 10 sec/day - Input: 200-240 VAC, phase – single. - Ambient: 5°C to 45°C, RH up to 85% normally. <p>b) Technical feature of Temperature Control System</p> <ul style="list-style-type: none"> - Temp. Range: 0.1 to 59.9°C. - Accuracy: $\pm 1^\circ\text{C}$. - Hysteresis: 0.4°C with sensor probe Pt-100 Sensor cord 5 meters. - Input: 200-240VAC (110 VAC available on demand), phase-single. - Ambient: 5°C to 45°C, RH up to 85% normally. <p>c) Relative Humidity Control System: It should maintain RH in the range of $\pm 4\%$.</p> <ul style="list-style-type: none"> - Range: 30% to 90%. - Real RH: $\pm 2\%$. ± 1 digit (at 45%). - Input: 220VAC (110VAC available on demand), phase- single. - Ambient: 5° to 45°C, RH up to 95%. <p>d) Timer for humidity– 1 no.</p>	1 Complete Set	
11.	<p>CIVIL WORK:</p> <p>A) Foundation wall for all sides of Green House along with the double door room.</p> <p>WIDE Based min 3 feet below earth’s surface, 3 feet above earth’s surface, as kick-board 9” wide. Frame base block height 2’.</p> <p>B) Floor: tiled with anti slippery hard material along with the entry room.</p> <p>C) Plinth Protection: 2 feet wide all around the greenhouse along with buffer room.</p>	1 Complete job in all respects	
12.	<p>ELECTRICAL WIRING:</p> <p>All wires will be of fire proof copper and desired load and switches imported make, extra switches also provided as standby. Each feature has own electric line with MCB and will be underground in PVC pipe complete set with A grade work. Separate electrical work, panel board and main switches as well.</p>	1 Complete Set	

2	<p>SHADE NET HOUSE WITH MULTIPLE WALL CHAMBERS FOR DIFFERENT TYPES OF RESEARCH</p> <table border="1"> <thead> <tr> <th data-bbox="215 275 285 359">Sl. No.</th> <th data-bbox="285 275 1097 359">PRODUCT TECHNICAL SPECIFICATION</th> <th data-bbox="1097 275 1289 359">Units</th> </tr> </thead> <tbody> <tr> <td data-bbox="215 359 285 1087">1.</td> <td data-bbox="285 359 1097 1087"> <p>SHADE NET HOUSE Size: 41.66m × 24m × 2.43m : 3.35m =1000sq.m.(L× W× SH : CH) Shape: Arc Structure: made by latest ZTP-Technology G.I. pipe 32mm & 25mm±1mm Squire GI Pipe. Door: Size 6'-3" × 3' (H×W) one no. with lock and pinion system. Roof screen & Side covers: 50% UV Stabilized agro shading net, colour- green/black as per your requirement. Electrical device: High quality ISI approved fittings with FR grade copper cable and rigid standard of safety with proper M.C.B. Micro fogging system (Misting): with micro filter return gutter control valve assembly pressure gauge. Humidification through micro misting system, Polymer water storage tank- 500 ltr. Capacity with 1hp mono block pump set. Timer for humidity Civil Work: Structure Raised on cc (concrete cement) blocks of 2 feet x 2 feet x 3 feet Underground Growth Boxes/Chamber Concrete leak proof structures for filling with different types of soils / growing media- Size : 1.5 m deep, 2m wide, length should be of the total length of the house with concrete partitioning after each 8m length. Partitioning along the length shall have provision for use as walking path with cemented work.</p> </td> <td data-bbox="1097 359 1289 1087"> <p>01 No.</p> <p>1 Complete set</p> <p>1 No.</p> <p>1 Complete set</p> <p>1 Complete set</p> <p>1 Complete set</p> <p>01 No.</p> <p>1 set Complete job in all respect</p> </td> </tr> </tbody> </table>	Sl. No.	PRODUCT TECHNICAL SPECIFICATION	Units	1.	<p>SHADE NET HOUSE Size: 41.66m × 24m × 2.43m : 3.35m =1000sq.m.(L× W× SH : CH) Shape: Arc Structure: made by latest ZTP-Technology G.I. pipe 32mm & 25mm±1mm Squire GI Pipe. Door: Size 6'-3" × 3' (H×W) one no. with lock and pinion system. Roof screen & Side covers: 50% UV Stabilized agro shading net, colour- green/black as per your requirement. Electrical device: High quality ISI approved fittings with FR grade copper cable and rigid standard of safety with proper M.C.B. Micro fogging system (Misting): with micro filter return gutter control valve assembly pressure gauge. Humidification through micro misting system, Polymer water storage tank- 500 ltr. Capacity with 1hp mono block pump set. Timer for humidity Civil Work: Structure Raised on cc (concrete cement) blocks of 2 feet x 2 feet x 3 feet Underground Growth Boxes/Chamber Concrete leak proof structures for filling with different types of soils / growing media- Size : 1.5 m deep, 2m wide, length should be of the total length of the house with concrete partitioning after each 8m length. Partitioning along the length shall have provision for use as walking path with cemented work.</p>	<p>01 No.</p> <p>1 Complete set</p> <p>1 No.</p> <p>1 Complete set</p> <p>1 Complete set</p> <p>1 Complete set</p> <p>01 No.</p> <p>1 set Complete job in all respect</p>	02 Complete Set
Sl. No.	PRODUCT TECHNICAL SPECIFICATION	Units						
1.	<p>SHADE NET HOUSE Size: 41.66m × 24m × 2.43m : 3.35m =1000sq.m.(L× W× SH : CH) Shape: Arc Structure: made by latest ZTP-Technology G.I. pipe 32mm & 25mm±1mm Squire GI Pipe. Door: Size 6'-3" × 3' (H×W) one no. with lock and pinion system. Roof screen & Side covers: 50% UV Stabilized agro shading net, colour- green/black as per your requirement. Electrical device: High quality ISI approved fittings with FR grade copper cable and rigid standard of safety with proper M.C.B. Micro fogging system (Misting): with micro filter return gutter control valve assembly pressure gauge. Humidification through micro misting system, Polymer water storage tank- 500 ltr. Capacity with 1hp mono block pump set. Timer for humidity Civil Work: Structure Raised on cc (concrete cement) blocks of 2 feet x 2 feet x 3 feet Underground Growth Boxes/Chamber Concrete leak proof structures for filling with different types of soils / growing media- Size : 1.5 m deep, 2m wide, length should be of the total length of the house with concrete partitioning after each 8m length. Partitioning along the length shall have provision for use as walking path with cemented work.</p>	<p>01 No.</p> <p>1 Complete set</p> <p>1 No.</p> <p>1 Complete set</p> <p>1 Complete set</p> <p>1 Complete set</p> <p>01 No.</p> <p>1 set Complete job in all respect</p>						
3	<p>FERTIGATION SYSTEM (complete with deep tube well, storage tank, iron removal if required, piping etc complete)</p> <p><u>Fertigation Automation System, Nutrition dosing unit:</u></p> <p>1 x Nutrition dosing unit with the following technical specifications:</p> <ul style="list-style-type: none"> - mixing tank system : content of 110 l net with overflow connection. - level protection : minimum level detection switch in mixing tank. - number of dosing channels: 2 for fertiliser on EC-value and 1 for acid on pH-value. - dosing valve and venturi: venturi with electrical quick action valve 124-DN5-24VCA-5W with venturi nozzle Ø2.7mm. - dosing capacity per channel: 30-300 litres/hour of fertiliser or acid solution at 3.0 Bar. - pump capacity net :9.0 m3/hr net at 4.0 Bar.: 11.0 m3/hr net at 3.5 Bar - pump type: mains voltage pump : 3-phase, 380-415VAC-50Hz - Power consumption pump: 2.8 kW. - EC measurement : 2 EC-sensors with thermistor element 3kΩ/25°C for temperature compensation of the EC-value. - pH measurement : 2 pH electrodes max. 10 bar, high pressure with coaxial cable 3 meters and BNC-connectors, holders for bayonet mounting. 	04 Complete Set						

	<ul style="list-style-type: none"> - dimensions inlet and outlet: water pressure operated inlet valve 2” with float bellow and PVC inlet Ø63 mm and outlet Ø50 mm. - frame construction: corrosion free materials. - electrical cabinet : manual switch, motor soft starter and thermal protection for pump. - integrated I/O-network materials: <p>* 1 x power supply unit 9510 with ring core transformer to supply two voltages: 24VAC-205VA for control outputs, fans, relays, and 24VDC-75W for electronic circuits and modules For I/O-network functions will be built in:</p> <p>* 1 x module EC interface for connection of two EC sensors</p> <p>* 1 x module pH interface with two BNC connectors, suited for connection of two pH sensors</p> <p><u>Configuration:</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">Water system</td> <td style="text-align: right;">1</td> </tr> <tr> <td>Litre counter measurement</td> <td style="text-align: right;">1</td> </tr> <tr> <td>EC/pH measurement and control</td> <td style="text-align: right;">1</td> </tr> <tr> <td>Fertiliser stock solution tanks</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Dosing channel control</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Water treatment recipe</td> <td style="text-align: right;">2</td> </tr> <tr> <td>Control of irrigation valve</td> <td style="text-align: right;">2</td> </tr> </table>	Water system	1	Litre counter measurement	1	EC/pH measurement and control	1	Fertiliser stock solution tanks	3	Dosing channel control	3	Water treatment recipe	2	Control of irrigation valve	2	
Water system	1															
Litre counter measurement	1															
EC/pH measurement and control	1															
Fertiliser stock solution tanks	3															
Dosing channel control	3															
Water treatment recipe	2															
Control of irrigation valve	2															
<p>4.</p>	<p>GENERATOR FOR POWER BACKUP</p> <p>with Stand and Roof Covering</p> <p>The DG set comprises of reputed brand developing BHP at 1500 rpm complying with the requirements of BS5514/ IS 10002, directly coupled to a Green AC generator capable of developing following KW at 415 V, 50 Hz, 0.8 pf (lag) generally meeting the requirements of BS5000. A power control panel to regulate the AC power is also provided. The DG set will be complete with the following:</p> <p>Cooling system-Air cooled</p> <p>KVA –30</p> <p>BHP- 56</p> <p>KW-24</p> <p>PH-III</p>	<p>04 Nos.</p>														
<p>5.</p>	<p>Water storage tank</p> <p>Light weighted and durable, Hygienic, Quality tested and approved by leading laboratories industries and institutes, maintenance free, Rust proof, ISI mark.</p> <p>Capacity- 2000 litre,</p> <p>Colour-Black .</p>	<p>04 Nos.</p>														
<p>6</p>	<p>Skilled Operator</p> <p>Skilled manpower for smooth operation of greenhouses, nethouses, fertigation units, generators etc for initial three years.</p>	<p>1 No.</p>														

Financial Bid

Schedule of Work

S. No.	Name of Item (s)	Specification (s) of Item	Quantity/ Unit	Rates quoted per unit (INR)	Total quoted rates (INR)
1.					
2.					
3.					
4.					
5.					
6.					
7.	Other Cost				
8.	Discount if any				
9.	Total				

(Signature of Bidder with seal)

(to be submitted on official letter head)

UNDERTAKING

I _____(Name of the Tenderer)_____

on behalf of _____(Name of the

Firm/Manufacturer/Dealer/Agent)_____ am fully and

unconditionally agree to abide by all the terms & conditions as mentioned in the Tender Notice

No. _____ for the work “ **Design, construction, testing &**

commissioning of green house,net house, fertigation unit, generator, water storage tank at ICAR

Research Complex for NEH Region, Tripura Centre, Lembucherra - 799210

Date:

Signature:

Place:

Name:

Official Seal:

Company has to give an undertaking on a Non-judicial Stamp Paper worth Rs.100/- , duly notarized.

I/ We (Company) hereby give an undertaking that:

(a) I/ We have not been blacklisted during last three years by any Govt. Department/ Govt. Autonomous Body/ Institution, etc.;

(b) I/ We have not submitted any fake/ forged certificates/documents and later, if any such 'Certificates/ Documents' found to be fake/forged or contains wilful wrong/ incorrect information; suitable legal action may be initiated against me/ us/ agency besides 'forfeiture of Earnest Money Deposit' and 'Blacklisting' etc.

(c) I/ We shall not withdraw my/ our bid after opening of Technical Bid and if done so, the ICAR, Tripura Centre shall be authorized to forfeit the EMD submitted by me/us.

(Signature of Company with seal)

Name:

Address:

Date:

Declaration by the Company

This is to certify that I/We before signing this offer have read and fully understood all the terms and conditions contained herein and undertake myself/ourselves to abide by them.

Encls:

- a) DD/Pay Order No.....
- b) Technical Bid along with Documents/proofs sought under Pre-qualification criteria
- c) Check list along with compliance against each item (with page no. , where it is kept).
- d) Financial Bid.

(Signature of Company with seal)

Name:

Address:

Date:

NOTE: Submission of all the documents mentioned above along with declaration, is mandatory. Non submission of any of the documents above will render the bid to be rejected.