



भारतीय चावल अनुसंधान संस्थान  
 राजेंद्रनगर, हैदराबाद - 500 030  
**ICAR-Indian Institute of Rice Research**  
 (formerly Directorate of Rice Research)  
 (Indian Council of Agricultural Research)



Rajendranagar, Hyderabad - 500 030; www.icar-iirr.org ; email: director.iirr@icar.gov.in

Director: 040-24591216/218; Chief Admin Officer: 040-24591321; Fax:040-24591217; email: hoa.iirr@icar.gov.in

F.No. I-14/EF/Speed Breeding Facility/GeM/2025

Dated: 14-01-2026

### **TENDER NOTICE**

Online tender under two bid system (Commercial /Technical bids) is invited by the Director, ICAR-IIRR from the reputed Manufacturers /Dealers/ Foreign Research Institute/CPWD/Central Govt./State Govt./PSUs/Autonomous bodies/etc. in India in the line for the Establishment of item namely **“Speed Breeding (Rapid Generation Advancement) Facility”** at ICAR -IIRR, Hyderabad.

The details of the tender is as under:

1. Name of the equipment/item: **“Speed Breeding (Rapid generation advancement) Facility” at IIRR, Hyderabad.** (As per detailed specification attached at **Annexure - A**)
2. Establishing Speed Breeding (Rapid generation advancement) facility for genome editing research at ICAR - IIRR, Hyderabad.
3. Pre-bid conference is scheduled on 19/01/2026 at 11.00 AM in Conference Room, IIRR, Hyderabad-500030.
4. Submission of tender documents: As per GeM tender document.
5. Last date of Tender - As per GeM tender document.
6. Opening of the technical bid of tender – As per GeM tender document.
7. Earnest Money Deposit: Rs. 12,00,000/- (Rupees twelve lakhs only). The bid security may be accepted in the form of Account Payee Demand Draft, Fixed deposit receipt, Banker’s Cheque, or Bank Guarantee from any of the commercial banks in favor of the Director, ICAR-Indian Institute of Rice Research, Hyderabad. (To be enclosed with Technical bid) before the closing date of the tender.
8. Firms registered with the Central Purchase Organization/NSIC/MSME only are exempted from submitting EMD if they have experience in the relevant field of Speed Breeding (proof of registration must be attached, without which it will not be considered). Except for Micro and Small Enterprises (MSEs) as defined in the MSE Procurement policy issued by the Department of Micro, Small and Medium Enterprises (MSME) or are registered with the Central Purchase Organization or the concerned Ministry or Department of Start-ups as recognized by Department of Industrial Policy and Promotion (DIPP).
9. Custom Duty Exemption Certificate (CDEC) will be issued only when the bid is quoted in foreign currency in case of foreign made items only and meant for ICAR- IIRR.

**SCHEDULE OF TENDER**  
**(OPEN TENDER ENQUIRY)**  
**ICAR - IIRR, Hyderabad – 500030**

For and on behalf of the Director, ICAR - IIRR sealed tenders are invited in Two Bid System (Technical and Commercial) on the prescribed forms in Chapters IV and V of the tender document for the purchase of the following stores as detailed in this schedule to tender. However, it may be noted that it will be at the discretion of the IIRR authority whether to purchase the equipment mentioned below.

Description of stores required	
Supply and Installation of Speed Breeding facilities, details as per <b>Annexure – A.</b>	As given in the specification.

1. This Tender Enquiry has the following Chapters and Annexures.

**Schedule of Tender**

Chapter I :	Instructions to Bidders
Chapter II :	Conditions of Tender /Contract
Chapter III:	Schedule of Requirement
Chapter IV:	Proforma for Technical Bid
Chapter V:	Proforma for financial bid
Annexure -I	Performance Statement for last 3 years
Annexure-II	Certificate for compliance of instructions
Annexure-III	Checklist for tenderers
Schedule A	Bill of Quantities for non scheduled items
Schedule B	Bill of Quantities for scheduled items

2. Tenderers are requested to study the tender documents completely and ensure all documents and Annexures are correctly filled in, signed, and stamped where applicable and then submit your offer.
3. Tenderers are advised to carefully go through all the conditions and documents attached to this tender inquiry before filling in the tender. All tender documents attached to the tender are sacrosanct for considering any offer as a complete offer. All tender documents must be duly completed, signed by an authorized signatory on each page and returned with the offer (from Page 01 to 16).
4. This tender is not transferable.

**Signature of Tenderer with office seal**

**CHAPTER-I**  
**Instructions to Bidders**  
**(THIS TENDER SET IS NOT TRANSFERABLE)**

1. Name of Stores : Online procurement through GeM – **Establishment of Speed Breeding (Rapid generation advancement facility at ICAR-IIRR, Hyderabad.**  
Tender Cost : As per GeM norms.
2. Last Date for submission of Tender document : As per GeM tender document.  
Opening of Technical Bid : As per GeM tender document.
3. Place of Submission of Tender: document : GeM Portal
  - i. The ICAR-IIRR will not be responsible for tenders submitted at any place other than GeM. Tenders not received within the due date will not be considered under any circumstances or for any reason.
  - ii. Tenderers are requested to study the tender documents completely and ensure all documents, forms and annexure to the tender are completely and correctly filled in, signed and stamped where applicable, all necessary literature, brochures and pamphlets have been attached and then to submit their offer. An incomplete tender offer shall be rejected straightway without any reference to the tenderers. Leaving any column not filled in or with cuttings will lead to rejection of the tender
4. Earnest Money Deposit (EMD) and validity : Rs. 12.00 lakhs (Rupees twelve lakhs only) of the bid security may be accepted in the form of Account Payee Demand Draft, Fixed deposit receipt, Banker's Cheque or Bank Guarantee from any of the commercial banks in favour of the Director, IIRR payable at Hyderabad before the last date of submission of bid.
5. Bid Offer validity of : Six months from date of opening of the tender. In the absence indication in the tender documents submitted, of the date up to which the offer has been kept valid, it will be taken that the offer will remain open for acceptance for the period specified in the Schedule to Tender.
6. Extension of validity & Earnest money : If the validity of the tender is extended, the validity of the Earnest Money will also have to be suitably extended by the tenderer failing which their tender shall not be considered by the purchaser after the expiry of the said period.

7. Eligibility for Responding : i) Only those firms should respond who are the manufacturers Or authorized dealers/agents of the stores specified in the tender specifications.  
ii) The foreign manufacturers of the tendered stores will have to specify in the tender document details of the sales service to be provided after expiry of warranty period.
8. Delivery Required By : For Indian manufacturer - Within 180 days from the Date of issue of the award letter or as specified in the supply order.
9. Terms of Delivery : For Indian manufacturer/suppliers: For IIRR, Hyderabad.  
Inspection after Receipt of Goods: The inspection will be done by the Technical Committee in the presence of firms representative. The successful tender will have to provide at his own cost and arrange technically qualified personnel at the consignee's location for joint inspection. These personnel must be able to unpack, assemble and demonstrate the use of the equipment fully and identify each Part/Machine supplied. Any consumables that are essential will be provided by the supplier free of cost. In case of receipt of materials in damaged condition, the suppliers will have to arrange the replacement of goods free of cost. All expenses in this regard will be borne by the supplier.  
Purchaser: Director, ICAR-IIRR, Hyderabad – 500030  
All damages which may occur as a result of defective packing shall be borne by the seller.
10. Compliance Statement : The firms must submit a compliance statement cum technical bid in the format given in Chapter -IV, failing which their offer will be treated as incomplete and is liable to be rejected.
11. Earnest /Security Deposit : Rs.12,00,000/- (Rupees twelve lakhs only) to be deposited along with Technical bid in the form of Crossed Demand Draft/Pay Order/ Fixed Deposit receipt/ Bank Guarantee in the name of the Director, IIRR from any Commercial Bank payable at Hyderabad. No other form of deposit will be accepted.  
In the absence of any indication in the tender documents submitted, of the date up to which the offer has been kept valid, it will be taken that the offer will remain open for acceptance for the period specified in the Schedule to Tender.
12. Guarantee/Warranty : Comprehensive on-site warranty i.e. 36 months is required.  
Warranty Term period will start from the date of installation of the items. In case at installation stores/part of stores are found defective /damaged during or after delivery to the consignee, the suppliers will replace or repair the store under

- warranty at the consignee's location in India, free of cost or in any case it is required to be sent back to the foreign manufacturer. A bank guarantee equivalent to the cost of the equipment is required to be submitted before lifting the store. All expenses in this regard will be borne by the supplier.
13. Performance Security : The successful bidder will have to submit a Performance security of equivalent to 5 % of the Contract /Order value before the issue of award letter valid till 60 days + the period of expiry of the warranty/ Guarantee period in shape of crossed Demand Draft/Pay order/ Fixed Deposit Receipt/ Bank Guarantee from a commercial bank in favour of the Director, IIRR, Hyderabad. The performance security will remain valid till the expiry of the warranty period. This will be released after completion of the warranty period.
14. Liquidated Damages : In case the firm does not complete the supply within the agreed Security delivery period as per contract, liquidated damages will be charged @ 0.5% per week or part thereof subject to a maximum of 5% of the contract value. However, the Institute reserves the right to either further extend or cancel the contract after the expiry of the delivery date and recover the liquidated damages from the dues of the firm or by legal means.
15. Dispute settlement : The dispute arising out of this contract shall be subject to the jurisdiction of Indian laws & court at Hyderabad. The sole arbitrator is appointed by the Secretary, ICAR, New Delhi. His decision will be final and binding to both parties (Supplier and Purchaser).
16. Submission of the : The tenderers must submit the tenders in **Two Bid System**. The price bid should be submitted in the BOQ provided on GeM Portal.
17. Two Bid System :  
 i) Rates for the optional item should be submitted as per Chapter -V in a separate sealed cover along with the technical details/bid as per Chapter -IV in a separate sealed cover along with detailed specifications of the store offered supported by leaflets and brochures, if any.  
 ii) Rates of optional items can be provided by the firm, if they want to. It will be submitted in a sealed envelope. EMD must be submitted in sealed envelope.  
 iii) Both the above-mentioned covers should be sealed separately and thereafter be kept in one big cover and again sealed.  
 iv) This big cover should also be superscribed with the Tender No., Stores and date of Tender opening.

- v) Composite bid i.e. rates indicated in the technical bid openly in tender is liable to be ignored.
- vi) Only the first cover i.e. Technical Bid shall be opened on the date of tender opening.
- vii) Price bids of only those offers, that will be technically qualified will be opened on Gem Portal.
- viii) Technical comparative statement for technically qualified firms will be uploaded on the Gem portal. Any firm having any representation can submit through the GeM portal.

#### 18. Onsite Maintenance

: The successful bidder has to depute his team consisting of Maintenance Engineer (1) and Support Staff (1) at onsite for functioning /upkeep and maintenance for a period of 36 months i.e. during the warranty period. No separate charges shall be payable for the onsite maintenance team including staff and consumables/spare parts/equipment.

##### A. TECHNICAL BID

###### a) **FIRST COVER should contain the following:**

- i) Tender documents duly completed and signed but **WITHOUT INDICATING THE RATE QUOTED.**
- ii) The technical details of the models offered along with the supporting original technical literature, leaflets, brochures etc. as per Chapter-IV.
- iii) Earnest Money: Rs. 12,00,000/- (Rupees Twelve lakhs only).
- iv) Details of supplies of similar item as per Annexure-A along with copies of supply orders.
- v) Latest income tax clearance certificate /copy of PAN card/TIN.
- vi) Latest GST clearance certificate.
- vii) Technical bulletin with specifications clearly stated with model.

###### b) **SECOND COVER should contain the following:**

- i) Details of rates, taxes, duties, and discounts, if any, quoted by the bidder, should be submitted as per Chapter-V.
- ii) Any documents in support of the price bid.
- iii) For Indian manufacturers rate should be at F.O.R. destination.

NOTE: a) The word TECHNICAL BID should be written clearly and prominently on the first cover along with the tender number, name of stores and date of opening. Similarly, the word PRICE BID should be written clearly and prominently on the second envelop along with the Tender Number, Name of Store.

b) Full name and status of the person signing the tender documents must be clearly mentioned in the Tenders.

18. Evaluation of the Proposal : A two-stage procedure will normally be adopted:
- i) Stage-I:**  
**Technical Evaluation**  
 a) Evaluation of Technical Bids to assess their suitability against the laid down parameters.  
 b) Tenderers must ensure that they enclose all original technical literature and detailed documentary proofs that specifically bring out the compliance of the equipment being offered against the specifications. If necessary the Tenderers may be directed to give a presentation for evaluation by a technical committee constituted for the purpose.  
 c) In case it is not possible to verify compliance of items as per technical bid due to lack of adequate documents, in original no reference will be made to tenderer and the bid will not be considered further and treated as cancelled.
- ii) Stage-II:**  
**Financial Evaluation**  
 a) The price bids of only those firms found meeting the laid down specifications at stage I shall be opened, evaluated and considered further.  
 iii) It is in the tenderers interest to include all relevant and detailed technical data as supporting documents along with their bid.
19. Mode of Payment : A. FOR INDIGENOUS SUPPLIES:  
 Payment on running bills basis after supply, satisfactory installation, commissioning and performance of the equipment at Hyderabad and after certification by our Scientists concerned/intender and Technical Evaluation Committee, will be made as per below schedule. Payment release will be against running bills submissions as under:
1. 15% against 1<sup>st</sup> RA bill on completion of Plinth Level completion of first project milestone.
  2. 15 % against 2<sup>nd</sup> RA bill on completion of PEB steel structure and supply of cladding PUF panel and pre-coated sheets (against completion of 2nd project milestone).
  3. 20 % against 3<sup>rd</sup> RA bill on completion of covering, floor C.C. and supply of HVAC and electric items (against completion of 3rd project milestone).
  4. 30 % at the time of delivery of imported lights, instruments, control system, and benching system (against completion of 4<sup>th</sup> project milestone).
  5. 20 % after completion of work and submission of handover documents and bill certification with measurement sheet (against completion of 5<sup>th</sup> project milestone).

A legal agreement/contract shall be executed with the contractor/firm by the Institute before installation of all/any type of instrument/machine as per the instructions of the Indian Council of Agricultural Research (ICAR).

- i. Training: The Tenderers shall provide training to the user as per the terms & conditions of the contract as has been specified in Technical & Financial Bids free of cost at the time of installation/commission of equipment at the consignees/users location. As specified by the purchaser. All expenses in this regard will be borne by the supplier.
- ii. Insurance: As applicable in the case of imported goods.  
For indigenous item it will be the responsibility of the supplier to supply the material in good condition on FOR basis without involving the risk of the purchaser.



## **CHAPTER-II**

### **CONDITIONS OF TENDER/CONTRACT**

1. All Annexures, attached with the Tender should be duly filled in and supported with requisite documents for considering any offer as a complete offer.
2. Director, IIRR, Hyderabad, reserves the right to cancel/reject any or all the tenders without assigning any reason.
3. Earnest Money Deposit of Rs. 12,00,000/- (Rupees twelve lakhs only) must be deposited in the form of crossed Demand Draft/Pay Order / fixed deposit receipt/ Bank Guarantee in favour of the Director, IIRR from any Commercial Bank payable at Hyderabad. No other form of deposit will be accepted. Technical bid without supported with earnest money, therefore will be rejected.
4. There will be no exemption for paying earnest money. However, Firms registered with the Central Purchase Organization/NSIC only are exempt from submitting EMD (proof of registration must be attached therewith without which it will not be considered).
  - a) No interest shall be payable by the purchaser on the EM deposited by the tenderer.
  - b) The EM deposited is liable to be forfeited if the tenderer withdraws or amends impairs or derogates from the tender in any respect within the period of validity of his tender.
  - c) If the successful tenderer fails to furnish the performance security as required in the contract within the stipulated period, the Earnest Money shall be liable to be forfeited by the purchaser.
  - d) EMD of the unsuccessful tenders shall be returned after finalization of the tender.

#### **5. GUARANTEE/WARRANTY**

- I. Except otherwise provided in the invitation to tender the contractor hereby declares that the goods/stores/articles/equipment sold/supplies to the purchaser/consignee under this contract shall be of the best quality and workmanship and new in all respects and shall be strictly in accordance with the specification and particulars mentioned/contained in the contract. The contractor hereby guarantees that the said goods/stores/articles would continue to confirm to the description and quality aforesaid for a period of 36 months from the date of receipt of goods/articles/equipment in good condition at site by the consignees in case of supply contract and 36 months from the date of installation and satisfactory taking over of the goods/stores/articles/equipment at site by consignee where installation and commission is involved and notwithstanding the fact that the purchase /inspection authority has inspected and/or approved the said goods/stores/articles equipment or such if during the 36 months the said goods/stores/articles/equipment be discovered not to confirm to the description and quality aforesaid or not giving satisfactory performance or have deteriorated and the decision of the purchase /consignee in that behalf shall be final and binding on the contractor/seller and the purchaser shall be entitled to call upon the contractor/seller to rectify the goods/stores/articles/equipment or such specified period as may be allowed by the purchaser in his discretion on application made thereof by the contractor/seller, and in such an event, the above period shall apply to the goods/stores/articles/equipment rectified from the date of rectification mentioned in the warranty thereof, otherwise the contractor/seller shall pay the purchaser such compensation as may arise by reason of the breach of warranty therein contained. Notwithstanding anywhere else mentioned to the contrary in this document, 9 of

16 of the bids would be evaluated on the price of the equipment and accessories, charges including AMC/maintenance for the evaluation of the financial/commercial bids.

- II. Guarantee that they will supply the spare parts, if and when required on an agreed basis for an agreed price. The agreed basis could be and include but without limitation an agreed discount on the catalogue price or an agreed percentage of profit on landed cost.
- III. Warranty to the effect that before going out of production for the spare parts they will give adequate advance notice to the purchaser of the equipment so that the later may undertake the balance of lifetime requirements.

#### **6. AMC of Equipment:**

- I. After the warranty/Guarantee term of the initial 3 years is over, the firm should mention the charges of AMC at least for next three years separately. It will be submitted along with second cover i.e optional item cover.
- II. The successful bidder has to depute his team consisting of Maintenance Engineer (1) and Support Staff (1) at onsite for functioning /upkeep and maintenance for a period of 36 months i.e. during the warranty period. No separate charges shall be payable for the onsite maintenance team including staff and consumables/spare parts/equipments.

**NOTE:** -In case of any discrepancy in the period of and/or AMC mentioned anywhere else in this Tender document, the stipulations as mentioned in chapter III (specification of the equipment/ item to be purchased) would prevail.

- 7. The bidder shall necessarily be a legal valid entity either in the form of a registered firm or Limited company or a Private Limited Company registered under the Indian Companies Act, 1956 or sole proprietorship or country of origin.
- 8. The Bidder should have registered with (the Department of Scientific and Industrial Research (DSIR) Govt. of India, Documentary proof should be attached.
- 9. An understanding (Self Certificate) is to be submitted that the Organization has not been blacklisted during the last 3 years by any central/state Government Department/organization/Autonomous Body/PSU etc.
- 10. Joint Venture / Collaboration for the said project is not allowed.
- 11. The Bidder should quote for all items of the tender. Any tender for part item will be rejected out rightly.
- 12. Bidders who meet the criteria given above are subject to be disqualified if they have made untrue or false representation in the forms, statements, and attachments submitted in proof of the qualification requirements or have a record of poor performance, not properly completing the contract, inordinate delays in completion or financial failure, etc.
- 13. Financial bids will be opened/considered only for the bidders who have qualified in the essential technical criteria/bid.

**14. The detailed breakup of the Financial Bid as per the Area/ measurements/itemwise as indicated at the schedules A and B may be furnished separately in an excel sheet and the same may be attached along with BoQ on GeM portal.**

**15. Penalty for use of undue influence:**

The seller should undertake that he has not given offered or promised to give directly or indirectly any gift, consideration, reward, commission, fees brokerage of inducement to any person in service of the Purchaser or otherwise in procuring, the contract or forbearing to do or for having done or for borne to do any act in relation or execution of the contract or any other contracts with the Institute for showing or for bearing to show favour or disfavor to any person in relation to the contract or any other contract in the IIRR. Any breach of the aforesaid undertaking by the seller or any one employed by him or acting his behalf whether with or without the knowledge the seller or the commission of any offers by the seller or any one employed or acting on his behalf, as defined in Chapter-IX of the IPC, 1860 or the Prevention of Corruption Act, 1947 or any other Act enacted for the Prevention of Corruption shall entitle the purchaser to cancel the contract and all or any other contract with the Institute seller and recover from the seller the amount of any loss arising from such cancellation. A decision of the purchaser or his nominee to the effect that a breach of the undertaking had been committed shall be final and binding on the seller. Giving or offering of any gift, bribe or inducement or any attempt at any such act on behalf of the seller towards any officer /employee of the purchaser or to any other person in a position to influence any officer /employees of the purchaser for showing any favour in relation to this or any other contract shall render.

**16. Laws governing the contracts:**

The contracts shall be governed by the laws of India for the time being in force. The contract shall be interpreted in accordance with these laws.

**17. Jurisdiction of Court:**

The court of Hyderabad shall have Jurisdiction to decide any dispute arising out of or in respect of the contract.

**18. Force Majeure Clause:**

The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure. For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, and floods. Epidemics, quarantine restrictions, strikes, lockout, or any act of war. Notice of the happening of any such event is given by either party to the other within 15 days from the date of occurring thereof. However either party at its discretion can terminate the contract in such cases.

**19. Termination of contracts:**

- I. Time shall be the essence of the contract. The purchaser shall have the right to terminate the contract without any notice in part or in full in any of the following cases.

- a) The delivery of the material is delayed for causes not attributed to Force Majeure after the scheduled date of delivery.
  - b) The seller is declared bankrupt or becomes insolvent.
  - c) The delivery of material is delayed due to causes of Force Majeure by more than reasonable time.
  - d) In case Performance Security is not furnished within the time period specified by the purchaser.
- II. Supply in the case of successful Tenderer should strictly confirm to the specifications of the equipment being purchased.
- III. Any change in Address /Telephone/Fax/e-mail of the tenderer should immediately be informed. The state of non-communication by the firm will make the offer liable for rejection.
- 20.** The successful bidder will have to provide the original proforma invoice from the foreign principal (duly signed in ink), in case of imported item/equipment, within 15 days of the date of receipt of purchase order, otherwise the purchase order will automatically stand cancelled without any further communication.

**21. Govt. Regulations:**

It shall also be confirmed that there are no Govt. restrictions or limitations in the country of the supplier or countries from which sub-components are being procured and/or for the export of any part of the system being supplied. Supplies/Contracts shall provide a certificate this effect.

- 22.** Late /Delayed tenders shall not be considered at all. These will be returned to the firm as it is at their expense. Post tender revision/correction shall also not be considered.

**23. Acceptance or rejection of offer:**

The Director, ICAR-IIRR reserves the right to accept or reject any tender in part or full without assigning any reason thereof. The successful bidder should submit order acceptance letter within 15 days from the date of issue.

**24. Page Numbering & Signatures:**

Every page of the tender must be numbered and signed by the authorized signatory giving his/her name and designation below the signature.

**Signature of Tenderer with office seal**

**CHAPTER-III**  
**ICAR - IIRR, Hyderabad – 500030**

**Specification of the equipment/item (in detail) to be purchased.**

1	As per Annexure “A” (as per Conceptual Layout and Specifications) and as per item wise details at Schedule A and B.	
---	---	--

**Signature of Tenderer with office seal**

**CHAPTER-IV**  
**ICAR- IIRR, Hyderabad – 500030**

**Technical Bids**  
**(To be sealed in a separate cover)**

**Technical Bid evaluation sheet for the Specification of the equipment/ item (in detail)**  
**to be purchased**

<b>Sl No</b>	<b>Essential Criteria</b>	<b>Whether complied with YES/NO</b>	<b>If yes, please Tech literature of the equipment duly printed &amp; clearly specify page No. of Bulletins which specifically confirm this</b>	<b>If no, attach deviation statement</b>	<b>Remarks (if any)</b>
1.	The Bidder should have completed at least 3 projects of establishing the fully climate-controlled speed breeding facility from the initial stage to till project completion with any Foreign Research Institute/CPWD/Central Govt./State Govt./PSUs/Autonomous bodies in India, with each costing Rs. 1 crore or above. A list of projects with purchase orders and completion certificates issued by the client should be enclosed. The details regarding site /details of the facility may also be enclosed for physical verification.				
2.	The Bidder/Applicant should have registered with valid ISO Certifications like ISO 45001:2018, ISO 9001:2015 & ISO 14001:2015.				
3.	The Bidder/Applicant should have registered with PF & ESIC Govt. of India. Documentary proof should be attached.				
4.	The Bidder must submit Purchase Orders for the establishment of the Speed Breeding Facility in Government/State Government /Autonomous Bodies in India. One order costing more than Rs.5.00 crore and two orders each costing more than Rs. 1.00 crore.				
5.	Performance Statement for the last 3 years as per Annexure-I.				
6.	The Applicant must be a legal entity, like a Private Limited/Public Limited/Government Registered Company registered under the Companies Act, Limited Liability Partnership (LLP) under the Partnership Act, Partnership				

	Firm, Societies Registration Act, etc. The agency/s must have a valid PAN card and GST Registration.				
7.	The bidder should have Annual turnover for the last three financial (2022-23, 2023-24 & 2024-25) years, ending on 31 March 2025, not less than INR 10 Crores. The copies of the Profit & Loss statement also to be provided. The bidder should not be in loss in the last 03 financial years. The Turnover certificate duly signed & stamped by Chartered Accountant should be enclosed.				
8.	The Bidder/Applicant should provide ITR (Income Tax Return) for last three financial (2022-23, 2023-24 & 2024-25) years.				

**Note:** All the bidders are requested to provide true statements in the columns. Concealing of facts will result into rejection of the tender completely. No communication will be made in this regard.

**Signature of Tenderer with office seal**

**CHAPTER-V**  
**ICAR- IIRR, Hyderabad – 500030**  
**PROFORMA FOR PRICE BID**  
**(Compulsory to be filled up with details by the bidder)**

Tender Inviting Authority:

Contract No:

Name of the Bidder/ Bidding Firm/ Company:						
Sl. No.	Item Description	Quantities / Number of Jobs	Total Amount	GST Amount in <b>INR</b> <b>Rs. P</b>	<b>Grand TOTAL AMOUNT</b> <b>With Taxes</b> <b>Rs. P</b>	Grand Total (in words)
1.	2.	3.	4.	5.	6.	8.
1.00	Supply and Installation of Speed Breeding Facility components as per Schedule “A” in conformity with specifications as shown at ‘Annexure ‘A”	As shown				
2.00	Supply and Installation of Speed Breeding Facility components as per Schedule “B” in conformity with specifications as shown at ‘Annexure ‘A”	As shown				
3.00	Plastic Pots specially designed for the facility.	500 Nos.				

I) Incidental expenditure, if any		
II) Packaging & handling charges, if any		

**Note:** Financial bid without optional items should be quoted in the BOQ in Gem portal. Further, item wise break up of the price details as per Schedule A and B should be enclosed additionally with the BOQ /Financial Document in GeM.

**Signature of Tenderer with office seal**



**PERFORMANCE STATEMENT FOR LAST 3 YEARS**

S. No.	Name of the items	Name of the office by whom order was placed	Order No. & date (Please enclose copy of supply orders)	Value of supply order	Delivered in time or not	If not please specify the reason	Attach satisfactory working report from each office (Yes/No)

**Signature of Tenderer with office seal**

**Annexure-II****CERTIFICATE TO BE SIGNED BY THE TENDERER****CERTIFICATE**

It is certified that I have read and understood and will comply with all instructions contained in the tender inquiry and its schedule. All pages of schedule to tender from page \_\_\_\_\_ to \_\_\_\_\_ have been filled properly and signed.

**Signature of tenderer:**

**Name in block letters:**

**Name of firm:**

**Full address:**

i) Telephone No. \_\_\_\_\_

ii) Mobile No. \_\_\_\_\_

iii) Fax No. \_\_\_\_\_

iv) Email id \_\_\_\_\_

v) Website \_\_\_\_\_

**Signature of Tenderer with office seal**

**Annexure-III****Checklist for Tenderers**

**Before submission of tender documents, Tenderers should check they have complied with the following requirements**

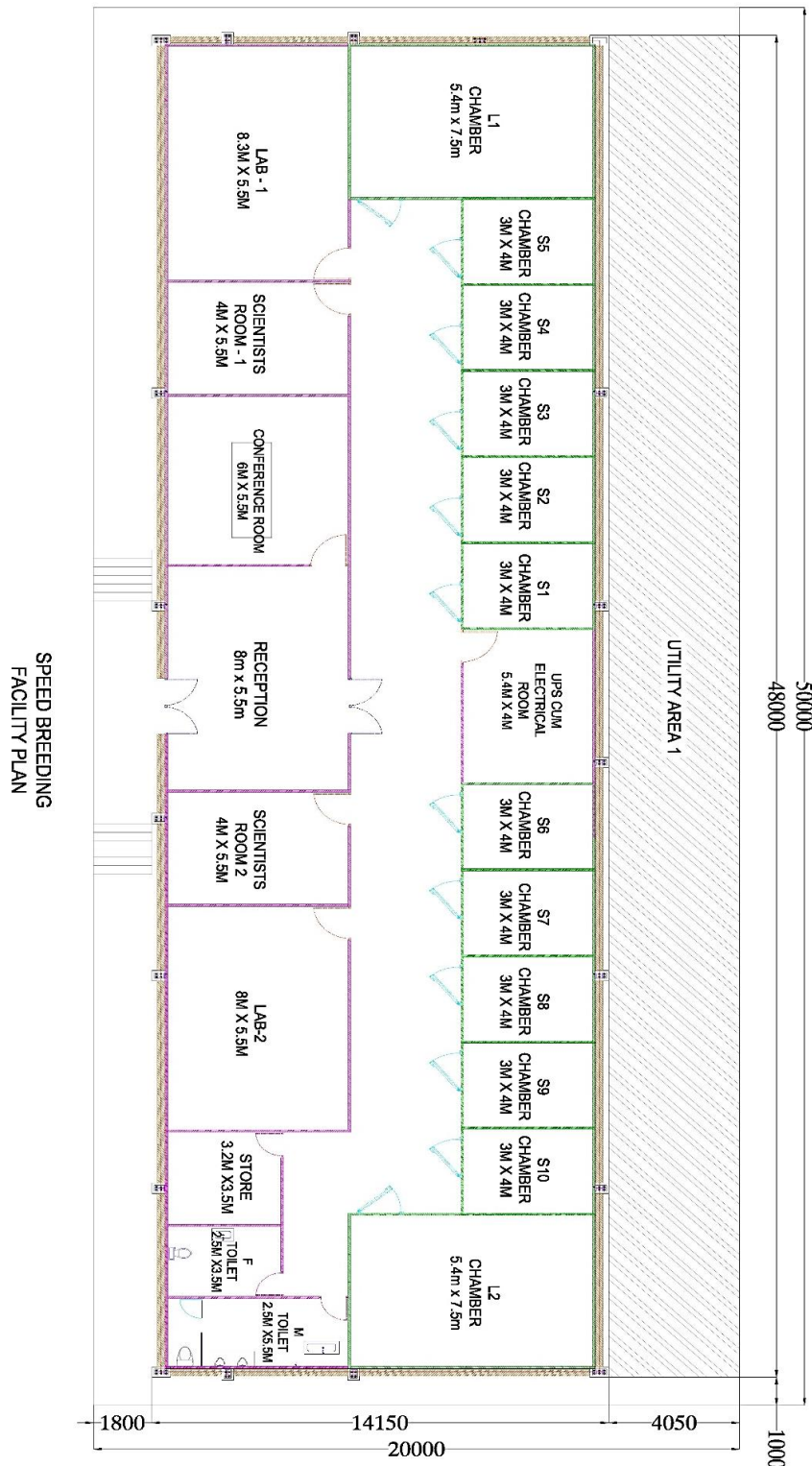
<b><i>Sl. No.</i></b>	<b>Requirements to be checked before submission of the tender</b>	<b>(indicate) <u>Yes/no</u></b>
1.	Earnest money Deposit (EMD) has been enclosed.	
2.	Complete tender documents have been enclosed, after signature & stamping on ALL pages.	
3.	Signatures of witnesses with full names and addresses have been added whenever required on tender document.	
4.	The proposal has been submitted in two bid system – Technical Bid & separate price Bid as per tender enquiry.	
5.	Offer validity as required in the tender has been accepted & clearly mentioned in the tender document.	
6.	Delivery Terms & Period as per tender have been accepted and mentioned in tender.	
7.	Payment Terms as per tender have been accepted and mentioned in tender.	
8.	The compliance statement as per chapter-IV has been enclosed along with supporting technical documents /proof for each point/parameter clearly showing it is complied with or not.	
9.	Performance statement for 3 years as required in tender, in the laid down format as per annexure- I, has been enclosed. If not, reasons be specifically given in writing.	
10.	Warranty terms as per tender accepted.	
11.	Annexure II regarding compliance of all conditions mentioned in the tender form has been enclosed.	
12.	The status of the tenderer has been clearly written in the tender – manufacturer or manufactures authorized agent. If an authorized agent, valid latest agreement authority letter/agreement for the stores quoted from the manufacturer has been enclosed.	
13.	Free Training on use of equipment after supply, as specified in tender, has been accepted in writing.	
14.	Technical and financial bids along with necessary documents have been sealed in separate envelopes and both envelopes again sealed in big envelopes with prescribed writing on envelopes.	
15.	The tenderer has clearly mentioned in writing that business dealings with their firms have not been banned by any Govt./Private agency.	
16.	If the tenderer wants to mention any specific condition, it must be mentioned on the covering/forwarding letter only which will be placed on the first page of the technical bid. Such conditions mentioned in any other document shall not be given any consideration.	

**Signature of Tenderer with Office Seal**

The purpose of this project is to establish a fully operational facility with synchronized equipment to grow crops (mainly rice) promoting Speed Breeding Research in Rice and other crops.

The Walk & Reach in Chamber should be housed inside a fencing which consists of a working chamber with all advanced facilities promoting early maturity of crop plants and an Ante-room. The drawing of proposed structure is given below.

### CONCEPTUAL LAYOUT



### **ANNEXURE-A**

#### **Technical Specifications for Establishment of Speed Breeding Facility at ICAR-IIRR, Hyderabad**

##### **MAIN BUILDING STRUCTURE WITH COVERING:**

Speed Breeding Facility should be of Specific Design Based on PEB structure which can withstand wind velocity up to 140 km/hr.

Main facility structure should be made of PEB structure type with epoxy coating on metal parts. Roof and all side outer covering by 0.5mm PPGL sheet

##### **UTILITY STRUCTURE:**

It should be made by hot dip galvanized pipe & roof covered with PPGL sheet & side wall covered with galvanized mesh with lockable provision.

##### **Area Measurements**

<b>Item Name</b>	<b>Dimension</b>	<b>Total Area</b>	<b>Units</b>
<b>Main Facility Covered Area</b>	14.15m x 48m	679.2 SQM.	01 Set
<b>Total Covered area including Utility</b>	18.15 x 48m	871.2 SQM.	01 Set
<b>Big Speed Breeding Chamber Area (L1 &amp; L2)</b>	7.5m x 5.4m	40.5 SQM.	02 Nos.
<b>Small Speed Breeding Chamber Area (S1 to S10)</b>	4m x 3m	12 SQM.	10 Nos.
<b>Entry/Reception Area</b>	5.5m x 8m	44 SQM.	01 No.
<b>Research Lab – 1 &amp; 2</b>	5.5m x 8.3m	45.65 SQM.	02 Nos.
<b>Scientists Room - 1 &amp; 2</b>	5.5m x 4m	22 SQM.	02 Nos
<b>Conference Room</b>	5.5m x 6m	33 SQM.	01 No.
<b>UPS Cum Electrical Room</b>	4m x 5.4m	21.6 SQM.	01 No.
<b>Common Corridor</b>	3.5m x 36m	110 SQM.	01 No.
<b>Utility Area</b> (around the speed breeding chambers)	4m x 48m	192 SQM.	01 No.
<b>Storeroom</b>	3.5m x 3.2m	11.2 SQM.	01 No.
<b>M-Washroom</b>	5.5m x 2.5m	13.75sq.m.	01 No.
<b>F-Washroom</b>	3.5m x 2.5m	8.75sq.m.	01 No.
<b>Structure Centre Height</b>	7.3m		
<b>Structure Side Height</b>	6.2m		
<b>Shape</b>	Hut		

## **1. CONSTRUCTION OF LARGE SIZE SPEED BREEDING CHAMBERS – L1 & L2:**

Dimensions: 7.5m x 5.4m x 4m. (L x W x H) - 02 Chambers

- 1) **Growth Area:** 40.5m<sup>2</sup>
- 2) **Height:** 4m (4000mm) inside height from floor.
- 3) **Fresh Air:** Filtered inlet 50 cfm per days.
- 4) **Exterior Finish:** Polyurethane coated Sheet
- 5) **Interior Finish:** Interior surface in SS (stainless steel) 316 sheet with smooth surface
- 6) **Cabinet Insulation:** 60mm thick polyurethane filled insulation
- 7) **Door with Glass view window Size:** 1200mm x 2100mm with inside safety release latch and cam-type self-closing hinges. Door should have positive closer device, thermal plastic gasket with magnetic core, and door stop. – 01 No. in each chamber x 2 chambers = 02 Nos.

### **A) LOCAL CONTROL SYSTEM:**

The CCM-C to control the climate conditions using a 7-inch touchscreen HMI display on the control panel. The CCM-C should be equipped with CCM-C V4.5 control software designed to match the required condition for the facility.

### **Features**

- Control system should be capable of Real time clock programming of temperature, relative humidity, lighting status & CO<sub>2</sub> (Optional).
- Industrial PLC based control system.
- 7-10-inch touch display
- Multi set-point programming.
- 15 time-based programs to form a schedule for a complete crop cycle
- Measuring parameter high & low deviation alarm
- Security: Multi-level password protection
- Auto restarts in case of power failure with in-built battery
- Alarm history of last 30 alarms
- Data recording facility of 3 months with 1-minute interval
- Data logging in graphical format & can be exported to Excel using Pen drive
- Audio/visual alarm in case of alarm trigger
- Remote access of local computer

### **VIRTUAL CHAMBER SOFTWARE:**

- To access & monitor the chamber from one location with following features
  - To work on networked Windows computer
  - To facilitate user to communicate directly with the local control system
  - Same programming facilities as local control system
  - Accessible via. Internet from anywhere
  - Online service diagnostic by service personal
  - Chamber usage tracking and reporting by user
  - Global email alerts

**B) LIGHTING SYSTEM:**

**A separate technical brochure (hard copy as well as web link for online verification) of lights to be provided for verification**

- Light Grid: system bench wise, 03 Nos. in each chamber.
- Total No. of light grid in Both Chambers – 06 Nos.
- Programming and control: Independent level programming to set up day/night programming.
- Light Grid system mechanism customized modules with gear motor, driving shaft, special cable drum with S.S. wire rope. Grid Integrated with following Adjustable Spectrum Lights
- **LED Grow Light:** The Grow light to deliver crop quality, delivering the ideal light spectrum for promoting robust plant growth.

**Features**

- Light intensity (PPF) up to 1140 $\mu$ mole/s
- PPFD: 750  $\mu$ mole/(m<sup>2</sup>-s) measured from 18 inch
- Light spectrum range: 400-750 nm
- Up to 46% Energy saving using LED
- Up to 05 tunable wavelength
- Wavelength-1: Blue (450nm)
- Wavelength -2: Red (660nm)
- Wavelength -3: White (5700K)
- Wavelength -4: Far-Red (735nm)
- Wavelength -5: White (3600K)
- Adjustable spectrum using variable light intensities
- Time based scheduling
- Individual and/or Group wise light control

Wattage	Voltage	Dimension	Weight	Thermal Management	Beam Angle	Lifetime
10.5-600W	220V, 1phase, 50Hz	199x219x425mm	7-8Kg	Active Fan Cooling	120°	>50,000h

- Total adjustable spectrum lights per Bench = 6 Nos.
- Total lights per chamber = 18 Nos.
- Total lights in both chamber= 36 Nos.

**C) TEMPERATURE CONTROL:**

- Temperature Range: 18°C to 42°C
- Temperature accuracy: +/- 0.5°C at set temperature point
- Temperature Safety Limits:
  - a) Programmable High and Low temperature limits tracking alarm, automatically following programmed set point.
  - b) Independent, high and low temperature limits for secondary safety.
  - c) Audible alarm for both safety devices and automatic chamber power off on reaching limits.
- Vertically adjustable sensing device in the growth area to sample chamber area of accurate temperature and humidity control and recording to avoid measurement error by lamp radiation.

**D) REFRIGERATION:**

- Air-cooled condenser (RAC outdoor only): capable of trouble-free working at outside temperature of 45°C
- **Evaporator:** Copper – tube construction.
- **Refrigerant:** CFC-free refrigerant.
- **Circulation:** Internal Circular of air smooth modulation using of air for smooth modulation of heating and cooling.

**E) AIR FLOW:**

- Upward airflow through uni-floor less than 15.2m/min. flow rate and having minimum impact on rate of transpiration of plant entire growth area, filtered fresh air, adjustable input and exhaust.
- Fresh air exchange approx. Filtered inlet, 50 cfm per days.

**F) HUMIDITY CONTROL:**

Ultra Sonic humidity System with fine water particles to attain humidity level up to 85%  $\pm$  5%.  
Capacity: 10Ltrs / Hrs. capacity. 02 humidifiers in each chamber, Total no of humidifier- 04 Nos.

**Range:** Up to 85% RH lights OFF and 80% Light ON,

**1) Control:** +/- 5% RH.

**2) System:** It should have a dry sensor to direct measure humidity in % RH.

PVC connection for de-ionized water supply from a single point source.

**G) CARBON DIOXIDE CONTROL SYSTEM:**

CO2 Range: 350-1200 ppm with CO2 Cylinder, manifold, pressure regulators, automatic solenoid valve, SS 304 Pipelines and fixing accessories.

**H) SSBF CUSTOMIZED BENCHES:**

Bench Size: 6m x 1.2m, Material: Extruded Anodized aluminium with food grade material customized top tray to keep pot plants.

Total benches in each chamber= 03 nos. (total 6 benches for large speed breeding chambers)

The benches should have provision for movability with minimum force. A single average man/woman should be able to move the bench without applying much power.

**2) CONSTRUCTION OF SMALL SPEED BREEDING CHAMBERS – S1 to S10****CONSTRUCTION:**

**Each Chamber Dimensions:** 4m x 3m x 4m. (L x W x H)

- 1. Growth Area:** 12 m<sup>2</sup>
- 2. Height:** 4m (4000mm) Inside height from floor.
- 3. Fresh Air:** Filtered inlet 50 cfm per day.
- 4. Exterior Finish:** Polyurethane Coated Sheet.
- 5. Interior Finish:** Interior surface in SS (stainless steel) 316 sheet, smooth surface
- 6. Cabinet Insulation:** 60mm of Polyurethane filled insulation.



- 7. Door with Glass view window:** Size 1000mm x 2100mm with inside safety release latch and cam-type self-closing hinges. Door should have positive closer device, thermal plastic gasket with magnetic core, and door stop. – 01 No. in each chamber x 10 chambers 10 Nos.
- 8. Control Panel:** Left hand side and details specification mentioned in control system.
- 9. Instrument Ports:** Two ports, 50mm diameter with light tight cap

#### **A) LOCAL CONTROL SYSTEM:**

The CCM-C to control the climate condition using a 7-inch touchscreen HMI display on the control panel. The CCM-C should be equipped with CCM-C V4.5 control software designed to match the required condition for the facility.

##### **Features**

- Control system should be capable of Real time clock programming of temperature, relative humidity, lighting status & CO<sub>2</sub> (Optional).
- Industrial PLC based control system.
- 7-10-inch touch display
- Multi set-point programming
- 15 time-based programs to form a schedule for a complete crop cycle
- Measuring parameter high & low deviation alarm.
- Security: Multi-level password protection.
- Auto restarts in case of power failure with in-built battery.
- Alarm history of last 30 alarms
- Data recording facility of 3 months with 1-minute interval.
- Data logging in graphical format & can be exported to Excel using Pen drive
- Audio/visual alarm in case of alarm trigger
- Remote access of local computer

#### **VIRTUAL CHAMBER SOFTWARE:**

- To access & monitor the chamber from one location with following features
  - To work on networked Windows computer
  - To facilitate user to communicate directly with the local control system
  - Same programming facilities as local control system
  - Accessible via. Internet from anywhere
  - Online service diagnostic by service personal
  - Chamber usage tracking and reporting by user
  - Global email alerts

**B) LIGHTING SYSTEM:**

**A separate technical brochure (hard copy as well as web link for online verification) of lights to be provided for verification**

- Light Grid system for Table size: 2.4m x 1.2m
- Light Grid – 01 Nos. in each bench wise
- Total No. of grid in all 10 Chamber – 10 Nos.
- Programming and control: Independent level programming to set up day/night programming.
- Light Grid system mechanism customized modules with gear motor, driving shaft, special cable drum with S.S. wire rope. Grid Integrated with following
- LED Light: for four chambers – S1, S2 & S6, S7  
Adjustable Spectrum Lights with 09 tuneable channels & ability to dim from 0 to 100%, Output at full intensity 1300  $\mu\text{mol/s}$ , 1.9  $\mu\text{mol/J}$  -380nm -630nm, -400nm -660nm, - 415nm -735nm, -450nm -White Horticulture, 530nm, Lifetime of Q90 >50 000h.
- LED Grow Light: (for six chamber S3, S4, S5, S8, S9 & S10) The Grow light to deliver crop quality, delivering the ideal light spectrum for promoting robust plant growth.

**Features**

- Light intensity (PPF) up to 1140 $\mu\text{mole/s}$
  - PPFD: 750  $\mu\text{mole}/(\text{m}^2\text{-s})$  measured from 18 inch
  - Light spectrum range: 400-750 nm
  - Up to 46% Energy saving using HPS
  - Up to 04 tunable wavelength
  - Wavelength-1: Blue (450nm)
  - Wavelength -2: Red (660nm)
  - Wavelength -3: White (5700K)
  - Wavelength -4: Far-Red (735nm)
  - Adjustable spectrum using variable light intensities
  - Time based scheduling
  - Individual and/or Group wise light control
- Total adjustable spectrum lights per Bench = 02 Nos.
  - Total lights per chamber = 02 Nos.
  - Total lights in all chambers= 20 Nos.

Wattage	Voltage	Dimension	Weight	Thermal Management	Beam Angle	Lifetime
10.5-600W	220V, 1phase, 50Hz	199x219x425mm	8Kg	Active Fan Cooling	120°	>50,000h

**C) TEMPERATURE CONTROL:**

- Temperature Range: 18°C to 42°C
- Temperature accuracy: +/- 0.5°C at set temperature point.
- Temperature Safety Limits:

- a) Programmable High and Low temperature limits tracking alarm, automatically following programmed set point.
- b) Independent, high and low temperature limits for secondary safety.
- c) Audible alarm for both safety devices and automatic Chamber power off on reaching limits.
- Vertically adjustable sensing device in the growth area to sample Chamber area of accurate temperature and humidity control and recording to avoid measurement error by lamp radiation.

#### **D) REFRIGERATION:**

- Air-cooled condenser (RAC out door only): capable of trouble free working at temperature 45°C
- **Evaporator:** Copper – tube construction.
- **Refrigerant:** CFC-free refrigerant.
- **Circulation:** Internal Circular of air smooth modulation using of air for smooth modulation of heating and cooling.

#### **E) AIR FLOW:**

- Upward airflow through uni-floor less than 15.2m/min. flow rate and having minimum impact on rate of transpiration of plant entire growth area, filtered fresh air, adjustable input and exhaust.
- Fresh air exchange approx. Filtered inlet, 50 cfm per days.

#### **F) HUMIDITY CONTROL:**

Ultra Sonic humidity System with fine water particles to attain humidity level up to 85%  $\pm$  5%. Capacity: 10Ltrs / Hrs. capacity. 01 humidifiers in each chamber total no all 10 chambers 10 Nos.

**Range:** Up to 85% RH lights OFF and 80% Light ON,

**1. Control:** +/- 5% RH.

**2. System:** It should have a dry sensor to direct measure humidity in % RH.

PVC connection for de-ionized water supply from a single point source.

#### **G) CARBON DIOXIDE CONTROL SYSTEM:**

CO2 Range: 350-1200 ppm with CO2 Cylinder with manifold, pressure regulators, automatic solenoid valve, SS 304 Pipelines and accessories.

#### **H) SSBF CUSTOMIZED BENCHES:**

Bench Size: 2.4m x 1.2m, Material: Extruded Anodized aluminium with food grade material customized top tray for keep pot plants.

Total bench per chamber = 01 no.

Total benches in all small chamber- 10 Nos.

The benches should have provision for movability with minimum force. A single average man/woman should be able to move the bench without applying much power.

### **3. RESEARCH LAB – 1 & 2** **CONSTRUCTION:**

**Dimensions:** 8.3m x 5.5m x 4m. (L x W x H)

**1. Working Area:** 45.65 m<sup>2</sup>

**2. Height:** 4m (4000mm) inside height

3. **Air- Conditioning System:** Split type Air conditioning system.
4. **Exterior Finish:** Polyurethane Coated Sheet
5. **Interior Finish:** Interior PPGI Sheet
6. **Cabinet Insulation:** 60mm of Puff Polyurethane filled insulation.
7. **Door:** Size: 1200mm x 2100mm with glass view window. 01 No in each Lab
8. Each lab should have a working platform made from granite stone from all slides
9. Each lab should have an installed washbasin and associated three-way taps and plumbing accessories.
10. Electric switches and sockets (15 in each lab) to be installed for plugging the instruments.
11. Each lab is to be installed with four 2 feet x 2 feet Backlit Panel (LED) – Cool White Light (6500K)
12. A Total of ten laboratory stools of branded company to be provided for both the labs.
13. The lab should have chemical storage cabinets installed on sidewalls.

#### **4. ENTRY HALL/RECEPTION AREA** **CONSTRUCTION:**

**Dimensions:** 5.5m x 8m x 4m. (L x W x H)

1. **Air-conditioning System:** Split type Air conditioning system.
2. **Exterior Finish:** Polyurethane Coated Sheet
3. **Interior Finish:** Interior PPGI Sheet
4. **Cabinet Insulation:** 60mm of Puff Polyurethane filled insulation.
5. **Main double leaf door** size: 1800mm x 2400mm. – 02 Nos.

#### **5. SCIENTIST ROOM - 1 & 2** **CONSTRUCTION:**

**Dimensions:** 5.5m x 4m x 4m. (L x W x H)

1. **Air-conditioning System:** Split type Air conditioning system.
2. **Exterior Finish:** Polyurethane Coated Sheet
3. **Interior Finish:** Interior PPGI Sheet
4. **Cabinet Insulation:** 60mm of Puff Polyurethane filled insulation.
5. **Door:** Door Size: 1170mm x 2100mm with glass view window
6. Each room should be provided with a storage cabinet (Almira) and a bookshelf
7. Each room should be provided with a ceramic sink and taps.

#### **6. CONFERENCE ROOM** **CONSTRUCTION:**

**Dimensions:** 5.5m x 6m x 4m. (L x W x H)

1. **Air-conditioning System:** Split type Air conditioning system.
2. **Exterior Finish:** Polyurethane Coated Sheet
3. **Interior Finish:** Interior PPGI Sheet
4. **Cabinet Insulation:** 60mm of Puff Polyurethane filled insulation.
5. **Door:** Door Size: 1170mm x 2100mm with glass view window

**7.STORE ROOM****CONSTRUCTION:**

**Dimensions:** 3.5m x 3.2m x 4m. (L x W x H)

- 1. Air-conditioning System:** Split type Air conditioning system.
- 2. Exterior Finish:** Polyurethane Coated Sheet
- 3. Interior Finish:** Interior PPGI Sheet
- 4. Cabinet Insulation:** 60mm of Puff Polyurethane filled insulation.
- 5. Door:** Door Size: 1170mm x 2100mm . 01 No.

**7. UPS CUM ELECTRICAL ROOM****CONSTRUCTION:**

**Dimensions:** 4m x 5.4m x 4m. (L x W x H)

- 1. Air-conditioning System:** Split type Air conditioning system.
- 2. Exterior Finish:** Polyurethane Coated Sheet
- 3. Interior Finish:** Interior PPGI Sheet
- 4. Cabinet Insulation:** 60mm of Puff Polyurethane filled insulation.
- 5. Door:** Door Size: 1170mm x 2100mm . 01 No.

**8.WASH ROOMS****CONSTRUCTION:**

**A. He Washroom Dimensions:** 5.5m x 2.5m x 4m. (L x W x H) x 1 No

**B. She Washroom Dimensions:** 3.5m x 2.5m x 4m. (L x W x H) x 1 No

- 1. Exterior Finish:** 60mm of Puff Polyurethane filled insulation
- 2. Interior Finish:** with cemented brick wall & tiles finishing.
- 3. Door:** Size: 900mm x 2100mm– 02 Nos.
- 4. Sink:** ceramic sink with cabinet and accessories.
- 5. Good Quality washroom accessories.**

**9.COMMON ITEMS FOR COMPLETE FACILITY****1. COMPUTER SYSTEM:**

- i. 22” monitor
- ii. CPU with i7 Processor 13<sup>th</sup> Generation
- iii. Window-11 home
- iv. 240 gb SSD + 1 TB HD
- v. 8 GB ram
- vi. 600VA ups system

**2. CENTRAL CONTROL SYSTEM COMPATIBLE FOR INTEGRATED OPERATION OF ALL SPECTRUM LIGHTS:**

Requirement of advanced and compatible control software for LED lighting systems for precise light management to optimize plant growth and quality in controlled environments. Software should offer

scheduling, dimming, and spectrum control with function to create grow zones and strategies with real-time monitoring and data-driven insights to enhance productivity and energy efficiency.

### **3. DOOR ACCESS SYSTEM:**

Biometric magnetic door access for secured door opening and closing with PC interface communication or card for access for each growth room.

#### **DOOR: - Specially designed for Speed Breeding/Clean Room Facility**

- Heavy duty reinforcement in double blade for extreme rigidity.
- Minimalist design & smooth surface enabling highest standard of hygiene.
- Design bottom gasket for complete hermetic sealing.
- 60-80mm PU Insulation
- Door Integrated with Airtight gasket and magnetic lock.
- **Emergency Door:** These should be Fire Rated Doors consisting of hardware such as Panic Bar, door closers, handles etc. 1 Nos.
- **Main Entrance Door Size:** 2200 x 2400mm

### **4. FIRE SAFETY:**

- Provide Fire Extinguisher Cylinder in each chamber.
- Designed to ensure safe passage through limited visibility conditions.
- Fire Detection systems equipped with a variety of detectors that can sense smoke, heat & flames as well.

### **5. CCTV SYSTEM:**

CCTV camera 18 Nos. with cabling and fitting complete accessories

- CP-PLUS NVR 16 Channel 4K
- Camera – 4MP
- CP-PLUS Full Giga Switch 24 port POE Switch
- Surveillance 4TB Hard Disk
- Camera boxes
- Cat6 Cable

### **6. RO SYSTEM:**

RO System-150 LPH capacity to be provided along with plumbing fittings for humidifier with 5000Ltrs storage tank for fresh water.

### **7. CIVIL WORK:**

Civil construction including foundation and base platform of the facility as per our approved design drawing

Foundation wall – 9” wide good quality brick wall 1.5ft below and 4ft above ground level wall duly plastered and painted

RCC Columns: 5ft deep and 4ft above ground level

Base PCC 75mm thick entire floor area

M-25 flooring 100mm thick on main facility area and 75mm thick on utility area.

TMT Bar winding for columns RCC Tie Beam and floor.

Floor & wall tiles of reputed make in washroom area.

Plinth Protection of 1.5m wide and 75mm thick all around the facility. (Made up of 2" thick crushed bricks with 20mm graded stone (1:3:6 Cement: Sand: Rodi) and 25mm thick 1:2:4 ratio cement slurry on top of it.

Cemented platform for RO Storage tank.

#### **8. FENCE WORK:**

The covered facility of nearly need to be fenced with high quality and strong link chain net wire 5ft height with galvanized pole and with entry / exit gate along with locking facility. An approach passage with paver blocks from main entry fenced area up to entry door needs to be provided. Gate: GI frame.

#### **9. FRONT FACIA:**

Made by good quality ACP Sheet finished with supporting structure, colour as per user requirement:

#### **10. SS RAILING:**

SS railing on front entry step area on left & right-hand side made by SS – 304 pipe material.

#### **11. FURNITURE:**

Sofa set for reception, half circle reception desk, 4 executive chairs, 4 visitor chairs, 2 executive tables, one conference room centre table with six chairs.

#### **12. BIG LED TV TOUCH SCREEN:** 48" Android based screen with Bluetooth

#### **13. GENERATOR:**

- 200 KVA, 3 phase capacity genset with canopy & AMF Panel.
- Shelter of DG Set made by Hot Dip Galvanized pipe & roof covered with 0.5mm thick PPGL Sheet covering
- Cemented platform including PCC & RCC as per platform size requirements.

#### **14. ANTI-TERMITE & ANTI RODENT TREATMENT: -**

Pre-Construction, The Anti Termite Treatment to be done on building construction area. The soil foundation, building pillars, and other joints to be treated using chemicals to keep termites and Rodent out of the premises.

#### **15. ELECTRICAL WIRING:**

For entire facility including Main DB Panel with Individual control MCB for each chamber

All wires should be of copper and desired load (Make-Finolex/Havells) and switches imported make, extra switches (10% of total) also to be provided as stand by. Each feature should have own electric line with MCB and should be underground in PVC conduit pipe complete set with A grade work.

Chamber to be compatible with Power supply 440 Volts, 1-3-Phase- 50 Hz-A.C. supply Neutral and Ground.

One main DB Panel with MCCB Protection independent for each chamber including safety norms for entire facility.

Hot Dip galvanized earthing arrangements for each equipment's and main structure building.

Separate Neutral earthing for DG Set

Separate Body earth for DG Set as per guidelines.

**16. UPS SYSTEM FOR POWER BACK-UP:** 50KVA capacity ups system with half hour backup for PAR Lights & Automation with accessories

**17. FLOORING:**

International standard “Resin based Epoxy” flooring of 2mm thickness on concrete surface. Provide and apply a thick primer & thick self-levelling topping. As per IS: 4631 standards.

**18. ADDITIONAL ITEMS:**

1. Speed Breeding Light – 10 Nos.
2. Stand By Cooling System:

**19. ADDITIONAL DISMANTLING WORK:**

Demolition of existing warehouse and land levelling work.

**20. Experience of firm:**

The firm should have experience in installation of at least three speed breeding facilities which are in operation for minimum one year. Verifiable documents to be submitted.

**21. Onsite training:** The firm needs to make arrangements for onsite training of IIRR staff (**5Nos**) for one complete crop cycle.

**22. Warranty:** The quotation should be inclusive of three-year comprehensive warranty and complete maintenance.

**23. Onsite Maintenance:**

The successful bidder has to depute his team consisting of Maintenance Engineer (1) and Support Staff (1) at onsite for functioning/upkeep and maintenance for a period of 36 months i.e. during the warranty period. No separate charges shall be payable for onsite maintenance team including staff and consumables/spare parts/equipments.



**ESTABLISHMENT OF SPEED BREEDING (RAPID GENERATION ADVANCEMENT ) FACILITY  
FOR GENOME EDITING RESEARCH AT ICAR-IIRR HYDERABAD**

**SPEED BREEDING FACILITY - BREAKUP AS PER CPWD - NON SCHEDULED ITEMS LIST**

**SCHEDULE- A**

**BILL OF QUANTITIES: PART-A1**

ITEMS CODE	DESCRIPTIONS	QTY.	UOM	Rate to be Quoted	Total
	<b>AUTOMATION CONTROL</b>				
1/NS.1	<p>Providing and Installation of Software Climate Control Master (CCM) Version: CCM-G V2.0</p> <p>Features:</p> <ul style="list-style-type: none"> <li>-Control system will be capable of Real time clock programming of temperature, relative humidity and lighting status.</li> <li>-Microcontroller based control system.</li> <li>-178/254 mm touch display</li> <li>-Multi set-point programming.</li> <li>-Experiment protection via temperature limit shut-down. Auto-restart when temperature is normal.</li> <li>-Temperature/Rh%/light/CO2 high &amp; low deviation alarm.</li> <li>-Auto restarts in case of power failure with in-built battery.</li> <li>-Alarm history of last 15 alarms</li> <li>-Data recording facility of minimum 30 days with 1-minute interval.</li> <li>-Data logging is in excel and graphical format.</li> <li>-Average hourly values of parameters for analysis of research.</li> <li>-Remote access to local computer.</li> <li>-Remote access from anywhere on computer when connected to internet.</li> <li>-Email Alarm Alert system</li> <li>-Control system along with all electric wiring and electrical switch gear panel with all safety features.</li> </ul> <p><b>VIRTUAL CHAMBER SOFTWARE:</b></p> <p>To access &amp; monitor in chamber from one location to fulfil customer need give solution for centralised system that has following features</p> <ul style="list-style-type: none"> <li>-To work on networked Windows computer</li> <li>-To facilitate user to communicate directly with the local control system</li> <li>-Same programming facilities as local control system</li> <li>-Access able via. Internet from anywhere</li> <li>-On line service diagnostic by service personal</li> <li>-Chamber usage tracking and reporting by user</li> <li>-Global email alerts</li> </ul>	12	Nos.		

1/NS.2	Article T+RH sensor Type Thermistor Sensor for Temperature Hygrometer for RH Housing ABS Temperature Range 0-50°C RH Range 0-100% Temperature Precision $\pm 0.3^{\circ}\text{C}$ @23°C RH Precision $\pm 2\%$ RH (10-90%) @23°C Output signal 4-20 mA for both Power consumption 40 mA Supply voltage 24 V DC ( $\pm 20\%$ ) Protection Class IP 65	12	Complete set		
1/NS.3	Article Quantum PAR sensor Type Silicon photo detector Housing Aluminium alloy Measuring Range 0-2500 $\mu\text{mole}/\text{m}^2\text{-sec}$ with 400-700nm Sensitivity $0.8 \text{ mV}/\mu\text{mole}*\text{m}^2*\text{sec}^{-1}$ Accuracy $\pm 5\%$ reading Response time $< 1\text{s}$ (99%) Output signal 4-20 mA Power consumption 40 mA Supply voltage 24 V DC ( $\pm 20\%$ ) Protection Class IP 65				
1/NS.4	Article CO2 sensor Type NDIR Housing ABS Measuring Range 0-2000 ppm Precision $\pm 3\%$ of reading Output signal 4-20 mA Power consumption $< 1 \text{ W}$ Supply voltage 24 V DC ( $\pm 20\%$ ) Protection Class IP 50				
<b>SPEED BREEDING LIGHTING SYSTEM</b>					
2/NS.1	<p>Providing and fixing of Special LED Grow lights to deliver crop quality and delivering the ideal light spectrum for promoting robust plant growth.</p> <p>Programming and control: Independent level programming to set up day/night programming.</p> <p>Features</p> <ul style="list-style-type: none"> <li>-Light intensity (PPF) up to <math>1140 \mu\text{mole}/\text{s}</math></li> <li>-PPFD: <math>750 \mu\text{mole}/(\text{m}^2\text{-s})</math> measured from 18 inch</li> <li>-Light spectrum range: 400-750 nm</li> <li>- Lights wattage: 10.5 to 600 watts, 220 V, 50HZ</li> <li>- Light beam angle: <math>120^{\circ}</math></li> <li>-Up to 46% Energy saving using LED</li> <li>-Up to 05 tunable wavelength</li> <li>-Wavelength-1: Blue (450nm) - Wavelength -2: Red (660nm)</li> <li>-Wavelength -3: White (5700K)</li> <li>-Wavelength -4: Far-Red (735nm)</li> <li>-Wavelength -5: White (3600K)</li> <li>-Adjustable spectrum using variable light intensities</li> <li>-Time based scheduling</li> <li>-Individual and/or Group wise light control</li> <li>- Life time: <math>&gt; 50000\text{H}</math></li> <li>- Software : 01 set for all Speed Breeding Lights</li> <li>- Total Lights in Chamber 1 &amp; 2 : 36Nos.</li> <li>- Total Lights in Chamber S1 to S10: 20 nos.</li> <li>- Total Spare Lights for all chamber: 10 Nos.</li> </ul>	56	Nos.		
<b>LIGHT GRID SYSTEM</b>					
3/NS.1	<p>Providing and fixing of Automatic Light Grid mechanism customized modules for Chamber L1 &amp; L2 with gear motor, driving shaft, special cable drum with S.S. wire rope. Grid Integrated with following</p> <p>Table wise Light grid mechanism : 03 units per Chamber</p> <p>Total Grid in both Chamber : 06 Nos.</p>	6	Complete set		

3/NS.2	Providing and fixing of Automatic Light Grid mechanism customized modules for Chamber S1 to S10 with gear motor, driving shaft, special cable drum with S.S. wire rope. Grid Integrated with following Table wise Light grid mechanism : 01 unit per Chamber Total Grid in all 10 Chamber : 10 Nos.	10	Complete set		
<b>HUMIDIFICATION SYSTEM</b>					
4/NS.1	Providing and fixing of Ultra- Sonic humidity System with fine water particles to attain humidity level up to $85\% \pm 5\%$ . Capacity: 10 Lt. / Hrs. capacity. Quantity for Chamber L1 & L2 = 02 units / Chamber Range: Up to 85% RH lights OFF and 80% Light ON, Control: +/- 5% RH. System: It has a dry sensor to direct measure humidity in % RH.	4	Complete set		
4/NS.2	Providing and fixing of Ultra- Sonic humidity System with fine water particles to attain humidity level up to $85\% \pm 5\%$ . Capacity: 10 Lt. / Hrs. capacity. Quantity for Chamber S1 & S10 = 01 unit / Chamber Range: Up to 85% RH lights OFF and 80% Light ON, Control: +/- 5% RH. System: It has a dry sensor to direct measure humidity in % RH.	10	Complete set		
<b>CO2 SYSTEM</b>					
5/NS.1	Providing and fixing of CO2 Enrichment system inside all speed breeding chambers of Range: 350-1200 ppm with centralized CO2 Cylinder manifold, pressure regulators, automatic solenoid valve, SS Pipe lines, SS manual control valve, SS pipe fixing accessories.	1	Complete set		
<b>SSBF BENCHING SYSTEM</b>					
6/NS.1	Providing and fixing of Customized anodized aluminium rollable top benching system with Food grade top tray along with pump autodrainage and water Recycling system. Bench frame size for L1 & L2: 6m x 1.2m = 3 units / Chamber	6	Complete set		
6/NS.2	Providing and fixing of Customized anodized aluminium rollable top benching system with Food grade top tray along with pump autodrainage and water Recycling system. Bench frame size for L1 & L2: 6m x 1.2m = 3 units / Chamber	10	Complete set		
<b>COOLING SYSTEM</b>					

7/NS.1	<p>Providing and fixing of ZECO make Double skin Floor mounted Air handling (<b>Temperature Range: +18°C to +42°C</b>)</p> <p>Unit Panel thickness in mm 43+/-2, panel insulated with cfc free puf of 40+/-2 kg/m3 ,centrifugal forward curved blade fan, drive sets, squirrel cage 3 phase induction motor of appropriate capacity , 6 row deep DX-coil, Heaters, 35 mm SP WG, pre filter before cooling Coil, Blower 5% fresh air Damper Unit may be factory/site assembled. Air Cooled Condensing Unit having with condenser Coil, fan with Motor and Drive, Scroll Compressor, HP / LP cutout, thermostatic expansion valve, Panel etc. including Refrigerant charging.</p> <p>Refrigerant piping MAANDV make (two lengths &amp; each circuit)</p> <p>Supreme make Nitrile duly insulated to interconnect indoor &amp; outdoor units with electrical wiring etc.</p> <p>G.S.S. Sheet metal ducting complete with Fire redartent Canvas Connection as per approved shop drawings. Supply of powder coated Extruded Aluminium double louvered supply / return air register ( grills ).</p> <p>Supplying and fixing of 25mm thk external insulation on DUCT with cross linked, closed cell, fire retardent, PARAMOUNT make XLPE polyethylene foam insulation with ALUMINUM foil finish, tape &amp; adhesive as required.</p>	2	Complete set		
7/NS.2	<p>Providing and fixing of ZECO make Double skin Floor mounted Air handling (<b>Temperature Range: +18°C to +42°C</b>)</p> <p>Unit Panel thickness in mm 43+/-2, panel insulated with cfc free puf of 40+/-2 kg/m3 ,centrifugal forward curved blade fan, drive sets, squirrel cage 3 phase induction motor of appropriate capacity , 6 row deep DX-coil, Heaters, 35 mm SP WG, pre filter before cooling Coil, Blower 5% fresh air Damper Unit may be factory/site assembled. Air Cooled Condensing Unit having with condenser Coil, fan with Motor and Drive, Scroll Compressor, HP / LP cutout, thermostatic expansion valve, Panel etc. including Refrigerant charging.</p> <p>Refrigerant piping MAANDV make (two lengths &amp; each circuit)</p> <p>Supreme make Nitrile duly insulated to interconnect indoor &amp; outdoor units with electrical wiring etc.</p> <p>G.S.S. Sheet metal ducting complete with Fire redartent Canvas Connection as per approved shop drawings. Supply of powder coated Extruded Aluminium double louvered supply / return air register ( grills ).</p> <p>Supplying and fixing of 25mm thk external insulation on DUCT with cross linked, closed cell, fire retardent, PARAMOUNT make XLPE polyethylene foam insulation</p>	10	Complete set		

	with ALUMINUM foil finish, tape & adhesive as required. <b>Total Units for 51 to S10 = 1 Units / Chamber</b>				
7/NS.3	Providing and fixing of General airconditioning like split AC and Cassette AC for Reception, Research lab, Conference room, UPS Room and connecting corridor including Refrigerant piping, insulation and drainage pipeline.	1	Complete set		
UNI FLOOR SYSTEM					
8/NS.1	Providing and fixing of Upward airflow through SS uni-floor along with hot dip galvanized base frame. Design of uni-floor airflow should be less than 15.2m/min. and having minimum impact on rate of transpiration of plant entire growth area, filtered fresh air, adjustable input and exhaust. Fresh air exchange approx. Filtered inlet, 50 cfm per days.	1	Complete set		
DOOR ITEMS					
9/NS.1	Providing and fixing of 80mm Door with 4 sided frame and Glass view window. Door Size: 1020mm x 2120mm with inside safety release latch and cam-type self-closing hinges. Door have positive closer device, thermal plastic gasket with magnetic core, and door stop provision.	12	Complete set		
9/NS.2	Providing and fixing of 40mm Door with 3 sided frame and Glass view window. Door Size: 1800mm x 2400mm with autoclosing and hardware and door stop provision.	2	Complete set		
9/NS.3	Providing and fixing of 40mm Door with 3 sided frame and Glass view window. Door Size: 1050mm x 2120mm with autoclosing and hardware and door stop provision.	7	Complete set		
9/NS.4	Providing and fixing of Emergency Exit door - 40mm Door with 3 sided frame and Glass view window. Door Size: 1050mm x 2120mm with autoclosing and hardware and door stop provision.	1	Complete set		
STRUCTURE MATERIALS					
10/NS.1	Speed Breeding Facility will be of Specific Design Based on PEB structure which can withstand wind velocity up to 140 km/hr. Main facility structure will be made of PEB structure type with epoxy coating on metal parts.	1	Complete set		
CLADDING					
11/NS.1	Roof and all side outer covering by 0.5mm PPGL sheet				
11/NS.2	Providing and fixing of 60mm puff panel wall Insulation for all speed breeding chambers with puff density 40±2 Kg/m3 Coldwell Wall Panel: Flat- Flat Ext Finish: 0.5mm PPGL - RAL 9002 & Int Finish: 0.5mm SS 304				

11/NS.3	Providing and fixing of 60mm puff panel Ceiling Insulation for all speed breeding chambers with puff density $40\pm 2$ Kg/m <sup>3</sup> Coldwell Wall Panel: Flat- Flat Ext Finish: 0.5mm PPGL - RAL 9002 & Int Finish: 0.5mm SS 304	1	Complete set		
11/NS.4	Providing and fixing of 60mm puff panel wall Insulation for speed breeding other common area with puff density $40\pm 2$ Kg/m <sup>3</sup> Coldwell Wall Panel: Flat-Flat Exterior and Interior Finish: 0.5mm PPGL - RAL 9002 both sides				
11/NS.5	Providing and fixing of 60mm puff panel Ceiling Insulation for Speed breeding other common area with puff density $40\pm 2$ Kg/m <sup>3</sup> Coldwell Wall Panel: Flat-Flat Exterior and Interior Finish: 0.5mm PPGL - RAL 9002 both sides				
<b>FLOORING</b>					
12/NS.1	International standard “Resin based Epoxy” flooring of 2mm thickness on concrete surface. Provide and apply a thick primer & thick self-levelling topping. As per IS: 4631 standards.	1	Complete set		
<b>FACILITY COMMON ITEMS</b>					
13/NS.1	COMPUTER SYSTEM WITH DOUBLE DISPLAY 22” monitor CPU with i7 Processor 13th Generation Window-11 home 240 gb SSD + 1 TB HD 8 GB ram 1200VA ups system	1	set		
13/NS.2	<b>CENTRAL CONTROL SYSTEM COMPATIBLE FOR INTEGRATED OPERATION OF ALL SPECTRUM LIGHTS:</b> Requirement of advanced and compatible control software for LED lighting systems for precise light management to optimize plant growth and quality in controlled environments. Software offer scheduling, dimming, and spectrum control with function to create grow zones and strategies with real-time monitoring and data-driven insights to enhance productivity and energy efficiency.	1	set		
13/NS.3	<b>DOOR ACCESS SYSTEM:</b> Biometric magnetic door access for secured door opening and closing with PC interface communication or card for access for each growth room.	1	set		
13/NS.4	<b>FIRE SAFETY:</b> Provide Fire Extinguisher Cylinder in each chamber. Designed to ensure safe passage through limited visibility conditions. Fire Detection systems equipped with a variety of detectors that can sense smoke, heat & flames as well.	1	set		

13/NS.5	<b>CCTV SYSTEM:</b> CCTV camera 18 Nos. with cabling and fitting complete accessories CP-PLUS NVR 16 Channel 4K Camera – 4MP CP-PLUS Full Giga Switch 24 port POE Switch Surveillance 4TB Hard Disk Camera boxes Cat6 Cable	1	set		
13/NS.6	<b>RO SYSTEM:</b> RO System-150 LPH capacity to be provided along with plumbing fittings for humidifier with 5000Ltrs storage tank for fresh water.	1	set		
13/NS.7	<b>FENCE WORK:</b> The covered facility of nearly to be fenced with high quality and strong link chain net wire 5ft height with galvanized pole and with entry / exit gate along with locking facility. An approach passage with paver blocks from main entry fenced area up to entry door needs to be provided. Gate: GI frame.	1	set		
13/NS.8	<b>FRONT FACIA:</b> Made by good quality ACP Sheet finished with supporting steel structure, Facia colour as per user requirement:	1	set		
13/NS.9	<b>SS RAILING:</b> SS railing on front entry step area on left & right-hand side made by SS – 304 pipe material.	1	set		
13/NS.10	<b>FURNITURE:</b> Sofa set for reception, half circle reception desk, 4 executive chairs, 4 visitor chairs, 2 executive tables, one conference room centre table with six chairs.	1	set		
13/NS.11	<b>BIG LED TV TOUCH SCREEN:</b> 48” Android based screen with Bluetooth	1	set		
13/NS.12	<b>GENERATOR:</b> -200 KVA, 3 phase capacity genset with canopy & AMF Panel. -Shelter of DG Set made by Hot Dip Galvanized pipe & roof covered with 0.5mm thick PPGL Sheet covering -Cemented platform including PCC & RCC as per platform size requirements.	1	set		
13/NS.13	<b>ANTI-TERMITE &amp; ANTI RODENT TREATMENT: -</b> Pre-Construction, The Anti Termite Treatment to be done on building construction area. The soil foundation, building pillars, and other joints to be treated using chemicals to keep termites and Rodent out of the premises.	1	set		

13/NS.14	<b>ELECTRICAL WIRING:</b> For entire facility including Main DB Panel with Individual control MCB for each chamber All wires will be of copper and desired load (Make-Finolex/Havells) and switches imported make, extra switches (10% of total) also to be provided as stand by. Each feature will have own electric line with MCB and will be underground in PVC conduit pipe complete set with A grade work. Chamber to be compatible with Power supply 440 Volts, 1-3-Phase- 50 Hz- A.C. supply Neutral and Ground. One main DB Panel with MCCB Protection independent for each chamber including safety norms for entire facility. Hot Dip galvanized earthing arrangements for each equipment's and main structure building. Separate Neutral earthing for DG Set Separate Body earth for DG Set as per guidelines.	1	set		
13/NS.15	<b>UPS SYSTEM FOR POWER BACK-UP:</b> 50KVA capacity ups system with half hour backup for PAR Lights & Automation with accessories	1	set		
13/NS.16	Main DB Panel approx. 120KW capacity for entire facility including separate MCCB for each conservatory	1	Complete set		
	<b>ADDITIONAL ITEMS</b>				
14/NS.1	Providing and fixing of Special LED Grow lights to deliver crop quality and delivering the ideal light spectrum for promoting robust plant growth. Programming and control: Independent level programming to set up day/night programming. Features -Light intensity (PPF) up to 1140µmole/s -PPFD: 750 µmole/(m <sup>2</sup> -s) measured from 18 inch -Light spectrum range: 400-750 nm - Lights wattage: 10.5 to 600 watts, 220 V, 50HZ - Light beam angle: 120° -Up to 46% Energy saving using LED -Up to 05 tunable wavelength -Wavelength-1: Blue (450nm) - Wavelength -2: Red (660nm) -Wavelength -3: White (5700K) -Wavelength -4: Far-Red (735nm) -Wavelength -5: White (3600K) -Adjustable spectrum using variable light intensities -Time based scheduling -Individual and/or Group wise light control - Life time: > 50000H - Software : 01 set for all Speed Breeding Lights - Total Lights in Chamber 1 & 2 : 36Nos. - Total Lights in Chamber S1 to S10: 20 nos. - Total Spare Lights for all chamber: 10 Nos.	10	Nos.		



14/NS.2	Stand By Air Cooled Condensing Unit having with condenser Coil, fan with Motor and Drive, Scroll Compressor, HP / LP cutout, thermostatic expansion valve,	12	set		
14/NS.3	ADDITIONAL DISMANTLING WORK: Demolition of existing warehouse and land levelling work	1	Job		
14/NS.4	Lab working table+ sink, Chemical Storage Cabinet for both Lab side wall, Laboratry Stool and accessories with Granite on all sides	1	set		
		SCHEDULE A TOTAL AMOUNT			
		<a href="#">GST@18%</a>			
	NON SCHEDULE ITEMS G R A N D TOTAL AMOUNT INCLUDING G S T				

**ESTABLISHMENT OF SPEED BREEDING (RAPID GENERATION ADVANCEMENT)**  
**FACILITY FOR GENOME EDITING RESEARCH AT ICAR-IIRR HYDERABAD**  
**SPEED BREEDING FACILITY BREAK UP AS PER CPWD FORMAT - SCHEDULED ITEMS**  
**LIST – SCHEDULE –B (BILL OF QUANTITIES)**

Jharkhand SOR 2023 Ref.	DESCRIPTIONS	QTY.	UOM	Rate to be quoted	Total
<b>2.00</b>	<b>EARTH WORK</b>				
2.28	2.28 Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m.2.28.1 All kinds of soil	950	Sqm		
2.60	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge. 2.6.1 All kinds of soil	489.00	Cum		
2.10	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :				
2.10.1	All kind of soil				
2.10.1.1	Pipes, cables etc, not exceeding 80 mm dia.	200	meter		
2.10.1.2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	50	meter		
2.25	2.25(a) Excavating, supplying and filling of local earth (including royalty) by mechanical transport upto a lead of 5km also including ramming and watering of the earth in layers not exceeding 20 cm in trenches, plinth, sides of foundation etc. complete.	413	Cum		
2.27	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	206	Cum		
<b>2.35</b>	<b>Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) :</b>				
2.35.2	Along the external wall below concrete or masonry apron using chemical emulsion @ 2.25 litres per linear metre including drilling and plugging holes etc. 2.35.2.1 With Chlorpyrifos/ Lindane E.C. 20% with 1% concentration	950	meter		
2.35.3	Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12mm diameter holes and plugging with cement mortar 1 :2(1 cement : 2 Coarse sand) to match the existing floor:2.35.3.1 With Chlorpyrifos/Lindane E.C. 20% with 1% concentration	950	Sqm		
<b>4.00</b>	<b>CONCRETE WORK</b>				
4.2.8	For Base PCC in foundation, Floor, under Tie beam, pathway 1:5:10 (1 cement : 5 coarse sand (zone-III): 10 graded stone aggregate 40 mm nominal size)	71	Cum		
4.11	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand(zone-III) : 4 graded stone aggregate 20mm nominal size).	48	Sqm		
4.17	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand (zone - III) : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	135	Sqm		
<b>5.00</b>	<b>REINFORCED CEMENT CONCRETE WORK</b>				

5.1	Providing and laying Reinforced cement concrete (nominal mix) using specified graded coarse aggregate of approved quality at various locations excluding the cost of centering and shuttering - All work up to plinth level : machine mixing, consolidating with rammer/ vibrators, curing, providing scaffolding, staging etc. complete as directed and instructed by Engineer. (Form work shall be paid separately under relevant item).				
5.1.2	For RCC Column & Tie beam, 1:1.5:3 (1 Cement: 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size)	57	Cum		
5.1.3	For RCC Floor 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	84	Cum		
5.9	Centring, Shuttering including Strutting, Propping etc.and removal of Form work for				
5.9.1	Shuttering for Foundation, Footing, bases for column	53	Sqm		
5.9.2	Retaining wall, return wall, wall ( any thickness) including attached pilaster , buttresses, plinth and string courses fillets, Kerbs and steps etc	48	Sqm		
5.9.6	Column, tie beam, Piers, abutments, Pillers, Post and Struts	218	Sqm		
5.23	Smooth finishing of the exposed surface of R.C.C. work with 6 mm thick cement mortar 1:3 (1 Cement : 3 fine sand).	936	Sqm		
5.22	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
5.22.6	5.22.6 Thermo-Mechanically Treated bars of grade Fe-500D or more.	7480	Kg		
6.00	<b>MASONRY WORK</b>				
6.10	Brick work with common burnt clay modular bricks of class designation 7.5 in foundation and plinth in: Providing and constructing brick masonry walls using bricks of first quality (min. comp. strength 35 kg/cm <sup>2</sup> ) of approved manufacturer at all locations, floors and levels including scaffolding, racking of joints, watering but excluding cement plaster finish complete as directed and instructed by Engineer.				
6.1.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	40	Cum		
8.00	<b>CLADDING WORK</b>				
8.30	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.				
8.3.2	Granite work	85	meter		
8.31	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	65	Sqm		
11.00	<b>FLOORING</b>				
11.41	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.				
11.41.2	Size of Tile 600x600 mm	24	Sqm		

11.56	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing , curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.				
11.56.1	Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	84	Sqm		
<b>16.00</b>	<b>ROAD WORK/ PATHWAY WORK</b>				
16.69	Providing and laying at or near ground level factory made Kerb stone M-25 grade jointed with Cement mortar 1:3 (1 Cement:Coarse sand)	9	Cum		
26.72	Providing and laying Factory made Cement concrete Colored Interlocking Paver Block 60MM Thick M-35 made by block making machine with strong vibrating compaction, of approved size and design including 50mm thick compacted coarse sand bed of coarse sand, filling the joints bwith fine sand etc.all complete as per the direction of Engineer- In-Charge.	121	Sqm		
<b>13.00</b>	<b>FINISHING</b>				
13.2.1	Wall Plaster 15-20 mm thick cement plaster of mix ratio 1:4( 1 Cement: 4 coarse sand)	280	Sqm		
13.48	Wall Finishing with Exterior emulsion water proof wall paints with double coat putty and two or more paint coat including primer .	170	Sqm		
<b>18.00</b>	<b>WATER SUPPLY</b>				
<b>18.80</b>	Providing & fixing Chlorinated Polyvinyl Chloride(CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer-in-Charge. Concealed work, including cutting chases and making good in the walls etc				
18.8.1	15 mm nominal outer dia pipes.	25	Rmt.		
18.8.2	20 mm nominal outer dia pipes.	15	Rmt.		
18.8.3	25 mm nominal outer dia pipes.	30	Rmt.		
18.8.4	32 mm nominal outer dia pipes.	25	Rmt.		
<b>18.90</b>	Providing &fixing Chlorinated polyvinyl Chloride(CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings. This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction or Engineer-in-charge.(External work)				
18.9.1	15 mm nominal outer dia pipes.	35	Rmt.		
18.9.2	20 mm nominal outer dia pipes.	20	Rmt.		
18.9.3	25 mm nominal outer dia pipes.	100	Rmt.		
18.9.4	32 mm nominal outer dia pipes.	60	Rmt.		
18.9.5	40 mm nominal outer dia pipes.	60	Rmt.		
18.9.6	50 mm nominal outer dia pipes.	30	Rmt.		
<b>18.16</b>	18.16 Providing and fixing brass stop cock of approved quality :				
18.16.1	15 mm nominal bore	14	Nos.		
18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):				
18.17.1	25 mm nominal bore	5	Nos.		
18.17.3	40 mm nominal bore	2	Nos.		
18.17.4	50 mm nominal bore	6	Nos.		
<b>18.19</b>	Providing and fixing gun metal non- return valve of approved quality (screwed end) :				
18.19.1	25 mm nominal bore				
18.19.1.2	Vertical	2	Nos.		

18.19.3	40 mm nominal bore				
18.19.3.2	Vertical	2	Nos.		
18.19.4	50 mm nominal bore				
18.19.4.2	Vertical	4	Nos.		
<b>18.32</b>	Constructing masonry Chamber 30x30x50 cm inside, in brick work in cement mortar 1:4 (1 cement :4 coarse sand) for stop cock, with C. I. surface box 100x100 x75 mm (inside) with hinged cover fixed in reinforced cement concrete slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), including necessary excavation, foundation concrete 1:5:10 ( 1 cement : 5 fine sand : 10 graded stone aggregate 40mm nominal size ) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick, finished with a floating coat of neat cement complete as per design				
18.32.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	6	Nos.		
<b>18.33</b>	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160mm bottom diameter and 180 mm deep ( inside) with chained lid and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size ) , including necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement :3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :				
18.33.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	6	Nos.		
18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.				
	500 Ltrs @ 11 per ltrs.	10	Nos.		
	1000 Ltrs @ 11 per ltrs.	8	Nos.		
18.49	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931				
18.49.1	15 mm nominal bore	4	Nos.		
18.50	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.				
18.50.1	15 mm nominal bore	5	Nos.		
18.51	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
18.51.1	15 mm nominal bore	6	Nos.		
18.52	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.				
18.52.1	15 mm nominal bore	6	Nos.		
18.53	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
18.53.1	15 mm nominal bore	2	Nos.		
18.53A	Providing and fixing C.P. Brass extension nipple (size 15mmx50mm) of approved make and quality as per direction of Engineer-in-charge.	20	Nos.		
18.76	Cutting holes up to 30x30 cm in walls including making good the same:				
18.76.1	With common burnt clay F.P.S. (non modular) bricks	12	Nos.		
18.84	Providing & fixing chrome plated brass battery based infrared sensor operated pillar cock, having foam flow technology.				
18.84.1	15 mm nominal bore	3	Nos.		
12.41	Providing & fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS:13592 Type A, including jointing with seal ring conforming to IS: 5382, leaving 10 mm gap for thermal expansion.				
12.41.1	75mm diameter pipe	70	meter		
		SCHEDULE A TOTAL AMOUNT			
		GST@18%			
		Total			

<b>SCHEDULE 'A' TOTAL AMOUNT INCLUDING GST</b>	
<b>SCHEDULE 'B' - TOTAL AMOUNT INCLUDING GST</b>	
<b>GRAND TOTAL</b>	