NATIONAL INSTITUTE OF PLANT GENOME RESEARCH
(An Autonomous Research Institution of the Department of
Biotechnology Ministry of Science and Technology, Govt. of India)
Aruna Asaf Ali Marg, New Delhi – 110 067 Phone: 26735139,
26735141 Fax: 26741658, 26741146

TENDER NOTICE
Tender No. 8/43/2019-20/NIPGR/S&P

Online Turnkey tenders (in two bid system) are invited on behalf of the Director, NIPGR from manufactures or their authorized dealer for the Supply, Installation, Testing & Commissioning of **Fluorescent dye-labelled SNP genotyping platforms with Real time PCR** including all the minor equipment's, accessories, consumables etc. along with site preparations required for making these platforms fully functional and operational at NIPGR Campus, Aruna Asaf Ali Marg, New Delhi 110067.

Sl.No.	Estimated Cost in (₹)	EMD in (₹)	Time for Completion	Date & Time of Pre-Bid Meeting	Last Date & Time of Sale / Submission of Tenders	Date & Time of Opening of Tenders
1.	23.61 crores	47.00 lacs	08 Weeks	01/10/2019 1200 Hrs.	17/10/2019 1500 Hrs.	18/10/2019 1500 Hrs.

The Earnest Money should be deposited in the form of Demand Draft drawn in favour of the Director, NIPGR, payable at New Delhi so as to reach the undersigned latest by 17/10/2019 (3.00 P.M). The Tender documents and detailed specifications can be obtained in person by the interested firms from the Purchase-Cum-Store Officer, NIPGR, during office hours against non-refundable cash payment of ₹ 2,000.00 (Rs. Two Thousand only) as mentioned above from 20/09/2019 to 17/10/2019 upto 1500 hrs. The tender document is available on eprocure.gov.in and can also be downloaded from our website: **www.nipgr.ac.in** and CPP Portal https://eprocure.gov.in/eprocure/app. The tender document downloaded from the website is exempt from payment of tender document cost (₹ 2,000/-).

The tenderers registered with MSME & NSIC in the above-mentioned Service / Activity are exempt from deposit of EMD.

The Director, NIPGR, reserves the right to accept or reject all or any of the bids without assigning any reasons thereof.

Purchase cum Stores Officer

TENDER DOCUMENTS

Name of Work: Supply, Installation, Testing & Commissioning of fluorescent dye-labelled SNP genotyping platforms with Real time PCR and other related equipments at NIPGR Campus, New Delhi

Owner: Director, NIPGR, Aruna Asaf Ali Marg, New Delhi – 110 067

Tender Issued to: _____

_____

_____

Place for submission/ Place of opening tender document:	Purchase Section NIPGR, Aruna Asaf Ali Marg, New Delhi-110067
Date & time of Pre-bid Meeting	1/10/2019 (12:00 hrs.)
Last date & time for sale / submission of Tender Documents:	17/10/2019 up to 15:00 hrs.
Date & Time of opening of Technical Bid:	18/10/2019 at 15:00 hrs.

COST OF TENDER DOCUMENT: ₹ 2,000.00 (Non-refundable)

Purchase cum Stores Officer
NIPGR, New Delhi

TENDER FORM

To

The Director
NIPGR,
ARUNA ASAF ALI MARG,
New Delhi

Dear Sir,

I/We have read and examined the following Tender Documents relating to the **Supply, installation, testing and commissioning of Fluorescent dye-labelled SNP genotyping platforms with Real time PCR and other related equipments** at **National Institute of Plant Genome Research, Aruna Asaf Ali Marg, New Delhi 110067**.

I/We hereby offer to execute the work complete in all respects specified in the underwritten Memorandum within the time specified therein, at the rates specified in the Price Bid and in accordance with the specifications, designs, drawings and instructions in writing referred to in the conditions of tender.

Tenderers Signature and Seal

GENERAL CONDITIONS

1. Online Turnkey tenders are hereby invited from manufacturers/ authorized dealers for the **Supply, installation, testing and commissioning of Fluorescent dye-labelled SNP genotyping platforms with Real time PCR and other related equipments at National Institute of Plant Genome Research, Aruna Asaf Ali Marg, New Delhi 110067**.

   The tender document consists of General Conditions, Instructions to bidders, General Information, Tender form, Terms and Conditions of Contract Agreement, Special Terms and conditions of Contract, Technical specification and Price Bid which can be obtained at a cost of ₹ 2,000.00 (Rs. Two Thousand only) (Non-refundable) in cash from 20/9/2019 to 17/10/2019 from the Purchase-cum-Stores Officer at NIPGR, Aruna Asaf Ali Marg, New Delhi. The tender document can also be downloaded from our website: www.nipgr.ac.in **free of cost**. The tender document is obligatory on the part of the tenderers & bid in no other form will be accepted.

2. The time allowed for the supply, testing and commissioning of above equipment's is 12 weeks from the date of issue of Supply order.

3. Every tender shall be accompanied by earnest money of ₹ 47.00 lacs (Rupees Forty-Seven Lacs) in the form of Demand Draft drawn in favour of the "Director, NIPGR" payable at New Delhi. Any tender not accompanied by such earnest money will be rejected straight away.

4. The Tenderer will submit his tender in prescribed format after examining the tender documents, scope of work, specific conditions of contract, Instructions to bidders, General Information, Terms and Conditions of contract agreement, technical specification, Price Bid, special terms and conditions of contract, specific conditions of contract.

5. The tender shall be submitted online in two parts, viz., Technical bid and Financial bid. Submission of the complete tender document duly stamped and signed by tenderer with technical bid is mandatory i.e. The Complete tender document issued/published by the Institute for the purpose should be sealed/signed and submitted by the bidders.

6. The tenderer shall submit a copy of the audited balance sheets / turnover certificate of the past three financial years ending 31/3/2019.

7. If a tenderer whose tender is accepted fails to undertake the work as per terms of the contract within 10 days to be reckoned from the date of issue of award letter, the earnest Money deposited will be forfeited.

8. NIPGR does not bind itself to accept the lowest or any tender and reserves the right to reject any or all tenders without assigning any reason.

9. NIPGR will not pay any expense, whatsoever incurred by tenderer for the preparation and submission of tenders.

10. The notice inviting tender, will form part of the contract agreement to be executed by the successful tenderer with the NIPGR.

11. All the correspondence on the tender shall be addressed to the Director, NIPGR, Aruna Asaf Ali Marg, New Delhi and any communication addressed to anyone else shall not in any manner to be binding upon the NIPGR, Aruna Asaf Ali Marg, New Delhi.

12. The tenderer shall submit a copy of Authorization Letter from the manufacturer (Original Equipment Manufacturer) along with copy of PAN/GST numbers allotted to them.

Tenderers Signature with Seal **Purchase cum Stores Officer**

INSTRUCTIONS TO BIDDERS

1. GENERAL INSTRUCTIONS:

The items referred here-in shall cover the entire scope of the proposal which includes supplying and installation of the equipment including the successful completion and the tests which the NIPGR, desires testing and commissioning shall be carried out.

2. TENDERERS TO STUDY ENTIRE TENDER DOCUMENT CAREFULLY:

Submission of a tender by a tenderer implies that he has read all the stipulations contained in this tender document and has acquainted himself of the nature, scope and specifications of the items to be followed.

3. TENDERER TO SUBMIT THE ENTIRE TENDER DOCUMENT:

The tenderer shall submit all documents issued to him for the purpose of this tender after duly filling the same in all respects. Tenders which are found to be vague or incomplete shall be rejected summarily.

4. TENDER SHALL BE WRITTEN IN ENGLISH LANGUAGE:

Every tender shall be written in English language. All information such as documents and drawings supplied by the tenderer will also be in the English language only. Drawings and designs shall be dimensioned according to the metric system of measurements. Tenders shall be forwarded under cover or a letter type written on the tenderer's letter-head and duly signed by the tenderer. Signatures must be in long hand, executed in ink by a duly authorized principal of the tendering firm. No oral, telegraphic or telephonic tenders or subsequent modifications there-to shall be entertained; If a tender is submitted on behalf of the firm, then all the partners shall sign or may be signed by one in whose favour all the partners have given General Power of Attorney. In case of tender submitted by a company, it shall be signed by one who has been authorized by the Board of Directors through a resolution. Copy of resolution and the authority letter in favour of the person signing must accompany the tender.

5. VALIDITY PERIOD OF OFFERS:

A. The rates quoted in the tender shall hold good for 90 days from the date of opening of the tender. No tenderer can withdraw/or modify his tender or revoke the same within the said period of 90 days. If a tenderer on his own withdraws or revokes the tender or revises or alters or modifies the tender for any item or condition within a period of aforesaid 90 days his earnest money deposit shall stand forfeited.
B. The validity of accepted rates is extendable for a period of 180 days from the date of issue of Award Letter, with mutual consent of both the parties.

6. TENDERER TO SIGN ALL PAGES:

The tenderer shall stamp and sign at the bottom right hand corner of every page of the tender documents in token of acceptance of tender conditions and for the purpose of identification.

7. ERASERES AND ALTERATIONS:

Tenders containing erasures and alterations of the tender documents are liable to be rejected unless these are authenticated by the person signing the Tender Documents.

8. TENDERER TO SATISFY HIMSELF OF SITE CONDITIONS:

Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tender regarding nature of the site conditions, the means of access of the site, the accommodation they may require and in general obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender in any manner. A tenderer shall be deemed to have full knowledge of the site, whether he inspects it or not and no compensation or otherwise of any charges incurred or to be incurred consequent on any misunderstanding or otherwise shall be admissible.

9. EARNEST MONEY:

The tender shall be accompanied by earnest money of ₹ 47.00 lacs (Rupees Forty-Seven Lacs) in the form of Demand Draft only drawn in favour of the Director, NIPGR payable at New Delhi. Earnest money of the unsuccessful bidder(s) shall be refunded after expiry of the validity period of the tenders/placement of Supply Order whichever is earlier. In case of the Successful tenderer the earnest money shall be adjusted against performance security.

10. TENDERER TO QUOTE BOTH IN FIGURES AND WORDS:

The bidder shall quote their rates for all the items both in figures as well as words given as per the attached format of Price bid. The amount of each item shall be worked out and the requisite total given. Special care shall be taken to write percentage in figures and words, and the amount in figures only in such a way that interpolation is not possible. The total amount shall be written both in figures and in words.

11. TENDER LIABLE TO REJECTION:

Tenders which do not fulfill all or any of the conditions laid down in this notice, or contain conditions not covered and / or not contemplated by the Conditions of tender document and/or expressly prohibited therein or stipulate additional/alternative conditions shall be liable to be rejected and his earnest money will be forfeited.

Tenders shall also be liable for rejection on any of the following grounds:-

i) Tenders containing remarks uncalled for.
iii) Conditional tenders.
iv) Tenders not submitted on prescribed Performa.
v) Telegraphic/Fax/Postal tenders.
vi) Tender submitted without EMD
vii) Tender with NIL consideration

13. CORRESPONDENCE:

Tenderers must mention their postal address and telephone number(s) of the Chief Executive/authorized agent or attorney in the tender. The tender submitted by the tenderer will be rejected if he or his agent cannot be contacted on the last known address or on the intimated telephone number(s) after reasonable search in which event earnest money may be forfeited by the NIPGR.

14. NIPGR NOT TO ASSIGN ANY REASON FOR REJECTION OF TENDER:

Director, NIPGR hold absolute discretion to accept or reject the lowest or any other tender without assigning any reason. No claim on this account shall be entertained.

15. AMENDMENT IN TENDER DOCUMENTS:

NIPGR reserves the right to revise or amend the Bid Documents upto the date prior to the date notified for opening of the tenders and also the right to postpone the date of submission and opening of tenders without assigning any reason, whatsoever.

NIPGR also reserves the right to change the quantities of the units while issuing the letter of award of work.

16. REFERENCE IN TENDER DOCUMENTS:

Director, NIPGR, shall be referred as "Owner" in all the documents of Tender documents/contract agreement.

17. PROGRAMME DIRECTOR, NGGF

Where ever the word "Programme Director, NGGF" occurs it shall mean the authorized Scientist appointed by the NIPGR for the superintendence of the execution of related works.

Tenderers Signature with Seal **Purchase cum Stores Officer**

GENERAL INFORMATION

1.	Accepting Authority	Director, NIPGR, New Delhi.
2.	Earnest Money	₹ 47.00 lacs (Rupees Forty-Seven Lacs) to be furnished with the tender in the form of in favour of "Director, NIPGR" payable at New Delhi. **(No interest is payable on this deposit)**
3.	Security Deposit	The EMD submitted by successful tenderer shall be treated as part of performance security deposit.
4.	Performance Security	The successful tenderer shall be required to deposit an amount equal to 10% of the tender value of the contract as Performance Security after adjusting the Security Deposit within 10 days from the date of issue of award letter. Performance Security may be deposited in the form of Demand Draft or Bank Guarantee from State Bank of India or any Scheduled bank.
5.	Authority competent to grant extension of time	Director, NIPGR.
6.	Tools & Plants	To be arranged by Tenderer
7.	Authority competent to reduce the Compensation amount	Director, NIPGR
8.	Defect Liability/warranty period	**36 months from the date of installation and acceptance by the NIPGR**
9.	Authority Competent to Appoint Arbitrator	Director, NIPGR
10.	Release of Security Deposit	The Performance Security shall be released after completion of the defect liability period.

Tenderers Signature with Seal

Specific Conditions of Contract

1. **Scope of work**: The scope of work generally consists of providing of Fluorescent dye-labelled SNP genotyping platforms with Real time PCR and other related equipments as described in the equipment specifications of the tender documents. The supplier shall carryout and complete the work under the contract in every respect in accordance with this tenders' documents and under directions & to the entire satisfaction of the Programme Director, NGGF. If any item of the work to be executed is not covered under specification, the same shall be executed as decided by the Programme Director, NGGF.

   It is not the intent to specify completely herein all aspect of design and constructional features of equipment and details of work to be carried out, nevertheless, the equipment and work shall confirm in all respect to high standard of engineering, design and workmanship and shall be capable of performing in continuous commercial operation in a manner acceptable to the Programme Director, NGGF, who will interpret the meaning of the specifications and drawings and shall have the right to reject or accept any work or material, which in his assessment is not complete to meet the requirements of the specifications and or applicable code, and standards mentioned elsewhere in the specifications.

2. **Operation & Maintenance manuals**: Prior to completion of the work and handing over the Fluorescent dye-labelled SNP genotyping platforms with Real time PCR and other related equipments, the supplier shall submit 3 sets of following details:

   i) Comprehensive operation instructions, preventive and routine maintenance schedules
   ii) Manufacturer's equipment catalogues and operating & maintenance instructions
   iii) Electrical control diagrams, piping scheme diagrams and other diagrams of the connections
   iii) List of recommended spare parts with spare part codes, specifications & source of procurements.

   Supplier to provide all for testing: The supplier shall provide and pay for all necessary tools, instruments gadgets and testing equipment required for conducting various tests. Any defects in material and / or in workmanship detected during initial testing shall be rectified by the supplier at his own cost. Initial testing shall be carried out in the presence of Programme Director, NGGF or his representative to his entire satisfaction. The installation shall be commissioned after approval by Programme Director, NGGF.

3. **Virtual completion**: On satisfactory completion of initial testing and commissioning, the installation shall be put to continuous running test for a period of 2 weeks for the purpose of taking over. Any defect in material and/ or in workmanship detected in the course of testing shall be rectified by the supplier at his own cost to the entire satisfaction of the Programme Director, NGGF. The test shall be repeated after removal of defects. After successful completion of above tests, the equipment shall be taken over.

4. **Guarantee & Defect liability period**: The equipment covered by this contract shall be guaranteed by the supplier against faulty material and workmanship for a period of **36** months from the date of virtual completion and taking over the installation. Any part found defective shall be replaced free of all costs by the supplier. The supplier shall guarantee that all equipment shall work satisfactorily and that the performance and efficiency of the

equipment shall not be less than the specified values. If performance of equipment during guarantee period is not found satisfactory, the guarantee period will be extended till satisfactory performance is established for further period of reasonable time decided by NIPGR. The services of the supplier's personnel if
requisitioned during the defect liability period shall be made available free of any cost to NIPGR. If the defects noticed during the guarantee period are not remedial within a reasonable time and / or some equipment or system as a whole remain out of order for a total period of one month (4 weeks) (Unless or otherwise extended) NIPGR shall have the right to remedy the defects at the supplier's risk & cost without prejudice to any other rights.

5. **Maintenance**: During the guarantee & defect liability, the supplier shall provide at no extra cost necessary material and personal to carry out the repairs & routine maintenance of equipment. The supplier shall attend to all problems experienced in the operation of the system within a reasonable time but not more than 48 Hrs. of receiving the complaint and take corrective action immediately.

6. **Operation of the equipment/Platform and Training of Personnel at site**: In order to enable NIPGR/NGGF staff get acquainted with the operation and maintenance of the said Equipment/platform, the supplier at no extra cost to NIPGR shall run the facility for a period of one year from the date of installation and train the departmental personnel during the said period.

7. **Storage of materials & safe custody**: Lockable storage space, if available shall be made available to the supplier by NIPGR. However, the supplier shall be responsible for watch & ward and safe custody of his equipment and installation till they are formally taken over by NIPGR. Non-availability of lockable storage space due to any reasons shall not relieve the supplier of his contractual obligations in any way.

8. **Completion period**: All work of installation, testing, commissioning and handing over of the fluorescent dye-labelled SNP genotyping platforms with Real time PCR and other related equipments in accordance with this contract shall be completed within the stipulated period or within the extended time as has been allowed by the Institute.

9. **Rate reasonability:** The bidders should provide the Price reasonability Certificates for the rates quoted by them duly supported with Supply Orders issued by other Government Institutes/ Organizations, Completion Certificates along with the Price Catalogues.

10. The supplier/manufacturer should ensure timely service and calibration of machine for successful installation and satisfactory operation.

Tenderers Signature with Seal

TERMS & CONDITIONS OF CONTRCT AGREEMENT

SECURITY DEPOSIT

The earnest money amounting of ₹ 47.00 lacs (Rupees Forty-Seven Lacs) will be treated as part of performance security deposit of the successful tenderer.

COMPENSATION CLAUSE

1. The time allowed for carrying out the work as entered in the tender shall be strictly observed by the Tenderer, and shall be reckoned from the day of the date on which the order to commence the work is given to the Tenderer. The Tenderer shall prepare and submit the details of delivery and installation for the execution of the said work within ten days of award of work for approval of the Programme Director, NGGF, NIPGR. The work on the contract shall be executed according to the approved schedule as aforesaid and shall throughout the stipulated period of the contract be proceeded with all due diligence (time being deemed to be the essence of the contract on the part of the Tenderer) and the Tenderer shall pay as compensation an amount equal to one percent or such smaller amount as Programme Director, NGGF, NIPGR may decide on the value of work as per contract, for every week that the work remains un-commenced or unfinished as per the agreed terms of Supply/work Order. Further to ensure good progress during the execution of the work, the Tenderer shall be bound in all cases in which the time allowed for any work exceeds one month to complete one fourth of the whole of the work before one fourth of the whole time allowed under the contract has elapsed, one half of work before one half of such time has elapsed and three fourth of the work before three fourth of such time has elapsed. In the event of the Tenderer failing to comply with this condition he shall be liable to pay as compensation an amount equal to one percent or such smaller amount as the Programme Director, NGGF, NIPGR, may decide of the value of balance work for everyday that the due quantity of work remains incomplete. Provided always that the entire amount of compensation to be paid under the provisions of this clause shall not exceed ten percent of the awarded cost of work as shown in the tender. The Director, NIPGR, on a representation from the Tenderer, is however, empowered to reduce the amount of compensation and his decision in writing shall be final.

TIME EXTENSION

3. If the Tenderer shall desire an extension of the time limit for completion of the work on the grounds of his having been unavoidably hindered in its execution or on any other ground he shall apply in writing to the Programme Director, NGGF, NIPGR within 10 days of the date of the hindrance on account of which he desires such extensions as aforesaid but before the expiry of time limit and the Programme Director, NGGF, if in his opinion(which shall be final) reasonable grounds as shown thereof ,authorized such extension of time if any, as may, in his opinion be necessary or proper.

COMPLETION

4. Without prejudice to the rights of Programme Director, NGGF under any clause hereinafter contained on completion of the work, the Tenderer shall be furnished with a certificate by the Programme Director, NGGF or his representative of such completion, but no such certificate shall be given nor shall the work be considered to be complete until the Tenderer shall have removed from the premises on which the work has been executed,

all surplus materials and rubbish, and cleaning off the dirt from all doors, walls, floors, or any other parts of buildings said to have been completed, and the measurements in the said certificate shall be binding and conclusive against the Tenderer, if the Tenderer shall fail to comply with the requirements of this clause as to the removal of scaffolding, surplus materials, and rubbish and cleaning off dirt on or before the date fixed for the completion of the work, Programme Director, NGGF, NIPGR may at the expense of the Tenderer have removed such scaffolding ,surplus materials and rubbish and dispose of the same as he thinks fit and clean off such dirt as aforesaid and the Tenderer shall forth with pay the amount of all expenses so incurred, and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any such sale proceeds actually realized by the sale thereof.

ARBITRATION

5. Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, designs , drawings and instructions here in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim , right, matter or thing whatsoever, in any arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works, or the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitrator appointed by the Director, NIPGR, at the time of dispute. It will be no objection to any such appointment that the arbitrator so appointed was associated with the work and that he had to deal with the matters to which the contract relates and that in the course of his duties in association with the Programme Director, NGGF, he had expressed views on all or any of the matters in dispute or difference. The arbitrator to whom the matter is originally referred being unable to act for any reason, the Director, NIPGR shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor. It is also a term of this contract that no person other than a person appointed by the Director, NIPGR as aforesaid shall act as arbitrator. If for any reason(s) the reference cannot be made by the Director, NIPGR, then there shall be no reference to Arbitration. In such eventuality, the decision of Director, NIPGR shall be final and binding on both the parties. In all cases where the amount of the claim in dispute is ₹ 50000/- (Rs. Fifty thousand only) or above, the arbitrator shall give reasons for the award. Subject as aforesaid the provisions of Arbitration and Cancellation Act 1996 or any statutory modifications or reenactment thereof and the rules framed there under and for the time being in force shall apply to the arbitration proceeding under this clause. It is also a term of the contract that while invoking arbitration the party invoking arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute. It is also a term of the contract that if a party does not make any demand for arbitration in respect of any claim(s) in writing within 90 days of receiving the intimation from the Programme Director, NGGF that the bill is ready for payment, the claim if any, shall be deemed to have been waived and absolutely barred and the owner shall be discharged and released of all liabilities under the contract in respect of these claims.

CARRYING OUT OF WORK

6. All the work shall be carried out strictly and in accordance with the specifications given in the tender to the total satisfaction of the Programme Director, NGGF. In the case of an item for which specification are not available in the said specifications relevant BIS specifications applicable as on the date of tenders shall be followed.

INSPECTION OF WORK

7. All work under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of Programme Director, NGGF, NIPGR or his subordinate in-charge of the work and the Tenderer shall at all times, during the usual working hours and at all other times at which reasonable notice of the intention of the Programme Director, NGGF to visit the works shall have been given to the Tenderer, either himself be present to receive order and instructions or have a responsible agent duly accredited in writing present for that purpose. Orders given to the Tenderer's agent shall be considered to have the same force as if they had been given to the Tenderer himself.

INSURANCE

8. The following insurance cover is to be provided by the Tenderer in the joint names of the employer and the Tenderer for the period from the start date till completion of entire work.
   a) Cover against damage to other people's property caused by the Tenderer's acts or omission;
   b) Cover against death or injury caused by the Tenderer's acts or omission to:
      i) Anyone authorized to be on the site;
      ii) Third parties who are not on the site;
9. No Escalation in rates shall be paid.

10. The Tenderer shall provide all necessary superintendence during execution of the work and as along thereafter as may be necessary for proper fulfilling of the obligations under the contract.

11. The tenderer must visit the site at NIPGR campus, Aruna Asaf Ali Marg, New Delhi - 110067 before quoting the rates.

12. Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the Tenderers who resort to canvassing will be liable to rejection.

13. The rates quoted for foreign equipments shall be CIF/CIP New Delhi.

14. The rates for Local equipments shall be inclusive of all taxes, octroi, cartage etc., and nothing extra will be paid.

15. No T&P will be issued by the department.

16. The final payment shall be made only after completion of the work subject to certification by Scientist –in- Charge.
17. The site of work is at NIPGR Campus, Aruna Asaf Ali Marg, New Delhi – 110067.

18. The **Technical specifications** of the equipments required are detailed at page **21– 45** of this Tender Document.

19. Installation, Testing & Commissioning of the supplied equipments will be done at our site by the bidder in the presence of Programme Director, NGGF of our Institute.

Tenderers Signature with Seal

SPECIAL TERMS AND CONDITIONS OF CONTRACT

1. TENDERER TO BE LIABLE FOR ALL TAXES ETC.

The rates specified in the tender shall be CIF/CIP New Delhi/ FOR NIPGR and inclusive of all taxes, duties and other charges etc., in respect of the this contract and the rates shall be firm irrespective of any variation in the prevailing rates of taxes, levies, octroi, etc., and any fresh imposition of any of these by State/Central/Statuary bodies. The supplier shall indemnify the Director against levy of any taxes, etc., in regard to this contract and in the event of the Director being assessed for any of the said imports. Director shall have the right to recover the total amount so assessed from the supplier's dues and the supplier shall also be responsible for all costs or expenses that may be incurred by Director in connection with any proceedings or limitation in respect of the same. We are eligible for concessional tax (rate) exemption under notification no**. 45/2017-** Central tax (rate)/Union territory tax (rate) **& 47/2017** – Integrated tax (rate) dated 14/11/2017 and fall under the category of Public funded research institution.

2. FORCE MAJEURE:

The right of the Tenderer to proceed with the work shall not be terminated because of any delay in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the Tenderer, including not limited to acts of God, or of the public enemy, restraints of a sovereign state, firms, floods, unusually severe weather.

3. JURISDICTION:

Not with standing any other courts having jurisdiction to decide the questions forming subject matter of a suit any and all actions and proceedings arising out of or relative to this contract (including any arbitration in terms thereof) shall lie only in the court of competent Civil jurisdiction in this behalf at New Delhi., where this contract is to be signed on behalf of Director, NIPGR and only the said court shall have jurisdiction to try any such actions and/or proceedings to the exclusion of all other courts.

4. SCOPE OF WORK:

The scope of work is as per enclosed details. The Tenderer should note that during the preparation of detailed working drawings, according to which the Tenderer has to execute the work covered under this contract, may undergo changes. The scope drawings for the entire work are not enclosed, but only a few indicating the probable nature of construction are attached. The scope of work is thus not limited only to the details.

5. Programme Director, NGGF Role:

The Programme Director, NGGF shall carry out general supervision and direction of the work. He/she has authority to stop the work. Whenever he/she considering such stoppage necessary to ensure the proper execution of the work. He/she shall also have authority to inspect and reject all work and materials, which do not conform to the specifications and to direct the application of Tenderer's forces to any portion of the work, as in his/her judgment is required, and to order the said force increased or diminished and to decide questions which arise in the execution of the work.
The Programme Director, NGGF shall have the right to suspend the work or part thereof at any time and no claim whatsoever on this account shall be entertained. In case of any clarification the Tenderer may appeal to the Director, NIPGR whose decision shall be final and binding on the Tenderer. The above inspection shall, however, not relieve the

Tenderer of his responsibilities in regards to defective materials or workmanship and the necessity for rectifying or replacing the same.

6. TENDERER'S RESPONSIBILITY FOR THE MANNER OF EXECUTION OF WORKS

The Tenderer shall be solely responsible for the manner and the method of executing the work. The work shall be subject to the approval of Programme Director, NGGF from time to time for purposes of determination of the question whether the work is executed by the Tenderer in accordance with the contract.

7. SUBMISSION OF BILLS:

Tenderer is to submit the bills in triplicate along with delivery challans to the Programme Director, NGGF for works executed by him. Payment will be released on completion of entire work subject to certification by the Programme Director, NGGF.

8. ACTION AND COMPENSATION PAYABLE IN CASE OF BAD WORK:

If it shall appear to Programme Director, NGGF, NIPGR or his representatives, that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of any inferior description or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to the contracted for, or otherwise not in accordance with the contract specifications the Tenderer shall on demand in writing from the Programme Director, NGGF specifying the work materials, articles complained or not with-standing that the same have been inadvertently passed, certified and paid for, forthwith rectify or remove and reconstruct the work so specified in whole or in part as the case may require, or as the case, remove the materials or articles so specified and provide other and suitable materials or articles so specified at his own cost and in the event of his failing to do so within a period to be specified by the Programme Director, NGGF in his demand aforesaid, then the Tenderer shall be liable to pay compensation at the rate of one percent on the amount of the estimate for every day not exceeding ten days while his failure to do so that continue and in the case of any such failure Programme Director, NGGF, NIPGR may rectify or remove, and re-execute the work or remove and replace with other materials or articles complained of, as the case may be at risk and expenses in all respects of the Tenderer.

9. It shall always prevail, unless otherwise specifically stated, that the entire provisions of Tender document been opened upon and accepted for compliance by the Tenderer without any reservation.

10. Exemption of Customs Duty and Excise Duty

The NIPGR is exempted from payment of Custom Duty and Excise Duty for supply of equipments etc. vide Govt. of India Notification No. 51/96 dt. 23/07/1996. Since the Customs Duty/ Excise Duty and clearance charges will be borne by the Institute, Bidders are requested to quote their rates accordingly. However, it will be the responsibility of the Supplier to shift the equipment to site of work including opening of crates, transportation, loading and unloading. Nothing extra will be paid on any account.

11. Terms of payment

100% of the equipments value against irrevocable LC on receipt of order acknowledgement and Performance Guarantee/Security from Principles of supplier or their Indian Agent subject to fulfillment of condition at Sl.No. **4** under General Information.

In case of the payment in Indian Rupees, payments shall be released upon successful/satisfactory installation of the equipment. The payment will be released after deduction of taxes at source as per Rules.

12. Bidder should provide quotations directly enclosed from the manufacturer.

13. Bidder providing misleading or wrong information will be disqualified.

14. Bidder will support all the claims by product catalogue, public website of the manufacturer.

15. The Tender Compliance Sheet attached with the tender document should be properly filled with complete details.

Tenderers Signature with Seal

Instructions for Online Bid Submission

1. The tender documents are available on our website www.nipgr.ac.in **& ww.eprocure.gov.in** and same can be downloaded.

2. Tender documents may be downloaded from ITPO's website www.nipgr.ac.in and CPPP site https://eprocure.gov.in/eprocure/app as per the schedule as given in the tender document.

3. Bids shall be submitted online only at CPPP website: https://eprocure.gov.in/eprocure/app. Tenderers/Contractors are advised to follow the instructions provided in the 'Instructions to the Contractors/Tenderer for the esubmission of the bids online through the Central Public Procurement Portal for eProcurement at https://eprocure.gov.in/eprocure/app**'.** Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

4. Not more than one tender shall be submitted by one contactor or contractors having business relationship. Under no circumstance will father and his son(s) or other close relations who have business relationship with one another (i.e when one or more partner(s)/director(s) are common) be allowed to tender for the same contract as separate competitors. A breach of this condition will render the tenders of both parities liable to rejection.

5. The bidders are advised to visit CPPP website https://eprocure.gov.in/eprocure/app at least 3 days prior to closing date of submission of tender for any corrigendum / addendum/ amendment.

6. Bids will be opened as per date/time as mentioned in the **Tender Document.** After online opening and evaluation of technical bids, the results of their qualification as well Price-Bid opening will be intimated later.

Submission of Tender

The tender shall be submitted online in two parts, viz., Technical bid and Financial bid.

All the pages of bid being submitted must be sequentially numbered by the bidder irrespective of nature of content of the documents before uploading.

The offers submitted by Post/Fax/email shall not be considered. No correspondence will be entertained in this matter.

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: https://eprocure.gov.in/eprocure/app**.**

REGISTRATION

1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: https://eprocure.gov.in/eprocure/app) by clicking on the link "**Online Bidder Enrolment**" on the CPP Portal which is free of charge.

2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra/ Nic etc.), with their profile.

5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.

6) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.

2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

Bidder should take into account any corrigendum published on the tender document before submitting their bids.

1) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

2) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

3) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, GST Certificate etc.) has been provided to the bidders. Bidders can use "My Space" or ''Other Important Documents'' area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

1) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

3) Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.

4) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official before bid opening date/time as mentioned in critical date sheet or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.

5) Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

6) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

7) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to

asymmetric encryption using buyers/bid opener's public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.

8) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

9) Upon the successful and timely submission of bids (i.e after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

10) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

ASSISTANCE TO BIDDERS

1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 3070 2232, 91-7878007972 and 91-7878007973.

Technical Specification

Specifications for supply, installation of Fluorescent dye-labelled SNP genotyping platforms with Real time PCR and other related equipments.

A. Main Platform

ITEM-1	• Supply, Installation, Testing & Commissioning of fluorescent dye-labelled SNP genotyping platforms with Real time PCR, including all the minor equipment's, accessories, consumables etc. along with site preparations required for making this platform fully functional and operational at NGGF-NIPGR Campus. Fluorescent dye-labelled SNP genotyping platforms with Real time PCR.	Unit-1
	• PCR-based, automated high-throughput Genotyping Platform (including thermal cycler and FRET capable plate reader) to carry out SNP genotyping in a wide variety of Organisms.	
	• System should provide automated solution for the generation of flexible, high quality genotyping data from 25,000 to 300,000 genotypes per day.	
	• Based on allele-specific PCR genotyping system, fluorescent-labelled primers, endpoint genotyping technology with capability to determine both SNP and insertion/deletion genotypes at specific locus. The analysis can be carried out with minimal sample DNA in 96, 384 and 1536 well formats.	
	• System should be modular, high-throughput genotyping system and software (LIMS) Platform should handle the total laboratory process including Project management, sample management and Tracking, genotyping, data analysis and reporting, etc.	
	• The platform should be robust and globally proven, demonstrated with peer reviewed publications and should have at least minimum 2 to 3 installations in India.	
	• Training of Personnel at site: In order to enable NIPGR/NGGF staff get acquainted with the operation and maintenance of the said Equipment/platform, the supplier at no extra cost to NIPGR shall run the facility for a period of one year from the date of installation and train the departmental personnel during the said period.	
	• Warranty as per rules.Standard Warranty: 3-year warranty.	
	• Charges on account of CMC for 2years besides, 3year Standard Warranty, unless otherwise specified.	

B. Minor Accessories

1A	Refrigerator (-30^{0}C) for storing of samples (leaves, seeds, liquid DNA, tissues) –	• Ultra-low, frost free freezer should be upright and provide uncompromised sample protection for -16° to -25°C with at least 350L capacity. • Appropriate voltage stabilizer to be provided. • Warranty as per rules. • Adjustable shelves, temperature controller, auto lamp on/off feature, should be supplied with all standard accessories as per manufacturer catalogue for the model supplied.	2
2A	Barcode Printer and scanner two set each consisting of**:**		2
	Handheld scanner	• Should have excellent performance and reliability for a wide variety of applications that require the versatility of area-imaging technology plus the freedom of Bluetooth® wireless connectivity. • Should have software along with a custom sensor, enabling extended depth of field, faster reading, and improved scanning performance on poor quality bar codes. From high density linear to 2D bar codes found directly on the screen of a mobile device. • Should incorporates a Bluetooth Class 2, v2.1 radio, enabling unrestricted movement up to 30 feet (10m) from the base. • Should provide extended battery life (up to 14 hours of battery life), maximizing productivity. • Image processing software should have advanced editing functionality—cropping, brightening, rotating, sharpening and more—to produce high-quality digital images. • Remote management system. • Designed to withstand 50 drops on concrete. • Other specifications: • Radio/Range 2.4 to 2.5 GHz (ISM Band) Adaptive Frequency Hopping Bluetooth v2.1; Class 2: 10 m (33') line of sight • Data Rate (Transmission Rate)- 3 Mbit/s (2.1 Mbit/s) • Battery- 1800 mAh Li-ion minimum • Number of Scans- Up to 50,000 scans per charge • Expected Hours of Operation- 14 hours • Dimensions of scanner- (LxWxH) 104 mm x 71 mm x 160 mm (4.1″ x 2.8″ x 6.3″) approx. • Operating Temperature- 0°C to 50°C • Light Levels 0 to 100,000 lux	2

		• Scan Pattern- Area Image (838 x 640 pixel array) • Decode Capabilities- Reads standard 1D, stacked, 2D and postal symbologies; limited OCR font reading • Warranty as per rules	
	Barcode printer	• Full-function front panel and large multilingual back-lit LCD display - with user-programmable password protection • Thin film printhead - with E^3 Element Energy Control • 8 MB Flash memory - including 2.0 MB user-available non-volatile memory storage for downloadable objects • Serial RS-232 and bi-directional parallel ports - with auto detect USB 2.0 port • Printing paper 1 box • Dual media sensors - transmissive and reflective, selectable through software or front panel • Internal Print Server - supporting 10Base-T, 100Base-TX, and fast Ethernet 10/100 auto-switching networks. • 32 bit 133 MHz RISC processor • 16 MB SDRAM memory • Internal real-time clock • Advanced label/media counters • Thermal transfer and Direct thermal printing of bar codes, text, and graphics • Auto calibration - printer calibrates when printer is turned on or when printhead is closed using approximately two labels • Power consumption: Printing = 121 W (printing pause test label at lowest speed) • Height: 15.5 in. (393.7 mm), Width: 10.31 in. (261.9 mm), Depth: 20.38 in. (517.5 mm) (approx.) • Warranty as per rules.	2
3A	Bead Beater	• It should be high shaking energy (aprrox 1400 rpm-2400 rpm), high-throughput cell disrupter. • In a single batch run it handles up to 192 samples using a deep-well microplate format or 45 samples in 1.5 or 2 ml screw-cap micro vials. • It should be capable of dry and freezing temperature grinding. • Power induction motor should be made of 1hp. • Complete cell disruption is achieved in 2 to 3 minutes of bead beating. • It should be capable to maintain low temperatures during bead beating.	2
4A	Tissue Lyser	• Should be able to perform high-throughput tissues/cells disruption and high-quality DNA isolation • Simultaneous processing of 192 in 2 to 4 minutes. Should work on animal, plants, bacteria and yeast samples. • Should prevent carryover from tube to tube. Should work with dry, wet and cryogenic samples. • Should be based on bead milling by high frequency impact action	2

		• High-speed shaking of samples in 1.2 ml collection tubes or 2 ml microcentrifuge tubes with stainless steel or glass beads. • Convenient and secure disruption process. Adapter sets optimized for high-throughput disruption. Wide range of accessories available (e.g. grinding jar set to process large samples). Reproducible results with difficult-to-lyse tissues. • Throughput should be 2 x 96 collection microtubes (1.2 ml) or 2 x 24 microcentrifuge tubes (2ml) • Warranty as per rules.	
5A	Freezer Dryer	• Should able to dry the plant tissue samples to prepare the plates for tissue analysis application. • Should be a laboratory Table top system with -55 °C condenser temperature with at least 4.5 Kg ice capacity. • Should provide required accessories to use along with Deep well plates and tubes. • Upright stainless-steel collector coil capable of holding 4.5 litres of ice before defrosting. • Should have real time display of collector temperature, vacuum level. • Data logging stores and displays data in table or chart format, and may be exported via USB or Ethernet. • Should have hot gas defrost. • System should meet the requirements of ISO/UL Standard 61010-1 (60 Hz models), CAN/CSA C22.2 No. 61010-1 (60 Hz models) and CE Conformity marking (230V, 50 Hz models). • Dryer should have Refrigeration temperature -50 degree centigrade. • Should be Compact benchtop design with a small footprint. • Warranty as per rules.	1
6A	Corn Grinder	• Should be able to grind / crush hard seeds into powders. • Seed grinding for DNA extraction Automated, high-throughput mechanical disruption ideal for high-throughput applications involving sample preparation for DNA, RNA, and protein extractions, pesticide residue analysis, and more. • Equipped with digital timer, lockdown lid, and safety interlock for operator protection. • Laboratory mill designed for vigorous up-and-down shaking of deep-well titer plates, vial sets, and centrifuge tubes. • The system should offer rapid, 1-2 min, simultaneous disruption of upto six deep-well 96 well titer plates at a single go. It should also accept 2 ml, 5ml, 15 ml and 50 ml tubes and accessories. • It is equipped with an adjustable clamp that accommodates a full range of sample vials from 2mL to 50mL centrifuge tubes and up to six deep-well titer plates. • The equipment must come with nesting tray for adjustable clamp assembly	2

		• The system must be capable of using grinding balls of stainless steel, silica or zirconium beads. • The system should have provision of effective tissue disruption and homogenization in frozen condition through cryo blocks for 2 ml, 15 ml, 50 ml sample tubes and for 96 well titer plates. • The equipment must be with digital timer and touch screen control panel, which enables the user to program run time, rate, cycles and pause time where up to 50 protocols can be saved. • Adjustable clamp must be present with a release button that allows users to secure vials or titer plates of various sizes. • It must include the following safety feature: lid interlock to prevent machine from running if top cover is open. • Accessories to enable cryogenic grinding and preserve temperature sensitive samples for RNA and protein extractions. • Large Clamp Assembly holds four deep-well titer plates, multiple centrifuge tubes, and other large grinding vials. • Standard Clamp Assembly holds two deep-well titer plates, vial sets, or cryo-blocks. • Strong vertical clamp movement of 500-1750 strokes/minute ensures that grinding media directly impact the sample each and every time. • Typical sample processing time of 1-2 minutes. • Warranty as per rules.	
7A	Refrigerated High Speed Bench Top Centrifuge	• Temperature range of -10^0C- + 40^0C • Should come with short-spin key, fast pre-cooling and stand-by/ continuous cooling option with high centrifugation speed 30,000 x g (17,000 rpm) or more, adjustable from 100 rpm upwards. • Must have a standby cooling and auto shut-off function so that the compressor is deactivated after inactivity in user defined period of 1/2/4/8 hrs. to save energy and extend compressor life. • Timer for run can be set up to 99 minutes/ continuous. • Must have "At set rpm" function which enables timer countdown to be started only when selected speed is achieved. • Digital display of time, speed and temperature. Programmable time and speed using Key pad. Must be able to store at least 50 routine procedures with minimum 5 programmable buttons for frequently used programs in the first level. • Acceleration time to max rpm ≤ 14 sec, Breaking time to max rpm ≤ 14 s. • Low noise levels less than 56 db at max speed • The centrifuge must be CE, IVD (*in-vitro* diagnostic) and amp; IEC 1010-2-020 certified. • Stainless steel chamber, Brushless maintenance free drive, Automatic motorised locking when lid almost closed.	2

		• Versatility with 12 different rotors option: 10 fixed angle rotors and 2 swing out rotors. • Fixed angle rotor: - 30x1.5/2ml, high speed rotor 24 x 1.5/2ml with 30000xg, 48x1.5/2ml with 18000xg, 16x5.0ml with 21000xg, 6x15/50ml falcon with 7500xg, 18x1-2ml cryo tubes, 24 spin column tubes, 8x8- PCR strips • Swing-bucket rotors for 24x1.5/2.0 ml tubes with 16,000xg and for 2 x DWP or MTP not higher than 29 mm with 2,200xg or more. • Rotors and lids should be made of anodised aluminium to ensure chemical resistance, with aerosol tight lid, Automatic imbalance and rotor recognition • Rotor must be autoclavable at 121^0C for 20 min to completely eliminate any containing material. • Rotors and accessories required for 1.5/2 mil tubes, 96 well plates and deep well plates to should be included. • Warranty as per rules.	
8A	Precision balance	• The balance is intended for weighing samples for mass spectrometry and must be of good sensitivity. • Maximum capacity of the balance must be (fine range/full range) – 75-81/ 215-220 g (semi-micro cum analytical balance). • The full range readability must be 0.1mg and fine range 0.01mg. • Balance Repeatability must be 0.01mg or better. • Minimum weight that can be weighed must be 2mg or better. • Minimum weight according to United State Pharmacopeia (USP) must be 20mg. • The balance must have fully automatic time & temperature controlled internal adjustment with two inbuilt weights. • The balance must have Agro clips, which is required to control measurement uncertainty. • The balance should have split draft shield doors that do not project beyond the balance to save working space. • The balance must have monobloc weighing system, which is proven weighing technology for fast & accurate results. The housing of balance must be resistant to most chemicals, incl. acetone. • The balance must have level controller at front side for easier levelling of the balance. • The balance must come with RS232 (to connect computer) & USB port. • The balance must have self-diagnostic features to test it e.g. keypad test, repeatability test. • The balance must have built-in date & time for GLP (Good Laboratory Practice)/GMP ○ (Good Manufacturing Practice) compliant printout required for quality assessment. • Warranty as per rules.	1
9A	Analytical balance	• Monolithic weighing cell must be incorporated for tolerating the fluctuation in accuracy with variation in temperature at root level	1

		• Should have internal motorized calibration system • High contrast liquid crustal backlit must be present for clear readout. • Rectangular all glass draft shield opening from 3 sides. • The balance must have self-diagnostic features to test it e.g. keypad test, repeatability test. • The balance must have built-in date & time for GLP (Good Laboratory Practice)/GMP (Good Manufacturing Practice) compliant printout required for quality assessment. • The balance must have a feature that allows fast & convenient dismantling of draft shield to enable washing the glass panel of the draft shield easily. The balance must have programmable smart keys for direct access to preferred applications. • Weighing capacity: 220 g • Readability: 0.0001g or 0.1 mg • Pan size: 90 mm • Linearity: 0.1/0.2 mg • Repeatability: < ±0.2 mg • Warranty as per rules.	
10A	pH and conductivity Meter	• Should be accurate, consistent results on day after day, easy-to-use features that maximize productivity and minimize training time. • Durable construction for long product life. Auto-Read, Timed, Single-shot. • Data Points: 2000 with Date and Time Stamp • Temperature Range (Metric): -5.0° to 105.0° C • Accuracy (pH): ±0.002 pH • Channels: 4 - customizable with modules • Resolution (pH): 0.1, 0.01, 0.001 • Range (pH): -2.000 to 20.000 • pH electrode: Double junction Tough glass refillable pH electrode with integrated temperature sensor. • Temperature range: -20 ° C to + 120° C • pH calibration point: up to 5. • Warranty as per rules.	1
11A	Water Purification system	• System should deliver high-quality ultrapure water. Measure and display compensated and non-compensated temperature. • Final Filters Options: Pharmaceutical grade, final filter with 0.22-micron membrane filter in stack disc configuration. • Water purification system to provide ultra-pure water directly from Potable Tap Water.	2

		• Pre-filtration with 5-micron PP depth filter to control the feed water particulate matter. • Reverse Osmosis and mixed bead ion exchange resins and activated carbon in a single cartridge, with feed water acceptance of up to 2000 micro Siemens conductivity • The 1st stage of the RO DI cartridge contains pre-treatment for reverse osmosis followed by RO membrane. The 2nd stage contains mixed bed ion exchange resin and organics for removal of organic contaminants. • High flux thin film composite polyamide RO membrane with Flow rate minimum 3 Ltr./Hr @ 25 deg C to tank • The tank must have outlet to collect the RO grade water. • RO Rejection must have capillary tube to reduce wastage of water. • Permeate divert valve Preventing premature exhaustion of downstream purification system. • Conductivity meter after RO to measure the performance of the system. • Minimum 6 Lit Inbuilt HDPE tank with vent filter, the tank should be filled from bottom to avoid air contamination. • System monitors and display water quality for Resistivity and Conductivity along with temperature compensation / product unit / pressure units / consumables pack lifetime, and alarms to alert the user. • Feed Water Specifications : Water Quality : Potable tap water; Fouling Index (SDI) : 12; Free Chlorine : <3ppm; Conductivity : <2000uS/cm. . The feed water quality testing should be provided by supplier and may provide additional accessories to meet the actual levels of contaminations. • Type 1 Product Water Specifications: Resistivity: 18.2 Meg Ohm.cm (@ 25-degree C); TOC: <10 ppb; Bacteria: <0.1cfu/mL; Pyrogen: 0.001Eu/mL; RNase <0.01 ng /mL; final flow Rate: minimum 0.5L/min • The System contains EU CE certificate and UL certificate, the specimen of the certificate should be attached along with the Bid. • One set of cartridges for the pre-filter as well as for the ultrapure unit to be provided. • All the required items to run the system must be included in the final quote Price for 1st year consumables from the date of installation should be included within the final quote and price of 2nd year as optional. Standard warranty for one years from the date of installation and should be included in the quote. • Warranty as per rules.	

	Pipettes		
12A	Manual Single channel pipette	• Variable volume; Volume should be continuously adjustable. • Built-in shock absorber inside the tip ejector which reduces thumb impact. • Fully Autoclavable, robust and calibrated one handed • Corrosion free; easy to clean tip ejector. • Pipette should be colour coded for easy recognition and 4 digit display, have adjustable and specific to liquid nature. • Removal of lower parts of pipette for easy cleaning. • Spring loaded tip cones for smooth fittings to tips and compatible with tips of other companies • Warranty for 3 years and certification from CE, ISO and IVD must be provided • Pipette should attach to stand by handle for prevention of cross contamination. • A compatible rotating carousel type pipette stand made of high-density ABS plastic that can hold upto 6 pipette should be supplied along with pipette. • RFID tags for asset management for easy handling and calibration management. • Comfortable handle, light springs and "Magnetic Assist" technology ensure light and smooth operation. • Small sealing area and positive stop ensure tips load quickly, seal perfectly and easy to eject. • Liquid handling during library preparation protocol. • Ergonomic handle design with comfortable finger hook to rest hand between pipetting cycles. • Very light spring forces resulting in less Aspiration and dispensing force. • Ejaculator metallic type. • Warranty as per rules. **Volume ranges for pipette** • 0.1-2.5 µl • 0.2-2 µl • 0.5-10 µl • 2-20 µl • 10-100 µl • 50-200 µl • 100-1000 µl • 500-5000 µl • 1000- 10,000 µl	4 4 4 4 4 4 4 4 4
13A	Number of pipette stand		5
14A	Manual Multichannel Pipette	• Fully autoclavable 8 channel and 12 channel pipette • Robust and calibration • One-handed and one button operation with low operating force even while wearing gloves. • Variable volume; Volume should be continuously adjustable.	

		• Built-in shock absorber inside the tip ejector which reduces thumb impact. • Fully Autoclavable, robust and calibrated one handed • Corrosion free; easy to clean tip ejector. • Pipette should be colour coded for easy recognition and 4 digit display, have adjustable and specific to liquid nature. • Removal of lower parts of pipette for easy cleaning. • Spring loaded tip cones for smooth fittings to tips and compatible with tips of other companies. • Warranty for 3 years and certification from CE, ISO and IVD must be provided • Pipette should attach to stand by handle for prevention of cross contamination. • A compatible rotating carousel type pipette stand made of high-density ABS plastic that can hold upto 6 pipette should be supplied along with pipette. • RFID tags for asset management for easy handling and calibration management. • Comfortable handle, light springs and "Magnetic Assist" technology ensure light and smooth operation. • Small sealing area and positive stop ensure tips load quickly, seal perfectly and easy to eject. • Liquid handling during library preparation protocol. • Ergonomic handle design with comfortable finger hook to rest hand between pipetting cycles. • Very light spring forces resulting in less Aspiration and dispensing force. • Ejaculator metallic type. • Warranty as per rules. • Volume ranges for pipette • 0.1-2.5 µl • 0.5-10 µl • 2-20 µl • 10-100 µl • 50-200 µl • 100-1000 µl	4 4 4 4 4
15A	Number of pipette stand		5
16A	Automatic Multichannel different volume range pipettes	Fully autoclavable 8 and 12 channel pipette, robust and calibratable, one handed and one button operation with low operating force even while wearing gloves. Fast loading, ergonomic handling and absolute precision. The pipette should be very light, color-coded for easy recognition, with 4-digit display, have adjustable volume and to specific liquid nature. Non-corrosive and light piston with smooth movement. Spring loaded tip cone for smooth fitting to tips, compatible with tips from different companies.	

		➢ Warranty for 3 years and certification for CE, ISO and IVD must be provided. Warranty as per rules. ➢ A compatible rotation carousel-type pipette stand made of high density ABS plastic that can hold up to 6 pipettes each should be supplied along with the pipettes. ➢ The pipettes should attach to the stand by the handle for prevention of cross-contamination. ➢ At the end of each pipetting cycle it should re-calibrates itself by resetting the zero point. ➢ It should have long-life battery enough for a day with minimal charging and should last for thousands of recharges. Volume ranges for pipettes **Type: 8 Channel** **Volume Range: 1 – 10 µL** Accuracy: 0.04 µL: ± 4.0 % 0.075 µL: ± 1.5 % 0.1 µL: ± 1.0 % Volume Increment: 0.01 Ml Type: 8 Channel **Volume Range: 2 – 20 µL** Accuracy: 0.15 µL: ± 7.5 % 0.15 µL: ± 1.5 % 0.2 µL: ± 1.0 % Volume Increment: 0.02 µL Type: 8-Channel **Volume Range 5 – 50 µL** Accuracy 0.18 µL: ± 3.5 % 0.3 µL: ± 1.2 % 0.4 µL: ± 0.8 % Volume Increment0.05 µL Type: 8-Channel **Volume Range 20 – 200 µL** Accuracy 0.5 µL: ± 2.5 % Volume Increment0.2 µL Type: 8-Channel **Volume Range 20 – 300 µL** Accuracy 0.75 µL: ± 2.5 % Volume Increment0.2 µL Type: 8-Channel **Volume Range100 – 1200 µL** Accuracy 3.6 µL: ± 3.6 % Volume Increment1.0 µL **Type12-channel** **Volume Range1 – 10 µL** Accuracy 0.04 µL: ± 4.0 %	**2** **2** **2** **2** **2** **2**

		Volume Increment0.01 µL Type12-Channel **Volume Range2 – 20 µL** Accuracy 0.15 µL: ± 7.5 % Volume Increment0.02 µL Type12-Channel **Volume Range5 – 50 µL** Accuracy 0.18 µL: ± 3.5 % Volume Increment0.05 µL Type12-Channel **Volume Range20 – 200 µL** Accuracy 0.5 µL: ± 2.5 % Volume Increment0.2 µL Type12-Channel **Volume Range20 – 300 µL** Accuracy 0.75 µL: ± 2.5 % Volume Increment0.2 µL Type12-Channel Volume Range100 – 1200 µL Accuracy 3.6 µL: ± 3.6 % Volume Increment1.0 µL	**2** **2** **2** **2** **2**
17A	Water Bath system	• Should be circulatory one with working temperature up to 99.9°C with bath volumes up to 20L, built-in dry running protection • Capacity: 20 L • Temperature: Ambient to 100°C • Temperature Uniformity: ±0.2°C at 37°C • Temperature Stability: ±0.1°C at 37°C • Accessories: Clear polycarbonate gable cover, Diffuser tray, Drain hose, Rubber duck • Certifications: UL Listed and CE Marked • Auto-On and Auto-Off • Low Fluid Protection • Audible Alarms: • Save up to four pre-set temperatures to quickly start the bath • Adjustable digital over-temperature protection allows you to set a maximum allowable temperature that will trip the alarm • Chemical and corrosion resistance with epoxy powder-coated exterior • Easily clean the chamber with its seamless stainless-steel interior • Warranty as per rules.	2
18A	Water bath	• Water bath should be high quality, durable and should be trouble-free and low-maintenance in everyday operations.	2

		• Working temperature range should be +18 °C to + 99.9 °C. • Should have dynamic temperature control systems • Heating capacity: 0.5kV • Power: 230 V, 50-60 Hz • Temperature stability : ±0.15 • Should be equipped with bath cover. • Bath opening/Bath depth (cm)W × L / D: 12 × 27 / 14 approx. • Dimensions (cm) W × L × H: 21 × 35 × 22 approx. • Filling volume maximum capacity: 4.5L. • Warranty as per rules.	
19A	High-throughput DNA extraction platform with processing of 8 x 96 well micro plates in parallel with validated magnetic bead-based extraction chemistry for plant tissues.	• High-throughput DNA extraction platform with processing of 8 x 96 well micro plates in parallel with validated magnetic bead-based extraction chemistry for plant tissues. • High-throughput extraction with high quality DNA suitable for downstream applications such as sequencing, microarrays and SNP genotyping. o Mini extractions (20-30 mg starting material) ⎮ 8 x 96 plates/1-1.5 hours o Maxi extractions (30-100 mg starting material) ⎮ 8 x 96 plates/2.5 hours • Fully walk away system compatible with Genotyping workflow for minimum hands-on operation. • Offline Tip wash station for reusage of tips across up to 40 DNA extraction runs. • Compatible with laboratory workflow management software for project and sample management. It has to be integrated with customized or pre-set protocols to suit a wide variety of sample materials. Warranty as per rules.	1
20A	DNA Quantification and QC Analysis	• Quantification of DNA and RNA with 2 µl up to 16 samples analysis with the help of an integrated software to identify the impurities and turbidity and other influencers in the samples • Ability to measure biologics and genomics from low to high concentrations in dynamic range of 0.03–200 OD. • Should have microfluidic circuits moulded into plates and chips ensuring that there's no cross-contamination or evaporation. • Light source: xenon flash lamp • Detector: UV/Vis polychromatic spectrophotometer. • Wavelength range: 230-750 nm.	1

		• Absorbance precision 0.001 OD (0.5 mm path) • Physical: 37 cm W x 46 cm D x 33 cm H, 21 kg approx. • Computer: Separate computer to be included, Microsoft Windows 10 or later • Warranty as per rules.	
21A	Monochromator Plate Reader	• Monochromatic based absorbance Plate reader with wavelength range 230 nm to 1000nm flexibility to work with high or low volume samples. • FRET capability. • Nano Quant Plate for parallel quantification and analysis up 16 samples as 2 Ul • Warranty as per rules.	1
22A	Mini Horizontal Gel Electrophoresis Unit	• Cell size (W x L x H) 9.2 x 25.5 x 5.6 cm approx. • Gel running tray able to run 15-20 samples in single tier. • Gel running tray size should be 7 x 7 cm, 7 x 10 cm tray approx. • Gel tray should have provision to run multiple tier. • Unit with safety lid. • Buffer tank. • Lid with cable. • Levelling bubble • Should be compatible for fast resolution of DNA (Bromophenol blue migration~4.5 cm/hr (at 75 V). • Warranty as per rules.	2
23A	Maxi Horizontal Gel Electrophoresis Unit	• Should have a single moulded tank with safety lid and UV Transparency tray. • Cell size (W x L x H) 18 x 40.5 x 9.4 cm approx. • Should have Gel tray sizes (OD) (W x L) 15 x 10 cm, 15 x 15 cm, 15 x 20 cm, 5 x 25 cm approx. • Should have a sample throughput up to 120 samples. • Should have replaceable platinum electrodes. • Should confirm to CE standard • Should have adjustable external gel caster • Should be compatible for fast resolution of DNA (Bromophenol blue migration ~3.0 cm/hr (at 75 V) • The electrophoresis system must be from the same manufacturer as the power pack for complete compatibility. • Warranty as per rules.	2
24A	Electrophoresis Power Supply	• Output 500 V, 2.5 A, 500 W • Volt-hour control 99,000 V-hr • Display 128 x 64 pixel, backlit, graphics LCD • Safety compliance EN61010 • Warranty as per rules.	4

25A	GEL documentation system	• System should have Trans UV excitation source and CCD based detector. • Pixel Size should be minimum 4.6 x 4.6 μm or better. • Image resolution should be minimum 4 megapixels or better. • Should have lens flat-fielding calibration for each sample tray to deliver image data that are always optimized and reproducible without imaging artefacts and should provide superior image uniformity and quantitation. • System should have a dynamic range of minimum 3.0 orders of magnitude and a pixel density of minimum 4,096 grey levels or better. • System should be able to do automatic camera adjustments like zoom focus adjust aperture or select light source during image acquisition and should provide flexibility to image a wide variety of applications including nucleic acid and protein detection via colorimetric and fluorescent stains • System should have one universal emission filter to accommodate a large portfolio of detection methods like ethidium bromide, SYBR Green SYBR, Safe SYBR ,Gold Gel, Green Gel, Red Fast Blast, SYPRO, Ruby, flamingo, oriole, CY3, rhodamine green, fluorescent Fluor orange and other spectrally similar stains labels and dyes • System should be able to visualize stain free DNA, RNA and protein gels • 2 pack of 10% fast running stain free gel solution sufficient to cast as many as 250 gels of 1.00 mm thickness should be provided • System should come with gel analysis software compatible with mac or PC computers • Software should generate 16-bit and 8-bit tiff images with export option • Software should be able to do automatic normalization of bands using total lane as a loading control. • Software should have customizable reports user-defined data charts with instant access to excel functionality snapshot tool to copy images lane profiles and graphs easily accessible targeted analysis features flexible lane and band detection and quantification tools including volumetric tools. • System should be provided with a thermal printer and a branded compatible desktop 21 inches LED display screen, 16GB RAM, 2X 1 TB HDD, I3 processor with 7th generation or better. • Warranty as per rules.	2
26A	Microplate Mixer	• Thermo/IKA with temperature controller and also with powerful orbital shaker with robust housing for high stability of tubes and with microfuge system spin for assay tubes.	2

		• Warranty as per rules.	
27A	Refrigerator (-80°C)	• Ultra-low freezer should be upright and provide uncompromised sample protection and storage for - 86°C with ~800L capacity. • Freezer must attain -80°C while operating at ambient temperature of 32°C. • Fully programmable microprocessor controlled with membrane keypad and eye level control panel. Audible and visible alarms for temperature, power failure, system failure, low battery etc. • System should have 304L grade stainless steel interior and tough powder coated exterior finish. • Freezer should have five insulated doors giving access to shelves which should be adjustable in 13 mm shelves and make the floor cabinet total five inner storage compartments. • Freezer should have insulation using vacuum insulation panelling with polyurethane foam. • Freezer should have heated air vent and front panel air filter. Freezer must have washable air condenser filter indication which should help to keep the fins free of dust to maintain peak cooling efficiency. • Freezer should have heavy duty lockable castors and lockable outer doors and lids. • Freezer must have battery backup and 4 PIN security lock for unauthorized tempering. • Freezer must have RS 232 interface data logging port and it must also have on board SMART diagnostic software. • Freezer must use CFC-FREE, HCFC-FREE non-flammable refrigerants and must be energy efficient and hermetically sealed cascade refrigeration system with pull down time of 5.5 hours or less. • Freezer should be capable to run at any voltage between 190 – 270V, and should be supplied with a 5 KVA (or better) branded quality servo stabilizer with time delay. • Freezer should have ISO 9001 safety requirements/IEC 61010 Electrical safety CE certified. • Warranty: at least one year for freezer and at least five-year warranty on the compressor. • Capacity (Metric): ~800 L • Temperature Range: −50° to −86°C • Type: Ultra-Low Freezer, Upright • Warranty as per rules.	2
28A	Refrigerator (-30°C)	• Ultra-low freezer should be upright and provide uncompromised sample protection for -16° to -25°C with ~350L capacity. • Vertical with shelves in upper portion and there should be	2

		pullout drawers in lower portion. • Voltage stabilizer to work on 230 Volts AC. • Warranty as per rules. • It should be frost free. • Adjustable shelves, temperature controller, auto lamp on/off feature, should be supplied with all standard accessories as per manufacturer catalogue for the model supplied. • Warranty as per rules.	
29A	Refrigerator (4°C)	• Should be designed with features that support sample protection and sustainability objectives for the storage of pharmaceuticals, vaccines, chemotherapy and other medical and pharmacy-grade storage requiring 2° to 8°C. • The doors of the fridge need to be glass door/transparent. • The fridge should come with a lock and key system. • Suitable stabilizer needs to be provided along with the fridge. • Warranty as per rules. • Capacity: Approximately 650 Litre • Temperature Range: 2 to 8^0C • Defrost: Auto • Rated load wattage: 300 W • No. of Shelves: Six (6) • Door Style: Glass • Drawers: 6 Basket Drawers	2
30A	DNA Storage tubes	2D Barcoded tubes with 500 ul, 1Ml capacity with internal screw cap to store aliquots of DNA and assay mix.	10
31A		SNP line Automated High throughput Genotyping Platform with intergraded Genotyping solution with automated DNA Preparation, Plate replications, reagents dispensing, Laser Plate sealing, Thermal cycling for PCR, data reading and analysis & reporting consist of following:	
32A	Replicator DNA Plate Preparation	• Plate replicator to create multiple daughter plates from source DNA plates, preparation of 24 x 1536 well plates with 1.5 µl dispensing within 12 minutes. • Quick stamp out copies of 96, 384 and 1536 well plates or reformatting of 96 and 384 well plates in to 1536 PCR well plates. • With variable Z-position dispensing head allowing use of both	1

		shallow and deep well plates • Integrated tips washstand to reduce pipetting tips contamination consumable cost. • It should be compatible with laboratory workflow management software for project / sample management and to be provided with laptop/software • Warranty as per rules.	
33A	liquid dispensing system	• Liquid Dispenser with volume ranges from 1 µl to 50 µl with accuracy of <5% CV at 1 uL, non-contact, continuous reagent dispensing of PCR master mix, assay mix for genotyping and standard PCR applications. • Quick dispense of 1 µl reagents in to 1536 well plates in less than 45 seconds. • It should be integrated with error control, data tracking with 1D, 2D data matrix barcode readers. • Vacuum-based 8-channel aspiration system allowing for multi-plate dispensing • Two plate positions, active working plate and load/unload plate, to increase throughput option is required • Ability of enhanced motion control ensuring greater accuracy • It should be integrated with tip washstand to reduce pipetting tips contaminations. • It should be compatible with integrated laboratory workflow management software. • Warranty as per rules.	1
34A	Automated Heat and Laser Sealers	• Thermal and Laser plate sealers suitable for 96, 384 and 1536 well plates to use with water bath PCR system. • Seals must be optically clear to improve assay detections in 1536 well Plates. • Heat sealer to seal and re-seal the plates up to 5 times, 265 mm diameter film role. • Suitable with wide variety of Plates formats 96, 384 and 1536 well Plates. • Laser sealer should be suitable for light-sensitive samples. • Suitable for elevated temperature assays and long-term storage. • Warranty as per rules.	1

35A	Barcode Printer and scanner one set each consisting of**:**	• Compatible for single tubes and 96 tube racks allows quick and easy input of sample tracking data combined with Project and sample management software through LIMS. The flatbed scanner base conforms with SBS standard 2D barcode tube racks which allows easy integration into automated Genotyping systems.	1
	Handheld scanner	• Should have industry-leading performance and reliability for a wide variety of applications that require the versatility of area-imaging technology plus the freedom of Bluetooth® wireless connectivity. • Should have proprietary software along with a custom sensor, enabling extended depth of field, faster reading, and improved scanning performance on poor quality bar codes. From high density linear to 2D bar codes found directly on the screen of a mobile device. • Should incorporates a Bluetooth Class 2, v2.1 radio, enabling unrestricted movement up to 30 feet (10m) from the base. • Should provide extended battery life (up to 14 hours of battery life), maximizing productivity. • Image processing software should have advanced editing functionality—cropping, brightening, rotating, sharpening and more—to produce high-quality digital images. • Remote management system. • Designed to withstand 50 drops on concrete. • Other specifications: • Radio/Range 2.4 to 2.5 GHz (ISM Band) Adaptive Frequency Hopping Bluetooth v2.1; Class 2: 10 m (33') line of sight • Data Rate (Transmission Rate)- 3 Mbit/s (2.1 Mbit/s) • Battery- 1800 mAh Li-ion minimum • Number of Scans- Up to 50,000 scans per charge • Expected Hours of Operation- 14 hours • Dimensions of scanner- (LxWxH) 104 mm x 71 mm x 160 mm (4.1″ x 2.8″ x 6.3″) approx • Operating Temperature- 0°C to 50°C • Light Levels 0 to 100,000 lux • Scan Pattern- Area Image (838 x 640 pixel array) • Decode Capabilities- Reads standard 1D, stacked, 2D and postal symbologies; limited OCR font reading • Warranty as per rules.	1
	Barcode printer	• Full-function front panel and large multilingual back-lit LCD display - with user-programmable password protection • Thin film printhead - with E^3 Element Energy Control • 8 MB Flash memory - including 2.0 MB user-available non-volatile memory storage for downloadable objects • Serial RS-232 and bi-directional parallel ports - with auto detect USB 2.0 port	1

		• Dual media sensors - transmissive and reflective, selectable through software or front panel • Internal Print Server - supporting 10Base-T, 100Base-TX, and fast Ethernet 10/100 auto-switching networks. • 32 bit 133 MHz RISC processor • 16 MB SDRAM memory • Internal real-time clock • Advanced label/media counters • Thermal transfer and Direct thermal printing of bar codes, text, and graphics • Auto calibration - printer calibrates when printer is turned on or when printhead is closed using approximately two labels • Power consumption:Printing = 121 W (printing pause test label at lowest speed) • Warranty as per rules.	
36A	Water bath thermal cycler for PCR	• Water bath thermal cycler for Polymerase chain reaction • It should be suitable for PCR system of 96, 384 and 1536 well formats and array tips and should have a capacity to handle 16 no's of 384/1536 well plates per batch. • Water bath thermal cycler plates should be automatically moved from one temperature to another temperature and must be precisely controlled and should perform faster cycle time of 40% when compared with Peltier based cyclers for high through put PCR applications. • Circulation jet ensuring temperature uniformity in each tank for high PCR accuracy and eliminating edge effects. • Depth: 70.5 cm (27.8") Width (without open screen): 55 cm (21.6"); Width (with open screen): 75 cm (29.5") Height (door closed): 92 cm (36.2"); Height (door open): 130 cm (51.2") approx. • Warranty as per rules.	2
37A	Real-Time PCR System	➢ **Real-Time PCR System for genotyping assays: 2 Nos.** • Automation compatible, high-throughput, touch screen interface, reliable, sensitive and accurate quantitative PCR (qPCR) system for broadest range of qPCR applications. • Should accommodate 4 different block types 96-well, 96-well Fast, 384-well, TaqMan Array Card, (384-well microfluidic card) • Responsive touch-screen, automation capabilities, and effortless block exchange without the need for any tools • Run hundreds of real-time PCR reactions effortlessly using	2

		TaqMan® Array 384-well microfluidic cards and integrated robotics system • Detect changes in target quantity as small as 1.5-fold in single-plex reactions and obtain 10 logs of linear dynamic range • With 6 colors (21 filter combinations) for ease of wide range of genotyping experiments. • Max. ramp Temp. 6.5°C/sec • Temperature Range: 4 to 99.9°C • Capping and decapping devices - It should perform easy capping, de-capping and picking of single tubes out of a rack. It should be mobile, battery-operated and should have 8 channel decapper for table use capping or decapping of 8 tubes at once. It should have integrated dropping mechanism – each 1 No. • Two X 2Kva online UPS with at least 30 min back up to be provided. • Warranty as per rules.	
38A	Vacuum pump and filteration set		1
39A	Drying Oven	• It should deliver flexible temperature uniformity regulated by microcomputer intelligent control. • A simple thermostat system which is easy to use and the units can be built up to meet individual requirements. • Temperature range: Ambient ±5°C to ±70°C fan assisted with 100 L Capacity. • Oil free vacuum pump with regulator to connect with SNP Line system. • Warranty as per rules	2
40A	Integrated fluorescence detection unit	• It should be an advanced optical system optimized for integrated fluorescence detection. • It should have filtered LED's which are optimized for a variety of commonly used fluorophores (range of 480-620 nm). • A high-resolution CCD camera supporting detection of fluorescence intensity within 5 detection channels for dyes emitting within the range of 510-705 nm. • Multiplex data capture for all 5 optical channels can occur in as little as 10 seconds - 1 set. • Laboratory workflow management software LIMS platform to	1

		handle laboratory processes including sample management and tracking, data analysis and reporting. • Every project needs to have a unique project number, and all associated sample plates, assays and genotyping results are tracked within the project. It should have the following features as mentioned below: • Multiple graphic user interface to shared database • Password-protected multi-level secure data storage • Multiple projects can be run simultaneously and are viewed by customer and project • Complete user tracking to event log file • Automatic job report details work schedules • Barcode tracking of plates and tubes - fully searchable • Large scale project capability with superfast access powered by MySQL • Strict operating option ensures users log freezer and plate storage locations. • Sample management package capable of creating DNA master layout graphical organizer, plate layout importer, plate replication tracking of 96, 384, 1536 – at any user definable format , assay + sample plate tracking, freezer storage tracking, robotic interface utilities for fully automatic plate tracking (DLLs and command line programs), thermal cycle parameter tracking, genotyping features. • Reading and calling from direct plate reader import, storage of multiple reads of the same plate, automated / manual cluster calling for plate reader files, compare differences between calls on plates, multiple assays can exist on the same plate, multiple master plates may be viewed individually as clusters. It should have IOT data monitoring devices and loggers. • Hardware: The system should be quoted with required Computer or laptop. The required local PC server should be provided, it will be connected to main server. • Warranty as per rules.	
41A	Integrated in line liquid handling, array processing and analytical system	• Fully automated, medium to high throughput system with both end point and real time PCR capabilities. • It should have a fully integrated automated PCR and qPCR setup, amplification and data analysis. • It should allow multi-functional dispensing for high speed	1

		fluid handling in 384- or 768-well Array Tape with an interchangeable 96- or 384-channel pipetting head precisely dispensing DNA samples into Array Tape. • It should have an integrated pipette wash system reducing tip waste and associated consumable costs while mitigating the risk of cross contamination. The - integrated amplification needs to be supported by a Peltier thermal cycling block. • Designed specifically for 384- and 768-well Array Tape, (no block change is required). Excellent ramp rates. Temperature uniformity and accuracy enable broad compatibility with amplification methodologies. • Should have an advanced optical system for in-line fluorescence detection in Array Tape. • Filtered LEDs should be optimized for a variety of commonly used fluorophores within the excitation range of approximately 480-620 nm. • With a high-resolution CCD camera supporting detection of fluorescence intensity with five detection channels for dyes within the range of approximately 510-705 nm. • Ability for multiplex data capture for all five optical channels in as little as 15 seconds. • Software and data analysis: The Software Suite should provide: Centralised data management, Instrument monitoring, intelligent run optimisation, Protocol generation and streamlined data analysis, pre-loaded on an embedded Windows® operating system, accessible to users through a unified web-based interface. • The system should allow users to rapidly generate liquid handling and thermal cycling protocols and scoring for post-PCR data analysis and interpretation. The scoring system should support absolute quantification (standard curve), relative quantification (relative standard curve and ΔΔCq), genotyping, and presence / absence. CSV data export for LIMS system is required. A touch screen interface facilitating instrument control and supporting real-time data monitoring. • Essential system consumables required for running High through Put Genotyping system • Start-up Consumables - Genotyping Reagents - Master Mix, Primer Assay ,1536 ,384 well Plates, deep well Plates, Aluminium heat seal rolls, Pipette tips, DNA extraction Kits, storage tubes 2ml/5 ml, LVl-2d barcoded tubes and Marine Grade 136 Stainless steel ball bearing - 1 set	

		• Start-up lab consumables. Reagent reservoir, measuring cylinder, Microfiber cloth, measuring jug, measuring jug-1 set • Should also provide suitable 20 KVA online UPS (another as a backup UPS) with at least one hour backup for entire platform. • Should take responsibility of furnishing the laboratory including partitioning of space assigned as per recommendations of manufacturer to provide end-to-end solution for efficient running and functioning of the platform without any fail. • Should set-up the genotyping facility and have responsibility to hand-over the facility in complete running condition. • Should also provide below list of small equipments/accessories with a centralized UPS for complete workflow to run the samples in the genotyping platform. • All major platforms, accessories, workstations, softwares, UPS and minor equipments (enlisted below) should be under five years comprehensive maintenance cost (CMC)/warranty for completing the workflow to run the samples in the genotyping platform and efficient functioning of the facility.	
42A	Air-Conditioners (ACs) with a capacity of 4 Ton each.	Supply, Installation, Testing and Commissioning of 4TR (Not less than 48000BTU/hr), 3 phase cassette type split A.C. Units (EER shall not be less than 3.00) complete with all components like indoor unit cooling coil, Centrifugal type fan including pumping of water, Outdoor unit (Air cooled condenser) comprising of Condenser coil scroll type compressor, condensor motor etc Controls, interlocking, electrical accessories etc as required for proper functioning of cassette unit controlled by cordless remote complete suitable for operation on 415 volts +/-10%, 50 Hzs A.C. Supply etc. Capable of performing functions like cooling, dehumidifying, air circulating, filtering etc complete as reqd as per technical specifications attached. (Make: M/s Blue Star, Hitachi, Voltas, Carrier, LG, Daikin, Mitsubishi, O- General,) NOTE- Condenser coil tube and evaporator coil tube shall be made from copper of high-quality grade.	4
43A	Lab renovation, furniture, etc. Creation of Turnkey Facility	As per the requirement for running the said facility.	
44A	Warranty:	3-year warranty on all the Equipments supplied and installed against the said tender.	

45A	Comprehensive Maintenance Contract	Two years after completion of Warranty period of three Years.	

TECHNICAL BID

Reg; Tender No. 8-43/2019-20/NIPGR/S&P for supply, installation of Fluorescent dye-labelled SNP genotyping platforms with Real time PCR and other related equipments.

A. Main Platform

ITEM-1	• Supply, Installation, Testing & Commissioning of fluorescent dye-labelled SNP genotyping platforms with Real time PCR, including all the minor equipment's, accessories, consumables etc. along with site preparations required for making this platform fully functional and operational at NGGF-NIPGR Campus. Fluorescent dye-labelled SNP genotyping platforms with Real time PCR.	Unit-1	**Compliance Yes/No**	**Please indicate Page No. of the Catalogue.**
	• PCR-based, automated high-throughput Genotyping Platform (including thermal cycler and FRET capable plate reader) to carry out SNP genotyping in a wide variety of Organisms.			
	• System should provide automated solution for the generation of flexible, high quality genotyping data from 25,000 to 300,000 genotypes per day.			
	• Based on allele-specific PCR genotyping system, fluorescent-labelled primers, endpoint genotyping technology with capability to determine both SNP and insertion/deletion genotypes at specific locus. The analysis can be carried out with minimal sample DNA in 96, 384 and 1536 well formats.			
	• System should be modular, high-throughput genotyping system and software (LIMS) Platform should handle the total laboratory process including Project management, sample management and Tracking, genotyping, data analysis and reporting, etc.			
	• The platform should be robust and globally proven, demonstrated with peer reviewed publications and should have at least minimum 2 to 3 installations in India.			

	• Training of Personnel at site: In order to enable NIPGR/NGGF staff get acquainted with the operation and maintenance of the said Equipment/platform, the supplier at no extra cost to NIPGR shall run the facility for a period of one year from the date of installation and train the departmental personnel during the said period.			
	• Warranty as per rules. Standard Warranty: 3-year warranty.			
	• Charges on account of CMC for 2years besides, 3year Standard Warranty, unless otherwise specified.			

B. Minor Accessories

1A	Refrigerator (-30^{0}C) for storing of samples (leaves, seeds, liquid DNA, tissues) –	• Ultra-low, frost free freezer should be upright and provide uncompromised sample protection for -16° to -25°C with at least 350L capacity. • Appropriate voltage stabilizer to be provided. • Warranty as per rules. • Adjustable shelves, temperature controller, auto lamp on/off feature, should be supplied with all standard accessories as per manufacturer catalogue for the model supplied.	2		
2A	Barcode Printer and scanner two set each consisting of**:**		2		
	Handheld scanner	• Should have excellent performance and reliability for a wide variety of applications that require the versatility of area-imaging technology plus the freedom of Bluetooth® wireless connectivity. • Should have software along with a custom sensor, enabling extended depth of field, faster reading, and improved scanning performance on poor quality bar codes. From high density linear to 2D bar codes found directly on the screen of a mobile device. • Should incorporates a Bluetooth Class 2, v2.1 radio, enabling unrestricted movement up to 30 feet (10m) from the base.	2		

		• Should provide extended battery life (up to 14 hours of battery life), maximizing productivity. • Image processing software should have advanced editing functionality—cropping, brightening, rotating, sharpening and more—to produce high-quality digital images. • Remote management system. • Designed to withstand 50 drops on concrete. • Other specifications: • Radio/Range 2.4 to 2.5 GHz (ISM Band) Adaptive Frequency Hopping Bluetooth v2.1; Class 2: 10 m (33') line of sight • Data Rate (Transmission Rate)- 3 Mbit/s (2.1 Mbit/s) • Battery- 1800 mAh Li-ion minimum • Number of Scans- Up to 50,000 scans per charge • Expected Hours of Operation- 14 hours • Dimensions of scanner- (LxWxH) 104 mm x 71 mm x 160 mm (4.1″ x 2.8″ x 6.3″) approx. • Operating Temperature- 0°C to 50°C • Light Levels 0 to 100,000 lux • Scan Pattern- Area Image (838 x 640 pixel array) • Decode Capabilities- Reads standard 1D, stacked, 2D and postal symbologies; limited OCR font reading • Warranty as per rules			
	Barcode printer	• Full-function front panel and large multilingual back-lit LCD display - with user-programmable password protection • Thin film printhead - with E^3 Element Energy Control • 8 MB Flash memory - including 2.0 MB user-available non-volatile memory storage for downloadable objects • Serial RS-232 and bi-directional parallel ports - with auto detect USB 2.0 port • Printing paper 1 box • Dual media sensors - transmissive and reflective, selectable through software or front panel • Internal Print Server - supporting 10Base-T, 100Base-TX, and fast Ethernet 10/100 auto-switching networks. • 32 bit 133 MHz RISC processor	2		

		• 16 MB SDRAM memory • Internal real-time clock • Advanced label/media counters • Thermal transfer and Direct thermal printing of bar codes, text, and graphics • Auto calibration - printer calibrates when printer is turned on or when printhead is closed using approximately two labels • Power consumption: Printing = 121 W (printing pause test label at lowest speed) • Height: 15.5 in. (393.7 mm), Width: 10.31 in. (261.9 mm), Depth: 20.38 in. (517.5 mm) (approx.) • Warranty as per rules.			
3A	Bead Beater	• It should be high shaking energy (aprrox 1400 rpm-2400 rpm), high-throughput cell disrupter. • In a single batch run it handles up to 192 samples using a deep-well microplate format or 45 samples in 1.5 or 2 ml screw-cap micro vials. • It should be capable of dry and freezing temperature grinding. • Power induction motor should be made of 1hp. • Complete cell disruption is achieved in 2 to 3 minutes of bead beating. • It should be capable to maintain low temperatures during bead beating.	2		
4A	Tissue Lyser	• Should be able to perform high-throughput tissues/cells disruption and high-quality DNA isolation • Simultaneous processing of 192 in 2 to 4 minutes. Should work on animal, plants, bacteria and yeast samples. • Should prevent carryover from tube to tube. Should work with dry, wet and cryogenic samples. • Should be based on bead milling by high frequency impact action • High-speed shaking of samples in 1.2 ml collection tubes or 2 ml microcentrifuge tubes with stainless steel or glass beads. • Convenient and secure disruption process. Adapter sets optimized for high-throughput disruption. Wide range of accessories available (e.g. grinding	2		

		jar set to process large samples). Reproducible results with difficult-to-lyse tissues. • Throughput should be 2 x 96 collection microtubes (1.2 ml) or 2 x 24 microcentrifuge tubes (2ml) • Warranty as per rules.			
5A	Freezer Dryer	• Should able to dry the plant tissue samples to prepare the plates for tissue analysis application. • Should be a laboratory Table top system with -55 °C condenser temperature with at least 4.5 Kg ice capacity. • Should provide required accessories to use along with Deep well plates and tubes. • Upright stainless-steel collector coil capable of holding 4.5 litres of ice before defrosting. • Should have real time display of collector temperature, vacuum level. • Data logging stores and displays data in table or chart format, and may be exported via USB or Ethernet. • Should have hot gas defrost. • System should meet the requirements of ISO/UL Standard 61010-1 (60 Hz models), CAN/CSA C22.2 No. 61010-1 (60 Hz models) and CE Conformity marking (230V, 50 Hz models). • Dryer should have Refrigeration temperature -50 degree centigrade. • Should be Compact benchtop design with a small footprint. • Warranty as per rules.	1		
6A	Corn Grinder	• Should be able to grind / crush hard seeds into powders. • Seed grinding for DNA extraction Automated, high-throughput mechanical disruption ideal for high-throughput applications involving sample preparation for DNA, RNA, and protein extractions, pesticide residue analysis, and more. • Equipped with digital timer, lockdown lid, and safety interlock for operator protection. • Laboratory mill designed for vigorous up-and-down shaking of deep-well titer plates, vial sets, and centrifuge tubes. • The system should offer rapid, 1-2 min, simultaneous disruption of upto six deep-well 96 well titer plates at a single go. It should also	2		

		accept 2 ml, 5ml, 15 ml and 50 ml tubes and accessories. • It is equipped with an adjustable clamp that accommodates a full range of sample vials from 2mL to 50mL centrifuge tubes and up to six deep-well titer plates. • The equipment must come with nesting tray for adjustable clamp assembly • The system must be capable of using grinding balls of stainless steel, silica or zirconium beads. • The system should have provision of effective tissue disruption and homogenization in frozen condition through cryo blocks for 2 ml, 15 ml, 50 ml sample tubes and for 96 well titer plates. • The equipment must be with digital timer and touch screen control panel, which enables the user to program run time, rate, cycles and pause time where up to 50 protocols can be saved. • Adjustable clamp must be present with a release button that allows users to secure vials or titer plates of various sizes. • It must include the following safety feature: lid interlock to prevent machine from running if top cover is open. • Accessories to enable cryogenic grinding and preserve temperature sensitive samples for RNA and protein extractions. • Large Clamp Assembly holds four deep-well titer plates, multiple centrifuge tubes, and other large grinding vials. • Standard Clamp Assembly holds two deep-well titer plates, vial sets, or cryo-blocks. • Strong vertical clamp movement of 500-1750 strokes/minute ensures that grinding media directly impact the sample each and every time. • Typical sample processing time of 1-2 minutes. • Warranty as per rules.			
7A	Refrigerated High Speed Bench Top Centrifuge	• Temperature range of -10^{0}C- + 40^{0}C • Should come with short-spin key, fast pre-cooling and stand-by/ continuous cooling option with high centrifugation speed 30,000 x g (17,000 rpm) or more, adjustable from 100 rpm upwards.	2		

		• Must have a standby cooling and auto shut-off function so that the compressor is deactivated after inactivity in user defined period of 1/2/4/8 hrs. to save energy and extend compressor life. • Timer for run can be set up to 99 minutes/ continuous. • Must have "At set rpm" function which enables timer countdown to be started only when selected speed is achieved. • Digital display of time, speed and temperature. Programmable time and speed using Key pad. Must be able to store at least 50 routine procedures with minimum 5 programmable buttons for frequently used programs in the first level. • Acceleration time to max rpm ≤ 14 sec, Breaking time to max rpm ≤ 14 s. • Low noise levels less than 56 db at max speed • The centrifuge must be CE, IVD (*in-vitro* diagnostic) and amp; IEC 1010-2-020 certified. • Stainless steel chamber, Brushless maintenance free drive, Automatic motorised locking when lid almost closed. • Versatility with 12 different rotors option: 10 fixed angle rotors and 2 swing out rotors. • Fixed angle rotor: - 30x1.5/2ml, high speed rotor 24 x 1.5/2ml with 30000xg, 48x1.5/2ml with 18000xg, 16x5.0ml with 21000xg, 6x15/50ml falcon with 7500xg, 18x1-2ml cryo tubes, 24 spin column tubes, 8x8- PCR strips • Swing-bucket rotors for 24x1.5/2.0 ml tubes with 16,000xg and for 2 x DWP or MTP not higher than 29 mm with 2,200xg or more. • Rotors and lids should be made of anodised aluminium to ensure chemical resistance, with aerosol tight lid, Automatic imbalance and rotor recognition • Rotor must be autoclavable at 121^0C for 20 min to completely eliminate any containing material. • Rotors and accessories required for 1.5/2 mil tubes, 96 well plates and deep well plates to should be included. • Warranty as per rules.			

8A	Precision balance	• The balance is intended for weighing samples for mass spectrometry and must be of good sensitivity. • Maximum capacity of the balance must be (fine range/full range) – 75-81/ 215-220 g (semi-micro cum analytical balance). • The full range readability must be 0.1mg and fine range 0.01mg. • Balance Repeatability must be 0.01mg or better. • Minimum weight that can be weighed must be 2mg or better. • Minimum weight according to United State Pharmacopeia (USP) must be 20mg. • The balance must have fully automatic time & temperature controlled internal adjustment with two inbuilt weights. • The balance must have Agro clips, which is required to control measurement uncertainty. • The balance should have split draft shield doors that do not project beyond the balance to save working space. • The balance must have monobloc weighing system, which is proven weighing technology for fast & accurate results. The housing of balance must be resistant to most chemicals, incl. acetone. • The balance must have level controller at front side for easier levelling of the balance. • The balance must come with RS232 (to connect computer) & USB port. • The balance must have self-diagnostic features to test it e.g. keypad test, repeatability test. • The balance must have built-in date & time for GLP (Good Laboratory Practice)/GMP o (Good Manufacturing Practice) compliant printout required for quality assessment. • Warranty as per rules.	1		
9A	Analytical balance	• Monolithic weighing cell must be incorporated for tolerating the fluctuation in accuracy with variation in temperature at root level • Should have internal motorized calibration system • High contrast liquid crustal backlit must be present for clear readout. • Rectangular all glass draft shield opening from 3 sides. • The balance must have self-diagnostic features to test it e.g. keypad test, repeatability test. • The balance must have built-in date & time for GLP (Good Laboratory Practice)/GMP (Good	1		

		Manufacturing Practice) compliant printout required for quality assessment. • The balance must have a feature that allows fast & convenient dismantling of draft shield to enable washing the glass panel of the draft shield easily. The balance must have programmable smart keys for direct access to preferred applications. • Weighing capacity: 220 g • Readability: 0.0001g or 0.1 mg • Pan size: 90 mm • Linearity: 0.1/0.2 mg • Repeatability: < ±0.2 mg • Warranty as per rules.			
10A	pH and conductivity Meter	• Should be accurate, consistent results on day after day, easy-to-use features that maximize productivity and minimize training time. • Durable construction for long product life. Auto-Read, Timed, Single-shot. • Data Points: 2000 with Date and Time Stamp • Temperature Range (Metric): -5.0° to 105.0° C • Accuracy (pH): ±0.002 pH • Channels: 4 - customizable with modules • Resolution (pH): 0.1, 0.01, 0.001 • Range (pH): -2.000 to 20.000 • pH electrode: Double junction Tough glass refillable pH electrode with integrated temperature sensor. • Temperature range: -20 ° C to + 120° C • pH calibration point: up to 5. • Warranty as per rules.	1		
11A	Water Purification system	• System should deliver high-quality ultrapure water. Measure and display compensated and non-compensated temperature. • Final Filters Options: Pharmaceutical grade, final filter with 0.22-micron membrane filter in stack disc configuration.	2		

		• Water purification system to provide ultra-pure water directly from Potable Tap Water. • Pre-filtration with 5-micron PP depth filter to control the feed water particulate matter. • Reverse Osmosis and mixed bead ion exchange resins and activated carbon in a single cartridge, with feed water acceptance of up to 2000 micro Siemens conductivity • The 1st stage of the RO DI cartridge contains pre-treatment for reverse osmosis followed by RO membrane. The 2nd stage contains mixed bed ion exchange resin and organics for removal of organic contaminants. • High flux thin film composite polyamide RO membrane with Flow rate minimum 3 Ltr./Hr @ 25 deg C to tank • The tank must have outlet to collect the RO grade water. • RO Rejection must have capillary tube to reduce wastage of water. • Permeate divert valve Preventing premature exhaustion of downstream purification system. • Conductivity meter after RO to measure the performance of the system. • Minimum 6 Lit Inbuilt HDPE tank with vent filter, the tank should be filled from bottom to avoid air contamination. • System monitors and display water quality for Resistivity and Conductivity along with temperature compensation / product unit / pressure units / consumables pack lifetime, and alarms to alert the user. • Feed Water Specifications : Water Quality : Potable tap water; Fouling Index (SDI) : 12; Free Chlorine : <3ppm; Conductivity : <2000uS/cm. . The feed water quality testing should be provided by supplier and may provide additional accessories to meet the actual levels of contaminations. • Type 1 Product Water Specifications:			

		Resistivity: 18.2 Meg Ohm.cm (@ 25-degree C); TOC: <10 ppb; Bacteria: <0.1cfu/mL; Pyrogen: 0.001Eu/mL; RNase <0.01 ng /mL; final flow Rate: minimum 0.5L/min • The System contains EU CE certificate and UL certificate, the specimen of the certificate should be attached along with the Bid. • One set of cartridges for the pre-filter as well as for the ultrapure unit to be provided. • All the required items to run the system must be included in the final quote Price for 1st year consumables from the date of installation should be included within the final quote and price of 2nd year as optional. Standard warranty for one years from the date of installation and should be included in the quote. • Warranty as per rules.			
	Pipettes				
12A	Manual Single channel pipette	• Variable volume; Volume should be continuously adjustable. • Built-in shock absorber inside the tip ejector which reduces thumb impact. • Fully Autoclavable, robust and calibrated one handed • Corrosion free; easy to clean tip ejector. • Pipette should be colour coded for easy recognition and 4 digit display, have adjustable and specific to liquid nature. • Removal of lower parts of pipette for easy cleaning. • Spring loaded tip cones for smooth fittings to tips and compatible with tips of other companies • Warranty for 3 years and certification from CE, ISO and IVD must be provided • Pipette should attach to stand by handle for prevention of cross contamination. • A compatible rotating carousel type pipette stand made of high-density ABS plastic that can hold upto 6 pipette should be supplied along with pipette. • RFID tags for asset management for easy handling and calibration management. • Comfortable handle, light springs and "Magnetic Assist" technology ensure light and smooth operation. • Small sealing area and positive stop ensure tips load quickly, seal perfectly and easy to eject.			

		• Liquid handling during library preparation protocol. • Ergonomic handle design with comfortable finger hook to rest hand between pipetting cycles. • Very light spring forces resulting in less Aspiration and dispensing force. • Ejaculator metallic type. • Warranty as per rules. **Volume ranges for pipette** • 0.1-2.5 µl • 0.2-2 µl • 0.5-10 µl • 2-20 µl • 10-100 µl • 50-200 µl • 100-1000 µl • 500-5000 µl • 1000- 10,000 µl	4 4 4 4 4 4 4 4 4		
13A	Number of pipette stand		5		
14A	Manual Multichannel Pipette	• Fully autoclavable 8 channel and 12 channel pipette • Robust and calibration • One-handed and one button operation with low operating force even while wearing gloves. • Variable volume; Volume should be continuously adjustable. • Built-in shock absorber inside the tip ejector which reduces thumb impact. • Fully Autoclavable, robust and calibrated one handed • Corrosion free; easy to clean tip ejector. • Pipette should be colour coded for easy recognition and 4 digit display, have adjustable and specific to liquid nature. • Removal of lower parts of pipette for easy cleaning. • Spring loaded tip cones for smooth fittings to tips and compatible with tips of other companies. • Warranty for 3 years and certification from CE, ISO and IVD must be provided • Pipette should attach to stand by handle for prevention of cross contamination. • A compatible rotating carousel type pipette stand made of high-density ABS plastic that can hold			

		upto 6 pipette should be supplied along with pipette. • RFID tags for asset management for easy handling and calibration management. • Comfortable handle, light springs and "Magnetic Assist" technology ensure light and smooth operation. • Small sealing area and positive stop ensure tips load quickly, seal perfectly and easy to eject. • Liquid handling during library preparation protocol. • Ergonomic handle design with comfortable finger hook to rest hand between pipetting cycles. • Very light spring forces resulting in less Aspiration and dispensing force. • Ejaculator metallic type. • Warranty as per rules. • Volume ranges for pipette • 0.1-2.5 µl • 0.5-10 µl • 2-20 µl • 10-100 µl • 50-200 µl • 100-1000 µl	4 4 4 4 4 4		
15A	Number of pipette stand		5		
16A	Automatic Multichannel different volume range pipettes	Fully autoclavable 8 and 12 channel pipette, robust and calibratable, one handed and one button operation with low operating force even while wearing gloves. Fast loading, ergonomic handling and absolute precision. The pipette should be very light, color-coded for easy recognition, with 4-digit display, have adjustable volume and to specific liquid nature. Non-corrosive and light piston with smooth movement. Spring loaded tip cone for smooth fitting to tips, compatible with tips from different companies. Warranty for 3 years and certification for CE, ISO and IVD must be provided. Warranty as per rules. A compatible rotation carousel-type pipette stand made of high density ABS plastic that can hold up to 6 pipettes each should be supplied along with the pipettes. The pipettes should attach to the stand by the handle for prevention of cross-contamination. At the end of each pipetting cycle it should re-calibrates itself by resetting the zero point.			

		It should have long-life battery enough for a day with minimal charging and should last for thousands of recharges.			
		Volume ranges for pipettes **Type: 8 Channel** **Volume Range: 1 – 10 µL** Accuracy: 0.04 µL: ± 4.0 % 0.075 µL: ± 1.5 % 0.1 µL: ± 1.0 % Volume Increment: 0.01 Ml	**2**		
		Type: 8 Channel **Volume Range: 2 – 20 µL** Accuracy: 0.15 µL: ± 7.5 % 0.15 µL: ± 1.5 % 0.2 µL: ± 1.0 % Volume Increment: 0.02 µL	**2**		
		Type: 8-Channel **Volume Range 5 – 50 µL** Accuracy 0.18 µL: ± 3.5 % 0.3 µL: ± 1.2 % 0.4 µL: ± 0.8 % Volume Increment0.05 µL	**2**		
		Type: 8-Channel **Volume Range 20 – 200 µL** Accuracy 0.5 µL: ± 2.5 % Volume Increment0.2 µL	**2**		
		Type: 8-Channel **Volume Range 20 – 300 µL** Accuracy 0.75 µL: ± 2.5 % Volume Increment0.2 µL	**2**		
		Type: 8-Channel **Volume Range100 – 1200 µL** Accuracy 3.6 µL: ± 3.6 % Volume Increment1.0 µL	**2**		
		Type12-channel **Volume Range1 – 10 µL** Accuracy 0.04 µL: ± 4.0 % Volume Increment0.01 µL	**2**		
		Type12-Channel **Volume Range2 – 20 µL** Accuracy 0.15 µL: ± 7.5 % Volume Increment0.02 µL			

		Type12-Channel **Volume Range5 – 50 µL** Accuracy 0.18 µL: ± 3.5 % Volume Increment0.05 µL Type12-Channel **Volume Range20 – 200 µL** Accuracy 0.5 µL: ± 2.5 % Volume Increment0.2 µL Type12-Channel **Volume Range20 – 300 µL** Accuracy 0.75 µL: ± 2.5 % Volume Increment0.2 µL Type12-Channel Volume Range100 – 1200 µL Accuracy 3.6 µL: ± 3.6 % Volume Increment1.0 µL	**2** **2** **2** **2**		
17A	Water Bath system	• Should be circulatory one with working temperature up to 99.9°C with bath volumes up to 20L, built-in dry running protection • Capacity: 20 L • Temperature: Ambient to 100°C • Temperature Uniformity: ±0.2°C at 37°C • Temperature Stability: ±0.1°C at 37°C • Accessories: Clear polycarbonate gable cover, Diffuser tray, Drain hose, Rubber duck • Certifications: UL Listed and CE Marked • Auto-On and Auto-Off • Low Fluid Protection • Audible Alarms: • Save up to four pre-set temperatures to quickly start the bath • Adjustable digital over-temperature protection allows you to set a maximum allowable temperature that will trip the alarm • Chemical and corrosion resistance with epoxy powder-coated exterior • Easily clean the chamber with its seamless stainless-steel interior • Warranty as per rules.	2		
18A	Water bath	• Water bath should be high quality, durable and should be trouble-free and low-maintenance in everyday operations. • Working temperature range should be +18 °C to + 99.9 °C.	2		

		• Should have dynamic temperature control systems • Heating capacity: 0.5kV • Power: 230 V, 50-60 Hz • Temperature stability : ±0.15 • Should be equipped with bath cover. • Bath opening/Bath depth (cm)W × L / D: 12 × 27 / 14 approx. • Dimensions (cm) W × L × H: 21 × 35 × 22 approx. • Filling volume maximum capacity: 4.5L. • Warranty as per rules.			
19A	High-throughput DNA extraction platform with processing of 8 x 96 well micro plates in parallel with validated magnetic bead-based extraction chemistry for plant tissues.	• High-throughput DNA extraction platform with processing of 8 x 96 well micro plates in parallel with validated magnetic bead-based extraction chemistry for plant tissues. • High-throughput extraction with high quality DNA suitable for downstream applications such as sequencing, microarrays and SNP genotyping. ○ Mini extractions (20-30 mg starting material) ⎫ 8 x 96 plates/1-1.5 hours ○ Maxi extractions (30-100 mg starting material) ⎫ 8 x 96 plates/2.5 hours • Fully walk away system compatible with Genotyping workflow for minimum hands-on operation. • Offline Tip wash station for reusage of tips across up to 40 DNA extraction runs. • Compatible with laboratory workflow management software for project and sample management. It has to be integrated with customized or pre-set protocols to suit a wide variety of sample materials. Warranty as per rules.	1		
20A	DNA Quantification and QC Analysis	• Quantification of DNA and RNA with 2 µl up to 16 samples analysis with the help of an integrated software to identify the impurities and turbidity and other influencers in the samples • Ability to measure biologics and genomics from low to high concentrations in dynamic	1		

		range of 0.03–200 OD. • Should have microfluidic circuits moulded into plates and chips ensuring that there's no cross-contamination or evaporation. • Light source: xenon flash lamp • Detector: UV/Vis polychromatic spectrophotometer. • Wavelength range: 230-750 nm. • Absorbance precision 0.001 OD (0.5 mm path) • Physical: 37 cm W x 46 cm D x 33 cm H, 21 kg approx. • Computer: Separate computer to be included, Microsoft Windows 10 or later • Warranty as per rules.			
21A	Monochromator Plate Reader	• Monochromatic based absorbance Plate reader with wavelength range 230 nm to 1000nm flexibility to work with high or low volume samples. • FRET capability. • Nano Quant Plate for parallel quantification and analysis up 16 samples as 2 Ul • Warranty as per rules.	1		
22A	Mini Horizontal Gel Electrophoresis Unit	• Cell size (W x L x H) 9.2 x 25.5 x 5.6 cm approx. • Gel running tray able to run 15-20 samples in single tier. • Gel running tray size should be 7 x 7 cm, 7 x 10 cm tray approx. • Gel tray should have provision to run multiple tier. • Unit with safety lid. • Buffer tank. • Lid with cable. • Levelling bubble • Should be compatible for fast resolution of DNA (Bromophenol blue migration~4.5 cm/hr (at 75 V). • Warranty as per rules.	2		
23A	Maxi Horizontal Gel Electrophoresis Unit	• Should have a single moulded tank with safety lid and UV Transparency tray. • Cell size (W x L x H) 18 x 40.5 x 9.4 cm approx. • Should have Gel tray sizes (OD) (W x L) 15 x 10 cm, 15 x 15 cm, 15 x 20 cm, 5 x 25 cm approx. • Should have a sample throughput up to 120	2		

		samples. • Should have replaceable platinum electrodes. • Should confirm to CE standard • Should have adjustable external gel caster • Should be compatible for fast resolution of DNA (Bromophenol blue migration ~3.0 cm/hr (at 75 V) • The electrophoresis system must be from the same manufacturer as the power pack for complete compatibility. • Warranty as per rules.			
24A	Electrophoresis Power Supply	• Output 500 V, 2.5 A, 500 W • Volt-hour control 99,000 V-hr • Display 128 x 64 pixel, backlit, graphics LCD • Safety compliance EN61010 • Warranty as per rules.	4		
25A	GEL documentation system	• System should have Trans UV excitation source and CCD based detector. • Pixel Size should be minimum 4.6 x 4.6 µm or better. • Image resolution should be minimum 4 megapixels or better. • Should have lens flat-fielding calibration for each sample tray to deliver image data that are always optimized and reproducible without imaging artefacts and should provide superior image uniformity and quantitation. • System should have a dynamic range of minimum 3.0 orders of magnitude and a pixel density of minimum 4,096 grey levels or better. • System should be able to do automatic camera adjustments like zoom focus adjust aperture or select light source during image acquisition and should provide flexibility to image a wide variety of applications including nucleic acid and protein detection via colorimetric and fluorescent stains • System should have one universal emission filter to accommodate a large portfolio of detection methods like ethidium bromide, SYBR Green SYBR, Safe SYBR ,Gold Gel, Green Gel, Red Fast Blast, SYPRO, Ruby, flamingo, oriole, CY3, rhodamine green, fluorescent Fluor orange and other spectrally similar stains labels and dyes • System should be able to visualize stain free	2		

		DNA, RNA and protein gels • 2 pack of 10% fast running stain free gel solution sufficient to cast as many as 250 gels of 1.00 mm thickness should be provided • System should come with gel analysis software compatible with mac or PC computers • Software should generate 16-bit and 8-bit tiff images with export option • Software should be able to do automatic normalization of bands using total lane as a loading control. • Software should have customizable reports user-defined data charts with instant access to excel functionality snapshot tool to copy images lane profiles and graphs easily accessible targeted analysis features flexible lane and band detection and quantification tools including volumetric tools. • System should be provided with a thermal printer and a branded compatible desktop 21 inches LED display screen, 16GB RAM, 2X 1 TB HDD, I3 processor with 7th generation or better. • Warranty as per rules.			
26A	Microplate Mixer	• Thermo/IKA with temperature controller and also with powerful orbital shaker with robust housing for high stability of tubes and with microfuge system spin for assay tubes. • Warranty as per rules.	2		
27A	Refrigerator (-80°C)	• Ultra-low freezer should be upright and provide uncompromised sample protection and storage for - 86°C with ~800L capacity. • Freezer must attain -80°C while operating at ambient temperature of 32°C. • Fully programmable microprocessor controlled with membrane keypad and eye level control panel. Audible and visible alarms for temperature, power failure, system failure, low battery etc. • System should have 304L grade stainless steel interior and tough powder coated exterior finish. • Freezer should have five insulated doors giving access to shelves which should be adjustable in 13 mm shelves and make the floor cabinet total five inner storage compartments.	2		

		• Freezer should have insulation using vacuum insulation panelling with polyurethane foam. • Freezer should have heated air vent and front panel air filter. Freezer must have washable air condenser filter indication which should help to keep the fins free of dust to maintain peak cooling efficiency. • Freezer should have heavy duty lockable castors and lockable outer doors and lids. • Freezer must have battery backup and 4 PIN security lock for unauthorized tempering. • Freezer must have RS 232 interface data logging port and it must also have on board SMART diagnostic software. • Freezer must use CFC-FREE, HCFC-FREE non-flammable refrigerants and must be energy efficient and hermetically sealed cascade refrigeration system with pull down time of 5.5 hours or less. • Freezer should be capable to run at any voltage between 190 – 270V, and should be supplied with a 5 KVA (or better) branded quality servo stabilizer with time delay. • Freezer should have ISO 9001 safety requirements/IEC 61010 Electrical safety CE certified. • Warranty: at least one year for freezer and at least five-year warranty on the compressor. • Capacity (Metric): ~800 L • Temperature Range: −50° to −86°C • Type: Ultra-Low Freezer, Upright • Warranty as per rules.			
28A	Refrigerator (-30°C)	• Ultra-low freezer should be upright and provide uncompromised sample protection for -16° to -25°C with ~350L capacity. • Vertical with shelves in upper portion and there should be pullout drawers in lower portion. • Voltage stabilizer to work on 230 Volts AC. • Warranty as per rules. • It should be frost free. • Adjustable shelves, temperature controller, auto lamp on/off feature, should be supplied	2		

		with all standard accessories as per manufacturer catalogue for the model supplied. • Warranty as per rules.			
29A	Refrigerator (4°C)	• Should be designed with features that support sample protection and sustainability objectives for the storage of pharmaceuticals, vaccines, chemotherapy and other medical and pharmacy-grade storage requiring 2° to 8°C. • The doors of the fridge need to be glass door/transparent. • The fridge should come with a lock and key system. • Suitable stabilizer needs to be provided along with the fridge. • Warranty as per rules. • Capacity: Approximately 650 Litre • Temperature Range: 2 to 8^0C • Defrost: Auto • Rated load wattage: 300 W • No. of Shelves: Six (6) • Door Style: Glass • Drawers: 6 Basket Drawers	2		
30A	DNA Storage tubes	2D Barcoded tubes with 500 ul, 1Ml capacity with internal screw cap to store aliquots of DNA and assay mix.	10		
31A		SNP line Automated High throughput Genotyping Platform with intergraded Genotyping solution with automated DNA Preparation, Plate replications, reagents dispensing, Laser Plate sealing, Thermal cycling for PCR, data reading and analysis & reporting consist of following:			
32A	Replicator DNA Plate Preparation	• Plate replicator to create multiple daughter plates from source DNA plates, preparation of 24 x 1536 well plates with 1.5 µl dispensing within 12 minutes. • Quick stamp out copies of 96, 384 and 1536 well plates or reformatting of 96 and 384 well plates in to 1536 PCR well plates. • With variable Z-position dispensing head	1		

		allowing use of both shallow and deep well plates • Integrated tips washstand to reduce pipetting tips contamination consumable cost. • It should be compatible with laboratory workflow management software for project / sample management and to be provided with laptop/software • Warranty as per rules.			
33A	liquid dispensing system	• Liquid Dispenser with volume ranges from 1 µl to 50 µl with accuracy of <5% CV at 1 uL, non-contact, continuous reagent dispensing of PCR master mix, assay mix for genotyping and standard PCR applications. • Quick dispense of 1 µl reagents in to 1536 well plates in less than 45 seconds. • It should be integrated with error control, data tracking with 1D, 2D data matrix barcode readers. • Vacuum-based 8-channel aspiration system allowing for multi-plate dispensing • Two plate positions, active working plate and load/unload plate, to increase throughput option is required • Ability of enhanced motion control ensuring greater accuracy • It should be integrated with tip washstand to reduce pipetting tips contaminations. • It should be compatible with integrated laboratory workflow management software. • Warranty as per rules.	1		
34A	Automated Heat and Laser Sealers	• Thermal and Laser plate sealers suitable for 96, 384 and 1536 well plates to use with water bath PCR system. • Seals must be optically clear to improve assay detections in 1536 well Plates. • Heat sealer to seal and re-seal the plates up to 5 times, 265 mm diameter film role. • Suitable with wide variety of Plates formats 96, 384 and 1536 well Plates.	1		

		• Laser sealer should be suitable for light-sensitive samples. • Suitable for elevated temperature assays and long-term storage. • Warranty as per rules.			
35A	Barcode Printer and scanner one set each consisting of**:**	• Compatible for single tubes and 96 tube racks allows quick and easy input of sample tracking data combined with Project and sample management software through LIMS. The flatbed scanner base conforms with SBS standard 2D barcode tube racks which allows easy integration into automated Genotyping systems.	1		
	Handheld scanner	• Should have industry-leading performance and reliability for a wide variety of applications that require the versatility of area-imaging technology plus the freedom of Bluetooth® wireless connectivity. • Should have proprietary software along with a custom sensor, enabling extended depth of field, faster reading, and improved scanning performance on poor quality bar codes. From high density linear to 2D bar codes found directly on the screen of a mobile device. • Should incorporates a Bluetooth Class 2, v2.1 radio, enabling unrestricted movement up to 30 feet (10m) from the base. • Should provide extended battery life (up to 14 hours of battery life), maximizing productivity. • Image processing software should have advanced editing functionality—cropping, brightening, rotating, sharpening and more—to produce high-quality digital images. • Remote management system. • Designed to withstand 50 drops on concrete. • Other specifications: • Radio/Range 2.4 to 2.5 GHz (ISM Band) Adaptive Frequency Hopping Bluetooth v2.1; Class 2: 10 m (33') line of sight • Data Rate (Transmission Rate)- 3 Mbit/s (2.1 Mbit/s) • Battery- 1800 mAh Li-ion minimum • Number of Scans- Up to 50,000 scans per charge • Expected Hours of Operation- 14 hours • Dimensions of scanner- (LxWxH) 104 mm x	1		

		71 mm x 160 mm (4.1″ x 2.8″ x 6.3″) approx • Operating Temperature- 0°C to 50°C • Light Levels 0 to 100,000 lux • Scan Pattern- Area Image (838 x 640 pixel array) • Decode Capabilities- Reads standard 1D, stacked, 2D and postal symbologies; limited OCR font reading • Warranty as per rules.			
	Barcode printer	• Full-function front panel and large multilingual back-lit LCD display - with user-programmable password protection • Thin film printhead - with E^3 Element Energy Control • 8 MB Flash memory - including 2.0 MB user-available non-volatile memory storage for downloadable objects • Serial RS-232 and bi-directional parallel ports - with auto detect USB 2.0 port • Dual media sensors - transmissive and reflective, selectable through software or front panel • Internal Print Server - supporting 10Base-T, 100Base-TX, and fast Ethernet 10/100 auto-switching networks. • 32 bit 133 MHz RISC processor • 16 MB SDRAM memory • Internal real-time clock • Advanced label/media counters • Thermal transfer and Direct thermal printing of bar codes, text, and graphics • Auto calibration - printer calibrates when printer is turned on or when printhead is closed using approximately two labels • Power consumption:Printing = 121 W (printing pause test label at lowest speed) • Warranty as per rules.	1		
36A	Water bath theromal cycler for PCR	• Water bath thermal cycler for Polymerase chain reaction • It should be suitable for PCR system of 96, 384 and 1536 well formats and array tips and should have a capacity to handle 16 no's of 384/1536 well plates per batch. • Water bath thermal cycler plates should be automatically moved from one temperature to	2		

		another temperature and must be precisely controlled and should perform faster cycle time of 40% when compared with Peltier based cyclers for high through put PCR applications. • Circulation jet ensuring temperature uniformity in each tank for high PCR accuracy and eliminating edge effects. • Depth: 70.5 cm (27.8") Width (without open screen): 55 cm (21.6"); Width (with open screen): 75 cm (29.5") Height (door closed): 92 cm (36.2"); Height (door open): 130 cm (51.2") approx. • Warranty as per rules.			
37A	Real-Time PCR System	➢ **Real-Time PCR System for genotyping assays: 2 Nos.** • Automation compatible, high-throughput, touch screen interface, reliable, sensitive and accurate quantitative PCR (qPCR) system for broadest range of qPCR applications. • Should accommodate 4 different block types 96-well, 96-well Fast, 384-well, TaqMan Array Card, (384-well microfluidic card) • Responsive touch-screen, automation capabilities, and effortless block exchange without the need for any tools • Run hundreds of real-time PCR reactions effortlessly using TaqMan® Array 384-well microfluidic cards and integrated robotics system • Detect changes in target quantity as small as 1.5-fold in single-plex reactions and obtain 10 logs of linear dynamic range • With 6 colors (21 filter combinations) for ease of wide range of genotyping experiments. • Max. ramp Temp. 6.5°C/sec • Temperature Range: 4 to 99.9°C • Capping and decapping devices - It should perform easy capping, de-capping and picking of single tubes out of a rack. It should be mobile, battery-operated and should have 8 channel decapper for table use capping or	2		

		decapping of 8 tubes at once. It should have integrated dropping mechanism – each 1 No. • Two X 2Kva online UPS with at least 30 min back up to be provided. • Warranty as per rules.			
38A	Vacuum pump and filteration set		1		
39A	Drying Oven	• It should deliver flexible temperature uniformity regulated by microcomputer intelligent control. • A simple thermostat system which is easy to use and the units can be built up to meet individual requirements. • Temperature range: Ambient ±5°C to ±70°C fan assisted with 100 L Capacity. • Oil free vacuum pump with regulator to connect with SNP Line system. • Warranty as per rules	2		
40A	Integrated fluorescence detection unit	• It should be an advanced optical system optimized for integrated fluorescence detection. • It should have filtered LED's which are optimized for a variety of commonly used fluorophores (range of 480-620 nm). • A high-resolution CCD camera supporting detection of fluorescence intensity within 5 detection channels for dyes emitting within the range of 510-705 nm. • Multiplex data capture for all 5 optical channels can occur in as little as 10 seconds - 1 set. • Laboratory workflow management software LIMS platform to handle laboratory processes including sample management and tracking, data analysis and reporting. • Every project needs to have a unique project number, and all associated sample plates, assays and genotyping results are tracked within the project. It should have the following features as mentioned below:	1		

		• Multiple graphic user interface to shared database • Password-protected multi-level secure data storage • Multiple projects can be run simultaneously and are viewed by customer and project • Complete user tracking to event log file • Automatic job report details work schedules • Barcode tracking of plates and tubes - fully searchable • Large scale project capability with superfast access powered by MySQL • Strict operating option ensures users log freezer and plate storage locations. • Sample management package capable of creating DNA master layout graphical organizer, plate layout importer, plate replication tracking of 96, 384, 1536 – at any user definable format , assay + sample plate tracking, freezer storage tracking, robotic interface utilities for fully automatic plate tracking (DLLs and command line programs), thermal cycle parameter tracking, genotyping features. • Reading and calling from direct plate reader import, storage of multiple reads of the same plate, automated / manual cluster calling for plate reader files, compare differences between calls on plates, multiple assays can exist on the same plate, multiple master plates may be viewed individually as clusters. It should have IOT data monitoring devices and loggers. • Hardware: The system should be quoted with required Computer or laptop. The required local PC server should be provided, it will be connected to main server. • Warranty as per rules.			
41A	Integrated in line liquid handling, array processing	• Fully automated, medium to high throughput system with both end point and real time PCR capabilities.	1		

	and analytical system	• It should have a fully integrated automated PCR and qPCR setup, amplification and data analysis. • It should allow multi-functional dispensing for high speed fluid handling in 384- or 768-well Array Tape with an interchangeable 96- or 384-channel pipetting head precisely dispensing DNA samples into Array Tape. • It should have an integrated pipette wash system reducing tip waste and associated consumable costs while mitigating the risk of cross contamination. The - integrated amplification needs to be supported by a Peltier thermal cycling block. • Designed specifically for 384- and 768-well Array Tape, (no block change is required). Excellent ramp rates. Temperature uniformity and accuracy enable broad compatibility with amplification methodologies. • Should have an advanced optical system for in-line fluorescence detection in Array Tape. • Filtered LEDs should be optimized for a variety of commonly used fluorophores within the excitation range of approximately 480-620 nm. • With a high-resolution CCD camera supporting detection of fluorescence intensity with five detection channels for dyes within the range of approximately 510-705 nm. • Ability for multiplex data capture for all five optical channels in as little as 15 seconds. • Software and data analysis: The Software Suite should provide: Centralised data management, Instrument monitoring, intelligent run optimisation, Protocol generation and streamlined data analysis, pre-loaded on an embedded Windows® operating system, accessible to users through a unified web-based interface. • The system should allow users to rapidly generate liquid handling and thermal cycling protocols and scoring for post-PCR data analysis and interpretation. The scoring			

		system should support absolute quantification (standard curve), relative quantification (relative standard curve and ΔΔCq), genotyping, and presence / absence. CSV data export for LIMS system is required. A touch screen interface facilitating instrument control and supporting real-time data monitoring. • Essential system consumables required for running High through Put Genotyping system • Start-up Consumables - Genotyping Reagents - Master Mix, Primer Assay ,1536 ,384 well Plates, deep well Plates, Aluminium heat seal rolls, Pipette tips, DNA extraction Kits, storage tubes 2ml/5 ml, LVl-2d barcoded tubes and Marine Grade 136 Stainless steel ball bearing - 1 set • Start-up lab consumables. Reagent reservoir, measuring cylinder, Microfiber cloth, measuring jug, measuring jug-1 set • Should also provide suitable 20 KVA online UPS (another as a backup UPS) with at least one hour backup for entire platform. • Should take responsibility of furnishing the laboratory including partitioning of space assigned as per recommendations of manufacturer to provide end-to-end solution for efficient running and functioning of the platform without any fail. • Should set-up the genotyping facility and have responsibility to hand-over the facility in complete running condition. • Should also provide below list of small equipments/accessories with a centralized UPS for complete workflow to run the samples in the genotyping platform. • All major platforms, accessories, workstations, softwares, UPS and minor equipments (enlisted below) should be under five years comprehensive maintenance cost (CMC)/warranty for completing the workflow to run the samples in the genotyping platform and efficient functioning of the facility.			

42A	Air-Conditioners (ACs) with a capacity of 4 Ton each.	Supply, Installation, Testing and Commissioning of 4TR (Not less than 48000BTU/hr), 3 phase cassette type split A.C. Units (EER shall not be less than 3.00) complete with all components like indoor unit cooling coil, Centrifugal type fan including pumping of water, Outdoor unit (Air cooled condenser) comprising of Condenser coil scroll type compressor, condensor motor etc Controls, interlocking, electrical accessories etc as required for proper functioning of cassette unit controlled by cordless remote complete suitable for operation on 415 volts +/-10%, 50 Hzs A.C. Supply etc. Capable of performing functions like cooling, dehumidifying, air circulating, filtering etc complete as reqd as per technical specifications attached. (Make: M/s Blue Star, Hitachi, Voltas, Carrier, LG, Daikin, Mitsubishi, O-General,) NOTE- Condenser coil tube and evaporator coil tube shall be made from copper of high-quality grade.	4		
43A	Lab renovation, furniture, etc. Creation of Turnkey Facility	As per the requirement for running the said facility			
44A	Warranty:	3-year warranty on all the Equipments supplied and installed against the said tender.			
45A	Comprehensive Maintenance Contract	Two years after completion of Warranty period of three Years.			

Name & Signature of Tenderers/
Company with Seal