

Two Bid Tender Document

PURCHASE OF SCIENTIFIC EQUIPMENTS AND OTHER MISCELLANEOUS ITEMS FOR  
VARIOUS DIVISION OF FRI, DEHRADUN.



Forest Research Institute  
P.O. New Forest  
Dehradun-248006  
2019-20

KISHAN KUMAR  
S  
VADAKEKANDIL

Digitally signed by KISHAN  
KUMAR S VADAKEKANDIL  
Date: 2019.07.09 15:23:49  
IST

**Notice Inviting Tenders**  
(National Competitive Bidding)

**Forest Research Institute**  
(Indian Council of Forestry Research & Education)  
Post- New Forest, Dehra Dun – 248006, Uttarakhand, India

Phone: 0135-2224205; Fax: 0135-2756865

Website: fri.icfre.gov.in Email: po\_fri@icfre.org

**TENDER NO: X- 16/2019-20/Purchase**

Online bids are invited two bid systems for purchase of scientific equipment and other miscellaneous items for various Divisions. Item No. 1 'Water Potential System, item No. 2 Rotary Evaporator with Vacuum Controller and Vacuum Pump, item No. 3 'Stereo Zoom Microscope' item No. 4 'DSL Camera with accessories' item No. 5 'Stereo-Zoom Microscope system with CC Camera, Illuminator and image analysis software, etc.' item No. 6 'Tree Motion Sensor' item No. 7 'Auto Analyser Machine' item No. 8 'Microscope' item No. 9 'Vacuum tank along with vacuum pump (Fabrication work)' item No. 10. 'Ultrasonicator' item No. 11. 'UV Spectrophotometer' and item No. 12. 'Preparation of GIS layers and Maps' for various Divisions of FRI, Dehradun.

1. Manual bids shall not be accepted.
2. Bid/Tender documents may be downloaded from FRI web site fri.icfre.gov.in (for reference only) and for online participation on MoEFCC Portal <https://moefcc.euniwizarde.com> as per the tender critical date sheet given below :

Events	Important date/time	Venue
Published Date	09. 07. 2019 5.00 P.M	<a href="https://moefcc.euniwizarde.com">https://moefcc.euniwizarde.com</a> , Newspapers/ Website: fri.icfre.gov.in
Bid document download	09.07.2019 5.30 P.M	<a href="https://moefcc.euniwizarde.com">https://moefcc.euniwizarde.com</a>
Due date for pre-bid conference	15.07. 2019 11.00 A.M	Purchase Section, Main Building, FRI
Bid submission start date	16.07. 2019 6.00 P.M	<a href="https://moefcc.euniwizarde.com">https://moefcc.euniwizarde.com</a>
Bid submission end date	06.08.2019 3.00 PM	<a href="https://moefcc.euniwizarde.com">https://moefcc.euniwizarde.com</a>
Opening date of technical bids	07.08.2019 3.00 P.M	Moefcc portal / Purchase Section Main Building, FRI
Opening date for financial bids	To be decided after technical evaluation	<a href="https://moefcc.euniwizarde.com">https://moefcc.euniwizarde.com</a>

**CONTENT OF TENDER PAPER**

This paper includes the following documents:-

1. Notice Inviting tender (Chapter I)
2. Instructions to bidders (Chapter -II)
3. Conditions of contract (Chapter III)
4. Specifications and allied details (Chapter IV)
5. Price Schedule (Chapter V)
6. Agreement contract form (Chapter VI)
7. Other standard forms (Chapter VII)

  
Purchase Officer

**Notice Inviting Tenders**  
(National Competitive Bidding)

Chapter-I

**Notice Inviting Tenders**  
(National Competitive Bidding)  
**Forest Research Institute**  
(Indian Council of Forestry Research & Education)  
Post- New Forest, Dehra Dun – 248006 Uttarakhand, India

Phone: 0135-2224205; Fax: 0135-2756865  
Website: fri.icfre.gov.in Email: po\_fri@icfre.org

**TENDER NO: X-16 /2019-20/Purchase**

**BIDDING DOCUMENT**

Online bids are invited two bid systems for purchase of scientific equipment and other miscellaneous items for various Divisions. Item No. 1 'Water Potential System, item No. 2 Rotary Evaporator with Vacuum Controller and Vacuum Pump, item No. 3 'Stereo Zoom Microscope' item No. 4 'DSL Camera with accessories' item No. 5 'Stereo-Zoom Microscope system with CC Camera, Illuminator and image analysis software, etc.' item No. 6 'Tree Motion Sensor' item No. 7 'Auto Analyser Machine' item No. 8 'Microscope' item No. 9 'Vacuum tank along with vacuum pump (Fabrication work)' item No. 10. 'Ultrasonicator' item No. 11. 'UV Spectrophotometer' and item No. 12. 'Preparation of GIS layers and Maps' for various Divisions of FRI, Dehradun

Item No.	Name of Item/Scientific Equipment	Quantity Required	EMDs	Division
1.	Water Potential System	1 No.	Rs. 13,000/-	G.&T.P. Division
2.	Rotary Evaporator with Vacuum Controller and Vacuum Pump	1 No.	Rs. 6,000/-	Chemistry Division
3.	Stereo Zoom Microscope	01 No.	Rs. 8,000/-	Forest Protection Division
4.	DSL Camera with accessories	01 No.	Rs. 5,000/-	Forest Protection Division
5.	Stereo-Zoom Microscope system with CC Camera, Illuminator and image analysis software, etc.	01 Set	Rs. 31,000/-	Forest Protection Division
6.	Tree Motion Sensor	01 No.	Rs. 15,000/-	Forest Products Division
7.	Auto Analyser Machine	01 No.	Rs. 9,000/-	New Forest Hospital
8.	Microscope	01 No.	Rs. 36,000/-	G.&T.P. Division
9.	Vacuum tank along with vacuum pump (fabrication work)	01 No.	Rs. 9,000/-	Forest Products Division
10.	Ultrasonicator	01 No.	Rs. 11,000/-	Forest Products Division
11.	UV Spectrophotometer'	01 No.	Rs. 14,000/-	Forest Ecology & Climate Change
12.	Preparation of GIS layers and Maps	01 No.	Rs. 1,00,000/-	Silviculture & Forest Management Division

The details of the above items and other terms and conditions, etc. are available in the tender documents. The tender forms and specifications are available at web site fri.icfre.gov.in, Moefcc site <https://moefcc.euniwizarde.com> Portal.

  
**PURCHASE OFFICER**

**Instructions to Bidders**

The additional terms & condition/guidelines given in the notification No.2-1/2016-IFD Dated 10<sup>th</sup> July 2017 will also be considered during the evaluation of tender at the different stage.

Bids shall be submitted online only at Moefcc website: <https://moefcc.euniwizarde.com> Tenderers/Bidders are advised to follow the instructions provided in the "Instructions to the Tenderer /Bidder" for the e-submission of the bids online through the Ministry of Environment and Forest Climate Change portal at <https://moefcc.euniwizarde.com> Hardcopies of EMD & Tender Fee OR its exemption certificate must reach the Purchase Section, Forest Research Institute, Dehradun in the prescribed form on or before the last date/time of online submission of the bid.

Not more than one tender shall be submitted by one tenderer /bidder having business relationship for one item. Under no circumstances will father and his sons 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 parties liable to rejection.

Tenderer/bidder who has downloaded the tender from the [fri.icfre.gov.in](http://fri.icfre.gov.in) or Moefcc Portal <https://moefcc.euniwizarde.com> shall not tamper/modify the tender form including downloaded price bid template in any manner. In case if the same is found to be tampered/modified in any manner, tender will be completely rejected and EMD shall be forfeited and tenderer/bidder is liable to be banned from doing business with FRI in future.

The Supplier and its Sub contractors shall have the nationality of an eligible country. A Supplier or Subcontractor shall be deemed to have the nationality of a country if it is a citizen or constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country. Nationality must be disclosed by the supplier.

The Purchaser (FRI) requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Annexure-I.

**All prices to be quoted in INR for FOR, FRI, Dehradun which would include GST & other charges.**

Intending tenderers/bidders are advised to visit again FRI website [fri.icfre.gov.in](http://fri.icfre.gov.in) and Moefcc website <https://moefcc.euniwizarde.com>, at least 3 days prior to closing date of submission of tender for any corrigendum / addendum / amendment.

Bids will be opened as per date/time as mentioned in the **Tender Critical Date Sheet.**



### Check List

Item	(A) Qualifying documents	Yes/No	Page
1.	Tender fees for Rs. 590/- (including 18% GST) in shape of crossed D.D in favour of Director, Forest Research Institute, Dehradun or Exemption certificate		
2.	EMD for item No. (1) of Rs. 13,000/- item No. (2) of Rs. 6,000/- item No. (3) of Rs. 8,000/- and item No. (4) of Rs. 5,000/- item No. (5) of Rs. 31,000/- item No. (6) of Rs. 15,000/- item No. (7) of Rs. 9,000/- item No. (8) of Rs. 36,000/- item No. (9) of Rs. 9,000/- and item No. (10) of Rs. 11,000/- item No. (11) of Rs. 14,000/- and item No. (12) of Rs. 1,00,000/- in shape of FDR in favour of Director, Forest Research Institute, Dehradun or EXEMPTION Certificate.		
3.	Signed and scanned copy of <b>AUTHORIZATION</b> certificate, if applicable.		
4.	Signed and scanned copy of <b>PAN</b> card		
5.	Signed and scanned copy of <b>TENDER ACCEPTANCE LETTER</b> as per tender document.		
6.	Signed and Scanned copy of <b>GST</b> certificate, if applicable.		
7.	Signed and Scanned copy of Affidavit of <b>PARTNERSHIP DEED</b> , if applicable.		
8.	Signed and Scanned copy of <b>AUDITED BALANCE SHEET</b> of last two years.		
9.	Signed and Scanned copy of affidavit in non-judicial stamp paper of Rs 10/- by the firm that it has <b>NOT BEEN BLACK-LISTED/DEBARRED/BANNED</b> by any Govt. Department/ Public sector during the past two years must be attached along with the Bid, failing which the Bid shall be rejected.		

### (B) Technical documents

1.	Signed and Scanned copy of the self certification only from the local suppliers that the item offered meets the minimum local content (50 % or more Indian manufactured parts are used in the item by cost/value) and shall give the details of the location at which the local value addition is made, wherever applicable.		
2.	Signed and Scanned copy of registration of Micro, Small & Medium Enterprises registered with National Small Scale Industries corporation Ltd., wherever applicable.		
3.	Scanned and signed copy of users list and supportive documents from the users for the satisfactory performance and after sales service showing <b>ATLEAST LAST ONE YEAR EXPERIENCE</b> of the firm for the supply/ services of similar types of goods/ services.		
4.	All specifications should be certified and guaranteed for <b>GENUINENESS &amp; BRAND NEW ITEM</b> and that the model of the equipment is <b>NOT GOING TO BE OBSOLETE</b> in near future (5 years) (Scanned and signed copy of supportive documents from the Principal to be enclosed).		
5.	<b>AVAILABILITY OF SPARES/PARTS</b> for next five years to be ensured (supportive documents from the Principal to be enclosed)		

#### Note:

1. It is compulsory to fill the above check list with pagination.
2. The document should be submitted/uploaded online in Moefcc portal in the above order of the check list and place the check list as cover page with pagination of documents.
3. In the absence of any of the qualifying documents, the bid shall be rejected.
4. Tender fee:-The tender form downloaded from above web sites must include Rs. 590/- (including 18% Service Tax) by crossed Demand Draft in favour of Director, FRI as tender fee and be submitted by post / hand to Purchase Officer, Forest Research Institute,

*Heem*

Dehradun-248006 on or before the end date of bid submission, and the scanned copy of the same should be uploaded in the Portal.

5. EMD in shape of FDR /EXEMPTION Certificate in favour of Director FRI should be submitted by post / hand to Purchase Officer, Forest Research Institute, Dehradun-248006 on or before the end date of bid submission, and the scanned copy of the same should be uploaded in the Portal.
6. The firm who already submitted EMD and Tender fee in the tender no. X-44/2018-19/Purchase, Tender I.D. 2018\_ICFRE\_415209\_1 and Tender No.X-53/2018-19/Purchase, Tender I.D. 2018\_ICFRE\_423365\_1 for a particular item need not submit again for the same.

A handwritten signature in black ink, appearing to be 'Herrn', is located in the bottom right corner of the page.

**Conditions of Contract**

**Submission of Tender**

The tender shall be uploaded online in Two parts, viz., Technical Bid and Price Bid.

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

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

**Pre-bid conference:**

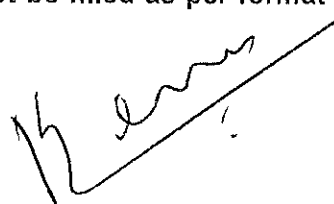
A pre-bid conference will be arranged with the end users for finalization/clarification of technical specifications of the equipment. Bidders are requested to take part in the Pre-Bid Conference at the scheduled date and time. The suggestions given by the bidders in the form of phone, email, FAX, etc. will not be entertained. The bidder must be present in Pre-Bid Conference, if bidder requires any change/modification in Bid Document. The change/modification will be incorporated in the Bid Document suggested by the bidder after the open discussion among the end user, other interested bidders and the committee members. The modified specifications, if any, after Pre-bid conference will be available at the Moefcc Portal <https://moefcc.eunlwizarde.com>. After Pre-bid conference no changes will be accepted in the desired specifications. If no party attends the Pre-bid conference then listed specifications will be considered as final.

**Cover 1. Technical Bid**

Documents are to be furnished by the Tenderer /Bidder along with **Technical Bid** as per the tender document:

**Cover 2. Price Bid**

Hard copies of financial and technical bid should not be submitted physically to the Purchase Section FRI Dehradun. The financial proposal must be submitted / uploaded in the Schedule of price bid in the form of BoQ\_1.xlsx separate for each item. Full details of business terms and conditions, e.g. packing and forwarding, delivery period, GST/Sales Tax/Trade Tax (whether provincial or Central), other Taxes/Charges, if any, the validity period of quotation, discount, free delivery, packing or any other information relevant to the items may please be indicated clearly. Prices must be quoted F.O.R. Dehradun. Foreign bidders, for imported goods if supplied directly from abroad are encouraged to quote prices in INR on FOR basis as far as possible. The Price bid undertaking and Schedule of price bid in the form of BoQ\_1.xlsx must be filled as per format given in Chapter –VI: Price Bid Schedule.



## **Proposal Evaluation**

### **Clarification of Bids :**

To assist in the examination, evaluation, comparison of the bids, and qualification of the Bidders, the Purchaser, at its discretion, may ask any Bidder for a clarification of its Bid. The Purchaser's request for clarification and the response shall be in writing by post/email/fax etc. Any clarification submitted by a Bidder in respect to its Bid and that is not in response to a request by the Purchaser shall not be considered. No change, including any voluntary increase or decrease, in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic typing errors noticed by the Purchaser in the Evaluation of the bids.

If a Bidder does not provide clarifications of its bid by the date and time set in the Purchaser's request for clarification, its bid may be rejected.

### **Unresponsive bids**

The bids will be scrutinized to determine whether they are complete and meet the essential and important requirements, conditions, etc. as prescribed in the Bid Document. The bids are liable to be treated as non-responsive and will be rejected if bidder does not upload qualifying and technical documents as required in the Bid Document.

### **Minor Informality/Irregularity/Non-Conformity**

If during the preliminary examination, the purchaser finds any minor informality and/or irregularity and/or non-conformity in a bid, the purchaser may waive the same provided it does not constitute any material deviation and financial impact and, also, does not prejudice or affect the ranking order of the bidders. Wherever necessary, the purchaser will convey its observation on such 'minor' issues to the bidder asking the bidder to respond by a specified date. If the bidder does not reply by the specified date or gives evasive reply without clarifying the point at issue in clear terms, that bid may be ignored.

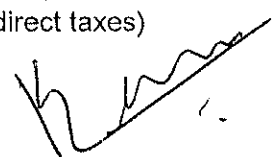
### **Evaluation of Bid**

The OM nos. 2-1/2016-IFD dated 10/07/2017; F – 18/3/2017-PPD dated 4/07/2018 and Order no. P-45021/2/2017-B.E-II dated 15/06/2017; Subject: Public Procurement (Preference to make in India) Order 2017, shall be implemented during the evaluation of the bid. The below mentioned component nos. 3a, 3b and 3c, 5, 6, 7 and 9a and 9f of the Order no. P-45021/2/2017-B.E-II dated 15/06/2017 shall be specifically taken care of during evaluation of the tender:

**3a.** Where there is sufficient local capacity and local competition\* and where the estimated value of procurement is Rs.50 lakhs or less, only local supplier (local supplier means a supplier or service provider whose product or service offered for procurement meets the minimum 50% local content\*\*) shall be eligible. If the procurement of such goods is more than Rs. 50 lakhs, the provisions of sub-paragraphs b or c as the case may be, shall apply.

\*For sufficient local capacity and local competition, at least three eligible local suppliers (who have minimum 50% local content is required) must participate in the bid as responsive bidders otherwise the bid shall be decided by the evaluation of all the responsive bidders irrespective of their origin.

\*\*Local content means the amount of value added in India which shall, unless otherwise prescribed by the nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes)



minus the value of imported contents in the item including all custom duties as a proportion of the total value in % (No. 2 of the order).

3b. In the procurements of goods which are not covered by paragraph 3a and which are divisible in nature, the following procedure shall be followed.

7. Among all qualified bids, the lowest bid will be termed as  $L_1$  if  $L_1$  is from a local supplier the contract for full quantity will be awarded to  $L_1$ .

If  $L_1$  bid is not from a local supplier, 50% of the order quantity shall be awarded to  $L_1$ . Therefore, the lowest bidder among the local supplier will be invited to match the  $L_1$  price for the remaining 50% quantity subject to the local supplier's quoted price falling within the margin of purchase preference and contract for that quantity shall be awarded to such local supplier subject to matching the  $L_1$  price. In case such lowest eligible local supplier fails to match the  $L_1$  price or accepts less than the offered quantity, the next higher local supplier within the margin of purchase preference shall be invited to match the  $L_1$  price for remaining quantity and so on, and contract shall be awarded accordingly in case some quantity is still left uncovered on local suppliers, then such balance quantity may also be ordered on the  $L_1$  bidder.

3c. In procurements of goods not covered by sub-paragraph 3a which are not divisible and in procurement of services where the bid is evaluated on price alone, the following procedure shall be followed.

8. Among all qualified bids the lowest bid be termed as  $L_1$ . If  $L_1$  is from a local supplier the contract will be awarded to  $L_1$ .

ii. If  $L_1$  is not from a local supplier, the lowest bidder among the local suppliers will be invited to match the  $L_1$  price subject to local suppliers quoted price falling within the margin of purchase preference and the contract shall be awarded to such local supplier subject to matching the  $L_1$  price.

iii. In case such lowest eligible local supplier fails to match the  $L_1$  price, the local supplier with the next higher bid within the margin of purchase preference shall be invited to match the  $L_1$  price and so on and contract shall be awarded accordingly. In case none of the local suppliers within the margin of purchase preference matches the  $L_1$  price, then the contract may be awarded to the  $L_1$  bidder.

5. The minimum local content shall be 50%.

6. Margin of Purchase Preference: The margin of Purchase Preference shall be 20%. The margin of Purchase Preference means the maximum extent to which the price quoted by a local supplier may be above the  $L_1$  for the purpose of purchase preference.

9a. The local supplier at the time of tender, bidding or solicitation shall be required to provide self certification that the item offered meets the minimum local content and shall give the details of the location at which the local value addition is made.

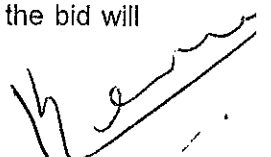
A two-stage procedure will be adopted in evaluating the proposals.

(i) **Technical Evaluation:**

The additional terms & condition/guidelines given in the notification No.2-1/2016-IFD dated 10<sup>th</sup> July 2017 will also be considered during the evaluation of tender at the different stages.

The price preferences for MSME firms will also be given as per rules if they have submitted relevant documents with the bid.

(a) **Evaluation of Qualifying Documents:** Tenders shall be scrutinized and evaluated by the Technical Committee or a Committee constituted by competent authority with reference to parameters prescribed in the Bid document. First of all, the qualifying documents of the bid will be checked and in absence of any of qualifying documents, the bid will be rejected.



(b) **Evaluation of Technical Specification:** Thereafter, the qualified bids shall be subjected to technical evaluation on the basis of the technical/ scientific specifications. The evaluation committee appointed by the competent authority will carry out its evaluation applying the evaluation criteria and point system as specified below. Each responsive proposal will be attributed a technical score. The points given to technical evaluation criteria are as under:

Technical specifications of the equipment	100
<b>Total</b>	<b>100</b>

The technical proposal should score at least 80 points out of 100 to be considered for Financial Evaluation.

(ii) **Financial evaluation:** Financial bids of only technically qualified bidders shall be opened online for further scrutiny and evaluation on a date notified.

The purchaser shall evaluate the technically qualified financial bids for deciding lowest bidder (L<sub>1</sub>) on the basis of ultimate landing cost. **Wherever, against a requirement, both indigenous as well as imported offers are received,** the offers for imported stores will be evaluated on the basis of the total landed cost after loading the custom duty and other levies, etc as may be applicable from time to time for taking purchase decision.

The ultimate/landing cost in respect of store is arrived at by considering following elements including AMC, Warranty, and Extended Warranty cost, etc if any unless these are optional requirements.

**(A) Indigenous stores**

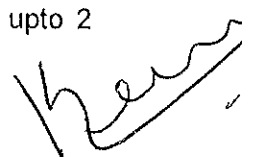
1. Basic price
2. Excise duty (if applicable)
3. GST& other applicable taxes
4. Insurance, freight and transportation of goods up to sites



### General Terms & Conditions

The offer will be subject to the following terms and conditions:

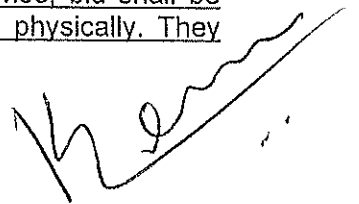
1. In order to maintain consistency across the publication the job for publication shall be considered as a single job and will not be split.
2. The rates quoted are to be FOR; Director, Forest Research Institute, PO New Forest, Dehradun-248006.
3. All pages of the tender document are to be signed and scanned and stamped by the tendering firm.
4. Short-listing of a bidder do not confer any rights on any bidder; it only means that the offer made is under consideration.
5. The bidders need not submit technical and financial bid physically. However, EMD and Tender Fee must reach physically on or before the end date/time of the tender by hand/post; otherwise the bid will not be entertained.
6. Please note that FRI, Dehra Dun has Custom Duty Exemption and Excise Duty Exemption Certificate. This may be kept in consideration while quoting the rates.
7. The stores are required to be delivered in full and within 30 days/or time given in Supply Order after acceptance of the offer. If a supplier asks for extension, it should be within the validity period and penalty as liquidated damage shall be charged @ 0.5% per week or 2% per month upto the maximum of 10% of the bidding cost in the extension period. It may be waived in unavoidable circumstances with the approval of competent authority.
8. The offer should be firm and open for acceptance till 120 days from the stipulated date of opening. Price escalation will not be allowed.
9. Full details of business terms and conditions, e.g. packing and forwarding, delivery period, GST, other Taxes/Charges, if any, the validity period of quotation, discount, free delivery, packing or any other information relevant to the items may please be indicated clearly.
10. No bid should be withdrawn after the deadline for submission of tender and before expiry of the tender validity period. If a tenderer withdraws the tender during this period, it will result in forfeiture of the earnest money furnished by the bidder.
11. **Normal terms of payment will be 100% payment within 30 days after receipt and acceptance of goods in satisfactory working condition after installation. If training is also the part of the offer, 20% payment will be released after the training. Generally no advance payment is made. If it is essential in cases of maintenance contract /AMC, the advance payment will not exceed by 50% of the contract. It shall be paid after receiving the 110% Bank Guarantee. Other terms of payment should be clearly spelt in the offer.**
12. The tender should accompany a DEMAND DRAFT/FDR of value as indicated in tender as Earnest Money (EMD), payable to the Director, Forest Research Institute, Dehradun, which will be refunded, without interest, if the offer is not accepted. In case the offer is accepted but not honored by the tenderer, the Earnest Money will be forfeited. The Earnest Money will also be forfeited, if wrong information is given in the tender to influence the tender cost.
13. The tenderer should quote on their printed letter-head paper, indicating thereon Sales GST/Trade Tax No., Registration No., Fax No., Telex No., Telephone No., E-mail, etc.
14. Any or all Bids can be rejected by the Director, FRI without assigning any reason. It cannot be challenged in any court. Disputes, if any, will be under the jurisdiction of Dehradun Court, Uttarakhand, India.
15. In case the opening dates of bid and pre bid conference are declared holidays, the dates will be shifted to the next working day.
16. In case of any dispute, the Director FRI shall decide the issue and his/her decision will be final and shall be binding on the parties.
17. No legal proceedings to enforce any claim and no suit arising out of this work contract shall be instituted except under the jurisdiction of Dehradun Court, Uttarakhand, India.
19. False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for upto 2



years as per rule 151 (iii) of the General Financial Rules alongwith such other actions as may be permissible under law.

20. The additional terms & condition/guidelines given in the notification The OM nos. 2-1/2016-IFD dated 10/07/2017: F – 18/3/2017-PPD dated 4/07/2018 and Order no. P-45021/2/2017-B.E-II dated 15/06/2017 will also be considered during the evaluation of tender at different stages.
21. The Micro, Small & Medium Enterprises registered with National Small Scale Industries corporation Ltd (MSME) will be given following exemption and price preferences during the tender process:
  - i. The registered firms with National Small Scale Industries Corporation Ltd (MSME) shall be exempted from tender fees and EMD.
  - ii. The price preference of L1+15% for divisible items, the 20% quantity of supply may be offered to the registered firm with National Small Scale Industries Corporation Ltd (MSME), if the firm is ready to match the L1 price. If the MSME registered firms are more than one with price preference of L1+15%, the 20% quantity will be divided among MSME registered firms if these firms are ready to match the L1 price.
  - iii. In case of non-divisible tenders, an MSME firm quoting the price in price band of L1+15% may be awarded for full / complete supply of tender value, if the firm is ready to match the L1 price. If there are more than one eligible MSME bidders (price band within L1+15%) then the opportunity to match the L1 rate, the tender shall be given first MSME (who has quoted lowest rate among and the MSME bidders within the price band of L1+15%) and the total quantity shall be awarded him after matching L1 price of the tender. If first eligible MSME bidder do not agree to match the L1 price of the tender, then the next ranked eligible bidder who has quoted within the price band of L1+15%, shall be given the chance to match L1 price for the award of the order.

Important: EMD and tender fees should be submitted physically before end date and time of bid submission to Purchase Section, Forest Research Institute, Dehradun; otherwise, bid shall be rejected. Hardcopies of Financial and Technical bids need not be submitted physically. They need only be submitted online on Moefcc portal.

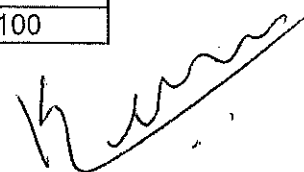


**Specifications and Allied Details**  
(Description of the items and specifications)

Item No. 1.

**Specification: Water Potential System**

Water Potential Measurement System			
Parameters		Specification	Score
1	Functions	The system should be capable of recording water potential of both tissues and soil samples	10
2	Sample Unit with sensor	Single or separate sample units for measuring soil and tissue water potential (one each must be included )	5
3	Sensors	Thermo coupled based	10
4	Automated Data Recording in data logger	The equipment/ data-logger should record data automatically	5
5	Software	The equipment should be compatible with windows PC	5
6	Unit of data recorded	Data should be available in MPa unit	5
7	Input channels	4-8 Numbers	4
8	Power	Lead Battery with a charging port	2
9	Batteries	Rechargeable	3
10	Display/Keyboard	Keyboard should be supported by back light	3
11	Operating Temp	System should work efficiently even in sunny and hot weather	3
12	Accuracy	Error should be less than 0.01	10
13	Cooling Current	Cooling Current should be 6 to 8 mA and take less time to make new program	10
14	Readings stored	More than 1 Lacks	4
15	Battery life	Lasting more than 100 days	4
16	Size	Portable for field work, easy to carry	10
17	Temperature range	Wide range (-10 to +60°C)	2
18	Consumable	Consumables to be included for immediate use	5
Total			100



Item No. 2.

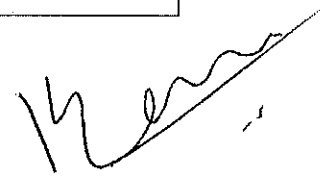
**Specifications of Rotary Evaporator System complete with Vacuum Controller and Vacuum Pump**

S.No	Particulars specifications	Score
1.	<p><b><u>ROTARY EVAPORATOR</u></b></p> <p>Manual quick –action jack lifting for simple raising and lowering of the flask by hand case of power failure.</p> <p>Rotation speed up to 280 rpm or better with microprocessor control.</p> <p>Shielded thermostatic bath.</p> <p>Heating bath for temperature of 20 – 95° C with an accuracy of <math>\pm 2^{\circ}</math> C</p> <p>Digital bath temperature display of both set and actual temperature simultaneously</p> <p>Over-temperature protection power cut off when actual temperature exceeds set temperature or by rapid temperature increase</p> <p>Evaporating flask from 50-4000 ml can be used on the same joint adapter without additional connections.</p> <p>Vertical Glass Assembly &amp; Continuous Vapor Ducting with high quality, inert 3.1 mm borosilicate glass wall thickness</p> <p>Cooling surface of vertical glass assembly 1400 cm<sup>2</sup> or better</p> <p>1 liter Evaporating Flask and 1 liter Receiving Flask should be provided in standard scope of supply.</p> <p>Automatic over heat cut-off protection</p> <p>Lift extension Up to 100 mm allows use of bump traps and glass extenders</p> <p>Multifunctional Combi-Clip tool for evaporating flask fixation and removal as well as vapor duct release Ingress Protection (IP ) Class should be 21 or better</p>	60
2.	<p><b><u>VACUUM CONTROLLER</u></b></p> <p>Modular vacuum Controller with large Digital display.</p> <p>Measuring range: 1400- 1 mbar.</p> <p>Control range: 1100- 1 mbar.</p> <p>Measuring accuracy : <math>\pm 2</math> mbar (<math>\pm 1</math> digit) - after calibration at constant temperature</p> <p>Hysteresis : Automatic or 1 – 500 mbar</p>	20
3	<p><b><u>VACUUM PUMP</u></b></p> <p>Single stroke diaphragm vacuum pump with a flow rate of 1.5 m<sup>3</sup>/h.</p> <p>Ultimate vacuum – 10 mbar (<math>\pm 2</math> mbar)</p> <p>2 stage/Steps diaphragm made of PTFE</p> <p>The pump should consumes less electrical power and works under reduced stress.</p>	20
Total		100

Item No. 3.

Specification:- Stereo Zoom Microscope

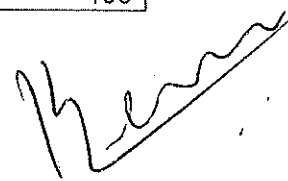
Sl.No.	Specifications	Marks
1	Microscope with apo-chromatic corrected zoom optical system	10
2	Trinocular tube with viewing angle of at least 35 deg	20
3	Objective: 1.0 x & 2.0 x apo-chromatic lenses	5
	<b>Eye Pieces</b>	
	a. WPL magnification: 10 x	5
	b. PL magnification: 16 x or 20 x	20
4	Zoom ratio : 1:8 about	10
5	Focus Drive	5
6	Reflected light LED ring light illumination	5
7	Transmitted light LED stage with black and white stage plate	10
8	Digital Camera with Imaging System with at least 10 megapixel camera with Laptop (HP 15 Core i5 8th gen 15.6-inch FHD Laptop (8GB/1TB HDD/Windows 10 Home/Sparkling Black /2.04 kg), 15q ds0010TU).	10
	<b>Total</b>	<b>100</b>



Item No. 4.

Specification:-DSL Camera with accessories

Sl. No.	Specifications	Marks
1	Body with 20 Megapixel CMOS (APS-C) sensor and ISO 100-16000	10
2	65-point all cross-type AF system for high-performance, accurate subject tracking with EV -3 sensitivity (center point) for focusing in extreme low-light conditions.	10
3	10ftp continuous shooting with autofocus;	10
4	Built in GPS; Shutter speed up to 1/8000;	10
5	1,50,000, RGB+IR pixel metering sensor	10
6	Built in compact flash and SD slot	10
7	Movie recording Full HD 1080pixels at 60fps.	05
8	Wi-Fi Adapter W-E1, remote shooting and image sharing	05
9	Lenses: a) 18-135 mm f/3.5-5.6 with image stabilizer and STM.  b) 180 mm (fixed) f/3.5 Macro lens with USM.	10 20
Total		100



**Item No. 5.**

**Specification:- Stereo-zoom microscope system with CC Camera, Illuminator and image analysis software, etc.**

SL No.	Specifications	Marks
1	Fully apochromatic encoded zoom system with Zoom ratio should be at least 20:1 or better.	10
2	Resolution upto 500 lp/mm or better at 1.0x objective and 10x eyepieces.	12
3	Magnification range 7x-160x or more with 1.0x objective and 10x eyepiece.	10
4	Microscope should be able to achieve high depth and high resolution simultaneously.	10
5	Automated motorized focus drive with profile column synchronized with smart coarse/fine rotary focus controller and digital touch control panel for display system's magnification, resolution, depth of field and zoom, objective, etc.	10
6	<b>Observation tube:</b> Tilting trinocular tube with 5°-45° degree viewing angle or better; with inter-pupillary distance adjustment range from 50 –80 mm or better. Observation and trinocular with camera port for 100/0%, 50:50%, -0/100% light path (with three beam splitting position) for simultaneous observation and imaging.	05
7	<b>Objectives and Eye peace:</b> Plan Apo 0.63x objective with 60 mm or more working distance. One additional objective Plan Apo 1.5x or 1.6 required. Two eyepieces of 10x magnification with 23 mm field of view or more with dioptr adjustment for both eyes.	05
8	<b>Base:</b> Transmitted light base with cooled LED illumination having long durability life time; with brightfield, darkfield and rottermann contrast field option feature with power supply unit. Base size not more than 400mm X 500 mm.	05
9	<b>Illumination:</b> Segmented LED Epi-illumination by non-reflectable cooled ring light illuminator (to be mounted on the objective) with control panel to control the LED's intensity; and A LED based bifurcated double gooseneck illumination with diffuser integrated with control panel and its power supply.	04
10	<b>Camera:</b> High Definition digital color camera attachments with CMOS sensor having minimum 10 MP resolution or better and live image acquisition of minimum 30 fps or better and movie clips, should have provision of SD card, operation through PC or stand alone with direct projection to HD screen.	10
11	<b>Software:</b> The image analysis software should be able to control all the functions of the camera, synchronized with motorized focus drive and zoom. Dedicated Z stake module for capturing images at various focus and combining them into a single focused 3D color image, creation of stereo pair, depth map, anaglyph and color relief images. Time-lapse at specified interval, high dynamic range imaging, live comparison, region and line measurement, micron bar, annotation and point to point and interactive measurement with window based data station, etc.	05
12	All parts and component of Microscope, camera, illuminator and software, etc. should be from the same manufacturer for seamless integration and high precision functioning.	10
13	Microscope system should be ready to use along with suitable computer workstation and upgradable in future for maximum possible optical attachments.	04
Total Marks		100

*hem*

Item No. 6 : Specification Tree Motion Sensor(TMS)

General characteristics		Marks
protection	Completely sealed against water and dust	05
<b>Measurement</b>		<b>25</b>
Accuracy tilt measurement	0.03 °	
Measurement interval	0.05 s (20 Hz)	
Type of tilt measurement	3D measurement	
Sensor orientation	arbitrary	
No. of sensors	10	
Accuracy temperature measurement	1 °C	
Temperature range	-20 – +50 °C	
<b>Battery</b>		<b>15</b>
Battery capacity and runtime	250 mAh; > 14 days	
Charging	wireless	
Charge duration	approx. 2 h	
recommended charging temperature	5 – 35 °C	
<b>Memory</b>		<b>25</b>
Memory size	256 MB	
<b>Communication</b>		<b>10</b>
Standby- and measuring mode	Bluetooth Low Energy 4.0	
Data download	Bluetooth Classic 2.1	
<b>Handling</b>		<b>10</b>
TMS power on	Magnetic key	
Outdoor-handling	BLE-capable mobile phone (Android, iOS) + <i>TMS App</i>	
Data download and analysis	PC with Bluetooth Classic + <i>TMS Control</i> software (direct sensor interaction)	
Number of TMS-chargers	10 (wireless charge bays)	
<b>Others</b>		<b>10</b>
Suitable Computer / Laptop with TMS software /windows		
Total		100

Item No. 7.

Specification:-Auto Analyser Machine (Bio Chemistry Machine) with Score

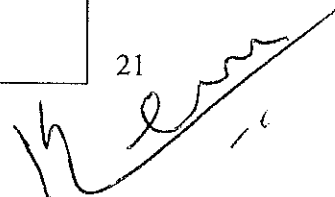
Sl. No.	Specification Auto Analyser Machine	Score Allotted
1.	<ul style="list-style-type: none"> <li>Low energy consumption and practically unlimited life time.</li> <li>Stable reading with a better resolution than others : 0.0001Abs</li> </ul>	05
2.	<ul style="list-style-type: none"> <li>Energy consume negligible</li> <li>Low maintenance costs avoiding parts replacements</li> </ul>	06
3.	<ul style="list-style-type: none"> <li>Very sensitive aspiration pulse sensor</li> <li>Easy manipulation of samples</li> </ul>	06
4.	<ul style="list-style-type: none"> <li>Software designed with the user in mind</li> <li>High knowledge in photometers software offering both exhibility and simplicity</li> </ul>	17
5.	<ul style="list-style-type: none"> <li>In addition to the built in thermal Printer, data (graphs and results) can be archived/exported by using a USB Flash Memory Drive.</li> </ul>	05
6.	<ul style="list-style-type: none"> <li>Range of measurement : 0-3.5A all wavelengths</li> <li>Wavelengths : 340,405,505,535,560,600,635,670nm (450nm optical)</li> <li>Light Source : LEDs</li> <li>Settings : Monochromatic &amp; Bichromatic</li> </ul>	16
7.	<ul style="list-style-type: none"> <li>Continuous system with peristaltic pump incorporated stepper motor pump operation</li> </ul>	05
8.	<ul style="list-style-type: none"> <li>Flow Cuvette of 18ul</li> <li>Removable cuvette: macro, Semi-macro &amp; micro or round tubes with 12mm</li> </ul>	16
9.	<ul style="list-style-type: none"> <li>Thermic printer with easy paper changes incorporated</li> </ul>	04
10.	<ul style="list-style-type: none"> <li>Table of techniques upto 150techniques</li> <li>Storage upto 2000patients results</li> <li>Quality control storage with levey Jenings charts and westgard's Rules</li> <li>Measurement Modes : Reading Absorbance, Endpoint, Kinetic, Differential Mode, Fixed-time, Ratiometric Mode, And cut off.</li> </ul>	15
11.	Optional Battery Pack :- Duration : 2hr	05
Total		100

Item No. 8.

**Specification:-Microscope**

Sl. No.	Specification	Marks
1.	<p><b>Advance Upright Microscope with the following features:</b></p> <ul style="list-style-type: none"> <li>• Microscope Advanced Upright, motorized</li> <li>• High quality optics with latest Infinity Colour Corrected System for high brightness, rich contrast and color correction. All optics coated with anti-reflection / anti-fungal treatment.</li> <li>• Rigid and sturdy <b>Microscope stand</b> with in-built motorized Z-drive with TFT/LCD Touch Screen Control monitor. This controller should control motorized parts like Fluorescence turret, Reflected Light Shutter, Objective change, focusing etc.</li> <li>• Wide Field Ergonomic <b>Trinocular phototube</b> with three way light path selection for simultaneous observation and imaging. 10X eyepieces with F.N. 22/23 or higher.</li> <li>• Built-in <b>motorized Z-focus</b> with step size of at least 10 nm or better, with coarse and fine focusing knob.</li> <li>• <b>Transmitted-light illumination</b> with motorized light intensity control unit. Built-in Koehler illumination for transmitted light. Built-in motorized field stop. 12V 100W halogen bulb (pre-centered) or suitable LED illumination system. Bidders quoting Halogen illumination should supply at least 20 additional halogen bulbs from the microscope manufacturer.</li> <li>• Seven or more position <b>Motorized objective nosepiece</b> with DIC/ polarizer attachment slot</li> <li>• Eight or more position <b>motorized fluorescence turret</b> with Motorized Reflected Shutter with 100 watt or better mercury illumination system</li> <li>• Narrow band pass, interference (hard coated) <b>fluorescent filter sets</b> for DAPI, FITC, TRITC and Texas Red. The motorized fluorescence turret should be able to accommodate at least 3 more additional filter sets for FISH applications.</li> <li>• <b>Universal turret condenser</b> with at least 5 positions for phase contrast, brightfield &amp; dark field applications. Should be quoted along with phase rings for all phase objectives. N.A. 1.1 or higher.</li> <li>• Ceramic quoted coaxial <b>stage</b> with right hand low drive control and dual slide holder. Should be onsite upgradable to 8-9 slides motorized scanning stage.</li> </ul>	35
2.	<p><b>Objectives :</b> Plan Achromat 4X/5X, Plan Achromat 10X Phase, Plan Achromat 20X Phase, Plan Semi Apochromat/Fluorite 40X Phase with N.A 0.75, Plan Apochromat 60X Oil N.A. 1.35 &amp; Plan Apochromat 100X Oil with N.A. 1.40. Objectives with higher N.A. will be preferred. Phase accessories for 10X, 20X &amp; 40X objectives should be a standard part of the quote.</p>	10
3.	<p><b>Color Camera:</b> Digital scientific grade color camera with a</p>	10

	<p>resolution of at least 5.0 Million Pixels, 12-bit or higher bit depth; binning of 2x, 4x or better, live frame rate of at least 15 fps at full resolution up to 70 or more fps at lower resolutions. USB3.0 or FireWire interface. Software for image and video capture, time lapse imaging, live comparison, annotation, basic measurements like line, angle, polygon etc, multi-channel merging &amp; unmerging. Colour Camera &amp; microscope should be from the same manufacturer. Compatible C-mount adapter should be quoted.</p>	
4.	<p><b>Karyotyping –System</b></p> <ul style="list-style-type: none"> <li>➤ The system should have Database, Capture / Acquisition and Analysis Mode.</li> <li>➤ Simple user friendly interface.</li> <li>➤ FDA cleared.</li> </ul> <p><b>Acquisition System:</b></p> <ul style="list-style-type: none"> <li>➤ Minimum resolution 5.0 Megapixel, monochrome camera, 12 bit or higher. Frame rate of at least 35 frames per second (fps) in full resolution. FireWire Interface / Gigabit Ethernet Interface</li> <li>➤ Acquisition of only required region.</li> <li>➤ Capturing by one mouse click and the whole process should be performed under the same software platform.</li> <li>➤ Automatic camera and image capture control with manual override function.</li> <li>➤ Gallery of recently acquired metaphases available within the capture/ application window</li> <li>➤ Display optimization for maximum display contrast.</li> <li>➤ Automatic image enhancements.</li> </ul> <p><b>Features for Database Management Software:</b></p> <ul style="list-style-type: none"> <li>➤ Single database for all applications</li> <li>➤ Modern paperless laboratory design management software should be included. Software should manage data, compare chromosomes and produce comprehensive reports (customizable reporting services including both pre-defined reports and laboratory / user defined reports) and compare various assays side by side in gallery.</li> <li>➤ Centralized server with better network accessibility and data integrity.</li> <li>➤ Multi-site connectivity: Single database can support multi-site installations without the need to transfer data between workstations.</li> <li>➤ Ability to assign levels of security for user access.</li> <li>➤ Capable to integrate with LIS (Laboratory Information System) of the institute/organization.</li> <li>➤ Ability to associate with any external documents (pdf, word, xml, etc).</li> <li>➤ Combined gallery view of all image types capture for a case, giving the user the ability to choose multiple images side by side viewing.</li> <li>➤ Any replaced or new image added should be updated in the gallery and in the database.</li> <li>➤ Ability to migrate cases from various versions.</li> <li>➤ Dynamic access control through configurable user roles and</li> </ul>	35



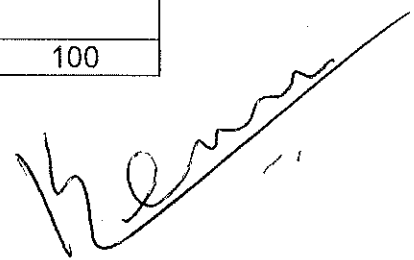
permissions and should have specially designed data security.

- Better control on flow and data protection by temporal lock of cell/slide/case as needed.
- Search mechanism by any case or slide field or combination of any fields even when archived.
- User notification of the next "To Do" item according to roles & permissions.
- Any replaced or new metaphases should be updated in the gallery and in the database.
- Capable to export acquired image as clipboard image.
- Capable to import external images.
- Image processing history saved with date and time of each modification.
- Multiple gallery options for comparison between same cases or multiple cases.
- Ability to generate highly configurable customized reports (Word/PDF).
- Easy and unlimited data archival and retrieval.

**Features for Karyotyping Software:**

- Ability to handle G-,R-,Q- banding, polyploid cells and markers
- Ability for multiple users to perform analysis on individual images within the same case simultaneously, for faster analysis of an urgent case
- Machine learning algorithm for the classification of each chromosome and arrangement in the karyogram per laboratory samples.
- Advanced automation offering background and foreground uniformity correction, automatic segmentation of touching chromosomes, optimized image enhancement, contrast and band sharpness.
- Multi-function tool which eliminates the need for switching between other functional tools. A single tool to select, de-select, separate touching and overlapping chromosomes, cut, join, delete or add parts of chromosomes, rotate or move the chromosomes etc. in metaphase as well as in karyotype workspace
- Easy to Move chromosomes. Drag and drop chromosomes to desired locations. Drag all chromosomes of a class at once.
- Merge as many regions or chromosomes as required – with automatic detection of chromosome contours to be added.
- Simple chromosome Rotation using the mouse scroll wheel.
- Localise Marker Chromosomes in Karyotype view.
- Automatic counting of chromosomes with minimal adjustment to complete full chromosome count. Additional tools for counting chromosome. Incorporate the sex chromosomes within the count tool for a display of both the model number and sex.
- Annotate chromosomes as well as ideograms. Free text

	<p>annotation, and markups, with different colors and shapes, can be added to metaphase and karyogram images.</p> <ul style="list-style-type: none"> <li>➤ All contour editing and segmentation operations, including addition of missing telomere regions, can be done within the karyotype window.</li> <li>➤ Karyotype arrangement should be adjusted automatically based on content of chromosomes, even if chromosome size is larger than standard size of the group or 10 or more chromosome are in the same class</li> <li>➤ Expand or shrink specific chromosome boundaries by keyboard short key</li> <li>➤ Accurately estimate the band resolution of metaphase.</li> <li>➤ Case Report summarizing karyotype of all cells aberrations for immediate view of clones and common aberration.</li> <li>➤ Ability to add missing telomeric regions directly in karyotype view.</li> <li>➤ Ability to score, count and analyse chromosomes.</li> <li>➤ Ability to display spine and centromere of all chromosomes.</li> <li>➤ Ability to prepare the customised ideograms.</li> <li>➤ Should support various species karyotype and be open system to add more species as and when required.</li> <li>➤ Support of ISCN ideogram with 300, 400, 550, 700 and 850 band resolutions.</li> </ul> <p><b>The quoted system should be onsite upgradable to scanning system for Karyotyping as well as FISH applications.</b></p>	
5.	<p><b>CPU:</b> Should be factory tested and should be part of the system supply from principals only so that there are no incompatibility issues. Should not be locally supplied. The minimum required specifications are:</p> <p>Compatible latest branded computer: i7 or higher Processor with at least 8GB RAM, 1 TB or higher HDD, Key Board, Optical mouse, DVD writer, 24" TFT Colour Monitor, Multimedia Kit, Windows 10 professional 64 bit or better OS with UPS.</p> <p>Complete system should be CE, FDA/IVD approved.</p> <p><b>Monitor:</b> Compatible 25 inch or better TFT screen.</p>	10
<b>TOTAL MARKS</b>		<b>100</b>



Item No. 9.

Solar Vacuum Drying Tank along with vacuum pump along with the marks

Sl. No.	Name of component (max. marks)	Specifications	
1.	The vacuum tank (25)	Inner size	3' x 3' x 10'
		Steel grade	SS-304
		Thickness	4 mm
		Stand height	12"
		Paint	Good quality white paint
		Corners neatly welded to withstand high level of vacuum (30 mm of Hg absolute)	
2.	Door(10)	Size	3' x 3'
		Gasket	Good quality gasket with sufficient width and thickness to withstand 80 °C and 30 mm of Hg absolute pressure
		Locking arrangement	Nut and bolt type attached with wheels of sufficient strength
		Locking wheels	Attached with sufficient diameter and wide, long nuts
		Locking wheels Ø	8"
		Vacuum release valve	1.5" diameter good quality high vacuum valve
		Hinges	Finely aligned with the door with heavy hinges
3.	Outer Ribbing(20)	Material	Mild steel square pipe
		Cross section	3" x 3"
		Thickness	3.75-4 mm
		Sides no. of rows along length	02
		Sides no. of rows across length	05
		Top & bottom rows along length	02
		Top & bottom rows across length	05
		Back wall number of rows along the length	02
		Back wall number of rows across the length	02
		Door: number of vertical rows	02
		Door: number of horizontal rows	04
		Paint	Good quality white paint
4.	Trolley system with rails inside tank(20)		

	<b>a. Rail system</b>	Length	9'
		Cross section	As per the wheels
		Material	Mild steel
		Welded with bottom layer wheel breaks at end	
		Finely aligned with the trolley system mounted on the rail. Capable of mounting and dismounting with the external (existing) rail system.	
	<b>b. Wood stacking trolley platform</b>	Good quality rail wheels	04 pairs
		Good quality ball bearing attached	04 pairs
		Chanel size to be used	4"
		Water supply pipes: 02 rows	0.75"
		The trolley and rail structure should be strong enough to support 500 kg weight	
5.	<b>Vacuum system(25)</b>		
	<b>a. Arrangement</b>	Pipe (6/8") extended from side of the tank to attach vacuum pump	01
		1" diameter, sealed air tight (capped), pipes, 02 from each of the side	04
		Good quality 5"Ø vacuum gauge attached on the roof	01
	<b>b. Vacuum pump</b>	Type	Water ring
		Stage	Double
		Capable of inducing vacuum in the tank 650 mm of Hg at Dehradun (650 m from m s l)	
		Capable of withstand 80 °C hot water vapour	
		Operating fluid:	water
		Noise level (ISO 2151):	70 dB (A)
		Gas inlet /outlet:	1"
		Sealing Type	Gland Packing
		Free Air Displacement	160 M <sup>3</sup> / hr
		Power Req'd.	7.5 HP, 1440 RPM, 3 Phase
		Material of Construction	Cast Iron+SS-304
		Impeller(I & II Stage)	SS-304
		Shaft	SS-410
		Coupling Guard	MS Fabricated
		Vacuum Gauge	4" Dial gauge, 0-760 mm Hg range
		Electric Motor	Reputed brand
		Warranty	Minimum 01 year

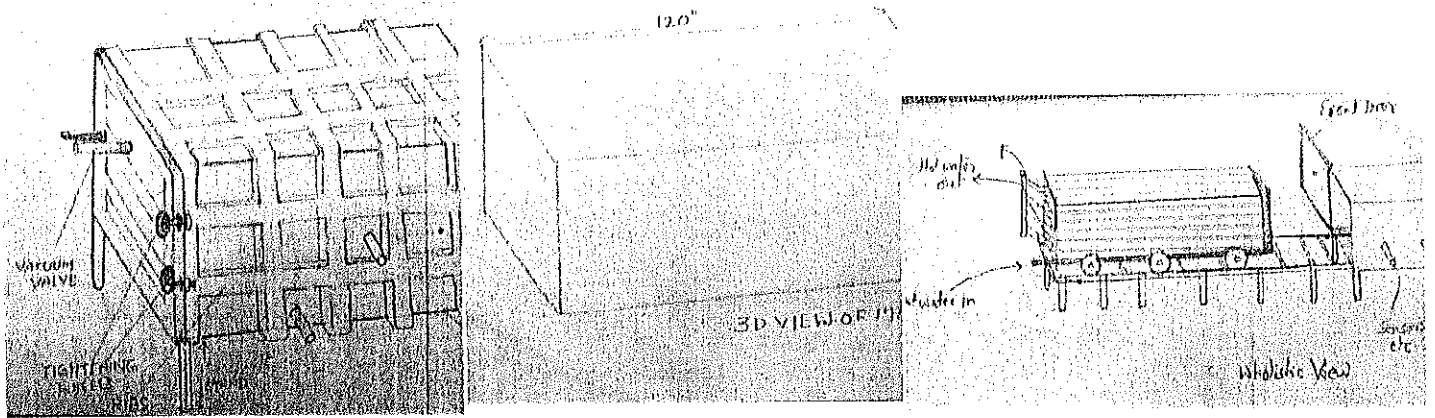
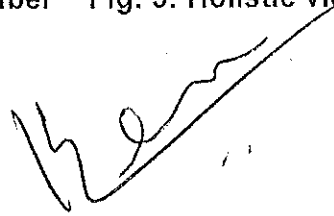


Fig. 1: Ribbing on the vacuum chamber

Fig. 2: The vacuum chamber Fig. 3: Holistic view of the system



Item No. 10.

Specification:- Ultrasonicator

S. No.	Details specification required	Marks
1.	Ultrasonicator with 750 Watt for stand mounted and handy operations. - Microprocessor based and real time display - With 1sec- 10hrs. processing time or better - Workable at temperature range 05 to 100° C. - Sample processing capacity: 05 microleters to 1000ml. - have automatic tuning energy (J). It should have LCD monitor able to display wattmeter.	10
2.	Ultrasonic frequency: 20-24KHz with automatic tuning frequency system. Typical application should include Homogenization, de-agglomeration and the emulsification of solutions.	10
3.	Amplitude adjustment: 05% to 100% The instrument should have automatic amplitude compensation to ensure uniform probe amplitude.	10
4.	Instrument should be equipped with and supplied with one no. 13mm (1/2") Solid and high intensity probe for operating the sample solution range of 15-250ml and with suitable connecting port/parts. The probe should be compatible with the instrument.	20
5.	Instrument should be equipped with and supplied with one no. 19mm (3/4") Solid and high intensity probe for operating the sample solution range of 50-500ml and with suitable connecting port/parts. The probe should be compatible with the instrument.	20
6.	Instrument should be equipped with and supplied with one no. 6.5mm (1/4") probe for operating the sample solution range of 05-40ml and with suitable connecting port/parts. The probe should be compatible with the instrument.	15
7.	Ultrasonicator system should have sound abetting system to prevent ultrasonic waves. The system should be provided with converter clamp, Laboratory-jack, sound protecting chamber, support stand, temperature probe to measure the temperature of processing sample. The temperature probe should be compatible with the instrument.	10
8.	Supplied with one 5KVA voltage controlled stabilizer to protect the system from power fluctuation etc.	05
<b>Total</b>		<b>100</b>

Item No. 11.

**Specification:- UV Spectrophotometer**

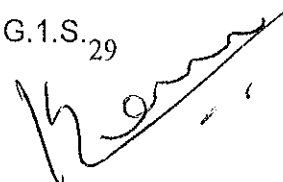
Parameter	Specification	Marks
Spectrophotometer Type	Microprocessor Based	5
Display	High Resolution Touch Screen LCD Colour Graphical display with Built-in-Windows PC	10
Wavelength Range (user Selectable)	190-840 nm	30
Wavelength Resolution	0.2 – 0.4 nm	30
Measuring Modes	Transmittance (T), Absorbance (ABS), Concentration (CONC) by K Factor and Multi standards.	10
Operating Mode	Single wavelength: Measuring 1, ABS and CONC	10
Light Source	Tungstan Halogen Lamp	5
	Total	100

## ITEM NO. 12. PREPARATION OF GIS LAYERS AND MAPS

### Scope of work

The following GIS layers needs to be prepared.

- Watershed boundary delineation up to Micro watershed level
  - Demarcation of Catchment area.
  - Demarcation of study area boundary.
  - Creation of State, District and Sub-district boundaries from Census of India
  - Creation of mosaic of Village boundaries from Census of India.
  - Landuse to be prepared from Satellite Data using visual interpretation at 1:50,000 scale (Built-up Land, Agricultural Land, Forest, Waste Lands, Water Bodies and Areas which are important or sensitive for ecological reasons like Wetlands, watercourses or other water bodies, biospheres, mountains, forests, Protected Areas, Notified Eco-sensitive areas, mangroves etc.) Interpretation has to be carried out at 1:35,000 scale and outputs to be prepared at 1:50,000 scale.
  - Creation of Digital Elevation Model (DEM)
  - Slope
  - Aspect
  - Forest Type Map preparation
  - Forest Density Map preparation
  - Soil Type Map preparation
  - Soil Erosion Map preparation
  - Drainage Map from satellite data
  - Road and Settlement locations from topographical sheets
  - Identification of suitable zones using multi-criterion analysis for forestry interventions.
  - Demarcation of boundaries for different categories of forestry interventions as provided by stake holders on very high resolution satellite image.
  - Composition of maps in AO or A1 size and A4 size for Report Purpose
  - Ground Truth verification for Landuse and Forest Density Map
  - Map/Graph/Chart/Statistics for Report need to be prepared
- i. The above list the Role and responsibility of Technical Service Provider with reference to preparation of GIS layers and maps.
- ii. All data to be used has to be procured by the service provider however the parent organization would provide the projection parameters for Lambert Conformal Conic projection with Spheroid and datum as WGS84 for re-projecting all layers into LCC projection to the successful bidder. Georectification of received/procured datasets would be the responsibility of the successful bidder.
- iii. Map composition has to be done for the riverscape.
- iv. For preparation of reports and presentation thereof the Technical Service Provider shall provide clear description of methodology to be adopted and they should imbibe G.1.S.<sup>29</sup>



Compatibility of information/attribute data in all the phases and stages of the subject of his assignment.

- v. The correspondence on behalf of the service provider would be done by the FRI with the National & State level Departments/Organizations/Institutes to expedite the procurement of already existing maps & databases. However the job to expedite & procurement would be of the service provider.
- vi. All the maps and databases, both original and derived, in hard & soft copy, would now and in future continue to be the property of FRI and would not be used/ utilized by the service provider for any other purpose or project, whatsoever.
- vii. Layers ready to be used in GIS environment must be produced. All GIS layers developed/procured) service provider written in CD/DVD in a format compatible with ERDAS and ArcGIS software.
- viii. The service provider would provide a draft report on Remote Sensing component and would submit the final report to the committee duly constituted by the Director, FRI.

#### **TIME SCHEDULE OF WORK**

- a) The complete scope of work is to be completed within a maximum period of 9 months.
- b) Time is essence of this contract. Therefore, no extension of time for whatsoever reason shall be permitted.

#### **1. DECIDING AWARD OF CONTRACT**

- a) Quality and competence of the technical service provider shall be considered as the paramount requirement. Followed by financial bids.
- b) The Director, Forest Research Institute, Dehradun reserves the right to accept or reject any or all the proposals without assigning any reason.
- c) You are requested to hold your proposal valid for 30 (Thirty) days from the date of submission. During this period you will maintain, your proposed price without change. The FRI will make its best efforts to finalize the agreement within this period.
- d) Please note that the cost of preparing a proposal and contract including visits to FRI, if any is not reimbursable.

#### **REGARDING CONTRACT**

- a) If any part of the contract does not correspond or agree with any other part, or if any question arises as to the meaning of the terms of the contract or as to the performance of the work, the Forest Research Institute, Dehradun shall determine the matter and his/ her decision shall be final and binding upon the parties hereto.
- b) The contract when executed by the parties hereto shall constitute the entire contract between the parties in connection with the works covered, and shall be binding upon the 30



parties hereto or upon either of them unless the said modification shall be in writing and duly executed by FRI and the firm.

- c) The contract shall not be assigned or sublet in whole or in part by the firm without prior written consent of the Director, Forest Research Institute, Dehradun. Any assignment or subletting of this contract by the firm without prior written consent of the Director, Forest Research Institute, Dehradun. or any interest therein, or of an money due or to become due by reason of the terms hereof, shall be null and void.
- d) The Director, Forest Research Institute, Dehradun. has the powers to cancel the contract at one-week notice, if the services of the contractor are found unsatisfactory or otherwise.

**TECHNICAL EVALUATION criteria for item no. 12 will be as below**

Pre-qualification criteria given in para -5 will be evaluated by Tender Committee and those qualify will be considered for further evaluation.

Technical Bid shall bear maximum marks 100 and the minimum marks for qualifying the technical bid shall be 70 marks. Bidders after qualifying in Technical Evaluation will only be considers for Financial BidEvaluation.

**The breakup of maximum marks shall be based on the following parameters:-**

S. No.	Parameter	Max. Score	Details	Break Up	Page No. of Documents attached
1.	The Bidder should have minimum average annual turnover of Rs. 1.00 Cr. (One Crore) for last three F.Y. i.e. 2015-16, 2016-17 & 2017-18.	10	Rs. 75 Lakh to Rs. 1.00 Cr.	05	
			Above Rs. 1.00 Cr.	10	
2.	The Bidder should have experience of similar kind of services with Government organizations/Public Sector undertakings etc. during last seven years for which the cost of the	20	One Projects	10	
			More than one Project	20	

	single work order more than Rs. 25 lakh. (Completion Certificate must enclosed along with work order)				
3.	Bidder must have relevant ISO 9001:2008 or 9001:2015 certification in the Line of Business. (Copy of ISO Certificate must attach)	10	No	0	
			Yes	10	
4.	Local Office in Dehradun	05	No	0	
			Yes	05	
5.	Sr. Consultant/Team Leader should have minimum qualification of Post-Graduation or M. Tech. in relevant field or PG Diploma in Remote Sensing /GIS/Geoinformatics with experience of 5 - 10 years in Remote Sensing & GIS. (Detailed CV along with qualification documents must enclosed)	15	No	0	
			Yes	15	
6.	A detailed work plan, proposed Approach and Methodology along with timeline. Technical approach to be followed by the consultant for completing the project.	40	No	0	
			Yes	40	

**NOTE:**

- A clear and detailed Approach and methodology towards the assignment. A work plan on how the methodology will be executed in the given time shall be attached. FRI, Dehradun may request the shortlisted consultants to make presentation if required. (The dates of presentation would be intimated accordingly).

The documents already enclosed in pre-qualification criteria, need not to be attached again.  
Page no. should be mentioned clearly for the technical evaluation.



**Price Schedule**

**(a) Price bid undertaking:** The format of Price bid undertaking as given under:

From: (Full name and address of the Bidder)

To,  
The Director  
FRI, Dehradun

Dear Sir/Madam,

I submit the price Bid for ----- and related activities as envisaged in the Bid document.

I have thoroughly examined and understood all the terms and conditions as contained in the Bid document, and agree to abide by them.

I offer to work supply the quoted item at the rates as indicated in the price Bid, Annexure IV inclusive of all applicable taxes except Service Tax.

Yours Faithfully,  
Signature of authorized Representative

**(b) Schedule of price bid in the form of BoQ\_1.xlsx**

The prices should be quoted only in BoQ\_1.xlsx available in the moefcc portal.

The below mentioned Financial Proposal/Commercial bid format is provided as BoQ\_1.xlsx along with this bid document at <https://moefcc.euniwizarde.com>. Bidders are advised to download at this BoQ\_1.xlsx as it is and quote their offer/rates in the permitted column and upload the same in the commercial bid. **Bidder shall not tamper/modify downloaded price bid template in any manner.** In case if the same is found to be tempered/modified in any manner, tender will be completely rejected and EMD would be forfeited and bidder is liable to be banned from doing business with Forest Research Institute.

1. The rates, taxes, charges, etc. should be quoted as per BoQ.
2. All taxes, fees, levies, etc. and any revision in the statutory taxes/fees, etc. will be the responsibility of the Bidder.
3. In case of any discrepancy/difference in the amounts indicated in figures and words the amount in words will prevail and will be considered.
4. The quoted rates shall remain firm throughout the tenure of the contract and no revision is permissible for any reason.

Authorized Signatory  
(Signature of the Authorized Person)



## Agreement/Contract Form

TENDER ACCEPTANCE LETTER  
(To be given on Company Letter Head)

Date: .....

To,  
Director  
Forest Research Institute  
Dehradun-248006

**Sub: Acceptance of Terms & Conditions of Tender.**

Tender Reference No:  
Name of Tender / Work:

Dear Sir,

1. I/ We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) name \_\_\_\_\_  
\_\_\_\_\_ as per your advertisement, given in the above mentioned website(s).
2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. \_\_\_\_\_ to \_\_\_\_\_ (including all documents like annexure(s), schedule(s), etc.), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/organization too have also been taken into consideration, while submitting this acceptance letter
4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.
5. I / We do hereby declare that our Firm has not been blacklisted/ debarred / banned by any Govt. Department/Public sector undertaking.
6. I / We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,  
(Signature of the Bidder, with Official Seal)



**Other Standard Form**  
**Format for Bank Guarantee**

To

Director  
Forest Research Institute  
P.O. New Forest  
Dehradun

Your Order No. \_\_\_\_\_ for the supply and delivery of \_\_\_\_\_ has been accepted by  
M/s \_\_\_\_\_.

In accordance with the terms of payment of the said order, we have agreed to pay the balance of 5% of the contract price of the supplier, furnishing you with an acceptable Performance Bank Guarantee for 5% of the total contract value, viz Rs. \_\_\_\_\_ for the due performance by the Supplier of all its contractual obligations and to be valid for a period of 24 months for the date of bank guarantee for this purpose you have agreed to accept our guarantee.

In consideration thereof, we hereby guarantee payment of and undertake to pay Rs. \_\_\_\_ and remit to you on demand and without demur the sum of Rs. \_\_\_\_\_ being 5% of the total value of the contract on receipt of your intimation that the Supplier has committed a breach of any of its contractual obligations.

This guarantee shall be valid for a period of 24 months from the date of Installation of the equipment in satisfactory condition or 27 months from the date of dispatch of the last lot of consignment whichever is earlier, and in any event shall expire on \_\_\_\_\_, you shall have the right to file/make your claim on us under the guarantee for a period of sixty days from the said date of expiry.

This guarantee shall not be revoked without your express consent and shall not be affected by your granting time or any other indulgence to the supplies or by any change in the constitution of the Bank or the supplies or for any other reason whatsoever.

Not with standing anything, contained herein above our liability under this guarantee is restricted to Rs. \_\_\_\_\_ and this guarantee will remain in force up to and inclusive of \_\_\_\_\_ - unless an action to enforce a claim under the guarantee is filed against us within sixty days from the date of expiry i.e. on or before \_\_\_\_\_, all rights under the guarantee shall be forfeited and we shall be relieved and discharged from all liabilities there under.

Signatory Bank with Seal



Technical documents: S. No. 1

#### CERTIFICATE OF LOCAL CONTENT

It is certified that the item offered meets the minimum local content of ----% (50 % or more Indian manufactured parts are used in the item by cost/value) and the local content is added at the location----- (please provide the name of place of manufacturing the item).

Name and seal of the firm with signature

Technical documents: S. No. 4

#### CERTIFICATE OF GENUINENESS & BRAND NEW ITEM

All specifications are certified and guaranteed for GENUINENESS & BRAND NEW ITEM and that the model of the equipment is NOT GOING TO BE OBSOLETE in near future (5 years).

Name and seal of the firm with signature

Technical documents: S. No. 5

#### CERTIFICATE FOR AVAILABILITY OF SPARES/PARTS

It is certified that the spare parts are made available for next five years.

Name and seal of the firm with signature



## Policy of Forest Research Institute, Dehradun (FRI) against the Corrupt and Fraudulent Practices

FRI strictly adheres to its policy against corruption and requires that bidders and their agents, subagents, sub-contractors, suppliers, etc. shall not indulge in any kind of corrupt practices, fraudulent practices, collusive practices, coercive practices, obstructive practices or other kinds of corruption declared as crime under Indian law.

- a) If bidder or their agents, subagents, sub-contractors, suppliers etc. are found, directly or indirectly, involved in such practices, bid or agreement and execution thereof at any stage may be rejected or cancelled as the case may be by the FRI and besides it, FRI may initiate legal actions including civil and criminal proceeding.

For the purpose of this provision the terms are defined as follows:

- (i) "Corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;<sup>1</sup>
- (ii) "Fraudulent Practices" is any act or omission including a misrepresentation which knowingly or recklessly made to mislead another party to obtain financial or other benefit or to avoid an obligation;<sup>2</sup>
- (iii) "Collusive Practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;<sup>3</sup>
- (iv) "Coercive Practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the action of a party;<sup>4</sup>
- (v) "Obstructive Practice" is deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or

<sup>1</sup> For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the procurement process or contract execution. In this context, "public official" includes FRI staff and employees of other organizations taking or reviewing procurement decisions.

<sup>2</sup> For the purpose of this sub-paragraph, "party" refers to a public official; the terms "benefit" and "obligation" relate to the procurement process or contract execution; and the "act or omission" is intended to influence the procurement process or contract execution.

<sup>3</sup> For the purpose of this sub-paragraph, "party" refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

<sup>4</sup> For the purpose of this sub-paragraph, "party" refers to a participant in the procurement process or contract execution intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation.

- b) Besides action under clause (a) FRI may also take action to blacklist / banned such bidder either indefinitely or for a specified period.

### **Instruction to Bidders for e-tendering**

The Special Instructions (for e-Tendering) supplement "General Instructions to Bidders", as given in the Tender Document. Submission of online Bids is mandatory for this Tender.

For conducting electronic tendering, MoEFCC is using the portal <https://moefcc.euniwizarde.com> of M/s ITI Ltd, a Government of India Undertaking.

#### **1.0 Tender Bidding Methodology:**

The offer should be submitted through e-tendering mode in the website <https://moefcc.euniwizarde.com> containing two e-bid viz. Technical and Financial Bid. The Bids will be uploaded along with all signed and scanned documents those are required for particular tender.

#### **2.0 Broad outline of activities from Bidders prospective:**

- (i) Procure a Digital Signing Certificate (DSC).
- (ii) Register on e-wizard portal.
- (iii) View Notice Inviting Tender (NIT) on e-wizard portal.
- (iv) Download official copy of Tender Documents from e-wizard portal.
- (v) Bid-Submission on e-wizard portal.
- (vi) Attend Public Online Tender Opening Event (TOE) on e-wizard portal (vii) Opening of Financial-part (Only for Technical Responsive Bidders).

For participating in this tender online, the following instructions need to be read carefully. These instructions are supplemented with more detailed guidelines on the relevant screens of the e-wizard portal.

#### **3.0 Digital Certificates:**

It is mandatory for all the bidders to have class-III Digital Signature Certificate – Signing + Encryption (in the name of person who will sign the Bid) from any of the licensed Certifying Agency (Bidders can see the list of licensed CA's from the link [www.cca.gov.in](http://www.cca.gov.in)) to participate in e-tendering.

#### **4.0 Registration:**

To participate in the e-tendering submission, it is mandatory for applicants to get registered their firm/company in e-tendering portal of ITI. <https://moefcc.euniwizarde.com> to have user ID & password from M/s ITI Ltd., The Annual registration charges for vendors/suppliers are Rs.2000/+18%GST-per annum. The procedure for the registration is as under:

Go to the website <https://moefcc.euniwizarde.com> In the home page, click on "Registration"

2) In the Vendor Registration form, vendor has to fill up the all mandatory applicant details. After submission of registration form, you will get the verification link on your registered mail id, after verification you log in your account with your user id and password and complete the all activity related to registration etc. Document uploading, paid registration fee, after completion of registration payment, you need to send your acknowledgement copy on our held desk mail id [ewizardhelpdesk@gmail.com](mailto:ewizardhelpdesk@gmail.com) for activation of your account.



## SEARCHING FOR TENDER DOCUMENTS

There are various search options built in the e-tender Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Item/work id, Title, Date, etc.

Once the bidders had selected the tenders in which they are interested, bidder can pay the processing fee Rs.3000-/ excluding GST@18%(NOT REFUNDABLE) by net-banking / Debit / Credit card then you may download the required documents / tender schedules, Bid documents etc. Once you pay both fees, tenders will be moved to the respective "Register" Tab. This would enable the e-tender Portal to intimate the bidders through e-mail in case there is any corrigendum issued to the tender document.

Please feel free to contact ITI Helpdesk (as given below) for any query related to e-tendering.

1. Helpdesk landline No: 011-49606060
2. Mr. Amrendra Kumar (90155315108)

