भारतीय मानक ब्यूरो

BUREAU OF INDIAN STANDARDS

e-tender Document for Supply, Installation and Commissioning of Test Equipments for BIS Laboratories

(Tender Reference No. -CHEMICAL 2020)

INVITED BY

BUREAU OF INDIAN STANDARDS (BIS)

Scientist F & Head, Laboratory Policy and Planning Department (LPPD)
9, BSZ Marg, New Delhi-110002
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TENDER UPLOAD DATE : 14-10-2020

LAST DATE FOR SUBMITTING TENDER : 4-11-2020

E-TENDER NOTICE

Bureau of Indian Standards (Laboratory Policy and Planning Department) invites bids, under **two bid system (Technical bid and Financial bid)** from bonafide experienced Manufacturers/Suppliers/ Dealers / Agencies/ Direct Importers for the job defined in this tender, as per details given below:

DESCRIPTION	SUPPLY, INSTALLATION AND COMMISSIONING OF …… test Equipment for……. **(Please refer Annex-3 for Technical Specifications of the equipment)**
Type of Tender	OPEN
EMD Amount (in INR)	Please see point No 1 -3 Below

i. Bidder(s) having beneficial ownership in countries which share land border with India in accordance with Department of Expenditure Order no. F. No. 6/18/2019-PPD dated 23.07.2020and DPIIT OM No.P-45021/112/2020-PP(BE-II)(E-43780)dated 24.08.2020 shall register themselves with DPIIT after applying on the prescribed format.

ii. The bidder can bid for one or more than one equipment. The items reserved for MSE as per MSE Policy 2012 shall be bid by MSE OEM only.

iii. The EMD amount for each equipment is, as detailed in Annex 3. Bidder shall quote only those products in the bid which are not obsolete in the market and has at least 7 years residual market life i.e. the offcered product shall not be declared end-of-life by the OEM The bidder has to bid for each equipment separately and provide EMD amount mentioned for each equipment separately for which he is submitting his bid. The EMD is to be submitted through payment online in an acceptable form or instrument bank guarantee or banker's cheque or fixed deposit receipt (the bidder shall have to upload scanned copy of the transaction document showing transaction code/RTGS No. etc.) in favour of Bureau of Indian Standards, New Delhi, payable at New Delhi. A scanned copy of EMD submitted also needs to be uploaded along with the bid at the Central Public Procurement Portal.For the purpose of online payment of EMD, the bank details of the BIS are as follows:

- Syndicate Bank, Bureau of Indian Standards, 9 Bahadur Shah Zafar Marg, New Delhi.
- IFSC/NEFT Code: SYNB0009084, Account No.: 90841010000018, Email id: dac@bis.gov.in, PAN No. AAATB0431G, GSTIN : 07AAATB0431G1ZD

iv. Proof of payment of EMD should be submitted along with Technical Bid.

v. No interest shall be payable for the sum deposited as Earnest Money Deposit.

vi. EMD of the unsuccessful bidders would be returned to them after expiry of the final bid validity and latest on or before the 30 days after the award of the contract.

vii. The EMD shall remain valid for a period of forty-five days beyond the final bid validity period.

viii. If EMD is forfeited for any reason, the concerned bidder may be debarred from participation in the RFPs/tenders floated by BIS in future as per its sole discretion.

Registered MSEs & Start-ups (Micro and Small enterprises (MSEs) as defined in MSE procurement policy 2012 issued by Department of MSME or are registered with the Central Purchase organisation or the concerned ministry or department or start-ups as recognised by the Government) or OEMs registered with NSIC are exempted from payment of EMD provided proof of registration is submitted.

PERFORMANCE SECURITY DEPOSIT

i) The successful bidder will have to submit a Performance Security equivalent to 10% of the total order in the form of online payment or instrument fixed deposite in an acceptable form; in favour of BIS, New Delhi. Performance Security should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. For the purpose of online payment of Performance Security, the bank details of the BIS are as follows:

- Syndicate Bank, Bureau of Indian Standards, 9 Bahadur Shah Zafar Marg, New Delhi.
- IFSC/NEFT Code: SYNB0009084, Account No.: 90841010000018, Email id: dac@bis.gov.in, PAN No. AAATB0431G, GSTIN : 07AAATB0431G1ZD

ii) The successful bidder has to renew the performance security on the same terms and conditions for the period up to the contract including extension period, if any.

iii) Performance Guarantee would be returned only after successful completion of job assigned to them after adjusting/recovering any dues recoverable/payable from/by the Supplier on any account under the contract.

Address of the issuing Authority	**Sc F & Head, Laboratory Policy and Planning Department** (LPPD) 9, BSZ Marg, New Delhi-110002 Email: clpolicycell@bis.gov.in Phone: **011-23230860**
Download Start & Bid Submission Start Date & Time	14-10-2020
Download End & Bid Submission End Date & Time	4-11-2020
Pre Bid Meeting	21-10-2020
Technical Bid opening date & Time	05-11-2020

1. Bureau of Indian Standards reserves the right to amend or with draw any terms and conditions contained in the tender document or to reject any or all bids without giving any notice or assigning any reason. The decision of issuing authority in this regard shall be final.
2. The bidder can submit his technical and financial bid along with applicable EMD for one or more number of equipments separately.The evaluation of technical and financial bid for each equipment will be carried out separately and L1 bidder will be determined for each equipment separately. The selection process for one equipment will not have any effect on other equipments. BIS reserves the right to proceed with one or more equipments as mentioned in the tender document while cancelling the purchase of one or more number of eauipments.
3. Performance security deposit for each equipment will have to be submitted separately by the selected bidder in the manner as detailed above.

-Sd-
Sc F & Head (LPPD)

TENDER DOCUMENT

PART-I: TECHNICAL BID

A: PRE-QUALIFICATION CRITERIA (PQC)

1. The bidder shall be PSU/ autonomous / public /private limited / Partnership/ Proprietorship / any other firm having been in business in India for the last three calender years (2017-18, 2018-19, 2019-20) for supply of the same/similar equipment. The documents authenticating the establishment of the firm shall be submitted.
2. The bidder shall have supplied, installed and commissioned at least three such same/ similar equipment in India and one of them should be in the last three years. Additionally, the list of customers shall also be enclosed.
3. The bidder shall enclose copies of purchase orders/letters of satisfaction from buyers or any other document as a proof of supply of same / similar equipment to Govt. or private customers with the minimum value of order.
4. The bidder shall submit copies of audited financial statements containing P & L account & balance sheets of last three years.
5. The bidder shall enclose valid proof of tax registrations as applicable to them such as GST/ PAN / last ITR or any other registration for taxation purpose (for Indian Bidders).
6. The bidder should not have been blacklisted. A declaration regarding thesame is to be submitted by the bidder in the format supplied at Annexure-4 A.
7. The bidder should not have earlier withdrawn from any tendering process of BIS.
8. The Bidder shall be willing to provide after sales support through a combination of warranty and comprehensive annual maintenance contract for a period of 6 years as per terms and conditions.
9. The bidder should not be under liquidation, court receivership or similar proceedings, should not br bankrupt. Bidder to upload undertaking to this effect with bid.
10. Net worth of the OEM should be positive as per the last audited financial statement

Note: The bidder shall enclose all requisite documents self attested as specified in the **checklist**. **The bidder must fill the checklist enclosed with relevant details.**

Checklist for Pre-Qualification Criteria (PQC)

Bidders must fill this check list with a **tick (√)** in the boxes in the right hand column. Relevant document, as per the checklist, shall also be enclosed with the technical bid.

S No.	Requirement	Document submitted	Check box
1.	Bidder is	1. Original Equipment Manufacturer 2. Dealer/ agency/ supplier/	1. ☐ 2. ☐
2.	Bidder is based in	1. India 2. Abroad	1. ☐ 2. ☐
3.	The bidder is a public undertaking/ autonomous body/ public limited / private limited / Proprietorship Company / firm	1. PSU/Autonomous 2.Limited/ Private Limited 3. Prioprietory / Partnership firm/LLP 4. Others (specify ……..)	1. ☐ 2. ☐ 3. ☐ 4. ☐
4.	Enclose applicable documents of establishment of firm - Certificate of Incorportation - Authorization letter from Principals - Partnership Deed/LLP - Proprietory Details - Others (specify ……..)	1. Yes, details enclosed 2. No, details not enclosed	1. ☐ 2. ☐
5.	Enclose applicable documents of Tax Registration: - GST - PAN - Last ITR - Others (specify ……..)	1. Yes, details enclosed 2. No, details not enclosed	1. ☐ 2. ☐
6	Enclosed statements of turnover per year for last three successive years.	1. Yes, details enclosed 2. No, details not enclosed	1. ☐ 2. ☐
7.	Enclose copies of audited financial statements containing P & L account Balance Sheet for last three years	1. Yes, details enclosed 2. No, details not enclosed	1. ☐ 2. ☐
8.	List of customers attached	1. Yes, details enclosed 2. No, details not enclosed	1. ☐ 2. ☐
9.	Enclosed letter of satisfaction from buyers or purchase orders or any other document from customers whom same / similar equipment was supplied.	1. Yes, details enclosed 2. No, details not enclosed	1. ☐ 2. ☐
10	Whether Bidder is willing to provide after sales support through a combination of warranty and comprehensive annual maintenance contract for a period of 6 years as per mutually worked out terms and conditions	1. Yes, willing to provide 2. No, not willing to provide	1. ☐ 2. ☐
11	Whether withdrawn from tendering process of BIS on an earlier occasion	1. Yes 2. No	1. ☐ 2. ☐
12	Whether blacklisted (submit declaration in annexure -4 A)	1. Yes 2. No	1. ☐ 2. ☐
13.##	Had earlier supplied equipment/ service to BIS	1. Yes 2. No	1. ☐ 2. ☐

- This is an additional information.

I Pre-bid Meeting

A Pre-bid meeting for interested Bidders will be held at the scheduled date and time indicated in the tender document.Any change in venue or timing of pre-bid meeting will be hosted on BIS website **(**www.bis.gov.in**) and the** Central Public Procurement (CPP) Portal of Government of India **(https://eprocure.gov.in/cppp)** .
Interested Bidders will be allowed to seek clarification and get their doubts cleared during pre-bid meeting.

Any change that would be made in the Tender Document by the Competent Authority after issue of the Tender /Pre bid meeting will be hosted on BIS website **(**www.bis.gov.in**)** and on CPP Portal of Government of India in the form of Corrigendum/Addendum for incorporating the same in the Bid before submission

The minutes of pre-bid meeting shall be intimated to all bidders present in the pre-bid meeting and shall also be exhibited on BIS website and on the CPP portal.

II Availability of Tender Document:

The Tender document may also be downloaded from the website of the Bureau (www.bis.gov.in and the CPP Portal.

The bidder shall bear all costs associated with the preparation and submission of its tender. The Bureau shall, in no case, be responsible or liable for these costs, regardless of the conduct or the outcome of the Bidding process.

III Language of Bid/Contract:

The language of the Bid shall be in English/Hindi and all correspondences etc. shall conform to English/Hindi language.

IV Last Date for Submission

Tenders have to be submitted online on CPP Portal (**https://eprocure.gov.in/eprocure/app)**. It shall be the responsibility of the bidder / tenderer to ensure that tender is submitted on before the deadline of submission prescribed.

Submission of Tenders shall be closed on CPP Portal mentioned earlier at the date & time of submission prescribed after which no bidder shall be able to submit the Tender.

It shall be the responsibility of the bidder / tenderer to ensure that his tender is submitted online on the CPP Portal (https**://eprocure.gov.in/eprocure/app)** before the deadline of submission. BIS will not be responsible for non-receipt of tender documents due to any delay or loss etc.

V Manner of Submission of Bid

Bids shall be submitted online only at CPP Portal.

Bidders are advised to follow the instructions provided in the 'Instructions to the Contractors/Bidder for the e-submission of the bids online through the Central Public Procurement Portal. A set of instructions for online bid submission are enclosed.

Bid documents may be scanned with minimum 100 dpi with black and white option which helps in reducing size of the scanned document.

Bidder who has downloaded the tender from the BIS website and the Central Public Procurement Portal shall not tamper/modify the tender form including downloaded price bid template in any manner. In case if the same is found to be tempered/modified in any manner, bid will be completely rejected and EMD would be forfeited and Bidder may be banned from doing business with BIS.

E-mail or fax submission shall not be considered.

VI Contents of the bid document

The bidders shall submit their bids in two parts, one part of the bid shall be **Technical Bid** and second part **Financial Bid**.

VII BID Format

a) Price Schedule(s) as per the BoQ format filled up with all the relevant information to be uploaded in the form of BOQ_PriceBid.xls.

The price bid format is provided as BoQ_PriceBid.xls along with this Tender Enquiry Document at https://eprocure.gov.in/eprocure/app**.** Bidders are advised to download this BoQ_XXXX.xls 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 tenderer is liable to be banned from doing business with the Bureau.

b) The authorized signatory of the bidder must digitally sign the bid. Bid sent by fax/email shall not be considered.

B: INSTRUCTIONS TO BIDDERS (FOR STRICT COMPLIANCE)

I DISCLAIMER

The information contained in the Tender Document, provided by the Bureau, is for information of the Bidders to assist them in formulation of their bids. Each Bidder can conduct their own investigation and analysis before submission of the bid. The Bureau shall not incur any liability, whatsoever, with regard to the completeness of the information contained in the Tender Document that the Bidder may require for submission of the bid. The Bureau reserves the right to amend any condition of the Tender Document through publication of a Corrigendum, besides rejection of any or all the bids received, if the Competent Authority of the Bureau decides so.

II ONLINE BID SUBMISSION

The bidder can bid for one or more than one equipment. The bidder has to bid for each equipment separately and provide EMD amount mentioned for each equipment separately for which he is submitting his bid.

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.

Bidder should be responsible for registering his company at Central Public Procurement Portal and seeking all necessary approvals required to upload the bid.

The THE BUREAUreserves the right to amend the document, tentative schedule and critical dates. It is the sole responsibility of prospective bidders to go through Central Public Procurement Portal / THE BUREAUWebsite from time to time for any updated information.

III REGISTRATION ON CPP PORTAL

i. Bidders are required to enrol 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.
ii. As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
iii. 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.
iv. 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 etc.), with their profile.
v. 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.
vi. 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.

IV SEARCHING THE TENDER DOCUMENT

i. 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.

ii. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender Annexes. 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.

iii. 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.

V PREPARATION OF BIDS

i. Bidder should consider any corrigendum published on the tender document before submitting their bids.

ii. Bidder should 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.

iii. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / Annex 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.

iv. 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. GST/PAN, annual reports, auditor certificates 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.

VI SUBMISSION OF BIDS

i. 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.

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

iii. Bidder has to select the payment option as "offline" to pay the EMD as applicable and enter details of the instrument. Bidder should pay the EMD as per the instructions specified in the tender document. The details of the NEFT/online instrument, should tally with the data entered during bid submission time. Otherwise the uploaded bid will be rejected. The EMD amount will be returned to the unsuccessful Bidders as per the provisions of GFR. It will be returned to the successful Bidder after receipt of the Performance Security.

Forfeiture of EMD: The Bid Security / Earnest Money deposited is liable to be forfeited if the tenderer withdraws or amends or impairs or derogates the offer in any respect within the period of

validity of the tender or fails to comply with any other condition stipulated in the document or if the successful Bidder does not pay the Performance Security in the prescribed time limit or fails to sign the Agreement after the award of Contract.

iv. 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, enable Macro in the excel sheet and complete the 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.

v. 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.

vi. 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 openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.

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

viii. 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.

ix. 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.

VII ASSISTANCE TO BIDDERS

i. 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.

ii. 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 Nos. 0120-4200462, 0120-4001002

VIII TERMS & CONDITION

i. The Invitation for Bids is to be uploaded on two bids basis i.e. Technical Bid and Financial Bid. The bidder can bid for one or more than one equipment. The EMD amount for each equipment is, as detailed in Annex 3. The bidder has to bid for each equipment separately and provide EMD amount mentioned for each equipment separately for which he is submitting his bid.

ii. It is the responsibility of the Bidder to ensure that the bids are up loaded on time within the deadline through www.eprocure.gov.in A scanned copy of the EMD sunmitted needs to be uploaded at the Central Public Procurement Portal and the original instrument of EMD shall be submitted before the Registered Micro & Small Enterprises (MSEs) as defined in MSEs Procurement Policy, 2012 issued by Department of Micro, Small & Medium Enterprises (MSME) or as registered with the Central Purchase Organisation or the concerned Ministry or Department or Start-ups recognized by

Department of Industrial Policy and Promotion (DIPP) are exempted from payment of EMD on production of valid certificate of registration with the authority/agency as indicated in the policy.

iii. All bids shall remain valid for 180 days from the last date of submission of bids.

iv. The BIS reserves the right to solicit additional information from Bidders.

v. The THE BUREAU reserves the right to accept the whole, or part of or reject any or all bids without assigning any reasons and to select the Bidder(s) who, in the sole opinion, best meet the interest of the THE BUREAU.

vi. Although negotiations are severely discouraged, the THE BUREAU also reserves the right to negotiate with the bidders placed as L1 bidder in the interest of the THE BUREAU.

vii. The THE BUREAU reserves the right not to accept bid(s) from agencies resorting to unethical practices or on whom investigation/enquiry proceedings have been initiated by Government investigating Agencies/Vigilance Cell.

viii. All information contained in this tender/bid, or provided in subsequent discussions or disclosures, is proprietary and confidential. No information shall be shared by the bidder with any other organizations/agencies.

ix. The successful bidder will submit the supply plan to THE BUREAU.

x. The **Financial bid will be opened** on a date, to be fixed later, for the successful bidders in the technical bid. Authorized representative of the bidder with an authority letter may remain present on the scheduled date and time.

xi. The bid along-with all requisite documents must **be signed and stamped by the authorized person,** failing which the bid shall be liable for rejection.

xii. The BUREAU reserves the right to accept or reject any bid or all the bids without assigning any reason thereof.

xiii. **Process to be confidential:**
Information relating to the examination, evaluation and comparison of Bids and the award of a Contract shall not be disclosed to Bidders or any other person not officially concerned with such process until the award to the successful Bidder has been announced.

xiv. Any kind of canvassing in regard to the offered equipment after submitting bid shall be treated as disqualification.

Special Conditions: Cost of the items should be mentioned clearly in the **Part-II: Financial Bid** only. The following details need to be included:

a. Price break-up of main equipment, accessories. Consumables, spares, fixtures (whichever is applicable) to be supplied by the bidder.

b. Rates quoted should specifically mention GST/other taxes-duties, as applicable. In absence of any such stipulation, it will be presumed that the prices include all Taxes/charges and no claim for the same shall be entertained.

c. Please quote your rates, other charges, applicable taxes and duties in the format prescribed in **Part-II: Financial Bid** (Please refer page 18).

d. The equipment is required to be supported for performance for six years, i.e., three years of warranty plus three years of **CAMC** (Comprehensive Annual Maintenance Contract). If the warranty offered by the bidder is less than three years, then the bidder shall quote the CAMC charges, year wise, for the remaining period of warranty, plus for fourth, fifth and sixth years. Please refer (B) of **Part-II: Financial Bid**

Financial bid shall be evaluated on the total price quoted, which is a combination of unit price of the equipment and CAMC charges upto six years of operation of equipment. The payment will be made for unit price of the equipment which will cover the warranty period also. The CAMC charges as quoted in the financial bid at (B) of Part -II shall be payable on yearly basis after CAMC starts.

e. Prices shall be quoted in Indian Rupees.

f The rates quoted shall be **valid for a period of one year** from the date of opening of the financial bid of the tender.

g. The successful bidder is responsible for Packing, Forwarding, Freight & Insurance, Delivery at site and Installation, Commissioning and Training of THE BUREAU personnel (at least 2 personnel per instrument) in a satisfactory manner.

h. The Agency Commission to the Indian Clearing Agent will not be paid by the THE BUREAU and the same would be borne by the supplier.

i. The bidder is expected to work out his rates keeping in view the technical specifications as per Annexure-3 of Technical bid & conditions mentioned clearly and arrive at the amount to be quoted. The bidder shall be deemed to have satisfied itself before bidding as to the correctness and sufficiency of its bid and of the rates and prices quoted in the attached form for financial bid (Part-II), which rates and prices shall, except as otherwise provided, cover all its obligations under the Tender and all matters and things necessary for proper fulfilling his obligations under the Tender.The financial bid shall clearly indicate all taxes including local taxes, etc. to be paid by the bidder for the goods to be supplied at specified places and any claim for extra payment on any such account shall not be entertained.

j. The price quoted by the bidder shall be applicable for the repeat order(s), if repeat orders are placed with the supplier. However, THE BUREAU reserves the right, not to place the repeat order.

xvii. Execution of Agreement: It shall be incumbent on the successful bidder to execute the Agreement, as per Annexure 6, on a non-judicial stamp paper of appropriate value to be purchased in New Delhi before commencement of the supply of the laboratory equipment and pay stamp duty, legal and statutory charges for the Agreement, if any, as applicable on the date of the execution. Please read carefully, the conditions of contract as given **in Part-III: Conditions of contract.**

xviii. The bidder can submit his technical and financial bid along with applicable EMD for one or more number of equipments separately.The evaluation of technical and financial bid for each equipment will be carried out separately and L1 bidder will be determined for each equipment separately.The selection process for one equipment will not have any effect on other equipments. THE BUREAU reserves the right to proceed with one or more equipments as mentioned in the tender document while cancelling the purchase of one or more number of eauipments.

xix. In case, more than one bidder becomes L1 jointly and there are more than one equipment of that kind to be supplied, the purchase order will be split in the successful bidders.

xx. Customs Duty Drawback-If any of the contracted stores are, on exportation, entitled to a drawback of customs duty in respect of themselves or the raw materials involved in their manufacture, the price to be charged by the Seller should be the net price after the deduction of all the entitled custom duty drawbacks.

xxi. Country of Origin: All goods and services to be supplied and provided under the contract shall have the origin in India or in the countries with which the Government of India has trade relations. The word "origin" incorporated in this clause means the place from where the goods are mined, cultivated, grown, manufactured, produced or processed or from where the services are arranged.

xxii. The insurance cover shall be obtained by the Supplier in its own name and not in the name of the Purchaser or its Consignee.

xxiii. **Software and Software Upgrades :**

The Supplier shall agree to provide copies of as-built software in executable code that are installed in the system at all levels. It shall also state the Hardware that needs to be in place for implementation ensuring that the Equipment/ Instrument un-availability is minimal. The Supplier shall also comply and guarantee software upgrades for the service life of the Equipment/ Instrument. Taking into account the operational requirements of the Purchaser, there may be a need to customize some portion of the software. Supplier should agree for such customization, which is expected to be limited, at no extra cost. Any software upgrades developed by the Supplier during the warranty and the post warranty period should be made available to the Purchaser at no extra cost and should be delivered and installed in a prompt and efficient manner. The Supplier should install and train the operator with software upgrades.The software provided should be able.

Force Majeure: Force Majeure (FM) means extraordinary events or circumstance beyond human control such as an event described as an act of God (like a natural calamity) or events such as a war, Strike, riots, crimes (but not including negligence or wrong-doing, predictable/ Seasonal rain and any other events specifically excluded in the clause). An FM clause in the contract frees both parties from contractual liability or obligation when prevented by such events from fulfilling their obligations under the contract. An FM clause does not excuse a party's non-performance entirely, but only suspends it for the duration of the FM. The supplier has to give notice of FM as soon as it occurs and it cannot be claimed ex-post facto. There may be a FM situation affecting Bureau of Indian Standards only. In such a situation, the Bureau of Indian Standards is to communicate with the supplier along similar lines as above for further necessary action. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of FM for a period exceeding 90 (Ninety) days, either party may at its option terminate the contract without any financial repercussion on either side. Notwithstanding the punitive provisions contained in the contract for delay or breach of contract, the supplier would not be liable for imposition of any such sanction so long as the delay and/ or failure of the supplier in fulfilling its obligations under the contract is the result of an event covered in the FM clause.

xxiv. Preference to 'Make in India': The process will also be subjected to the provisions of 'Public Procurement (Prefrerence to Make in India) Order 2017 and the same will be followed. The bidder, however, shall meet the requirements of technical bid for availing preference under the make in India order.

xxv. **Integrity Pact:** For successful supplier, it is essential to sign the integrity pact with the THE BUREAU, given at annexure-7. The pact essentially envisages an agreement between the prospective suppliers/ bidders and the buyer, committing persons/ officials on both sides, not to resort to any corrupt practices in any aspect/ stage of the contract. Only those suppliers/ bidder, who commit themselves to such a pact with the buyer, would be considered competent to participate in the bidding process. In other words, entering into this pact is a preliminary qualification.

C: <u>STANDARD FORMS TO BE UTILIZED BY THE BUREAU AND THE BIDDERS</u>.

a. **Annexure-1** **Details to be furnished by Bidders**
Details to be furnished by the bidders

b. **Annexure-2** **Statement regarding the deviations from the clauses of the tender document**

c. **Annexure-3** **Technical Specification**

d. **Annexure-4** **Technical compliance statement by the bidder**

e. **Annexure-5** **Declaration regarding blacklisting or litigation**

Annexure-1

Details to be furnished by the bidders

i. Name of the bidder:

2 Details Registration/Import licence if any with validity date:

i. Address for Communication:

i. Telephone No.:
Landline:……. Mobile:……

i. E-mail:

i. Manufacturers Name and Address (if different);

7. Bank Account Details:
Name of the bank:……. A/c no. ……
IFSC code …….. Type of A/c…….

i. Name and designation of the person authorized to sign the documents:

7. PAN, TIN Number of the bidder:

8 GST No.:

i. Details of EMD
Draft Number :…….. Date: ……
Name of the Bank: …… Payable at: ……

This is to certify that the above facts are true to the best of my/our knowledge and belief. I/We have read and understood the terms and conditions of the Tender document.
I/We give an undertaking to abide by these terms and conditions of the tender document.
Name and Signature of the bidder
Seal of the Bidder

Date

Annexure-2

Statement regarding the deviations from the clauses of the tender document:

S No.	Tender clause no.	Details of deviation	Justification, if any

Annexure-3

Sl. No	Equipment	Item No.	No. of Equipment Required	Estimated Total Cost Of equipment	EMD Amount (Lakhs)	BIS Lab where supply is to be made(*)	Technical Specifications
1.	Spark OES and sample preparation Machines	A1	5	500 lakhs	Rs. 10.00 Lakhs	EROL, NROL, PBOL, BNBOL, SROL	Annexure- A1
2.	O, H, N analyzer	A2	3	1350 lakhs	Rs. 27 Lakhs	WROL, EROL, SROL	Annexure- A2
3.	XRF for cement with UPS and computer	A3	2	70 lakhs	Rs. 1.40 Lakhs	NROL, WROL	Annexure- A3
4.	DSC Analyzer	A4	3	102 lakhs	Rs. 2.04 Lakhs	WROL, CL, SROL	Annexure- A4
5.	Epiflourescence/differential interface contrast(DIC) microscope	A5	2	50 lakhs	Rs. 1 Lakh	CL, SROL	Annexure- A5
6.	Auto titrator	A6	6	690 Lakhs	Rs. 13.80 Lakhs	WROL, BNBOL, SROL, PBOL, NROL, CL	Annexure- A6
7.	Microbalance	A7	6	120 lakhs	Rs. 2.40 Lakhs	BNBOL, NROL, WROL, PBOL, 2 no. at SROL	Annexure- A7

Annexure 3A

Technical Specification of …… test equipment for …….

S.No.	Components/ Fixtures/ Accessories/	Requirement

	Spare parts/ CRMs etc.	
(1)	**(2)**	**(3)**
1.		
2		
3		
4		

Annexure-4

Technical compliance statement by the bidder for ……. Test equipment for ……

Sl.No.	Technical Specification (Annexure 3)	Quoted details by the bidder	Deviation from col (2), if any	Remarks
(1)	**(2)**	**(3)**	**(4)**	**(5)**

Note:
Do not mention "We Comply or Complied with or yes" in your response at col (3),
Quote the actual specifications of equipment to be supplied in col (3).
Deviations, if any, from col (2) be quoted in col (4).

Annexure-4 A

Declaration regarding black-listing or litigations

I/We hereby declare that our firm/ agency is not black-listed by any Ministry or Department of Central Government/ State Government or PSU or other bodies under the Central Government/ State Government. I/We further declare that no criminal case is registered or pending against the firm/ company or its owner/ partners/ directors anywhere in India.

Dated the ……day of ……..2020.

Signature of Bidder _____
Name & Address of Bidder _____
_____
Seal of the Firm/ Company"

PART-II: FINANCIAL BID

i) The financial bid will be submitted in the following form which can be downloaded from CPPP website. Bidders are advised to quote their offer/ rates in therelevant column and and upload the same in the financial/ commercial bid.

ii) Financial bid shall be evaluated on the unit price quoted + custome duty + surcharge/ cess on custom duty+ CAMC charges upto six years of operation of equipment+ other taxes including or IGST and unit price quoted + CAMC charges upto six years of operation of equipment + other taxes including GST. The payment will be made for unit price of the equipment (which will cover the warranty period also), custome duty with surcharge/ cess on custom duty (if applicable) and IGST / GST. The CAMC charges as quoted in the financial bid at (B) of Part -II shall be payable on yearly basis after CAMC starts.

iii) The format for submitting **Financial Bid** is given below:

(A) UNIT PRICE

S No. (i)	Item description and item code (ii)	Component As per Technical Specification (Annexure –3) (iii)	Unit Price (in INR) Exclusive of all Taxes at designated Delivery Point (iv)	Price in words (v)	Surcharge on Custom Duty, to be entered by the bidder (vi)	IGST (for imported item) in % of unit price or GST (for indegenous item) in % of unit price to be entered by the bidder (vii)	Total Unit Price including of taxes (in INR [=(iv)+(v)+(vi)+(vii)] (viii)	Period of Warranty (1/2/3 years) (ix)
1.								
2								
3								

(i) **Comprehensive Annual Maintenance Contract (CAMC) Charges (in INR):**

S No.	Component	2nd year	3rd year	4th year	5th year	6th year
1	*CAMC* *					
2.	Applicable Taxes					
3.	Total					

Total Price of Bid (A+B) (Inclusive of taxes) (In Words)

……

…...……

Signature of bidder
Name & Address
Date

Note:

i) Discount or any other offers affecting the package price must be mentioned here only. Discount or any other offers affecting the package price mentioned at any other place of the bid will not be considered.

ii) .

iii) * CAMC for 2nd and 3rd year to be quoted if the warranty period is for one year

PART-III: CONDITIONS OF CONTRACT

a) CONTRACTOR:

'Contractor' shall mean the individual or firm or company whether incorporated or not, has qualified in bidding process and undertaking the Contract and shall include legal representatives of such individual or persons composing such firm or unincorporated company or successors of such firm or company as the case may be and permitted assigns of such individual or firm or company.

b) PARTIES TO THE CONTRACT:

The parties to the contract shall be the Supplier/ Contractor (whose offer is accepted by THE BUREAU) and THE BUREAU.

The person signing the offer or any other document forming the part of Contract on behalf of other persons of a firm shall be deemed to have due authority to bind such (person/s) or the firm as the case may be, in all matters pertaining to the Contract. If it is found that the person concerned has no such authority, THE BUREAU may, without prejudice to any other Civil/Criminal remedies, terminate the Contract and hold the signatory and / or the firm liable for all costs and damages for such termination.

c) PERFORMANCE SECURITY

i) based in India

ii) For Indian Supplier: The successful bidder shall submit, within 15 days of the placement of the order, an unconditional Performance Bank Guarantee from a Nationalized/ scheduled Bank for 10% of the order value, as per format indicated in Annexure-5. Performance Security will remain **valid for a period of sixty days beyond** the date of completion of all contractual obligations of the supplier including warranty obligations.

Any amount due/recoverable from the Supplier/ Contractor under the terms of this Contract or any other account, may be deducted from the amount of Performance Security In case, the amount of Performance Security is reduced by reason of any such deduction, the Supplier/ Contractor shall, within fifteen (15) days of receipt of notice of demand from THE BUREAU, make good the deficit. In case, security is deposited by way of bank guarantee by the Supplier/ Contractor, then any penalty for damages liquidated or un-liquidated or for any breach or failure or determination of Contract, not previously paid to THE BUREAU, shall immediately on demand be paid by the said bankers to THE BUREAU under and in terms of the said guarantee.

If during the term of this Contract, the Contractor is in default of the due and faithful performance of its obligations under this Contract, or any other outstanding dues by the way of fines, penalties and recovery of any other amounts due from the Contractor, THE BUREAU shall, without prejudice to its other rights and remedies hereunder or at the Applicable Law, be entitled to call in, retain and appropriate the Performance Security.

Nothing herein mentioned shall debar THE BUREAU from recovering from Contractor by a suit or any other means any such losses, damages, costs, charges and expenses as aforesaid, in case the same shall exceed the amount of the Performance Security.

The Performance Security shall be retained until all disputes, if any, between both the parties have been settled to the entire satisfaction of THE BUREAU. The Performance Security shall be returned to the Contractor by THE BUREAU within sixty days following the Completion Date or Termination Date of this Contract provided that there are no outstanding claims of THE BUREAU on the Contractor.

d) CONTRACT DOCUMENTS:

The several Contract documents forming the Contract shall be taken as mutually explained to one party by the other, but in case of ambiguities or discrepancies the same shall be explained and harmonized by the Authorized Officer of THE BUREAU who shall issue to the Contractor necessary instruction thereon and in such event unless otherwise provided in the Contract the priority of the documents forming the contract shall be as follows:

i) The Agreement
ii) The terms and conditions of the Contract
iii) Tender Notice and Tender Document
iv) Purchase orderor Letter of Acceptance
v) Any other correspondence exchanged between the parties in connection with the contract.
vi) The Contractor's Offer

5. QUANTITY OF GOODS or PLACE OF SUPPLY or PERSONS WHO CAN PLACE ORDERS

The **Testing Equipments** shall be supplied at various THE BUREAU labs, as detailed in Annexure 3, at the address(s) given below:

a) CL- Central Laboratory,
Bureau of Indian Standards,
Plot no. 20/9, Site IV, Sahibabad Industrial Area,
Sahibabad- 201010, Distt. Ghaziabad (U.P.)

b) EROL- Eastern Regional Office Laboratory,
P-230, C.I.T. Scheme VII M,
Block-W, Kankurgachi,
Kolkata-700054.

c) NROL- Northern Regional Office Laboratory
B-69, Phase VII, SAS Nagar
Industrial Focal Point, Mohali-160051

d) WROL- Western Regional Office Laboratory
Manakalaya
Bureau of Indian Standards E-9, M.I.D.C.,
Behind Marol Telephone Exchange.
Andheri (East), Mumbai 400 093

e) SROL- Southern Regional Office Laboratory
C.I.T Campus, IV Cross Road
Chennai-600 113

f) BNBOL- Bangalore Branch Laboratory
Peenya Industiral Area,
Ist Stage, Bangalore-Tumkur Road,
Bangalore-560 058

g) PBOL- Patna Branch Laboratory
Pataliputra Industrial Estate, Patna-800 013

Goods for each THE BUREAU Laboratory can be ordered by Head of that THE BUREAU Laboratory only, who is authorized by THE BUREAU to place orders against this Contract. Goods can be repeat-ordered by Head of other THE BUREAU Laboratories, who are authorized by THE BUREAU to place repeat orders against this Contract. However, the Authorized Officer reserves right not to place repeat orders.

Immediately on receipt of the purchase order (leats within one week of receipt of the purchase order), the contractoror supplier shall intimate the concerned laboratory about the consumables or other additional articles required for correct functioning of the instrumentor equipment, so that timely installation and commissioning can be done, and no time is lost in completion of such formalities after receipt of the instrumentor equipment.

6 TRANSPORTATION:

The supplier is required to ensure having an import license for the equipment quoted where applicable as per GOI guidelines. The Goods shall be delivered at the destinations specified in Clause 8 below and shall include loading, unloading and transportation. **The Goods damaged during transportation shall have to be replaced at Contractor's cost.**

7. QUALITY OF GOODS:

All Goods to be supplied by the Contractor shall be in conformity with the Technical specifications as laid down in Annexure-3 of this bid.

8 CONSIGNMENT DESTINATION:

For the destination mentioned in the purchase order:

h) (Head) Central Laboratory,
Bureau of Indian Standards,
Plot no. 20/9, Site IV, Sahibabad Industrial Area,
Sahibabad- 201010, Distt. Ghaziabad (U.P.)

i) (Head) Eastern Regional Office Laboratory,
P-230, C.I.T. Scheme VII M,
Block-W, Kankurgachi,
Kolkata-700054.

j) (Head) Northern Regional Office Laboratory
B-69, Phase VII, SAS Nagar
Industrial Focal Point, Mohali-160051

k) (Head) Western Regional Office Laboratory
Manakalaya
Bureau of Indian Standards E-9, M.I.D.C.,
Behind Marol Telephone Exchange.
Andheri (East), Mumbai 400 093

l) (Head) Southern Regional Office Laboratory
C.I.T Campus, IV Cross Road
Chennai-600 113

m) (Head) Bangalore Branch Laboratory

Peenya Industiral Area,
Ist Stage, Bangalore-Tumkur Road,
Bangalore-560 058

n) (Head) Patna Branch Laboratory
Pataliputra Industrial Estate, Patna-800 013

9 INSTALLATION AND COMMISSIONING: Installation and commissioning of the equipment will be done by the supplier **FREE OF CHARGE** at the consignee's premises. The supplier has to arrange for labour and others.

10 WARRANTY

10.1 The equipment along with all critical componentsoraccessories is to be guaranteed for trouble free performance for a **minimum period of three years after installation.** If the warranty period is less than three years, the Comprehensive Annual Maintenance Contract Charges for the remaining period (three years – the actual warranty period quoted) shall be added to the cost of equipment for the purpose of evaluation of the financial bid.

10.2 The defects, if any, during the warranty period shall be rectified free of charge by arranging free replacement at site, wherever necessary. **The last six months of the warranty period shall be free of complaints, failing which the warranty period will get extended by another six months.**

11. FREE TRAINING

Training, free of cost will be provided by the supplier to **at least two THE BUREAU officials** for testing, routine maintenance and smooth running of the equipment, after installation and commissioning at the location.

12. INSPECTION OR PRE-DELIVERY INSPECTION

THE BUREAU reserves the right to carry out predelivery inspectionorinspection at the time of delivery. The obligation to supply goods conforming to specification and its successful installation and commissioning shall be on the supplier.

The Authorized Officer shall be entitled to inspect and examine goods intended to be supplied to THE BUREAU either at the factory, godown or at any place(s) where these are lying or from which these are being obtained and the supplier shall provide such facilities as may be required for such inspection and examination. If goods are not found as per specified requirements, purchase order will be revoked and thereafter THE BUREAU shall be free to purchase the goods from the open market. THE BUREAU will not make any payment for any such non-conforming goods.

All goods shall be inspected by THE BUREAU preferably in the presence of supplier or his authorized representative, when the packages are opened in THE BUREAU Labs on delivery and prior to installation. The decision of THE BUREAU shall be binding. Rejected itemsorgoodsorstores shall be removed by the supplier at his own cost and risk, within 30 days of receipt of notice for the removal of such goods, and no liability, whatsoever, on THE BUREAU shall be attached for the rejectedordisapproved goodsoritemsorstores. In case of default on the part of the supplier in removing the rejected goods, the Authorized Officer of THE BUREAU shall be at liberty to have them removed by other means. The Authorized Officer shall have full powers to procure other goods through other means for substituting the rejected goods. All costs, which may be incurred upon such removal andoror substitution, shall be borne by the supplier.

The Authorized Officer shall have full powers to decide about removal of any or all of the goods supplied which are not in accordance with the contract specifications or which do not conform to the samples, if any, approved by THE BUREAU.

13. TIME FOR SUPPLY, INSTALLATION AND COMMISSIONING.

13.1 The time allowed for delivery, successful installation and commissioning shall be 8 weeks from the date of purchase order (PO). 13.2 **Liquidated Damages For Delayed Supply Installation and Commissioning:** Time and date of **Supply Installation and Commissioning of equipments** as stipulated in the order shall be deemed to be the essence of the contract. In case of delay in execution of the order beyond the date of delivery as stipulated in the order or any extensions sanctioned by the Authorized Officer, THE BUREAU may at its option either:-

13.3.1 Accept delayed delivery at prices reduced by a sum equivalent to one percent (1%) of the value of any goods not delivered for every week of delay or part thereof limited to a maximum of 10% of the total order value.

13.3.2 Cancel the order in part or full and purchase such cancelled quantities from elsewhere on account and at the risk of the bidder, without prejudice to its rights in respect of goods delivered.

14. RISK PURCHASE

In case the Contractor fails to deliver the quantity as stipulated in the delivery schedule, THE BUREAU reserves the right to procure the same or similar Goods from alternate sources at the risk, cost and responsibility of the Contractor.

15. IMPOSITION OF FINES or PENALTY

Subsequent to an order being placed against the quotation received in response to this enquiry if it is found that the goods supplied are not of the right quality or not according to specifications required by THE BUREAU or received in damaged or broken condition or otherwise not satisfactory owing to any reason of which THE BUREAU shall be the sole judge, THE BUREAU shall be entitled to reject the goods, cancel the contract and buy its requirements in the open market and recover the loss, if any, from supplier reserving to itself the right to forfeit the security deposit, if any, furnished by the supplier against the contract. The supplier will make his own arrangements to remove the rejected goods within 30 days of instruction to do so. Thereafter, they will lie entirely at the suppliers risk and responsibilities and storage charges along with any other charges applicable will be recoverable from the supplier.

16. TERMS OF PAYMENT:

A) The Terms of Payment are: The successful bidder shall furnish with in 15 days of placement of the order a Performance Security, from a Nationalized or Scheduled Bank for 10% of the order value. **Performance Security should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations.** On The Performance Security shall be furnished in the bank account of BUREAU of INDIAN STANDARDS (payable at……..) or Performance Bank Guarantee as per format indicated in Annexure-5.

B)

C) **Payment for Indian Suppliers:** 100% payment shall be made against delivery, installation, commissioning, training at site and on acceptance as per Purchase Order on receipt of invoice, delivery challan. note, certificate of acceptance by the Bureau and other relevant documents and provided, that the

Performance Security for 10% of the order value, within 15 days of placement of the order is given to THE BUREAU.

17. TAXES

Taxes will be deducted by THE BUREAU wherever applicable.

18. INDEMNITY:

The Contractor shall indemnify and keep indemnified THE BUREAU against all losses and claims for injuries or damage to any person or any property whatsoever which may arise out of or in consequence of the Contract and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto under the provisions of various labour laws as amended from time to time.

The Contractor shall indemnify, protect and save THE BUREAU against all claims, losses, costs damages, expenses, action suits and other proceeding, resulting from infringement of any patent, trademarks, copyrights etc. or such other statutory infringements.

19. CORRUPT OR FRAUDULENT PRACTICES

THE BUREAU requires that the Bidders under this Bid observe the highest standards of ethics during the procurement and execution of such Contracts.

THE BUREAU will reject a proposal for award if it determines that the Contractor has engaged in corrupt or fraudulent practices before, during or after the period of contract; THE BUREAU will hold the Contractor ineligible to be awarded a contract, either indefinitely or for a period of 24 months from the date of declaring the contractor ineligible if it at any time determines that the Contractor has engaged in corrupt and fraudulent practices in competing for, or in executing the Contract.

20. THE BUREAU MAY TERMINATE THE ORDER, IF

(a) The Contractor becomes insolvent;
(b) A receiver, administrator, trustee or liquidator is appointed over a substantial part of its assets;
I Any act is done or event occurs with respect to the Contractor or its assets, which, under any applicable law has substantially similar effect to any of the foregoing acts or events;
(c) Serious discrepancy in the quality of the Goods is noticed during the inspection.
I Delays in delivery beyond the scheduled date of delivery as stipulated in the order or any extensions sanctioned.
(d) Delays in installation and commissioning beyond the period stipulated or any extensions sanctioned.
(e) If the Contractor is in breach of any law or statute governing the supply of Goodsor Services;
(f) The Contractor, in the judgement of the THE BUREAU, has engaged in corrupt or fraudulent practices in competing for or in carrying out the Services under the Contract.
(g)The Contractor enters into voluntary or involuntary bankruptcy or liquidation.
It shall also be lawful for THE BUREAU to terminate the Agreement at any time without assigning any reason and without being liable for loss or damage which the Contractor may suffer by reason of such termination, by giving the Contractor 15 days notice in writing by THE BUREAU for such termination. Any such termination shall be without prejudice to any other right of the THE BUREAU under the Contract.

If the Contractor decides to terminate the Contract before the end of contract period, the Contractor has to give an advance intimation of at least 60 days.If the Contractor terminates the agreement without prior notice of 60 days, then the entire security deposit will be forfeited.

21. PUBLICITY

Any publicity by the Contractor in which the name of THE BUREAU is to be used, should be done only with the explicit written permission of THE BUREAU.

22. JURISDICTION

No suit or other proceedings relating to performance or breach of Contract shall be filed or taken by the Contractor in any Court of law except the competent Courts having jurisdiction in New Delhi, where headquarter of THE BUREAU is located.

23. DISPUTE RESOLUTION - In case of any dispute that cannot be resolved amicably, the same shall be referred to the sole Arbitrator appointed by Director General, Bureau of Indian Standards, whose decision shall be final and binding upon both the Bureau as well as the Applicant. The provisions of the Arbitration and Conciliation Act, 1996, as amended from time to time, shall be applicable

24. MODE OF SERVING NOTICE

Communications between Parties which are referred to in the Contract are effective only when in writing. A notice shall be effective only when it is delivered. All notices shall be issued by the authorized officer of THE BUREAU unless otherwise provided in the Contract. In case, the notice is sent by registered post or speed post to the last known place or abode or business of the Contractor, it shall be deemed to have been served on the date when in the ordinary course of post these would have been served on or delivered to it.

25. GOVERNING LANGUAGE

Governing language for the entire contract and communication thereof shall be English and or or Hindi only. In case of any dispute, the English version shall prevail.

26. LAW:

The contract shall be governed and interpreted under Indian Laws.

27. STAMP DUTY

The Contractor shall bear and pay any stamp duty and registration charges if any, in respect of the agreement to be signed.

28. AUTHORIZED OFFICER:

The Authorized Officer on behalf of THE BUREAU shall be the Head(s), of the THE BUREAU Laboratory giving the purchase order. In case of repeat orders by any other THE BUREAU Laboratory, the Head of concerned THE BUREAU Laboratory placing the repeat order shall be deemed to be the Authorized Officer in respect of the said order.

29. STANDARD FORMS TO BE UTILIZED BY THE THE BUREAU AND THE CONTRACTOR:

Annexure-5 BANK GUARANTEE BOND
Annexure-6 CONTRACT AGREEMENT FORM

30. CONFIDENTIALITY

The bidder shall not divulge or disclose proprietary knowledge obtained while delivering Goods and services under this Contract to any person, without the prior written consent of the Bureau.

ANNEXURE-5
FORM OF BANK GUARANTEE BOND

1. In consideration of Bureau of Indian Standards (hereinafter called 'The THE BUREAU') having agreed to exempt _____

   (hereinafter called "the said Contractor(s)') from the demand under the terms and conditions of an Agreement dated _____ made between _____ and _____ for

   _____ (hereinafter called "the said Agreement of **Performance Security** for the due fulfillment by the said Contractor (s) of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs._____(Rupees_____-
   _____ Only) we,_____ {hereinafter referred to as (indicate the name of the bank)'the bank'} at the request of _____

   [(Contractor (s)] do hereby undertake to pay THE BUREAU an amount not exceeding Rs. _____ against any loss or demand caused to or suffered or would be caused to or suffered by the THE BUREAU by reason of any breach by the said Contractor (s) of any of the terms or conditions contained in the said Agreement.

2. We _____ do hereby indicate the name of the bank)undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the THE BUREAU of Indian Standards stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by THE BUREAU by reason of breach by the said Contractor (s) of any of the terms or conditions contained in the said Agreement or by reasons of the Contractor (s) failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. .....

3. We, undertake to pay to THE BUREAU any money so demanded notwithstanding any dispute or disputes raised by the Contractor (s) or Supplier (s) in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

   The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor (s) or Supplier (s) shall have no claim against us for making such payment.

4. We, _____ further agree that the Guarantee

   (indicate the name of Bank)

   herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of THE BUREAU under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till the authorized officer of the THE BUREAU (…….Laboratory) certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said

Contractor (s) and accordingly of the said Agreement have been fully and properly carried out by the said Contractor (s) and accordingly discharges this guarantee. Unless a demand or claim under this guarantee ismade on us in writing on or before the .....we shall be discharged from allliability under this guarantee thereafter.

5. We .....further agree with the THE BUREAU that

(indicate the name of Bank)

THE BUREAU shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time to performance by the said Contractor (s) from time to time or to postpone for any time or from time to time any of the powers exercisable by THE BUREAU against the said Contractor (s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor (s) or for any forbearance, act or commission on the part of THE BUREAU or any indulgence by THE BUREAU to the said Contractor (s) or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor (s) or Supplier (s).

7. We, ... lastly undertake not to revoke this

(Indicate the name of bank)

guarantee during its currency except with the previous consent of THE BUREAU in writing.

Dated the ..... day of..... 20

For .....

(indicate the name of bank)

Annexure-6

CONTRACT FORM or AGREEMENT

THIS AGREEMENT made on this day of between Mors_____ (Name and Address of the Contractor) (hereinafter referred to as the CONTRACTOR, which expression shall, unless it be repugnant to the context or meaning thereof, be deemed to mean and include its successors and assigns) of the ONE PART and the THE BUREAU of Indian Standards, 9-Bhadurshah Zafar Marg, New Delhi-110002 (hereinafter referred to as the THE BUREAU, which expression shall, unless it be repugnant to the context or meaning thereof, be deemed to mean and include its successors and assigns) of the OTHER PART.

WHEREAS the Contractor is a manufacturersor millsor authorized distributorsor dealers (Details of business)

AND WHEREAS THE BUREAU is a body corporate, enacted by Parliament . THE BUREAU intends to purchase _____ , therefore, invited bids through Open Tender enquiry dated _____

WHEREAS the Contractor (successful bidder) submitted his bid vide _____ in accordance with the bid document and was selected as 'successful bidder' pursuant to the bidding process and negotiation on contract prices, awarded the 'Letter of Acceptance' (LoA) No._____ to the Contractor on _____.

BOTH THE PARTIES HERETO agree to abide the terms and conditions as mentioned in:

"Part-III (Conditions of Contract) of Tender Document".

_____	_____
(Signature of Contractoror Authorized Representative)	(Signature of Authorized Officer of THE BUREAU)
Name _____	Name _____
Designation_____	Designation_____
Address_____	Address_____
_____	_____
Seal of the FirmorCompany	**Seal of THE BUREAU**
Witness:	**Witness:**
_____	_____
(Signature)	(Signature)
Name of Witness_____	Name of Witness_____
Address_____	Address_____

Annexure -7

INTEGRITY PACT GUIDELINES

"The Bureau" and "The supplier" hereby agree not to indulge in any corrupt practices including without limitation any activity or action to influence the transaction on any aspect of contract and commit to take all measures necessary to prevent corruption maintaining complete transparency and fairness in all activities related to the Bureau. Users agree to follow and adhere with the Integrity Pact guidelines as under:

Preamble

The Bureau values full compliance with all relevant laws of the land, regulations, economic use of resources and of fairness or transparency in its relations with its Contractor (s).

Section 1 Commitments of the Bureau.

1. The Bureau commits itself to take all measures necessary to prevent corruption and to observe the following principles:

(a) No employee of the Bureau, personally or through family members, will in connection with the bid for, or the execution of a person, any material or immaterial benefit which the person is not legally entitled to.

(b) The Bureau will during the bid process treat all bidders with equity and reason. The Bureau will in particular, before and during the bid process, provide to all Contractor(s) the same information and will not provide to any supplier(s) confidential or additional information through which the supplier(s) could obtain an advantage in relation to the process or the contract execution.

(c) The Bureau will exclude from the process all known prejudiced persons.

2. If the Bureau obtains information on the conduct of any of its employees which is a criminal offence under the IPC or PC Act, or it there be a substantive suspicion in this regard, the Bureau will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 Commitments of the supplier(s)

1. The supplier(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the bid process and during the contract execution.

(a) The supplier(s) will not, directly or through any other persons or firm, offer promise or give to any of the Bureau's employees involved in the bid process or the execution of the contract or to any third person any material or other benefit which he or she is not legally entitled to, in order to obtain in exchange any advantage before or during the execution of the contract.

(b) The supplier(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

(c) The supplier(s) will not commit any offence under the relevant IPC or PC Act; further the supplier(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the the Bureau as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

(d) The supplier(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

2. The supplier(s) (s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 Disqualification from bid process and exclusion from future contracts

1. If the supplier(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put his reliability or credibility in question, the Bureau is entitled to disqualify the supplier(s) from the bid process or take action as per the related provisions of the RFP document.

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Section 4 Compensation for Damages

1. If the Bureau has disqualified the supplier(s) from the bid process prior to the award according to Section 3, the Bureau is entitled to demand and recover the damages equivalent to Earnest Money Deposit.

2. If the Bureau has terminated the contract according to Section 3, or if the Bureau is entitled to terminate the contract according to Section 3, the Bureau shall be entitled to demand and recover from the supplier damages of the amount equivalent to Performance Bank Guarantee.

Section 5 Previous Transgression

1. The supplier declares that no previous transgressions occurred in the last three years with any Government Organization that could justify his exclusion from the bid process.

2. If the supplier makes incorrect statement on this subject, he can be disqualified from the bid process and action can be taken as per the related provisions of the RFP document.

BUYER BUREAU OF INDIAN STANDARDS, NEW DELHI	BIDDERor SUPPLIER SIGNATURE & SEAL

Annexure 8

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

Date:

To,

_____
_____
_____
_____
_____

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____

Name of Tender or Work: -

_____
_____
_____
_____
_____

Dear Sir,

1. Ior We have downloaded or obtained the tender document(s) for the above mentioned 'TenderorWork' from the web site(s) namely:

_____
_____

As per your advertisement, given in the above mentioned website(s).

2. I or We hereby certify that I or 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 or we shall abide hereby by the terms or conditions or clauses contained therein.

3. The corrigendum(s) issued from time to time by your departmentor organization too have also been taken into consideration, while submitting this acceptance letter.

4. I or We hereby unconditionally accept the tender conditions of above mentioned tender document(s) or corrigendum(s) in its totality or entirety.

5. I or We do hereby declare that our Firm has not been blacklistedor debarred by any Govt. DepartmentorPublic sector undertaking.

6. I or We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrectoruntrue or found violated, then your departmentor 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)

Annexure-A1

Specifications for Spark-OES	
Parameters Description	Spark type optical emission spectrometer Floor mounted minimum foot print meant for chemical analysis of ferrous, and non-ferrous metals and alloys. The system should have latest software for analysis and calibration for the defined multi-base alloys in Solid form.
Metal/alloy bases/ standards:	Annexure A mentions the compositions and dimensions of the Certified Reference Material (CRMs) for Ferrous, Copper, Aluminium, Tin, Zinc, Nickel bases required along with SUS standards.. Annexure A gives the list of ranges of maximum and minimum % of an element detectable in each alloy type. The min% represents the minimum detectable wt% of the element in that alloy type. The minimum detectable limit of the equipment should fall in the range given in the min% column for each alloy type in each base. The bidders' equipment will be ranked according to the lowest minimum detectable limit for each alloy type. We may ask the bidders to verify trial samples or ask them to demonstrate the capabilities of their equipment as required. Vendors have to provide 2 CRMs each covering the minimum and maximum points in certified range/value for the alloys mentioned in Annexure A. CRMs should have traceability to International Standards.
Detector System:	PMT or (PMT+CCD) based detector . Multiple Detectors to cover the range as per specified metal alloy bases with superior resolution and signal to noise ratio.
Optic System:	Vacuum based optic system with focal length of 600mm or better. Machine should have facility to add PMT in future if required. The limit on the no of base and PMTs that can be added should be 65 PMT's or better. Instrument shall have high resolution multi detectors. Order of wavelength should be of first order. Minimum effective wavelength range of 130-650 nm or more. High resolution grating of 2200 grooves/mm or better. Accuracy of the equipment should be of third decimal. Optical systems should be stabilized against temperature fluctuations.
Analytical software:	Softwares: a) Equipment control to seamlessly control the equipment and display the results and analysis. b) Software (Integrated or separate) to perform qualitative and quantitative elemental analysis c) software for grade identification. d) Factory set standard Ferrous, Aluminum, Copper, Nickel, Titanium, Zinc, Tin alloy databases and factory settings for quick analysis with minimizing runs on CRM samples. The analysis of the results should be automatically giving us the composition in wt%/ atomic %/ppm with the possible errors for each element. However, provisions should be provided to save the raw data whenever necessary. Latest software for chemical analysis of elements should provide greatest flexibility in terms of, operation, calibration, analysis of the spectra. The software should be built such a way that it can hint interferences between two elements when present together. The software should enable printing out of the result and also to enable saving data before every data processing step. The software should come with robust background identification and peak identification algorithms. Software should be provided in softcopy through removable media devices. Software and database upgrades to be given at least up to the warranty period.

	Software must be Multitasking type. It must acquire and process the data simultaneously. Shall be fully compatible with LIMS available with BIS Labs. • Data may be processed as it is being acquired
Structure:	Argon flushed spark stand with maximum freedom and flexibility to be provided. It should in with for simultaneous measurement of all elements.
PC& Printer:	Personal computer with colour Laser Printer, The PC must have minimum 8 GB RAM, minimum 500 GB HDD with Win 10 OS and Recommended Windows 10 Professional with installed CD/DVD software. Antivirus software shall be preloaded in the system. All the software provided should be original software with License key as applicable.
Aragon Gas Consumption	During analysis not more than 4L and during Sleep not more than 0.1L/min or/else 1000 or more sparks per standard 7 cuM cylinder
Power Supply	200V – 230V Single phase 4kVA
Validation	The supplier shall have to carry out validation of method for analysis of elements in various base alloys given in Annexure A. The validation has to be completed in maximum one month.
Application, Operation and Maintenance Training Component:	On site comprehensive application training for scientific/technical personnel operating the system and support services till customer satisfaction with the system followed by two weeks comprehensive training to two personnel on operation and maintenance and application aspect of the instrument at supplier's laboratory. Training should be provided on Half yearly basis for two years at BIS Lab.
Other conditions:	The system must be factory tested and a certificate should be provided. Supplier to specify pre installation requisites.
Program sheet & calibration ranges	Equipment should be calibrated for the different alloys as per given analytical program sheet for all the above-mentioned bases (Annexure A). Calibration certificates/reports with traceability to be provided
Warranty	i) Comprehensive Warranty on all parts except consumables for at least 6 years from the date of satisfactory installation shall be provided by the manufacturer & two Preventive maintenance visits /year with PM kit to be provided during warranty period. ii) During CAMC period, two Preventive maintenance visits /year with PM kit and unlimited breakdown visits to be included. iii) Warranty & CAMC to include third-party supplied items also. **Maximum breakdown period should not exceed 72hrs.** **For any breakdown exceeding this duration warranty period will be proportionally extended.**
Standard Accessories	Standard accessories are to be supplied with the machine for regular and smooth operation. Different sample holders need to be provided for wire and plate samples If Nitrogen, Argon or any other gas is required one set of cylinders, regulator and cylinder trollies provided. Argon gas purifier shall be provided.
Upgradation for additional matrix	At site
Power supply/stabilizer	220V ±10%, 50 Hz, AC supply.
Additional items	1. Operation and maintenance manual to be provided in hard and soft copy form with the unit. 2. Application notes (CD-ROM) for elemental analysis in ferrous, copper, Aluminium, Tin, Nickel & Zinc alloys or as applicable.

	3. Operation kit comprising all required items like pump, tubing, transfer tubing, work coils etc. for startup/ regular operation of the instrument 4. Consumables including emery paper for ferrous and non-ferrous for three years operation of system for main OES unit are required 5. High speed disc grinder unit (closed type) to polish the samples with 2800 rpm minimum shall be provided
Instrument performance verification (IQ,OQ, PQ)	To be done with traceable standards for the first 2 years (at the time of installation and on each maintenance visit) Required documents, kits and required standards as required
Safety	The design of equipment shall ensure safety of operators and equipment at all times. Exhaust filters system for flushing out of argon gas.
After sales support	

Additional accessories to be supplied along with the main equipment

1) Basic grinding machine/sample preparation tools required for ready functioning
2) Isolation transformer of optimal size to isolate the system from surges in all lines (Neutral, Phase and Earthing)
3) UPS: Minimum 3KVA UPS to give 30 mins or more backup.

Annexure A

Elements and the range of factory calibrations for different Cu bases

Element	Bronze		Brass		Pure Copper	
	min	max	min	max(±10%)	min	max(±10 %)
Sn	0.001-0.5	13.5-16.5	0.001-0.1	2.2	0.0005 - 0.1	0.1
Pb	0.001-0.5	10-12	0.001-0.1	0.8	0.001 - 0.1	0.1
Zn	0.001-0.5	3.5-4.3	9-11	40.0	0.0005 - 0.1	0.1
Fe	0.001-0.5	0.6-0.7	0.001-0.1	3.1	0.002 - 0.1	0.1
Ni	0.001-0.5	4.5-5.5	0.001-0.1	3.2	0.001 - 0.1	0.1
Al	0.001-0.5	0.09 - 0.11	0.001-0.1	8.0	0.001 - 0.05	0.05
Si	0.001-0.5	0.63 - 0.77	0.001-0.1	0.7	0.0005 - 0.05	0.05
As	0.001-0.5	0.18 - 0.22	0.001-0.1	0.2	0.001 - 0.1	0.1
Mn	0.001-0.5	0.27 - 0.33	0.001-0.1	5.2	0.0005 - 0.05	0.05
Bi	0.001-0.5	0.18 - 0.22	0.001-0.1	0.05	0.0005 - 0.02	0.02
Sb	0.001-0.5	0.9-1.1	0.001-0.1	0.45	0.002 - 0.1	0.1
Mg			0.001-0.1	-	0.0005 - 0.03	0.03
P	0.001-0.5	0.72 - 0.88	0.001-0.1	0.16	0.0005 - 0.1	0.1
S	0.001-0.5	0.15 - 0.18	0.001-0.1	0.04	0.0005 - 0.02	0.02

Cr	-			-	0.0002 - 0.04	0.04
Ag	-			-	0.0005 - 0.02	0.02
Cd	-			-	0.0001 - 0.03	0.03
Co	-			-	0.002 - 0.06	0.06

	Pure Ni		Inconel		Ni-Cu-Sn	
element	**min**	**max (±10%)**	**min %**	**max (±10%)**	**min %**	**max (±10%)**
C	0.001-0.1	1.50	0.001-0.1	0.10	0.001-0.1	0.13
Si	0.001-0.1	6.00	0.001-0.1	1.00	0.001-0.1	
Mn	0.001-0.1	3.00	0.001-0.1	1.70	0.001-0.1	2.20
P	0.001-0.1	1.00	0.001-0.1	0.02	0.001-0.1	1.00
S	0.001-0.1	0.20			0.001-0.1	0.22
Cr	0.001-0.1	33.00	11 - 13	28.00	0.001-0.1	
Fe	0.001-0.1	50.20	4 - 5	28.00	0.001-0.1	3.00
Mo	0.001-0.1	37.00	0.001-0.1	10.00		
V	0.001-0.1	1.40	0.001-0.1	0.05		
W	0.001-0.1	4.50	0.001-0.1	3.00		
Ti	0.001-0.1	6.50	0.001-0.1	2.60		
Cu	0.001-0.1	50.00	0.001-0.1	1.90	26-28	47.00
Nb	0.001-0.1	8.00	0.001-0.1	6.00		
Al	0.001-0.1	7.00	0.001-0.1	0.80		
N	0.001-0.1	0.03	0.001-0.1	0.03		
B	0.001-0.1	3.20	0.001-0.1	0.01		
Co	0.001-0.1	23.00	0.001-0.1	3.30		
Ta	0.001-0.1	4.50				
Zr	0.001-0.1	0.70				
Mg	0.001-0.1	0.13			0.001-0.1	0.14
Pb	0.001-0.1	0.07				
Sn	0.001-0.1	12.00			6 - 8	13.00
Zn	0.001-0.1	0.40				
Ni	Reference		Reference		Reference	

Elements and the range of factory calibrations for different Tin bases

	Sn General		Sn-Cu-Sb		Sn-Pb	
	min %	**max (±10 %)**	**min %**	**max (±10 %)**	**min %**	**max (±10 %)**
Pb	0.0001-0.1	70.00	0.0001-0.1	3.50	10.00	70.00
Sb	0.0001-0.1	15.00	0.0001-0.1	15.00	0.0001-0.1	0.65
As	0.0001-0.1	0.60	0.0001-0.05	0.60	0.0001-0.001	0.03
Bi	0.0001-0.05	0.70	0.0001-0.05	0.70	0.0001-0.01	0.30
Cd	0.0001-0.1	1.50	0.0001-0.1	1.50	0.0001-0.001	0.01
In	0.0001-0.005	0.07	0.0001-0.005	0.07	0.0001-0.001	0.01
Ag	0.0001-0.1	5.00	0.0001-0.05	0.90	0.0001-0.005	0.07
Cu	0.0001-0.1	9.00	0.0001-0.1	9.00	0.0001-0.01	0.23
Al	0.0001-0.005	0.07	0.0001-0.005	0.07		
Fe	0.0001-0.01	0.10	0.0001-0.01	0.11	0.0001-0.005	0.05
Ni	0.0001-0.1	1.20	0.0001-0.05	0.60	0.0001-0.001	0.02
Zn	0.0001-0.1	2.70	0.0001-0.001	0.02	0.0001-0.001	0.03
Ge	0.0001-0.05	0.55				
Te	0.0001-0.001	0.03			0.0001-0.001	0.01
P	0.0001-0.001	0.01				
Au	0.0001-0.01	0.18			0.0001-0.01	0.18
Hg	0.0001-0.01	0.16				
Co	0.0001-0.001	0.03	0.0001-0.001	0.03		
Ga	0.0001-0.001	0.02				
S	0.0001-0.001	0.01				
Se						
Sn	Reference		Reference		Reference	

Elements and the range of factory calibrations for different Fe bases

Element	Low Alloy Steel		Cr-Ni Steel		Cr Steel	
	min	max (±10 %)	min	max (±10%)	min	max (±10%)
C	0.001-0.1	1.2	0.001-0.1	0.15	0.001-0.1	0.15
Si	0.001-0.1	1.7	0.001-0.1	1.9	0.001-0.1	1.9
S	0.001-0.005	0.07	0.0001-0.005	0.03	0.0001-0.005	0.03
P	0.001-0.01	0.1	0.001-0.003	0.04	0.001-0.005	0.04
Mn	0.001-0.1	2	0.001-0.1	1.5	0.001-0.1	1.5
Ni	0.001-0.1	4.5	3-4	31.0	0.001-0.1	4.0
Cr	0.001-0.1	4	4-5	26.0	8-9	27.0
Mo	0.001-0.1	1.6	0.001-0.1	3.6	0.001-0.1	3.6
Cu	0.001-0.01	0.5	0.001-0.01	0.35	0.001-0.01	0.35
Co	0.001-0.1	0.3	0.001-0.01	0.4	0.001-0.01	0.4
Sn	0.001-0.1	0.1	-		-	
Al	0.001-0.1	1.5	0.001-0.01	0.2	0.001-0.01	0.2
Nb	0.001-0.01	0.15	0.001-0.1	1.6	0.001-0.1	1.6
W	0.001-0.1	3	0.001-0.01	0.25	0.001-0.01	0.25
As	0.001-0.01	0.1	-		-	
Ti	0.001-0.01	0.3	0.001-0.01	0.47	0.001-0.01	0.47
V	0.001-0.05	0.5	0.001-0.01	0.3	0.001-0.01	0.3
Zr	0.001-0.01	0.2	-		-	
B	0.001-0.01	0.01	0.001-0.005	0.01	0.001-0.005	0.01
Pb	0.001-0.005	0.08	0.001-0.01	0.05	0.001-0.01	0.05
Mg	-		-		-	
N	10 ppm onwards		10 ppm onwards		10 ppm onwards	
Zn	-		-			-

Elements and the range of factory calibrations for different Fe bases continued.

Element	Low Alloy Cast Iron		High Alloy Cast Iron	
	min	max (±10%)	min	max (±10%)
C	1.6-1.7	3.8	0.9-1.0	3.7
Si	0.001-0.1	3.2	0.001-0.1	1.6
S	0.001-0.01	0.14	0.001-0.005	0.08
P	0.001-0.1	1.5	0.001-0.01	0.4
Mn	0.001-0.1	1.3	0.001-0.1	2.0
Ni	0.001-0.1	1.8	1.8-2	16.0
Cr	0.001-0.1	1.2	5.4-6	31.0
Mo	0.001-0.1	1.5	0.001-0.1	3.8
Cu	0.001-0.1	1.2	0.001-0.1	2.0
Co		-		
Sn	0.001-0.1	0.4		
Al	0.001-0.01	0.075		

Nb	0.001-0.005	0.06		
W	0.001-0.005	0.15		
As	0.001-0.1	0.1		
Ti	0.001-0.1	0.3		
V	0.001-0.1	0.5		
Zr	0.001-0.1	0.1		
B	0.001-0.01	0.1		
Pb	0.0002-0.01	0.04		
Mg	0.001-0.005	0.095		
N	10 ppm onwards	10 ppm onwards		
Zn	-	0.001 - 0.05		

Elements and the range of factory calibrations for different Al bases

Element	**Low Alloy Al**		**Al-Si**		**Al-Mg**	
	min	**max (±10%)**	**min**	**max (±10%)**	**min**	**max (±10%)**
Al	INT.STD.	INT.STD.	INT.STD.	INT.STD.	INT.STD.	INT.STD.
Si	0.001-0.1	1	1 – 1.1	20	0.001-0.05	1
Fe	0.001-0.01	0.8	0.001 – 0.1	1.2	0.001-0.05	1
Cu	0.001-0.01	0.5	0.001 - 0.05	0.5	0.001-0.01	0.2
Mn	0.001-0.1	1.5	0.001 - 0.05	0.6	0.001-0.1	11
Mg	0.001-0.1	1.3	0.001 - 0.05	0.7	1 -1.1	10
Cr	0.001-0.01	0.2	0.001 - 0.01	0.4	0.001-0.01	0.3
Zn	0.001-0.01	0.2	0.001 - 0.01	0.3	0.001 -0.01	0.3
Ti	0.001-0.01	0.1	0.001 - 0.01	0.2	0.001 -0.01	0.2
Ni	0.001-0.01	0.1	0.001 - 0.01	0.3	0.001-0.005	0.05
Zr	0.001-0.01	0.1			0.001-0.005	0.06
Na	0.001-0.01	0.03	0.001 - 0.005	0.03		
Bi	0.001-0.01	0.08			0.001-0.005	0.03
Sn	0.001-0.01	0.08	0.001 - 0.01	0.1	0.001-0.005	0.05
Cd	0.001-0.01	0.05				
Co	0.001-0.005	0.007				
Sb	0.001-0.005	0.05	0.001 - 0.01	0.1		
Ca	0.001-0.005	0.03	0.001 - 0.03			
Pb	0.001-0.005	0.1	0.001 - 0.2		0.001- 0.005	0.05
V	0.001-0.005	0.04	0.001 - 0.01		0.001- 0.005	0.01

Analytical Program Sheet: This table provides the approximate wavelength and typical range in which the PMTs have to be performing. It can be better as well. However, the ultimate criteria would be that the vendors gives the details on the equipment's capability as per above min and max detectable %s for each element as given in tables for each alloy in each base.

Element	**Wavelength nm**	**Analytical Range (%)**		
		Fe	**Cu**	**Al**

Fe	271.4	INT.STD.	0.5 – 10	0.1 - 10
Fe	259.9		0.001 - 1.0	0.001 - 2.0
C	193.0	0.001 - 4.2*	0.005 - 0.5	
Si	212.4	0.001 - 5.0		
Si	251.6		0.0005 - 5.0	0.001 - 1.0
Si	390.5			1 - 25
Mn	293.3	0.001 - 1.0	0.0005 - 2.0	0.001 - 2.0
Mn	290.0	0.1 - 20	1 – 10	1 - 10
P	178.3X2	0.001 - 1.0	0.001 - 1.0	0.005 - 0.1
S	180.7	0.001 - 0.5	0.0005 - 0.5	
Cu	327.4	0.001 - 0.5		0.001 - 0.5
Cu	224.2	0.01 - 5.0		
Cu	296.1		INT.STD.	0.1 - 15
Ni	231.6	0.001 - 4.0	0.001 - 1.0	0.01 - 10
Ni	227.7	1 - 40.0		
Nb	317.5	0.001 - 2	1 - 35	
Cr	267.7	0.001 - 4.0	0.0001 - 1.0	0.001 - 1.0
Cr	298.9	1 - 40.0		0.1 - 10
Sn	189.9	0.001 - 0.2	0.0005 - 1.0	
Sn	317.5		1 - 20	0.001 - 15
As	197.2	0.002 - 0.2	0.001 - 0.2	
Ti	337.2	0.001 - 1.0	0.001 - 1.0	0.001 - 1.0
V	311.0	0.001 - 1.0		0.001 - 0.5
Mo	202.0	0.001 - 1.0		
Mo	277.5	0.1 - 10		
B	182.6	0.0005 - 0.05		
Al	394.4	0.001 - 1.0	0.001 - 1.0	
Al	237.2		1 - 15	INT.STD.
Ca	396.8	0.0005 - 0.01		0.0005 - 0.1
Zr	339.2	0.001 - 1.0	0.005 - 0.5	0.001 - 1.0
Ag	328.0		0.001 - 0.8	0.001 - 0.8
Pb	405.7	0.001 - 0.1	0.001 - 10	0.001 - 1.0
Bi	306.7	0.001 - 0.1	0.0005 - 1.0	0.001 - 1.0
Sb	187.1x2	0.003 - 0.5	0.005 - 1.0	
W	220.4	0.005 - 20		
Co	258.0	0.001 - 10	0.01 - 2.0	0.01 - 1.0
Zn	206.1	0.001 - 0.01	0.0005 - 0.5	0.001 - 0.1
Zn	481.0		0.01 - 45	0.01 - 15
Mg	280.2	0.001 - 0.1		0.001 - 0.1
Mg	383.8			0.01 - 15
N	170.0/ 129	50 ppm onwards		
Cd	228.8		0.0001 - 0.15	
Na	589.0			0.0001 - 0.01

Annexure-A2

Technical Specification
Oxygen, Nitrogen & Hydrogen Analyzer

The Simultaneous Oxygen, Nitrogen & Hydrogen analysis should be PC controlled which must be operated on Windows based Operating System and should be compatible with external printer for reporting result in hard copy format. The determinator should operate in simultaneous mode for measurement of Nitrogen, Oxygen & Hydrogen in one sample using single carrier gas either Helium or Argon for wide variety of Metals including Iron, Steel, Ferrous & non-Ferrous including Inorganic samples like Refractories and Ferroalloys in the form of Pins, Cubes, Chips and Granular. The determinator must support either Helium or Argon carrier gas with minimum variation in analysis range & precision.The system should employ Inert Gas Fusion (IGF) or Carrier Gas Hot Extraction Method. The instrument must be CE complaint to both Low-voltage and electromagnetic compatibility directives.
The determinator must include the following specification:

Furnace:	Impulse Furnace Type.
Principle of operation	Inert Gas Fusion (IGF) or Carrier Gas Hot Extraction Method (CGE) using IR-detector and/or Thermal Conductivity Detector.
Ramping of Furnace Temperature:	The instrument software must be capable of controlling the furnace output from 0-100% by Power, current and should supports steps, ramps and sustain modes. Control for identifying and quantifying of different Oxides and Nitrides should be available for refractories.
Furnace Power:	7.5 KW or more and should be liquid cooled.
Automatic Cleaning Mechanism:	The determinators must incorporate programmable automatic cleaner for cleaning both the Lower and Upper Electrodes simultaneously after each sample analysis. The Auto cleaner should be equipped with high velocity noiseless integrated Vacuum Cleaner for removing dust maintaining cleaner furnace zone.
Analysis time	5 minutes or lesser
Analysis Range:	Based on one gram sample. Oxygen: 0.05 ppm to 5% or better. Nitrogen: 0.05 ppm to 3% or better. Hydrogen: 0.1 ppm to 2500 ppm or better.
Precision:	Oxygen : 0.025 ppm or 0.3% RSD whichever is greater. Nitrogen: 0.025 ppm or 0.3% RSD whichever is greater. Hydrogen: 0.05 ppm or 2% RSD whichever is greater.
Calibration:	Provision for 4 types of calibration should be there, which includes standard calibration, gas dose calibration, and blank calibration and drift calibration. Calibration can be performed automatic or manually. Gas dose calibration should be available for both Oxygen and Nitrogen using CO_2 and N_2 gas to be used when the standard samples for lower range are not available.
Standard Sample	Standard sample with different range of Iron, Steel & Ferroalloys should be quoted & supply with the main machine.
Mass Flow Controller & Dynamic Flow Compensator	The determinators must include heated Mass Flow Controller to maintain stable flow through detectors to improve accuracy for higher level of Oxygen measurement with back pressure control and to improve calibration stability.

Detection Method	The determinators should be equipped with latest generation independent detector for Oxygen , Hydrogen & Nitrogen measurement. Oxygen should be measured through series of IR detectors at least two CO_2IR-detectors for measuring High & Low range and at least one CO IR detector. The IR Detector should be independently heated without using any oven to thermally isolate the detectors from environmental temperature fluctuations and must save down time & the same IR-detector should not use any moving part like chopper blade etc. Nitrogen should be measured by latest generation independently heated plug-n-play type dual flow controlled Thermal Conductivity Detector (TCD) with auto range change facility.
Sample Introduction System	The sampling mechanism must support direct loading of powder samples without use of any holder or basket. The sample dropping mechanism must incorporate efficient loading of wide range of samples like, Pins, Cubes, Chips, and Granular. Analyzer should have auto sampler with capacity of minimum 60-120 samples. It should have a mass flow controller/electronic flow controller for constant flow of carrier gas & sample introduction by ball valve technique for better accuracy of results to avoid the atmospheric nitrogen contamination. Sample feed : 60 to 120 auto sampler
Application Software:	-The software must contain real time self-diagnostics including ambient chart of instrument temperatures, pressures, and detector signal, manual control of solenoid and switches, automated leak check network and communication diagnostics. The software must also contain an automatic system check that verifies internal network communication, solenoid and switches, system pressure, furnace control and temperature. Shall be fully compatible with LIMS available with BIS Labs. - Calibration sample with extensive graphic displays of peak to understand the combustion cycle and to optimize analytical conditions to ensure optimal performance. - The software program should include Oxides and Nitrides separation with graphically display for both qualitative and quantitative analysis. The software should be capable of being used through android or i-phone also.
Carrier Gas	Helium/Argon should be used for Carrier gas.
Instrument performance verification (IQ,OQ, PQ)	To be done with traceable standards for the first 2 years (at the time of installation and on each maintenance visit) Required documents, kits and required standards as required
Warranty	i) Comprehensive warranty on all parts except consumables for at least 6 years from the date of satisfactory installation shall be provided by the manufacturer & two preventive maintenance visits /year with PM kit to be provided during warranty period. ii) During CAMC period, two Preventive maintenance visits /year with

	PM kit and unlimited breakdown visits to be included. iii) Warranty & CAMC to include third-party supplied items also. **Maximum breakdown period should not exceed 72hrs.** **For any breakdown exceeding this duration warranty period will be proportionally extended.**
UPS	Branded 15 KVA UPS/or suitably for providing uninterrupted power supply to the instrument with backup of minimum 30 minutes
Application, Operation and Maintenance Training Component:	On site comprehensive application training for scientific/technical personnel operating the system and support services till customer satisfaction with the system followed by two weeks comprehensive training to two personnel on operation and maintenance and application aspect of the instrument at supplier's laboratory. Training should be provided on Half yearly basis for two years at BIS Lab.
2. Essential units/equipment should be supply/installed with the equipment as follows:-	
a. Compatible water chiller and compatible accessories should be quoted optionally.	
b. Set of high purity (99.999%) Gas cylinders with regulator for carrier gas (2Nos cylinders +1 regulator), combustion gas (2 Nos cylinders +1 regulator) with all connection tubing to the instruments shall be provided.	
c. A pin sample cutter for sample cutting.	
d. Personal computer with minimum 21 inch monitor and colour Laser Printer shall be provided. The PC must have minimum 8 GB RAM , minimum 500 GB HDD with Win 10 OS and Recommended Windows 10 Professional with installed CD/DVD software. Antivirus software shall be preloaded in the system. All the software provided should be original software with License key as applicable.	
e. Required atleast 3 nos of Gas Cylinders (of each type) for both instrument operation and Gas Dose Calibration with respective Two Stage Regulators (or any similar technology) are to be offered.	
d. Consumables for 5000 analysis (except gases) are to be offered.	
e. Necessary Reagents for the main determinator should be offered.	
f. Any other equipment if required should be supplied for smooth functioning of the whole system.	
g. Spare parts so as to ensure that during Warranty/CAMC period the **breakdown period does not exceed 72hrs** should be offered.	
h. BASCRM for Iron & Steel and Ferroalloys with different ranges (refer analysis range given above) at-least three each for each element should be included for Nitrogen, Oxygen and Hydrogen.	
3. All the necessary electrical installation for the equipments will be in the scope of bidder..	
4. One set of consumables to be supplied along with the machine for installation/validation.	
5. Operation & maintenance manuals to be supplied in soft copy & hard copy along with the machine	
6. Demonstration on performance parameters are essential and is to be carried out by the vendors on specification for range, precision & calibration of the offered model during the time of evaluation of the bids.	

Annexure-A3

X-Rays Fluorescence Spectrometer – Technical Specifications

1. Model : Sequential Wavelength Dispersive X-ray Fluorescence Spectrometer. (fully Computerised)

2. Application : Qualitative and Quantitative Analysis of

   i/ Portland cement, blended cements and raw materials e.g. limestone, clay, bauxite, sandstone, gypsum, kiln feed, iron ore, dolomite etc.

   ii/ Industrial wastes used in cement manufacture like fly ash, slag, sludge, mine's waste etc., aggregates, sand & other minerals etc.

3. Elements to be Analysed : ^{11}Na- ^{92}U; specifically Na, Mg, Al, Si, P, S Cl, K, Ca, Fe in cement and raw materials. Additionally Mn, Ti, Pb, Zn, Ba, Cd, Cr, Hg etc.

4. Accuracy and Precision : To meet the criteria laid down in ASTM-C-114 and ISO 29581-2 or better for cement analysis.

5. Automatic Samples Changer : To hold 60 or more samples in pressed powder pellet and fused glassbead form.

6. Optics : Wavelength dispersive, combination of slits, filters and collimators for achieving high resolution or high sensitivity.

7. H.T. Generator : Power: 50 W or more

8. X-ray Tube : End Window, Rh target, Ceramic Insulation to match the generator

9. Spectrometer

Sample Handling	: Choice of vacuum and He path
Sample Size	: Solid, pressed powder pellets, beads.
Sample Inlet	: 40 mm (pl. specify)
Sample Rotation	: Air lock system
Goniometer	: ~ 30 rpm (pl. specify)
Crystal Changer	: θ/2θ independent driving mechanism with high angular reproducibility.
	: 8 positions, bidirectional, automatic
Cabinet Temperature	: Please mention the temperature & stability, influence of room temperature
Stability	

10. Analysing Crystals : i/ Standard package for ensuring analysis of all elements ^{11}Na- ^{92}U

ii/ Special crystals for efficient analysis of cement and raw materials.

iii/ Minimum 5 Crystals to be quoted to cover above range

11. X-ray Detectors : Flow proportional counter, scintillation counter

12. Safety Standards : X-ray safety – All safety measures to meet latest International standards.

Quoted Model and its power range should be approved by AERB

13. Data Processing System : Computer with latest configuration and operating system, with TFT screen and ready for interfacing with other automation system, Laser printer.

14. Operational, Control and Application Softwares and Databases : High performance software with

- Total control of spectrometer function-Performance check, drift correction and operation.
- Data acquisition and data evaluation system.
- All programmes for qualitative and quantitative analysis of cement and related materials including

databases required (Please specify and provide details)

- Matrix correction programmes – Linear and Higher order, line overlap correction etc.
- Fundamental parameter method (for standard less quantitative analysis of unknown Materials).
- SPC module for trend analysis.

15. UPS : On line, Generator compatible separate UPS (reputed make) of adequate capacity with ~ 60 min back up to support XRF .
16. Sample Holders 50 Nos
    Steel rings for sample preparation 100 Nos.
17. Any other peripheral unit required including UPS etc.
18. Spares and consumables: as per tender document
19. Operator's training As per tender document
20. Warranty / Guaranty As per tender document

21. Sample Preparation : Pressed Powder. A) Automatic Pressed pelletiser with pressure upto 40 Tons
B) Vibratory Mill , Heavy Duty floor standing with Tungsten Carbide Bowl

22. Suitable Water Chiller – external for cooling of the X-Ray Tube and XRF.

Set of Standards for elemental analysis in Cement (OPC, PPC, PSC, WPC, SRPC), Fly ash, Limestone, Dolomite, Manganese Ore, Magnesite, Gypsum, Ilmenite, Quartzite, Iron ore and bauxite

Set of CRMs with full traceability as per ISO 17034 of following elements in above mentioned Cements and mineral ores

To meet the XRF laboratory requirements following should be ensured as part of supplies:

(A) Programmable Fusion Parameters: there should be provision to program following parameters to insure stable and reproducible glass disks.
   1. Temperature
   2. Time
   3. Rate of heating
   4. Crucible rocking speed
   5. Cooling air flow

(B) Security features: The offered system must be equipped with following security features:
   1. Integrated safety door
   2. Emergency stop button
   3. Can operate supervision free
   4. Fully automated
   5. The instrument should comply with national safety norms

(C) Software and operation with following features: -
   1. One touch operation
   2. Touch screen
   3. Windows based system
   4. Should contains present programs
   5. Possibility to create new fusion programs and modifies the present programs
   6. Programmable pre-heat mode
   7. Should be possible to connect to external PC

(D) Five sets of Tungsten Carbide Crucible and Casting Mould/Casting Dish should be provided. The Crucible should be capable of holding weight of minimum 30gms of sample

(E) A Platinum-Gold Mould/Casting Dish of 40 mm diameter to match collimator mask of XRF with minimum weight of 35 gm should be offered.

(F) Flux for Fusion Bead Preparation: Following Pre fused anhydrous beads with 99.99% purity, granulometry 100%, <50 micron sized beads, No dust, with water content <0.05% with Certificate of Analysis must be offered. Quantity 1kG with wetting agent. The flux type should be suitable for fu sion of Cement and associated materials commonly analysed in Building Industry.

(G) Grinding Mill to grind the sample to powder

Annexure-A4

Specifications for Standalone Differential Scanning Calorimeter (DSC)

S.No	Feature	Specifications
1.	General Description	Differential Scanning Calorimeter Suitable for OIT analysis as per IS 4984, IS 14885 & IS 16098 (Part-2). (with latest version and amendments)
2.	Sensor type	Suitable with Double Furnace
3.	Temperature range	-100 ^{0}C to 700 ° C or better
4.	Temperature accuracy	± 0.1 °C or better
5.	Temperature precision	± 0.05 °C or better
6.	Enthalpy precision	± 0.1% or better
8.	Heating/ Cooling rate	0.01 to 200 °C per min or better
10.	Isothermal stability	±0.1°C
13.	Segment types	Static (Isothermal) and dynamic
14.	Gas atmospheres	Inert & oxidizing (N_2 & O_2)
15.	Calibration Standards	Pure Indium & Pure Tin with purity certificates
16.	Associated accessories	Sealing press /Crimping tool, cleaning brush and tweezers, N_2 & O_2 gas cylinders, flow meters (2 Nos)
17.	Sample pan	Aluminium pans and lids (1000 pcs ; 25µl or better)
18.	Personal computer with color printer	Latest configuration compatible with the instrument
19.	Software	Licensed software for control, data acquisition and processing. Should be multi-tasking and should be able to control multiple thermal modules
20.	Other items	1. 5 KVa UPS with 30 minutes back-up
21.	General terms and conditions	1. Price for each items should be quoted separately 2. Price for optional items should be indicated separately 3. Warranty- as per Model Tender document 4. Indicate the price of AMC after the expiry of the warranty period

		5. List of spares needed for each year along with cost and discounted rates should be provided. An undertaking that the vendor will supply all the spares for 5 years after the warranty period to be provided 6. Complete technical details along with hard and soft copies of the manuals should be provided 7. Software upgrade should be incorporated by the vendor as and when the new versions are released at no additional cost 8. Onsite training for at least two persons in the operation and general maintenance should be given 9. List of installations in India for the last two years to be provided 10. Qualification, verification and calibration services must be available.

Annexure-A5

Scope: The epiflourescence Microscope fitted with DIC shall be capable to test Giardia & Cryptosprorodium as per USEPA 1623/ ISO 15553 with the following specifications :

Fully motorized and computer controlled inverted microscope

• Inverted completely motorized (latest model) microscope with Infinity optical corrected optical system and a vinyl cover to protect from dust.

• Microscope should be dual deck equipped with motorized Z-focus for fast XYZ scanning with minimum step size of 10 nm or better.

• All accessories for high resolution Bright Field (BF), Phase Contrast (PC), Fluorescence (FL) and Differential Interference Contrast (DIC) illumination and imaging should be supplied.

• The microscope should have 1.5X, 2X intermediate magnification changer.

- Nomarski differential interference contrast attachment to be mounted in conjunction with a reflected-light fluorescence attachment to enable one-touch switchover among brightfield, phase contrast, differential interference contrast, fluorescence.

• Motorized fine/coarse focus, focus knob with rotary encoder, escape (for anti-collision) and refocus mechanism, laser safety interlock signal output, light distribution with motorized changer: 100% Eyepiece, 100% Left and 100% Right.

• The microscope should come with a pre-centered 12 Volt 100W Halogen or equivalent illumination for transmitted light and DIC applications.

• The microscope should have hardware and software based automatic focus correction to avoid continuous drift caused by mechanical or thermal changes. Users should have control to keep this option “on” or “off” in both continuous and on-demand experiment needs.

• Microscope should have the facility to project the objective back aperture plane on a monitor with camera .

• Microscope should have the automatically engage / disengage all the correct components for their chosen observation method.

Condenser:

Completely motorized universal turret condenser suitable for all microscopy techniques with 6 or more positions.

• Should supply following TWO condensers

1) Air condenser with 0.5 NA or better

2) Oil condenser with 1.40 NA or better

Both Phase contrast condensers are equipped with ring slits for 4X, 10X, 20X and 40X phase contrast

objectives.

Nomarski Differential Interference Contrast Attachment:

- It should have Nomarski condenser and NA Nomarski analyzer as accessories.
- In addition to 10X, 20X and 40X Nomarsk i prisms, the multifaceted condenser should contain ring slits for 10X and 40x phase contrast objectives.

Reflected-Light Fluorescence Attachment

- Four types of cubic dichroic mirror units should be available for U, V, Band G excitation, with each unit consisting of an exciter filter, a dichroic mirror and a barrier filter.
- Switchover between the two excitation wavelengths should be achieved by a simple one -touch operation.

Stage:

• Completely motorized, smooth XY encoded stage with Joystick control, as well as total control by the software.

• Universal Holder, well plate holder, slide holder & stage ring holder.

Eyepiece:

- 10x or better

Nosepiece:

• Microscope should have motorized DIC revolving nosepiece to hold minimum 6 objectives at a time with anti - collision mechanism.

• Automatic focus drift correct mechanism (750nm LED or better) continuously caused by thermal & mechanical changes during long term live cell imaging experiments. So that images remain in focus even working on higher magnification & higher resolution techniques. The Focus drift correction should wor k for all the objectives mentioned.

Additional Requirements:

- Ocular micrometer

Objectives:

Should be supplied with following high performance, highly corrected, Plan Apochromatic objectives suitable for Bright field / Fluorescence / DIC imaging.

High NA and highly colour/lambda corrected confocal grade

Objectives:

1) Plan Apo 10 x /N.A. 0.40 or higher.

2) Plan Apo 20 x /N.A. 0.70 or higher.

3) Plan Apo 40 x /N.A. 0.90

4) Plan Apo 60/63 / NA 1.49 or higher

5) Plan Apo 100 /NA 1.49 or higher.

Stage incubator:

• System should be equipped with best and highly sensitive onstage live cell imaging chamber with following specifications.

1) CO2 and O2 sensors.

2) Thermal and humidity monitor and controller, microscope enclosure with temperature control for long term imaging

3) Objective collar heater

• The stage should be compatible to hold slides, petri-plates of standard size and dimension.

• All parameters should be controlled by same imaging software.

• All the accessories required for the integration with the microscope and full functioning of the quoted stage incubator should be included.

DIC attachments:

All necessary components required for high quality DIC imaging from 20x - 100x objectives should be included.

Epi-fluorescence attachment:

• Motorized epi-fluorescence attachment with motorized 6 positions or better turret filter block.

• Noise Terminator mechanism incorporated for high signal to noise ratio images

• Pre-centered motorized Mercury/Metal Halide Fiber illuminator or of 120W/130W with facility for no heat and electrical noise transfer from lamp to the microscope body is conducted, lamp should have a lifetime of 2000 hrs or higher.

• Motorized High speed shutter compatible with episcopic fluorescence Illumination to prevent photobleaching. Should have 5 or more position filter wheel with Neutral Density filters.

Filter cubes:

Highest quality Bandpass Fluorescent filter cubes and any other required components for fluorescent imaging applications.

- BFP/DAPI/Hoechst
- FITC/GFP
- YFP/EYFP
- CFP

Software:

The quoted software should have the following features:

• Most advanced level image acquisition, Complete microscope control, Camera control and Laser control.

• Saving of all instrument parameters along with the image for repeatable / reproducible imaging. Time series, Z – Stacking with Autofocus, Multi position, Stitching / Tiling imaging capabilities.

• Software should have real-time simultaneous control for all the motorized devices

• Diverse measurement and statistical processing.

• Software should have the capability of multi-dimensional acquisition namely XT, XZ,XY, XYT, XYZ,XYλ,XYZT,XYλT, XYλZT, reconstruction.

• Software should be capable of recording intensity profiles and other parameters of live cell imaging experiments along with Environment parameters as recorded data.

• It should be capable of handling & controlling Multi-laser for simultaneous two- colour imaging.

• It should be capable of standard geometry measurements like length, area, angles etc including intensity measurements.

• Advanced 3D image reconstruction with rendering from Z-stack image series.

• The system should have special experiment management/designing facility so that users can plan his experiments based on different system settings and different experimental conditions.

• Must be free and should be accessible for at least two offline users with features for data analysis and statistical measurements.

• Free lifetime software update

Software should be LIMS Compatible

Computer Workstation:

• INTEL latest and a fastest PROCESSOR based workstation having a latest configuration with DDR4 SDRAM 32GB RAM, 2TB SATA 7200 RPM and 512 MB SSD, NVIDIA GeForce gtx graphic card with High resolution 80 cm (1 no.) LED Monitor/TV should be supplied along with the system.

• The above system should essentially be supplied with a Real-Time control/command board for quick & real-time parallel execution & processing of experimental commands to various components of the system without any time lag.

• Operating system shall be windows 10 Pro 64 bit or higher and the instrument firmware shall be upgradable.

• Computer table for system

• UPS system to support the entire set-up

Annexure-A6

Potentiometric Auto Titrator system with Parallel Titration and Karl Fischer titration facility with the following specifications is required.

1 The system should be microprocessor based, capable of doing all types of Titrations like Acid base, Non Aqueous, Redox, Complexometric, Back-titration and precipitation.
2 The system should also have the facility to perform Volumetric Karl Fischer Titration. The accessories for the same should be quoted.
3 The system should be completely software controlled and should have atleast two galvanically isolated measuring interfaces within the same system, for performing two titrations simultaneously with separate work stations.
4 The system should be quoted with the sensors and accessories to perform chloride, calcium, magnesium, aluminium and iron in food and cement samples.
5 The instrument should have the following measurement range

a) pH : 0 to + 14.0 with Resolution of 0.001
b) mV : ± 1200 with Resolution of 0.1 mV or better
c) I_{pol} : ± 120 μA or better
d) V_{pol} : ± 1100 mV or better

6 As a security measure the basic instrument and all the peripheral devices connected to it should be recognized automatically by the software as soon as it is connected to the software.
7 The system should have the possibility to connect up to Four Titrating burettes for different types of titrations.
8 Burette should have a resolution of 1/10000 steps or better of its burette volume and the flexibility to handle more than one solvent for liquid handling.
9 Preparation of burette with new titrant and emptying the burette, with a single command should be possible.
10 Burettes volume of 2, 5, 10, 20 and 50 ml should be available if required. 20 ml (LC: 0.01 ml) burettes for potentiometric titration and 10 mL (LC: 0.01 ml) burette for Karl Fischer volumetric titration should be given with the system.
11 Dosing drives with chip on board technology with the capability of read and write should be provided. It should detect the burette volume once connected. The chip on the burette should store the important data like titrant name, concentration, date of preparation, expiry date, etc.
12 The instrument should have the option to connect intelligent sensors with chip on board technology to capture all data related to calibration and performance of sensors.
13 The instrument should also have the facility to perform pH measurements with the capability of 5 points calibration. Suitable electrode should be provided with the system.
14 The instrument should also have the facility to perform ion measurements with suitable ion selective electrodes if required.
15 Two magnetic stirrers one each for potentiometric titration and Karl Fischer titration, with control on stirring speed and direction should be provided. The magnetic stirrer provided for Karl Fischer titration should have a membrane pump used for the aspiration of titrated solutions and addition of methanol for titration.
16 Suitable automation facility for handling sample preparation and titration of minimum 15 samples should be available if required in future.
17 Latest windows based software should be provided with the system, with the following facilities.

a) It should be possible to connect unlimited number of instruments to the software.
b) Software should be LIMS compatible and facilitate parallel multi-tasking functions. Software should support client-server version if required.
c) Result monitoring, customized report and automatic data back-up should be available.
d) Automatic inquiry of sample size and/or ID number after start of titration on request.
e) Variable Start Delay for poorly soluble samples.
f) Should be possible to do two titrations parallely in the same window.

g) Result trend analysis, History about the each determination should be available.
h) Export and import of data(s) in different formats like CSV (to excel), XML (to LIMS) etc, should be possible.
i) Should have unique user login facility with passwords for multiple users.
j) Should be 21 CFR Part 11 compliant.

18 The potentiometric titration system should have the above features and should be offered with all the necessary accessories for performing the applications mentioned above.
19 Instrument performance verification (IQ,OQ, PQ): To be done with traceable standards for the first 2 years (at the time of installation and on each maintenance visit)
20 Required documents, kits and required standards as required
21 Warranty: as per tender document
On-site demonstration to the users and Operation and Maintenance Training

Annexure-A7
Technical Specification of Microbalance

S. No.	Components/ Fixtures/ Accessories/ Spare parts/ CRMs etc.	Requirement
(1)	(2)	(3)
1.	Capacity	1.1 gm or more
2.	Readability / Least Count	0.001 mg
3.	Stabilisation time	5 sec or better
4.	Linearity	0.006 mg or better
5.	Repeatability	0.003 mg or better