

**INDIAN STATISTICAL INSTITUTE**  
**203, BARRACKPORE TRUNK ROAD**  
**KOLKATA - 700 108**



**TENDER DOCUMENT**

**FOR**

**Renovation of OCR Laboratory at CVPR Unit, 8<sup>th</sup> Floor of S.N.  
Bose Bhavan, ISI, Kolkata - 700 108.**

**Price: ₹224.00 (Rupees Two Hundred Twenty-Four) Only.**

**IN-CHARGE, ENGINEERING UNIT  
P. N. HAKSAR BHAVAN, 1<sup>ST</sup> FLOOR,  
203, B.T. ROAD, KOLKATA - 700108**

**Name of the Tenderer: \_\_\_\_\_**

**INDIAN STATISTICAL INSTITUTE  
ENGINEERING UNIT  
P.N. HAKSAR BHAVAN, 1<sup>ST</sup> FLOOR  
203, B. T. ROAD, KOLKATA - 700 108**

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**INDIAN STATISTICAL INSTITUTE  
ENGINEERING UNIT**

P.N. HAKSAR BHAVAN, 1<sup>ST</sup> FLOOR  
203, B. T. ROAD, KOLKATA - 700 108

**NOTICE INVITING TENDER**

No.: EU / LT /01/2019-20

Date:04/02/2020

1. Sealed tenders in the Institute's contract form are invited from the Enlisted Contractors (Civil Works) of the Institute for the following work:-

| Sl. No. | Name of the work  | Estimated Cost (₹) | Cost of Tender Document (₹)      | Time of Completion      |
|---------|---|--------------------|----------------------------------|-------------------------|
| 1.      | Renovation of OCR Laboratory at CVPR Unit, 8th Floor of S.N. Bose Bhavan, ISI, Kolkata – 700 108. | 1,10,378.00        | 224.00<br>( 200.00 +<br>GST@12%) | 15<br>(Fifteen)<br>Days |

2. Tender documents containing Notice Inviting Tender, Instruction to the Tenderer, General Conditions of Contract, Technical Specifications, Form of Tender, Bill of Quantities, etc. can be downloaded from the official website of the Institute [www.isical.ac.in](http://www.isical.ac.in) from 07/02/2020 to 13/02/2020.
3. The sealed envelope containing tender document along with the Money Receipt for submission of the cost of Tender Document, subscribing the name of work written on the cover shall be submitted to the **In-charge, Engineering Unit, P.N. Haksar Bhavan, 1<sup>st</sup> Floor, Indian Statistical Institute, 203, B. T. Road, Kolkata –700 108 up to 3.00 P.M. on 13/02/2020 and shall be opened by In charge, Engineering Unit or his representatives on the same day at 3.30 P.M.** in presence of the tenderers or their representatives who choose to attend. In case of closure of that day for some unforeseen reason, the same will be opened on the next working day at the same time mentioned above.
4. Cost of Tender Document of **₹224.00 (Rupees Two Hundred Twenty-Four Only)** shall be deposited at I.S.I. Cash Section on all working days from **10:45 A.M. to 1.45 P.M.** against request for deposit of the amount duly recommended by the In-Charge, Engineering Unit or his authorized representative. This sum is not refundable under any circumstances.

**NOTE: The Money Receipt (in original) shall be enclosed with the Tender, without which the Tender shall be summarily rejected.**

5. Each page of the tender document and any corrections in the tender shall have to be signed and stamped by the Tenderer/Authorized Signatory before submission.
6. All rates shall have to be quoted in ink and written both in figures and words. In case of discrepancy in the rate quoted in words & figure, word will prevail. Overwriting/applying correction fluid shall be avoided.
7. The tender shall remain valid for a period of **3 (three) months** from the date of opening and if before expiry of this validity period, the tenderer amends his quoted rates or tender making them unacceptable to the institute and/or withdraws his tender, he shall be liable to be disqualified as an enlisted contractor in future.
8. In the event of tender being submitted by a partnership firm, it must be signed by each partner thereof or in the even of absence of any partner, it must be signed by a person holding power of attorney authorizing him to do so.
9. The time allowed for completion of the work is **15 (Fifteen) Days** and will be reckoned from the seventh day after the date of issue of work-order.
10. After completion of the work as certified by In-Charge, Engineering Unit, the contractor (successful tenderer) shall maintain the works allotted to him for a period as stated in the Work - Order. Defects arising from supply of faulty materials, bad workmanship etc. during this period shall have to be repaired/mended at contractor's own cost.
11. The acceptance of the tender in part or whole shall rest with the competent authority of the Institute, who does not bind himself to accept the lowest tender and reserves to himself the authority to reject any or all the tenders received without assigning any reason thereof.
18. Tenders, which do not fulfill any of the above conditions or are incomplete in any respect, are liable to rejection.



**In-Charge, Engineering Unit.  
Indian Statistical Institute**

**INDIAN STATISTICAL INSTITUTE**  
**ENGINEERING UNIT**  
**P.N. HAKSAR BHAVAN, 1<sup>ST</sup> FLOOR**  
**203, B. T. ROAD, KOLKATA - 700 108**

**INSTRUCTIONS TO THE TENDERER**

1. Attention of the tenderer is directed to the conditions of tender and general conditions of contract.
2. The tenderer shall visit and inspect the site and on his own responsibility obtain all information, which may be necessary for the purpose of quoting and submitting a tender. No excuse or ignorance as to site conditions and local information will be accepted after awarding of the contract. All costs, charges and expenses that may be incurred in connection with the preparation of his tender shall be borne by him and the Institute accepts no liability whatsoever therefore. The tenderer shall submit in writing if there is any clarification required before the last date & time fixed for submission of tender.
3. The tender specifications, documents and correspondence accompanying the tenders shall have to be submitted. All measures, Unit etc. shown in the tender documents and calculations shall be in metric units. All rates, prices and sums shall be in Indian currency. The language used throughout shall be English.
4. No alteration shall be made by the tenderer in the tender and the tender must be in accordance with specifications.
5. Tender must be submitted the rates for all the items of work involved and any incomplete tender will not be considered. The items for which the rates are not quoted will be considered, as 'Zero' & the agency should complete that item of work without any claim.
6. The time for completion of work is **30 (Thirty) Days** & will be reckoned from the 7<sup>th</sup> day from the date of receiving Work -Order.
7. Should there be any doubt or obscurity as to the meaning of any of the tender documents or if any further information is required, the tenderer must address his enquiry in writing in duplicate to In charge, Engineering Unit, Indian Statistical Institute, 203, B. T. Road, Kolkata -108. Such enquiries must be submitted not later than one week before the date fixed for submission of the tenders.

**INDIAN STATISTICAL INSTITUTE  
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**GENERAL CONDITIONS OF CONTRACT**

**DEFINITIONS :-**

1. The 'Contract' means the Conditions of Contract, Instructions to Tenderers, Form of Tender, Schedule of Materials to be supplied by the Institute, the Specification, Schedule of Quantities and Rates and the Drawings attached hereto and signed.
2. In the contract the following expressions shall, unless the context otherwise requires, have the meaning, hereby respectively assigned to them.
  - a) The expression 'Work' shall mean the works to be executed in accordance with the contract—temporary or permanent, original or substituted, altered or additional.
  - b) The 'Site' shall mean the land and/or places on, into or through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.
  - c) The 'Contractor' shall mean Messers ..... and shall include their assigns and/or successors, his/their heirs and administrators.
  - d) The 'Director' shall mean the Director of the Indian Statistical Institute, 203 B. T. Road, Kolkata - 700 108 or his successors who shall sign the contract on behalf of the Director.
  - e) The 'Engineer' means the In-Charge, Engineering Unit of the Institute or his representatives authorized by the Institute for the purpose of control and supervision of the work and to issue instructions and make correspondence with the contractor on behalf of the Institute.

**Clause - 1.**

**EARNEST MONEY :-**

Deleted.

**Clause - 2.**

**SECURITY DEPOSIT :-**

Security Deposit shall be recovered by deduction from Progressive Bill(including Final Bill, if necessary) @ 10% of the Gross Value of Work in each Bill, so that the total recovery may not exceed 10% of the Total Value of the Work actually done upto the stage of completion. The entire amount of the deposit so deducted shall be returned to the Contractor at the end of the successful completion of Defect Liability Period (12months).

**Clause - 3.**

**NO INTEREST PAYABLE ON EARNEST MONEY/SECURITY DEPOSIT :-**

No interest shall be paid to the Tenderers/Contractors on the amount of Earnest Money/Security Deposit held by the Institute at any stage.

**Clause - 4.**

**FORFEITURE OF DEPOSIT :-**

The Security Deposit may be liable to forfeiture at the option of the Institute if the contractor fails to carry out the work or to perform/observe any of the conditions of the contract. The Institute shall also be at liberty to deduct any of their dues from the Security Depositor from any sum due or to become due to the contractor under any other contract.

**Clause - 5.**

**INTERPRETATION OF CONTRACT DOCUMENTS :-**

Several documents forming the contract are to be taken mutually explanatory of one another. Should there be any discrepancy, ambiguity, omission or error in the various contract documents, the Engineers shall have the power to correct the same and his decision shall be final and binding on the parties on the contract.

**Clause - 6.**

**CONTRACTOR'S PRICE INCLUSIVE OF ALL COSTS :-**

Unless otherwise specified, the contractor shall be deemed to have included in his Tender/Offer all his costs for supplying and providing all constructional plant and

tools, temporary work, materials both for temporary and permanent works, labour including competent supervision thereof, transporting to and from the site and in and about the work, including loading, unloading, fencing, watching, lighting, payment of fees, taxes and duties to the appropriate authorities and other things of every kind required for construction, erection, satisfactory execution and maintenance of the work including rectification of badwork.

The contractor's quoted rates shall also be deemed to have been inclusive of the following :-

- a. Keeping the site free of unnecessary obstruction and removal from site of constructional plant wreckage, rubbish, surplus earth or temporary works no longer required.
- b. Cleaning and removal from site all surplus materials of every kind to leave the site clean and tidy after completion of the work, without which payment against final bill may be liable to be withheld.
- c. Making arrangements for deployment of all labourers and workers, local or otherwise including payment for their wages, transport, accommodation, medical insurance and all other statutory benefits.
- d. Making arrangements in and around the site, as per the requirements of local authorities or the In - Charge or his representatives for preventing (1) spread of any infectious diseases like smallpox, cholera, plague, malaria etc. (2) illegal storage and distribution of Drugs, Narcotics, Alcoholic Liquor, Arms and Ammunitions (3) unlawful or disorderly conduct of the contractor or his sub-contractor's workmen.

#### **Clause - 7.**

##### **CONTRACTOR TO SUPERVISE THE WORKS :-**

Necessary and adequate supervision shall be provided by the contractor during execution of the works and as long as thereafter the Engineers shall consider during the maintenance period. The contractor or his competent and authorized agent or representative shall be constantly at site and the contractor shall inform the Engineer in writing about such representative/agent of him at site.

#### **Clause - 8.**

##### **CONTRACTOR TO SUPPLY ALL MATERIALS AS PER REQUIREMENT :-**

Unless stipulated otherwise in the contract, all materials required for the work should be procured and supplied by the contractor with the approval of the Engineer and subject to subsequent testing as may be required by him. The Engineer shall exercise his sole discretion to accept or reject such materials.



**Clause - 9.**

**CONTRACTOR TO ARRANGE FOR TESTING AT HIS OWN COST:-**

Unless stipulated otherwise in the contract, the cost of any test required by the Engineer in respect of materials and workmanship deployed on the works shall be borne by the contractor.

**Clause - 10.**

**CONTRACTOR TO REPLACE MATERIALS/WORK NOT ACCEPTABLE :-**

The Engineer shall have the power to inspect any material and work at any time and order at any time --- (1) for removal from the site any material which in his opinion is not in accordance with the contract or his instruction; (2) for the substitution of proper and suitable materials; (3) the removal or proper execution of any work, which in respect of material or workmanship is not in accordance with the contractor's instructions. The contractor shall comply with such orders at his own expense and within the time specified in order. If the contractor fails to comply, the Engineer shall be at liberty to dispose of any such materials and re-do any work by engaging any outside agency at the risk and expense of contractor after giving him a written prior notice of 7 days.

**Clause - 11.**

**CONTRACTOR TO SEEK APPROVAL OF ENGINEER BEFORE COVERING ANY PORTION OF WORK :-**

No work shall be covered up and put out of view by the contractor without approval of the Engineer and whenever required by him, the contractor shall uncover any part or parts of the work or make openings in or through the same as may be directed by the Engineer from time to time and shall reinstate or make good those parts of work thus affected to the satisfaction of the Engineer, all at the cost of the contractor.

**Clause - 12.**

**MATERIALS AND WORKS :-**

Unless stipulated otherwise in the contract, all materials, workmanship and methods of measurement shall be as per PWD (West Bengal) schedule/relevant codes of the Bureau of Indian Standards (Latest Revisions) and the written instruction of the Engineer. Where no specific reference is available in the contract, the materials and workmanship shall be of the best of their respective kinds to the satisfaction of the Engineer.

**Clause - 13.**

**CONTRACTOR TO SUBMIT HIS PROGRAMME OF WORK :-**

Whenever required by the Engineer, the contractor shall submit to him the details of his (a) Programme for execution of the work, (b) Proposed procedure and methods of work, (c) Proposed deployment of plant, equipment, labour, materials and temporary works. The submission to and/or any approval by the Engineer shall not relieve the contractor of any of his obligations under the contract. If for any reason the contractor be unable to adhere to this earlier programme, he shall submit his revised programme for completion of work with the stipulated time whenever asked to do so.

**Clause - 14.**

**CONTRACTOR CANNOT SUBLET THE WORK :**

The contractor shall not directly or indirectly transfer, assign or sublet the contract or any part thereof without the prior permission of the Engineer. Even if such permission be granted, the contractor shall remain fully responsible for any default, neglect, bad workmanship and unsatisfactory progress of work of any sub-contractor or his agents.

**Clause - 15.**

**APPLICABILITY OF LAWS ON THE CONTRACT :-**

The contract shall be governed by all relevant Indian Acts as applicable only within the jurisdiction of the High Court at Calcutta including the following Acts:

- a) The Indian Contract Act, 1872.
- b) The Workmen's Compensation Act, 1923.
- c) The Minimum Wages Act, 1948.
- d) The contract labour (Regulation and Abolition) Act, 1970.
- e) The Indian Arbitration Act, 1940 (in case of a definite Arbitration Agreement only).

**Clause - 16.**

**PAYMENT ON THE BASIS OF MEASUREMENTS AT AGREED RATES :-**

All payments shall be made to the contractor on the basis of measurements of actual work done, as recorded in the Institute's Measurement Books and at accepted Tendered or Agreed Rates, as the case may be, except as otherwise provided in the Contract and when the Engineer decides any other rate for change in the scope of work or omission, if any, on the part of the contractor.

**Clause - 17.**

**RECORDING OF MEASUREMENTS :-**

Measurements for works done shall be progressively taken by the Engineer and entered in the Institute's Measurement Book, at intervals deemed suitable and proper by him. The contractor or his duly authorized representatives shall remain present at the time of such measurement and assist the Engineer in every manner required by him. After the measurement taken have been entered in the Measurement Book, the contractor or his authorized agent shall sign & stamp the Measurement Book at the end of such measurement, as a token of acceptance of all such measurements, recorded above and prior to such signature.

**Clause - 18.**

**CONTRACTOR TO PREPARE AND SUBMIT HIS BILLS :-**

Based on the quantum of work and the value thereof computed in the Measurement Book, the contractor shall type out his bill and submit the same to the Office of the Engineering Unit in duplicate, duly signed & stamped. The Measurement Book will not be handed over to the contractor but he will obtain the abstracts of quantities, amounts and recoveries to type out the bill.

**Clause - 19.**

**RECOVERY FOR OVER-PAYMENT :-**

No Certificate of the Engineer shall protect the contractor against or prevent the Institute from obtaining repayment from the contractor, in case of the Engineer over certify for payment or the Institute over-pay the contractor on any account.

**Clause - 20.**

**INTEREST NOT ADMISSIBLE TO THE CONTRACTOR :-**

No claim for interest shall be admissible to the contractor at any stage and in respect of any money or balance or Bank Guarantee, which may be due to the contractor from the Institute, owing to dispute or otherwise or for any delay on the part of the Institute in making Running Account or final payment or otherwise.

**Clause - 21.**

**ENGINEER'S POWER TO VARY THE WORKS :-**

The quantities set out in the Bill of Quantities of the Tender shall be treated as estimated quantities of the work and the Engineer shall have the power to order the contractor in writing to make any variation of the quantity, quality or form of the works or any part thereof that may, in his opinion, be necessary.

**Clause - 22.**

**PAYMENT FOR EXTRA/ADDITIONAL/SUBSTITUTED WORK :-**

All extra, additional or substituted work done or work omitted by order of the Engineer shall be valued on the basis of the rates and prices set out in the contract, if in the opinion of the Engineer, the same shall be applicable. If the contract does not contain any rates or prices directly applicable to the extra, additional or substituted work, then the Engineer may decide the suitable rates on the basis of P.W.D. Schedule of Rates or current market rates. In all cases the Engineer shall solely determine the suitable rates in the manner deemed by him as fair and reasonable, and his decision shall be final and binding.

**Clause - 23.**

**EXTENSION OF COMPLETION TIME:-**

Should the quantum of extra or additional work of any kind or delayed availability of free work site or Institute's material's to be supplied as per contract or exceptionally adverse climatic conditions and natural phenomenon or strikes, lockouts, civil commotions or other special circumstances of any kind beyond the control of the contractor, cause delay in completing the work, the contractor shall apply to the Engineer in writing for suitable extension of completion time within seven (7) days from the date of occurrence of the reason and the Engineer shall thereupon consider the stated reasons in the manner deemed necessary and shall either reject the application or determine and allow in writing the extension period as he would deem proper for completion of work with or without the imposition of 'Liquidated Damage' (Clause No. 26 hereof) on the contractor and his decision shall be binding on the contractor.

**Clause - 24.**

**LIQUIDATED DAMAGE :-**

If the contractor fails to complete the work within the stipulated time or such extension thereof as communicated by the Engineer in writing the contractor shall pay as compensation (Liquidated Damage) to the Institute @ 1/2% (half percent) of the total value of the work (contract value) for every week or part thereof of the work remains unfinished subject to a maximum of 10% of the said value of work.

Without prejudice to any of their legal rights, the Institute shall have the power to recover the said amount or compensation/damage from any amount due or likely to become due to the contractor. The payment or deduction of such compensation/damage shall not relieve the contractor from his obligation to complete the work or from any of his other obligations/liabilities under the contract and in case of the contractor's failure and at the absolute discretion of the Engineer, the work may be ordered to be completed by some other agency at the risk and expense of the contractor.

**Clause - 25.**

**DEFAULT OF THE CONTRACTOR AND TERMINATION OF CONTRACT :-**

Without being liable for any compensation to the contractor, the Institute may, in its absolute discretion, terminate the contract and enter upon the site and works and expel the contractor therefrom after giving him a minimum 3 (three) day's notice in writing, due to occurrence of any of the following reasons and decision of the Institute in this respect, as communicated by the Engineer, shall be final and conclusive.

1. The contractor has abandoned the contract.
2. In the opinion of the Engineer, either the progress or quality of work is not satisfactory or the work is not likely to be completed with the stipulated time on account of the contractor's lapses.
3. The contractor has failed to commence the works or has without any lawful excuse under any of these conditions, kept the works suspended for at least 15 days despite receiving the Engineer's written notice to proceed with the work.
4. The contractor has failed to remove materials from site or to dismantle or demolish and replace work for 7 days after receiving from the Engineer written notice stating that the said materials or work were condemned and rejected by him under these conditions.
5. The contractor is not executing the works in accordance with the contract or is persistently or flagrantly neglecting to carry out his obligations under the contract.

In all such cases of termination of work, the Institute shall have the power to complete the work through any other agency at the contractor's risk and expense and the contractor shall be debited any sum or sums that may be expended in completing the work beyond the amount that would have been due to the contractor, had he duly completed the whole of the work in accordance with the contract. The Institute shall have the power to retain all money due to the contractor until the work is completed by other agency.

**Clause - 26.**

**MAINTENANCE OF WORK :-**

On completion of execution of the work the contractor shall maintain the same for a period, as specified in the work-order, from the date of completion of the work as noted in the Measurement Book. Any defect/default, which may appear in the work during the aforesaid maintenance period, arising, in the sole opinion of the Engineer, from materials or workmanship not in accordance with the contract or the instruction of the Engineer, shall, upon the written notice of the Engineer, be amended and made good by the contractor at his own cost within seven (7) days of the date of such notice, to the satisfaction of the Engineer, failing which the Engineer shall have the defects amended and made good through the agency at the contractor's risk and cost and all expenses, consequent thereon or incidental thereto, shall be recoverable from the contractor in any manner deemed suitable by the Engineer.

**Clause - 27.**

**REFUND OF SECURITY DEPOSIT :-**

On completion of all obligations under the contract including that in the maintenance period, the contractor may apply for the refund of his Security Deposit. Upon recommendation of the Engineer, the Deposit held by the Institute shall be returned to the contractor, after making deduction therefrom in respect of any sum due to the Institute from the contractor.

**Clause - 28.**

**PRICE ESCALATION :-**

No price escalation on account of changes in the rates of Materials, Labour, P.O.L. or any other account shall be allowed during currency of the contract.

**Clause - 29.**

**ENGINEER'S DECISION FINAL :-**

In all disputes, matters, claims, demands or question arising out of or connected with the interpretation of the contract including the meaning of specifications, drawings, designs and instructions or as to the quality or workmanship or as to the materials used in the work or the execution of the work whether during the progress of the works or after the completion and whether before or after the determination, abandonment or breach of the contract the decision of the Engineer shall be final and binding on all parties to the contract and shall forthwith be given effect to by the contractor.

**INDIAN STATISTICAL INSTITUTE**  
**ENGINEERING UNIT**  
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203, B. T. ROAD, KOLKATA - 700 108

**TECHNICAL SPECIFICATIONS**

**(All I.S. Codes shall be the latest revised ones.)**

**(A) MATERIALS:**

**1. BRICKS.**

Bricks for general masonry work shall conform to IS : 1077 and for face brick work shall conform to the specifications in IS : 2691.

Bricks for general masonry work shall be of First Class (Class-A) quality, kiln burnt, of uniform size, shape and colour, free from cracks, flaws or nodules or free lime and emit clear ringing sound when struck. Fractured surface shall show uniform texture, free from grits, lumps, holes etc.. Compressive strength shall be 105 Kg./Sq. Cm. (minimum). All bricks shall have rectangular faces and sharp straight edges. The bricks shall show no appreciable signs of efflorescence either dry or subsequent to soaking in water. Bricks shall not be dumped at site but should be stacked in regular tiers, even as they are unloaded to minimize breakage and defacement.

**2. LIME .**

Lime shall be stone lime and conform to the specification building lime IS : 712. Lime putty may be prepared from hydrated lime or Quick lime. Hydrated lime shall be mixed with water to form a putty and shall be stored with reasonable care to prevent evaporation for at least 24 hours before use. Quick lime shall be shaken with enough water to make a cream, passed through a No. 0 sieve and then stored with reasonable care to prevent evaporation for at least seven (7) days before use. Lime shall be stored in weatherproof sheds.

**3. CEMENT.**

Cement used shall generally be Ordinary Portland Cement conforming to IS: 269. If the cement is issued to the contractor by the Institute, the former shall satisfy himself at the time of taking delivery that the quality, quantity and freshness of cement are up to the specified standards. No complain later on

regarding the cement supplied by the Institute shall be entertained and all rectification work done on this account shall be done by the contractor at his own expense. If the cement is supplied by the contractor, the same shall be fresh when delivered and procured from reputed and approved manufacturers. The contractor shall submit the manufacturer's test-certificate for each consignment of cement procured for the works. Cement shall be stored above the ground level in perfectly dry and watertight sheds. The bags shall be stacked in a manner so as to facilitate removal on First-in-First-out basis. Any material considered defective by the Engineer shall not be used by the contractor and shall be removed from the site immediately.

#### **4. COARSEAGGREGATES.**

CoarseaggregatesforconcreteshallbeasperIS:383consistingofhard,strong, durable and well graded pieces of crushed stone (available from quarries of Pakur or Chandil areas) and shall be free from Organic or Clay coatings and otherimpuritieslikedisintegratedstones,softflakyparticlesetc.andanyother material likely to affect the strength, durability or appearance of concrete. Washing of aggregates by approved means shall be carried out, if desired by theEngineer.

Coarse aggregates shall be stored on brick soling or on an equivalent platform so that they do not come in contact with grass, clay, dirt or otherinjurious substances at any stage. Aggregates of different sizes shall be kept in separate stacks.

#### **5. FINEAGGREGATE.**

Fine aggregate shall be hard, durable, clean sand obtained from approved source and free from adherent coatings or organic mattersandshall not containclayballs,pelletsandimpuritiesasIronPyrities,Alkalis, Salts, Coal, Micz. shale or other laminated materials in such form or quantities as to adversely affect the strength, durability or appearance of mortar, plaster or concrete. All sand shall be well graded. Sand for concrete shall conform toIS : 383.

#### **6. STEEL.**

Reinforcement steel shall be clean and free from loose mill scales, dust, loose rust,oil,greaseorothercoatingswhichmayimpairproperbond.Coldtwisted steelbarsshallconformtoIS:1786,mildsteeltolS:432andstructuralsteeltolS : 226.

Reinforcement bars shall be stored off the ground and under cover, if desired by the Engineer. If necessary, a coat of cement wash shall be given to the bars to guard against rusting.



**7. WATER.**

Water shall be clean, fresh and free from organic matters, acids or soluble and other deleterious substances which may cause corrosion, discolouration, efflorescence etc.

**8. SURKI.**

Surki shall be made from well burnt 1<sup>st</sup> class brick bats, ground to pass through a mesh 2mm. each way and shall be preferably clean and free from any foreign matter.

**9. GLASS.**

All glasses shall be of specified type, colour visibility and shall be free from cracks, flaws, spick bubbles and blemishes and shall not weight less than 7.4 Kg./Sq.Cm. unless otherwise specified.

**10. PLYWOOD.**

Plywood shall be commercial quality or with decorative surface veneer. Unless specifically permitted otherwise, the adhesive used in plywood shall be phenol formaldehyde synthetic resin of B.W.R. type conforming to IS:848.

**11. DECORATIVE LAMINATES.**

Laminate sheets shall be 1.5 mm./1.0 mm. thick and the colour, pattern, finish, texture and source shall be approved by the Engineer.

**12. FLUSH DOORS.**

Unless otherwise specified, flush doors shall be solid core doors with commercial or decorative faces and hardwood edges. The core shall be of block-board or wood particle board. The thickness shall be as specified the Schedule of Items.

**13. PANEL DOORS.**

Panel doors shall be of teakwood shutter frame unless otherwise specified and panels with teakwood/commercial ply/teakwood particle board as per Schedule of Items.

**14. PIPES, VALVE, COCKS, TAPS AND OTHER FIXTURES.**

All pipes, valves, stopcocks, taps and other fixtures shall conform to relevant Indian Standard Specification and shall be of best quality from approved manufacturers. Working pressure, Nominal size and material shall be as per schedule.

**15. WHITEWASH.**

Whitewashing is to be done with 5 parts of stone lime and one part of shell lime with gum (2Kg./Cu.M. of lime) and indigo as necessary and to be mixed as per standard practice.

**16. DRY DISTEMPER.**

Dry distemper shall be made from suitable pigments, extenders, lime proof printers, water soluble binders etc. and shall conform to IS : 427.

**17. OIL BOUND WASHABLE DISTEMPER.**

O.B. washable distemper shall be of oil emulsion type containing suitable preservatives and shall conform to IS : 428.

**18. WATERPROOF CEMENT PAINT.**

Waterproof cement paint shall be made from best quality white cement and lime resistant colours with accelerators, waterproofing agents and fungicides. The paint shall conform to IS : 5410.

**19. SYNTHETIC ENAMEL PAINT.**

Synthetic enamel paint shall be made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give a smooth, hard, durable and glossy finish to all exterior and interior surfaces. The paint shall conform to IS : 2932 and IS : 2933.

**20. FRENCH POLISH.**

French polish shall be made from best quality shellac, denatured spirit and other suitable alcohol soluble ingredients and made by a well known approved manufacturer. The material shall conform to IS : 348.

**21. SOLINGBRICKS.**

SolingbricksshallcomplywithIS:5779.Bricksshallbefreefromcracksand other flaws and lime modules. The bricks shall have as far as possible, plain rectangular faces and straight right angled edges. The average compressive strength shall not be less than 50 Kg./Sq.Cm..

**22. OVERBURNT BRICKMETAL.**

Brick metal for use in road works shall be made out of over burnt bricks or brick bats and shall be free from dust and other foreign matter.

**23. SCREENINGS.**

Screeningstofillvoidsinthecoarseaggregatesshallgenerallybeofthesame material as the coarse aggregate. However, where indicated, predominantly non-plastic material as such as Kankar modules, moorum or gravel (other than river-borne rounded aggregate) may also be used.

**24. BINDINGMATERIAL.**

Binding material to prevent ravelling of water bound macadam shall consist ofafinegrainedmaterialpossessingplasticityindexofbindingmaterialupto 6 which is used as sub-base/base course with bituminoussurface.

**25. AGGREGATE FOR BITUMINOUS SURFACEDRESSING.**

Aggregatesshallconsistofcrushedstoneorcrushedgravel,asspecified,and shall have clean, strong, durable and fairly cubicle fragments freefrom disintegrated pieces, salt, alkali, vegetable matter, dust and adherent coatings.

**26. AGGREGATES FOR BITUMENCARPET.**

Aggregatesshallconsistofangularfragmentsandshallbeclean,hard,tough, durable and of uniform quality throughout. They shall be crushed rock or gravel and shall be free of soft and disintegrated material, vegetable orother deleteriousmatter.

**27. BITUMEN.**

Paving bitumen shall conform to IS : 73 and cut back bitumen to IS : 217. Bitumen emulsion shall conform to IS : 3117.

## **(B) WORKMANSHIP:**

### **1. SITE CLEARING.**

The area to be excavated shall be cleared out of fences, trees, logs, bush, stumps, rubbish etc. and leveled up. Before excavation work and after setting out, initial levels of the ground shall be taken by the Contractor jointly with the Engineer.

### **2. EXCAVATION AND BACKFILLING.**

All excavation shall be as per drawings or as directed and kept free of water and slush by use of adequate dewatering methods and shall not be carried out below the foundation level of structure close by until required precautions have been taken.

All back filling shall be done using approved materials free from lumps and clods, roots, vegetations brick bats etc. and compacted in layers not exceeding 250 mm.

### **3. BRICK SOLING.**

Bricks used for soling shall be firmly laid in position over a thick cushion of sand on the ground which has been dressed and consolidated by ramming or light rolling. The surface shall be free from undulations. After laying of each layer of bricks, sand shall be spread over and worked into the joints to pack the bricks tight.

### **4. BRICK MASONRY.**

Bricks soaked by submergence in clean water for at least two hours before use shall only be used. Broken bricks shall not be used. Bricks shall be laid with frogs upwards over full mortar beds. All masonry work shall be true to lines and levels as shown on the drawings or as directed and shall be cured for at least seven days from the date of laying.

### **5. POINTING TO MASONRY.**

All joints of brickwork shall be raked out to a depth of 10mm while the mortar is still green. After removing of all loose dust from the joints, mortar consisting of 1 part cement and 3 parts clean, well graded sand shall be pressed carefully into the joints and finished suitably. The pointed surface shall be cured for at least 3 days.

## 6. PLASTERING.

Mortar for plastering shall be as specified in the schedule of items. Cement and sand shall be mixed dry on a watertight platform and minimum water added to achieve working consistency. No plaster which has stood for more than half an hour shall be used. Plaster when more than 12 mm. thick shall be applied in two coats – the base coat to be thicker than the finishing coat. The base coat shall be allowed to dry and shrink before applying the second coat of plaster. All plastered surfaces after laying shall be watered for a minimum period of seven (7) days.

## 7. NEAT CEMENT FINISH.

Immediately after achieving a true plastered surface with the help of a wooden straight edge, the entire area shall be uniformly treated with a paste of neat cement at the rate of One Kg./Sq.M. and rubbed smooth with a trowel.

## 8. CONCRETE.

Concrete plain or reinforced, shall be of the Grade or proportion as mentioned in the schedule. The specified proportion is by volume in dry rodded condition of the different constituents. Well graded and washed aggregates measured in suitable boxes shall be used. The unit of measurement for cement shall be bag of cement weighting 50 kgs. and this shall be taken as 0.035 cubic metre. Normally all structural concrete shall be mixed in mixer machine for duration not less than 2 minutes and suitably vibrated. The quantity of water to be used for each mix of 50 Kg. cement to give the required consistency shall not be more than 34 litres for 1:3:6 mix., 32 litres for 1:2:4 mix., 30 litres for 1:1.5:3 mix and 27 litres for 1 : 1 : 2 mix.

## 9. LIME TERRACING.

Lime terracing on roof shall be composed of brick aggregate of 25 mm. (nominal) size unless otherwise specified, surki and bisra lime in the specified proportion. Lime concrete shall be laid (and not thrown) in a single layer and spread and rammed with wooden rammers of weight not exceeding 2 kgs. to the specified average thickness, slopes and levels. The concrete shall be used when it is quite fresh. The concrete shall then be further consolidated by two beating the concrete in unison with wooden hammers (weight 1 to 2 kgs.) for 3 or more days until the mortar is almost set.

**10. WHITEWASHING.**

The surface shall be cleared of all loose materials and dust. All holes and irregularities of the surface shall be filled up with lime putty and allowed to dry before application of the wash. One coat of whitewash shall consist of four consecutive strokes of the brush – one horizontally from right to left and the next from left to right and the third stroke from bottom to upward and the fourth from top to downward before the previous stroke dries. Each coat shall be allowed to dry before the next coat is applied.

**11. WATERPROOF CEMENT PAINT.**

Surface to be coated with cement paint shall be washed and brushed down. As soon as the moisture has disappeared, the surface shall be given one coat of paint. Care shall be taken so that the paint does not dry out too rapidly. After 4 to 6 hours, the water shall be sprinkled over the surface to assist curing and prevent cracking. After the first coat has dried (24 to 48 hours) the second coat shall be applied in a similar manner. The finished surface shall be kept moist by occasional sprinkling with water for seven days after painting.

**12. DRY DISTEMPER.**

New plastered surface shall be allowed to dry for at least two months. For cement plastered surface, the surface shall be washed with a solution of 100 gms. of Zinc Sulphate to One litre of water and then allowed to dry. Dry distempering shall be done as per the manufacturer's instruction.

**13. OIL BOUND WASHABLE DISTEMPER/SYNTHETIC ENAMEL PAINT.**

These shall be applied on properly primed surface and shall be carried out strictly as per the manufacturer's instructions.

**14. CONTROL OF LAYER THICKNESS (ROADWORKS).**

Average thickness of a layer shall not be less than the specified thickness. In addition, spot reduction in thickness shall not exceed 15 mm. in case of sub-bases and base courses of water bound macadam and bitumen macadam and 6 mm. in case of surface wearing courses of bitumen carpet.

**15. PREPARATION OF ROAD SURFACE.**

Surface to be primed shall be swept clean, free from dust, dirt or other deleterious matter by hand brushing, with wire brushing – brass brooms and finally by fanning the cleaned surface with gunny bags and for best results be dry. Large irregularities, pot-holes, depressions etc. shall be repaired prior to priming.

**16. APPLICATION OF BITUMINOUS PRIMER.**

Bituminous primers shall not be applied on a wet surface or during dust storms or when the weather is foggy or rainy. After the surface to be primed has been prepared the bituminous primer shall be sprayed uniformly over the dry surface using mechanical sprayers. The primer shall be applied at the rate indicated.

**17. CURING.**

The primed surface shall be allowed to cure for not less than 24 hours or till it is cured. During this period, the traffic shall be kept off the primed surface.

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**SUGGESTED BRAND NAME OF MATERIALS ARE TO BE USED (BUILDING)**

| <b>SL. NO.</b> | <b>ITEM</b>                             | <b>SUGGESTED BRAND NAME OR SIMILAR (APPROVED BY THE AUTHORITY)</b>                       |
|----------------|---|--|
| 01.            | Cement                                  | Ultratech / Lafarge-Concreto / ACC Super   |
| 02.            | White Cement                            | Birla White / JK White   |
| 03.            | Steel                                   | TATA / SAIL  |
| 04.            | Ceramic Tiles                           | Kajaria / Johnson / Somani / Orient  |
| 05.            | Vitrified Tiles                         | Marbonite / Kajaria Plus / Somani / Orient   |
| 06.            | Vinyl Flooring                          | Tuskar / Poly Floor/ Armstrong / Marblex   |
| 07.            | Bonding Agent                           | SIKA Highbond / CICO Bond EPO  |
| 08.            | Water Proofing Admixture                | SIKA Plastocrete Super / CICO Superplast   |
| 09.            | Rust Removing Agent                     | SIKA Rust off  |
| 10.            | Anticorrosive Paint                     | SIKA Rust top  |
| 11.            | Tile Fixing Polymerised Adhesive        | SIKA Tilofix   |
| 12.            | Epoxy Grout for filling Tile joint      | SIKA Tilogrout   |
| 13.            | HMHDPE Felt                             | Multiplus / Indolit  |
| 14.            | White Cement Based Wall Putty           | Birla White Wall care  |
| 15.            | Acrylic Distemper                       | ICI Maxilite Distemper / Berger Bison / Asian Paints Tractor Acrylic Distemper           |
| 16.            | Interior Acrylic Emulsion               |  |
|                | Standard Acrylic Emulsion               | ICI Dulux 3-in-1 Stayclean / Barger Breathe Easy / Asian Paints Premium Emulsion         |
|                | Luxury Acrylic Emulsion                 | ICI Dulux Velvet Touch / Barger Silk /Asian Paints Royale luxury Emulsion                |
| 17.            | Synthetic Enamel Paint                  |  |
|                | Standard                                | ICI Dulux Gloss / Berger Luxol High Gloss Enamel/ Asian Paints Premium Semi Gloss Enamel |
|                | Luxury                                  | ICI Dulux Supergloss 5-in-1  |
| 18.            | Exterior Cement Based Paint             | Snowcem Plus / Durocem plus / Seacem Plus  |
| 19.            | Exterior Acrylic Emulsion               |  |
|                | 100% Premium Acrylic                    | ICI Dulux Weather Shield / Berger Weather Coat All Guard / Asian Paints Apex             |
|                | Super Protective 100% Acrylic           | ICI Dulux Weather Shield Max / Berger Weather Coat Smooth / Asian Paints Apex Ultima     |
| 20.            | P.V.C. Door                             | Sintex / Duroplast   |
| 21.            | Medium Density Fibre Board              | Century  |
| 22.            | Particle Board                          | Century / Alishan  |
| 23.            | Boiling Water Resistant (BWR) Ply       | Greenply (Greenclub) / Century / Alishan   |
| 24.            | Decorative Laminate                     | Greenlam / Century   |
| 25.            | Mortice / Cylindrical Lock              | Godrej   |
| 26.            | Floor Spring                            | Garnish  |
| 27.            | Hydraulic Door Closure                  | Garnish / Ranjan / Godrej  |
| 28.            | Aluminium Section                       | Indal  |
| 29.            | Non Asbestos Fibre Cement Board Ceiling | Everest  |
| 30.            | Fly/Mosquito proof nylon net            | Netlon Polybit (256 meshes per Sq. Inch.)  |



**SUGGESTED BRAND NAME OF MATERIALS ARE TO BE USED (PLUMBING)**

| <b>SL. NO.</b> | <b>ITEM</b>   | <b>SUGGESTED BRAND NAME OR SIMILAR (APPROVED BY THE AUTHORITY)</b> |
|----------------|---|--|
| 01.            | G.I. Pipes  | TATA (Medium Duty), Jindal (Non-TATA)                              |
| 02.            | G.I. Fittings   | HB / R   |
| 03.            | P.V.C. Pipes  | Oriplast / Supreme / Dupal (Schedule-80)                           |
| 04.            | P.V.C. Tank   | Sintex / Patton  |
| 05.            | P.V.C. Cistern  | Parryware Slimline   |
| 06.            | P.V.C. Closet Seat Cover  | Parryware Slimline   |
| 07.            | P.V.C. Connector Pipe   | Prayag   |
| 08.            | P.V.C. Ball Cock  | Prayag   |
| 09.            | P.V.C. Bib Cock / Stop Cock/<br>Angular Stop Cock / Pillar Cock | Prayag   |
| 10.            | P.V.C. Shower   | Prayag   |
| 11.            | P.V.C. Waste Fittings   | Prayag   |
| 12.            | I.P.W.C. / E.P.W.C. / Urinal                                    | Parryware / Nycer / Hindware                                       |
| 13.            | Basin / Sink  | Parryware / Nycer / Hindware                                       |
| 15.            | Gate Valve  | Leader / Zoloto  |
| 16.            | C.P. Bib Cock / Stop Cock/<br>Angular Stop Cock / Pillar Cock   | Essco / Jaquar / Marc  |
| 17.            | C.P. Shower & Shower Arm  | Essco / Jaquar / Marc  |
| 18.            | C. P. Waste Fittings  | Essco / Jaquar / Marc  |
| 19.            | C. P. Bottle Trap   | Essco / Jaquar / Marc  |

# **FORM OF TENDER**

**Name of the work : Renovation of OCR Laboratory at CVPR Unit, 8th Floor of  
S.N. Bose Bhavan, ISI, Kolkata – 700 108.**

**NIT No.: EU / LT / 01 / 2019-20 Date: 04/02/2020**

**To  
The In-Charge  
Engineering Unit  
Indian Statistical Institute  
203, B. T. Road, Kolkata – 700 108.**

I/We \_\_\_\_\_  
of \_\_\_\_\_  
having examined the site of works, inspected the drawings and read the Specifications, General  
Conditions of Contract and Conditions of Tender, hereby tender and undertake to execute and  
complete all the works required to be performed in accordance with the Specifications, Bill of  
Quantities, General Conditions of Contract and Drawing (s) at the rates and prices set out in  
the annexed Bill of Quantities within the stipulated completion period and in the event of our  
tender being accepted in full or part, I/We also undertake to enter into a Contract Agreement  
in the Format approved by the Institute.

I/We have deposited with the Cash Section, ISI, ₹ \_\_\_\_\_  
\_\_\_\_\_ (Rupees \_\_\_\_\_  
\_\_\_\_\_ ) vide receipt No. \_\_\_\_\_ dated \_\_\_\_\_ as Cost of Tender  
Document.

I/We agree that the period for which the tenders shall remain open for acceptance shall not be less than  
3 (three) months.

**Date:** \_\_\_\_\_

\_\_\_\_\_  
**(Signature of the Tenderer)**

\_\_\_\_\_  
**(Seal of the Tenderer)**

Name of the tenderer: \_\_\_\_\_

Phone No.: \_\_\_\_\_

Mobile No.: \_\_\_\_\_

E-mail ID: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Percentage BOQ**

Tender Inviting Authority : In-charge, Engineering Unit.

Name of the work:Renovation of OCR Laboratory at CVPR Unit, 8th Floor of S.N. Bose Bhavan, ISI, Kolkata – 700 108.

NIT No.: EU / LT / 01 /20119-20 Date : 04/02/2020

Bidder Name : \_\_\_\_\_

| SI No  | Description of Items   | Unit   | Quantity | Rate (₹) | Amount (₹)       |
|--|--|--------|----------|----------|------------------|
| 1  | Supplying fitting, fixing decorative lamination conforming to IS: 2046 : 1995 as per approved make, brand, finish and thickness with fitting, fixing the same on Particle/MDF / Ply Boards with recommended / approved adhesive with proper clipping the sides for better attachment as per direction of Engineer-in-charge. The rate includes the cost of labour, adhesive and all incidental charges thereof.Glossy/Matt/Suede excluding surface texture or metallic lustre. Thickness of laminate 1.5mm | Sq.M.  | 29.90    | 1056.00  | 31574.40         |
| 2  | Wood work in posts, post plates, rafters, battens, truss members, purlins etc. Fitted and fixed complete (excluding the cost of bolts, paints, but including the cost of nails, screws etc.) (The quantum should be corrected upto three decimals) Sal:Malayasian.   | Cu..M. | 0.30     | 95887.00 | 28766.10         |
| 3  | Supplying, fitting and fixing boiling water proof ply conforming to IS: 710-1977 bonded with phenol formaldehyde synthetic resin conforming to IS: 848-1974 of approved make and brand fitted and fixed as per design as per approval and direction of Engineer-in-Charge.[excluding the cost of supporting frame work and teak wood batten/ Lapping. 6 mm ply.  | Sq.M.  | 29.90    | 1436.00  | 42936.40         |
| 4  | Supplying bubble free float glass of approved make and brand conforming to IS: 2835-1987 panes set in putty and fitted and fixed with teak wood beads and nails complete for all floors in internal walls complete. 6 mm thick.coloured / tinted / smoke Glass.  | Sq.M.  | 9.00     | 789.00   | 7101.00          |
| <b>Total Amount in Words :</b>   |  |        |          |          | <b>110377.90</b> |
| <b>Total Amount in Figure: Rupees One Lakh Ten Thousand Three Hundred Seventy Seven Paise Ninety Only.</b> |  |        |          |          |                  |

Quoted Percentage in Figure : \_\_\_\_\_  
(Below/At par/ Above)

Quoted Percentage in Words : \_\_\_\_\_

Quoted Amount in Figure : \_\_\_\_\_

Quoted Amount in Words : Rupees \_\_\_\_\_

\_\_\_\_\_ Only.

Date :

\_\_\_\_\_  
Signature of the Tenderer

\_\_\_\_\_  
Seal of the Tenderer

Name of the Tenderer: \_\_\_\_\_

Address : \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_