

# **INTER-UNIVERSITY ACCELERATOR CENTRE**

(An Autonomous Centre of UGC)  
Aruna Asaf Ali Marg, New Delhi-110 067

## **NOTICE INVITING E-TENDER**

TENDER NO: IUAC/NIT/41/AJM/2018-19

Dated:27/02/2019

### **Instructions for Online Bid Submission:**

Inter-University Accelerator Centre (IUAC), invites online bids through e-Procurement Portal under two bid system, viz., Technical and Financial bids, from eligible and experienced parties for the work/supply of **“Round the Clock Operation and Maintenance of Water System Ph-I, II&III, 150 KLD Sewage Treatment Plant (STP) and associated equipments etc., at IUAC”**.

Tender Documents may be downloaded from Central Public Procurement Portal <http://eprocure.gov.in/eprocure/app> and [www.iuac.res.in](http://www.iuac.res.in)

Aspiring Bidders who have not enrolled/registered in e-Procurement Portal should enroll/ register before participating through the website <http://eprocure.gov.in/eprocure/app>.

Bids shall be submitted online only at CPPP website: <http://eprocure.gov.in/eprocure/app>. Tenderers/Contractors are advised to follow the instructions provided in the e-procurement portal. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

IUAC reserves the right to accept / reject any/all tenders in part/full without assigning any reasons thereof.

Bidder has to select the payment option as “offline” to pay the tender fee/EMD as applicable. The Earnest Money Deposit shall be in the form of demand draft issued in favour of “Inter-University Accelerator Centre, New Delhi” and it should be deposited in IUAC before the bid opening. Bidders registered with MSME/NSIC are exempted from payments of EMD & tender fee. Copy of valid registration certificate should be uploaded.

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 and submit it online without modifying the format. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

Any Corrigendum/Amendments in respect of above tender shall be issued on IUAC website [www.iuac.res.in](http://www.iuac.res.in) and website <https://eprocure.gov.in> only. Bidders should take into account any corrigendum published on the tender document before submitting their bids.

## E-TENDER DOCUMENT

Name of Work	Round the Clock Operation and Maintenance of Water System Ph-I, II&III, 150 KLD Sewage Treatment Plant (STP) and associated equipments etc., at IUAC".
Tender No.	IUAC/NIT/41/AJM/2018-19
Tender Value/Estimate	Rs. 52,00,000/- (Rupees Fifty Two Lacks) per Annum
Earnest Money Deposit	Rs.1,04,000/- (Rupees One Lac Four Thousand only in the form of DD)
Tender Fee	Rs.500/- (Rupees Five Hundred only)
Bid Submission End Date	20/03/2019 at 3.00 PM
Technical Bid Opening Date	22/03/2019 at 3.30 PM
Price Bid Opening Date	To be intimated later
Contact Person	M. B. Joseph, Administrative Officer (S&P) e-mail: <a href="mailto:joseph@iuac.res.in">joseph@iuac.res.in</a> Phone: 011-24126018 & 24126022

### GENERAL CONDITIONS OF TENDER:

1. **Submission of Tender:** Tenders should be uploaded on CPP Portal in two parts separately, i.e. **"Technical bid" (Part-A)** and **"Price bid" (Part-B)**. No other mode of submission will be accepted.
2. **Technical Bid (Part-A) :** In this bid, the bidder should upload the scanned copies of following documents required for technical qualification:
  - i) Company profile, organizational set up, credentials, technical staff, list of plant, machinery & tools in his possession etc.,
  - ii) All the pages of NIT (including blank Price bid) duly signed & stamped by the bidder as a token of acceptance of the NIT conditions
  - iii) Copy of work orders for "Round the Clock Operation and Maintenance of Water Supply Systems" successfully executed during the last 7 years for reputed Public Ltd. Companies, Public Sector, Govt. Institutions and autonomous bodies in the following manner:
    - a) Three similar works, each of value not less than Rs. 20.8 lakhs per annum  
Or
    - b) Two similar works, each of value not less than Rs. 26.0 lakhs per annum  
Or
    - c) One similar work of value not less than Rs. 41.6 lakhs per annum.
  - iv) Satisfactory work completion certificates from clients with contract details. The work order and completion certificate should be for the same work.
  - v) Copies of EPF, ESI & GST Registration and a copy of latest annual EPF Statement of existing workers.

IUAC reserves the right to visit the working sites mentioned by bidders as proof of experience to ascertain the quality of service rendered. The bidder will have to arrange for such visit.

3. **Price Bid (Part-B):** In this bid, the bidder is required to quote his prices for item nos. 4, 5, 6&7 as per Price Bid (Annexure-XII). The bidders should quote unconditional rates in the Price Bid.
4. **Earnest Money:** An earnest money of Rs. 1,04,000/- (One Lac four thousand only) has to be deposited in IUAC before bid opening. The EMD shall be only in the form of Bank Draft payable to Inter University Accelerator Centre, payable at New Delhi. No Cheques/Cash shall be accepted as EMD. EMD of technically disqualified bidders will be returned within 15 days from the date of evaluation of the technical bids. The refund of EMD to the lowest 4th bidders onwards shall be made within 15 days from the date of opening of price bid. The refund of EMD of the 2<sup>nd</sup> & 3<sup>rd</sup> lowest bidders shall be made after award of work and site mobilization by the successful bidder. The EMD of the successful lowest bidder (L1) shall be held back as security deposit and will be released after completion of the works and site clearance.
5. **Exemption from EMD:** Companies registered with National Small Scale Industries Corporation (NSIC) and Micro Small & Medium Enterprises (MSME) will be given relaxation as per Govt. rules. Copy of Exemption certificate shall be uploaded.
6. **Validity of Tender:** Tender shall be valid for our acceptance without any change in rates and NIT conditions for a period of 90 days from the date of opening of price bid.
7. **Labour Escalation:** Contractor will be given actual reimbursement of the increased/enhanced/reduced wages paid to his workers on the basis of increase/enhancement/reduction in statutory minimum wages as decided by the labour department, Govt. of Delhi from time to time. Other than this, no escalation shall be paid during the execution of contract period.
8. **Scope of Work:** Detailed special conditions of this contract, scope of work, equipment covered and other details are enclosed with this NIT as per Annexure - I to XI.
9. **Deviations:** No deviation from the stipulated terms and conditions will be allowed. Tenders should be unconditional.
10. **Site Conditions:** Contractor shall acquaint himself fully with the site conditions and the working environment of Centre before quoting his rates. No compensation on account of any site difficulties will be entertained, at a later date, after award of the work. The plant & machinery will be handed over to the contractor on "As is where is basis" and **the entire liability of smooth operation & maintenance of the systems will rest with the successful bidder.**
11. **Correspondence:** All the correspondence in respect of tender/contractual obligation shall be addressed to A.O (S&P), Inter-University Accelerator Centre, P.B. No. 10502, Aruna Asaf Ali Marg, New Delhi-110067.
12. **Terms of Payment :** The payment shall be made on submission of the bills (format to be approved by the Centre) by the contractor after due certification by the IUAC person responsible for supervision of the work in the following manner:
  - a) Monthly bill shall be raised by the contractor on successful completion of every month as per the schedule of prices quoted in Annexure-XII. The contractor should submit the bill

on 1<sup>st</sup> of every month. The payment shall be made after due certification by the IUAC Engineer-In-Charge responsible for supervision of the work, who may at his discretion effect deductions for non-performance or delayed/improper work. The payment will always be made by ECS after deduction of applicable Income Tax (TDS).

b) Amount towards mandatory requirements such as EPF, ESI & GST shall be paid by IUAC only on submission of the relevant authenticated documents. It is mandatory for the contractor to submit the employees wage bill along with EPF, ESI & GST receipts, ECR statement, paid wages sheet duly signed by employees and the attendance record.

c) Submission of bill/receipt on account of payment made to statutory bodies/authorities i.e. ESI, EPF & GST etc. need to be adhered with strict compliance. Non-compliance in regard to the above may lead to a penalty to be decided by the Director or the committee constituted by Director and that shall be full and final as far as amount of release of payment to the contractor is concerned.

d) There should not be any deductions e.g. advance etc. from the employees wages in the Wages Sheet except for absentees.

13. **Security Deposit:** On award of work, the contractor shall furnish a Bank Guarantee valid for the entire contract duration plus two months equivalent to one month's contract value. In case of extension of contract after the first year, fresh bank guarantee for the new contract has to be submitted for the contract value. Besides the above, the EMD of the successful lowest bidder (L1) shall also be held back with IUAC and will be released only after completion of the works and site clearance.
14. **Labour Laws:** The contractor shall abide by all the prevalent rules and regulations related to labour laws, accident, workmen compensation act, workmen insurance, ESI, EPF etc., This will be the sole responsibility of the contractor. IUAC will not be a party at any stage in any of the disputes relating to the above. In case of any liability arises due to non-conformance of labour laws by the contractor, under no circumstances IUAC will be liable for the same.
15. All the manpower deployed at site by the contractor should be given one weekly off in every 7 days or as many Sundays in any given month. If in case they are performing reliever's duty, they should be paid extra for the same by the contractor. In addition to the above, 3 National Holidays (26<sup>th</sup> Jan, 15<sup>th</sup> Aug. & 2<sup>nd</sup> Oct.) and any special mandatory holidays as declared by Govt. of India from time to time should also be given to the manpower.
16. **Minimum Wages:** The monthly wages to be paid to the personnel shall never be less than the minimum wages decided by the labour department of Govt. of Delhi from time to time in addition to benefits like EPF/ESI calculated on total monthly wages (not on any part of wage). In case of revision in wage by Labour Department of Govt. of Delhi from time to time, the difference shall be paid on submission of paid wage sheet. If contractor wishes to pay more than the minimum wages to his manpower, the same should be taken into account in his overhead & profit component. Any other miscellaneous expenditure to be incurred by the contractor also should be taken into account in his overhead & profit component.
17. **Monthly Wages:** The contractor will disburse the monthly wages to his persons on or before 10<sup>th</sup> of each month by NEFT / online transfer to employee's bank account or in cash

in the premises of IUAC. The IUAC may at its discretion depute its representative to witness the wage payment in cash. However, IUAC reserves the right to make payment of wages to contractor's persons directly in the event of receipt of any complaint from his person(s) regarding delayed payment or non-payment of wages and recover the amount so paid along with 10% overheads from the contractor's bill. Delay in making monthly wages to his staff working at IUAC will be considered as disqualification on contractor's part and this will lead to termination of the contract. In such a case, IUAC's decision will be final.

18. **EPF and ESI:** EPF and ESI numbers of manpower deployed at site by contractor should be furnished to IUAC along with the documentary evidence. EPF statement of all the manpower deployed by the contractor should be submitted to IUAC periodically or as and when asked for. Original ESI cards of employees should be shown to IUAC for verification and photocopies of the same to be submitted. On the expiry of contract, contractor has to submit the clearance certificate from all the manpower deployed by him indicating no dues towards wages, EPF settlement etc., Contractor has to sign the EPF settlement papers for the people who leave the organization while working at IUAC and also after completion of the contract in our presence in case of a complaint or a dispute between contractor and his workmen.
19. **Rules governing the Contractor's employees working in the Centre's premises:** The contractor's employees working inside the IUAC campus will abide by IUAC terms. Any damage to the Centre's property due to mishandling, carelessness etc., on the part of contractor or his workmen will be recoverable from the contractor's bills.
20. **IUAC reserves the right** to reject any or all the tenders in full or in part without assigning any reason whatsoever and the decision of the IUAC in this regard will be binding on all the bidders. Tenders not complying with any of the provisions stated in this tender document are liable to be rejected.
21. All the persons deployed by the contractor at IUAC will have to carry valid gate-passes, which will be issued only after submission of their bio-data in desired format. Any negligence / offence on their part will attract immediate removal from site. It is mandatory for all the contractor's employees to wear badges with their company's name embossed on the same and display it.
22. All the employees will have to be covered under insurance against any personal accident and IUAC will not be liable for payment of any compensation on that account.
23. All the persons deployed by the contractor at IUAC will have to get the police verification done from competent authorities. The contractor has to submit the police verification certificate and acknowledgement slip of the same for all the employees to IUAC.
24. During execution of work, the contractor should follow all standard norms of safety measures/precautions to avoid accidents/damages to men, machines and buildings. On non-adherence of this clause, suitable fines, as decided by the Director, IUAC shall be imposed.
25. Manpower deployed by the contractor at our site for carrying out the contracted works is strictly prohibited being associated with any other works other than the awarded works on the campus.

26. If any contractor's person is found to be misbehaving or to be negligent in the duties assigned to him/her, IUAC reserves the right to seek his/her removal from IUAC, with suitable replacement within 24 hours.
27. No material belonging to the contractor whether consumable or non-consumable should be brought inside the IUAC campus without proper entry at the main gate nor any material should be taken out without proper gate pass issued by the Centre.
28. In case of any injury to contractor's person at IUAC campus, due to any reason, the contractor shall be responsible for taking the person to the hospital/nursing home/dispensary for treatment at his own cost. If in the case of emergency IUAC vehicle is used, IUAC incurs any expenditure on the treatment of the person, the contractor will be suitably charged for the same.
29. Under no circumstances the contractor will be permitted to sublet his work to any another contractor while working at IUAC. Likewise the Contractors persons will not be permitted to undertake any private jobs in the IUAC Campus.
30. IUAC will provide free water and electricity at one point and contractor has to make his own arrangements from that point as per his requirements.
31. **Termination of Contract:-** The Director, IUAC reserves the right to terminate the contract immediately on account of poor workmanship, failure to mobilise the site, non-compliance of set norms/specifications for the works, delay in progress of work, violation of any contract provisions by the contractor. In such cases, the Bank Guarantee equivalent to one month's contract value held with Centre and the EMD will be forfeited by IUAC. The contract can also be terminated at the request of either party with two months notice period or else to pay two months O&M bill value in-lieu of the notice period.
32. Any dispute arising out of this contract will be subjected to jurisdiction of New Delhi/Delhi.
33. Tender once submitted will remain with IUAC and will not be returned to the bidders.

**Accepted**

**(Signature of Bidder)**

Note:- Entire NIT with blank price bid is to be uploaded with "Technical bid (Part-A)" duly signed & stamped by the bidder

**Annexure – I**

**SPECIAL CONDITIONS OF THIS CONTRACT**

1. The contractor has to ensure the promptness in service and this is basically the essence of the contract. The contractor has to ensure 99% uptime of the system. All endeavour will be made by the contractor to restrict to preventive maintenance and unforeseen outages will be kept to the minimum.
2. While all efforts will be made to complete the maintenance activities in the normal hours. If the situations so warrant that the maintenance has to be done beyond the normal hours, the same will be done by the contractor at no extra cost to IUAC.
3. Log - Book supplied by IUAC will be maintained by the operator in- charge in each shift. The readings for the previous day will be got countersigned on the subsequent day by the Engineer - in Charge.
4. The maintenance log book will be filled each day by the concerned supervisor of the successful bidder, mentioning the details of the activities carried out during the day and the materials consumed in each maintenance activity. This maintenance logbook will also be countersigned on the subsequent day by the engineer - in charge.
5. All the spares required in Water System & STP O&M contract will be provided by IUAC.
6. The Water System & STP are 24 hour per day operating plants through-out and the site working has to be accordingly arranged by the contractor all the year including Sundays and Holidays. Furthermore the maintenance gang has to be so arranged by you that it is geared up / available for breakdown maintenance work 24 hours of the day.

7. Inside water conditions will be maintained as per directions of the Engineer-In-Charge, but within design parameters.

8. **Manpower:** The plant and equipments will be manned by operators and mechanics having adequate skill and knowledge.

The contractor shall have to deploy the following minimum manpower during the period of contract

S. No.	Details	Category	Nos.	Qualification	Experience
<b>General Shift</b>					
1	Supervisor	Min. Graduate and above	1	3 years Diploma in R&A/C/Mechanical/Electrical or 2 years ITI in R&A/C/Electrician	3 years for Diploma qualified 8 years for ITI qualified In Utilities or relevant
2	Senior Mechanic	Graduate and above	1	2 years ITI in pump mechanic/fitter/electrician	6 years in servicing & overhauling of pumps, panels or relevant
3	STP Operator Cum Technician	Skilled	1	2 years ITI in pump mechanic/electrician/fitter	3 years in STP/utilities or relevant
4	Plumber	Skilled	1	2 years ITI in plumbing	3 years in plumbing or relevant
5	Helper	Un-skilled	2	10 <sup>th</sup> class	2 years in technical field
<b>Shifts</b>					
6	Operator	Skilled	6	2 years ITI in R&A/C/pump mechanic/fitter/electrician	3 years in utilities or relevant
7	Operator (Reliever)	Skilled	1	-Do-	-Do-
8	Helper	Un-skilled	3	10 <sup>th</sup> class	2 years in technical field
9	Helper (Reliever)	Un-skilled	1	-Do-	-Do-

i) All the manpower should be got approved by IUAC before deployment at site. Documentary evidence of qualification and experience has to be furnished before deployment of manpower.

ii) Please note that category chosen for Supervisor and Senior Mechanic is only for wages purpose. Qualification and experience will be as per S. No. 1&2 of item#8.

iii) There should be three (3) shifts in a day equally spaced. Each shift should be manned by minimum Two Operators and One Helper for Water System Ph-1,2&3 and Sewage



Treatment Plant (STP). Reliever Helper will relieve shift helpers and work in general shift for rest of the days. General shift should be manned by minimum One Supervisor, One Senior Mechanic, One STP Operator Cum Technician, One Plumber and Two Helpers. Deployment of manpower to various plants and areas is depending upon the need and requirement. All the manpower including operators and helpers should be ready to work at any plant/area of the subjected work.

iii) Contractor may have to deploy additional maintenance gang depending upon the requirement, which should be geared-up for 24 hours breakdown maintenance works, in-addition to minimum manpower as mentioned above without any extra cost to IUAC.

## 9. Deductions / Penalty:

i) Wage will be deducted for each unattended duty in General shift duty. If employee is absent for more than 2 days, contractor should immediately make an alternative arrangement. Shift duties should never be left un-attended under any circumstances and the operator/helper has to continue the duty till the arrival of reliever.

ii) If the maintenance activities are not carried out as per the response time indicated in the Annexure-XI, suitable deductions on proportionate basis will be made from contractor's bills and the Centre reserves the right to determine the amount in question.

iii) If the breakdown activities (interruption in the plant operation) are not attended to on emergency basis, deductions at our discretion will be affected from contractor's bills instead of response time indicated in the Annexure - XI.

iv) The Centre reserves the right to get the preventive/breakdown maintenance works done by some other source if the contractor is not attending to the same. In such cases, the cost involved, overheads + penalty for the same will be debited from contractor's bills.

v) In case of non-availability of sufficient consumables/tools/instruments, contractor's site Supervisor shall be given a time of 24 hours to arrange the same. If contractor fails to comply, IUAC shall arrange the same on its own and recover expenditure from the contractor along with 10% departmental charges.

10. **Consumables:** Supply of all consumable items (as per Annexure-X) is required for day to day operation and maintenance work. They are deemed to be included in contractor's scope and to be quoted separately in item no.5 of Annexure – XII.

11. The contractor will provide all necessary tools, fixtures, equipments, measuring instruments (as per Annexure-IX) or if any extra required for smooth operation and maintenance work. Safe custody of all such T&P will be contractor's sole responsibility. They are deemed to be included in contractor's scope and to be quoted separately in item no.6 of Annexure – XII.

12. The contractor will provide one pair of **Safety Shoes** of Liberty make Art. No. 7198-01 (N) /Bata/Action or equivalent make to each of the employee deployed at site including one pair of socks. The make/model no. of shoes should be got approved by us before procurement of the same. In the event of extension of contract after first year, fresh pair of

safety shoes to be provided to each employee deployed at site. They are deemed to be included in contractor's scope and to be quoted separately in item no.6 of Annexure – XII.

13. The contractor will provide 2 pairs of uniform to each of the employee deployed at site including stitching charges and 1 full Sweater for winter. The quality/colour of the uniform should be got approved by us before procurement of the same. In the event of extension of contract after first year, fresh pair of uniform (2 pairs) and 1 sweater to be provided to each employee deployed at site. They are deemed to be included in contractor's scope and to be quoted separately in item no.6 of Annexure – XII.
14. The work shall be carried out as per the norms set by the manufacturer of respective equipment, specification and specific instructions as may be issued by the IUAC's representative responsible for work from time to time.
15. Contractor should depute a qualified supervisor dedicated for this site, who will co-ordinate work execution activities and interact with IUAC representative responsible for supervision of work.
16. Watch and Ward of entire Water System Ph-I,II&III and STP installation till the system is taken back by IUAC shall be the sole responsibility of the contractor and pilferage, if any, shall be entirely to his account.
17. This contract is **TECHNICAL IN NATURE AND NOT A LABOUR SUPPLY CONTRACT**. Therefore managing all the affairs of the Water System, STP and the associated sub-systems in a responsible and dedicated manner will be entirely the responsibility of the bidder who is awarded the works. Contractor cannot take the plea of minimum manpower deployed at site and escape from the overall responsibility. If necessary, contractor has to depute additional manpower for preventive/breakdown maintenance activities without any extra cost to IUAC.
18. The contract will be initially awarded for one year period. However, the contract may be renewed for successive years depending upon the performance in previous year and by mutual agreement. There is no binding on Centre to renew the contract after first year.
19. The successful bidder should depute two responsible people one week before actually taking over the system to get acquainted with the system without any extra cost to Centre.

## ANNEXURE - II

### SCOPE OF WORK (WATER SYSTEM Ph-I):

The following scope of work is only indicative and contractor is strongly advised to use his own judgement in evaluating the quantum of work involved in Round the clock Operation and Maintenance of Potable Water Systems, Processed water Systems, Lab Cooling Water Systems, Horticulture Water Systems for the laboratory and Housing Complex besides the 25 acre estate etc., The bidder is strongly advised to understand the criticality of the application and the importance of maintaining more than 95% of uptime of the systems.

1. To operate the Water System of Phase-I complete with equipments as per Annexure - III round the clock throughout the year (365 days of the year with three shift operation). The water system comprises of potable water system complete including utility building-I, lab complex, hostel block, flatlet blocks, hostel, dining hall, auditorium, residential complex consisting of 4 flats of Type VI (Parijat), 12 flats of Type V (Kalpataru), 12 flats of Type IV (Kamadhenu) and 8 flats of Type II (Sumeru) etc., Processed water system no. 1 and system no. 2 circulating controlled temperature of 20 degree centigrade water and of desired water quality, lab cooling water supply system, horticulture water supply system (approximately 4000 meters in length) spread over a campus area of 25 acres and other associated sub-systems. (Kindly note that operation of potable water supply system and the horticulture water supply system is tricky due to elevation differences of the campus terrain and the same involves manipulation of valves and a considerable effort on the part of the operators).
2. To operate/maintain 200 Lts./hr Reverse Osmosis (RO) plant. However, this plant is under AMC with OEM.
3. To manually fill RO treated water daily by carrying in jerry cans from the plant room I (EL.254m.) to tower block (EL298.6m) as and when required so as to keep the SS Tank on EL 298.6 always full of water.
4. To check and clean all electrical controls monthly by using CTC by an Electrician. To tighten all electrical controls and rectification of the same as and when required including all panel work, cabling work, fresh cable terminations in-case of burning of the same etc.,

5. To check and clean water strainers etc., monthly or less depending on the requirement.
6. To check the performance of operational safeties and replace if necessary.
7. To check and clean (descale) heat exchangers as and when required but at least once in six months (the chemicals have to be arranged by the contractor at his own cost).
8. To tighten the foundation bolts monthly.
9. To check and rectify rotary equipment alignment once in three months at least or as and when required. The alignment has to be checked and rectified using three dial gauges and precision level and by fabricating suitable rigid alignment fixtures. The fixtures and the measuring instruments have to be furnished by the contractor and the alignment accuracy has to be + and - 0.05 mm on the radial and axial and level should be within ½ degree.
10. To check and replace the bearings and other spares in all the machines as and when required as per the preset preventive maintenance schedule. The preventive maintenance schedule has to be furnished by the contractor on award of the works and has to be duly concurred and approved by the concerned engineer-in charge.
11. To attend to repairs on the mechanical equipment such as pump-sets, piping, centrifugal pumps, submersible pumps, monobloc pumps, valves etc., including minor and major overhauling.
12. To lubricate motor/pumps, bearings as and when necessary and not later than at least once in three months.
13. To check electrical circuits and rectify the same by a qualified electrician as and when necessary. To clean and tighten all the electrical points.
14. To check holding (valve passing) of all valves (approx. 400 nos.) in the system and descale them as and when required (descaling chemicals have to be arranged by the contractor).
15. To check and top-up / replace lubrication oil from the pump sump.
16. To attend to GI/MS/SS pipe leakages by threading/tightening/welding. Welder and welding machine should be arranged in a short notice of 2-4 hours depending upon the urgency of work involved.
17. To cut appropriate size gaskets from sheets as and when required.
18. To ensure adequate water level in all the tanks in all the overhead/underground systems as mentioned in item no.1.
19. To operate the DJB water valve as and when required. To draw DJB water into the IUAC underground RCC reservoir and keep a record of daily water drawn. To supply DJB water to housing as per the timings decided by Engineer-in-charge.

20. To clean / flush / disinfect all housing and lab sintex tanks and RCC tanks once in three months. Underground raw water RCC tanks should be cleaned once in six months.
21. To provide and operate additional water connections to the different labs / beam lines and beam hall etc.,
22. To clean the Y strainers, coils and associate piping of all magnets, quadrapole, power supplies inside the lab block, beam hall, vault area and the tower block and to descale the same as and when required.
23. To operate the raw water pumps to feed the raw water during the softener regeneration, expansion tank filling and cooling tower tank filling.
24. To attend to the plumbing complaints related to fresh water in the housing, lab block, hostel, guest house, flatlet-I&II, dining hall, auditorium etc. To clear the choking in GI piping by using pressure pump or by any other means. Pressure pump has to be arranged by the contractor.
25. To attend to the plumbing complaints related to RO Water Purifiers / water coolers.
26. To attend to minor extension of the GI pipe lines up to 2 1/2" diameter on a single work not exceeding 18 meters.
27. To replace the Borewell pumps as and when required by lifting the entire piping length and putting back including the recommissioning of the borewell pump. The tripod and chain pulley block, slings, shackles etc., for the same have to be arranged by the contractor free of any cost to IUAC.
28. To empty the horticulture water tanks of all the water. These water tanks house treated sewage water and the tanks have to be organised to be emptied only on the Saturday night or early hours of Sunday. The tanks have to be cleaned off all the muck. In the process the foot valves of all the pumps also have to be cleaned. It should be done in all the Sundays of the month and each of four tanks should be cleaned at least once in a month but as and when required. The muck thus cleaned has to be dispensed in suitable location outside the campus. **Please note that use of manual labour for the above is strictly prohibited as per Govt. guide lines and it should be done by Mechanised cleaning only.**
29. To properly clean all equipments and machines daily.
30. To do maintenance on all water lines including attending to leakages by threading / tightening /welding.
31. To operate and maintain 2 nos. submersible sewage pumps/monobloc pumps situated near Borewell#5 along with electrical panels, control systems, valves, piping etc.,
32. To manually fill RO treated water daily by carrying in jerry cans from plant room phase I (RO plant) to various portable closed-loop cooling systems situated at various locations in the lab building.

33. To attend to repairs on monobloc pump sets used in portable closed-loop cooling systems.
34. To attend to repairs on motors & monobloc pump sets installed in high vacuum furnace and SPL laboratories.
35. To attend to the servicing and maintenance of Electro-Pneumatic valves used in GDA & INGA LN2 Auto filling systems. Also to help in piping and plumbing works connected to the above systems.
36. To get the spares issued from IUAC stores and to help in maintaining spares inventory
37. To maintain log books in each shift to be provided by IUAC.
38. For the above scope of work IUAC will provide the following free of any charges to the contractor.
  - a) Free water and electricity for operation of the plant.
  - b) All spares required to maintain the plant and those that are going permanently into the installation.
  - c) IUAC will pay for additional charges for machining jobs, workshop repairs, and motor burnouts as and when necessary.
  - d) IUAC will provide gate passes to the contractor personnel. However, for the lost passes etc., general terms and conditions of IUAC may be referred to.

**ANNEXURE - III**

**DETAILS OF EQUIPMENT COVERED UNDER SCOPE OF WORK (ANNEXURE - II)**

<b>S.No.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1.	Khimline make CC-80-200 model <b>Raw Water</b> Pumps Q-36 CMH H-45 M, RPM-2900 with GEC make 11 KW/15 HP Motor	02
2.	Kirloskar make DB/50/20 model <b>Raw Water</b> Pump Q-10 l/s H-45 M, RPM-2900 with GEC make 11 KW/15 HP Motor	01
3.	Khimline make CC-40-200 model <b>Lab Cooling Water Supply</b> Pumps Q-10 CMH, H-40 M, RPM-2900 with GEC make 3.7 KW/5 HP Motor	02
4.	Khimline make CC-40-160 model <b>Lab Cooling Water Return</b> Pumps Q-10 CMH, H-25M, RPM-2900 with GEC make 2.2 KW/3 HP Motor	02
5.	Khimline make CC-40-250-06 model <b>Accelerator Cooling Water</b> Pumps Q-15 CMH, H-70M, RPM-2900 with GEC make 9.3 KW/12.5 HP Motor	02
6.	Khimline make CC-40-200-05 model <b>Accelerator Cooling Water</b> Pumps Q-5 CMH, H-45M, RPM-2900 with GEC make 3.7 KW/5 HP Motor	02
7.	Monobloc Beacon Weir 1-1/2 DM, 8HD, 3HP Sewage Water Pumps	03
8.	Monobloc Beacon Weir 1-1/2 DM, DMB, 5HP Sewage Water Pumps	08
9.	Monobloc Crompton 1 HP De-ionised Water Pump	02
10.	Monobloc 0.25 H.P Water pump Sharp make	06

11.	Monobloc 0.50 H.P Water pump Sharp make	06
12.	Closed-loop cooling systems with pump and piping	09
13.	Processed Water SS Piping with associated valves in Beamhall, Vault, EL 256m. etc.,	Lot
14.	Processed Water SS Piping with associated valves in Ion Source Room	Lot
15.	Raw Water ( Potable Water ) piping of approximately length 1800 meters with associated valves	Lot
16.	Gardening Water tanks of different capacities	06
17.	Sewage treated horticulture water hydrants and distribution Piping of approximate length 4000 meters from the sewage treated horticulture water tanks to the hydrants with associated valves and fittings	Lot
18.	Monobloc Beacon Weir Booster Pump for Ion-source Potable Water, 5 HP	01
19.	RO plant of 200 Lts./hr capacity along with sub systems	01
20.	Submersible Sewage Pumps of 3H.P, 415 V,15 CMH, 9M Head along with electrical panels, pipes etc.,	02
21.	Heat Exchangers to cater to approximately 117 TR	02
22.	Kent make RO Water Filters piping	Lot
23.	Control circuit consisting of 3 way valve, modulating Motor and controller to control processed water temperature of 20 Deg. Centigrade	02
24.	Borewells of approximate 400 feet depth comprising of 3 HP and 6 HP submersible pumps with associated control panels, water meter, NRV, piping, submersible cable, wire rope sling etc.,	02
25.	Borewells of approximate 200 feet depth comprising of 3 HP submersible pumps with associated control panels, water meter, NRV, piping, submersible cable, wire rope sling etc.,	02
26.	Borewells of approximate 200 feet depth comprising of 5 HP submersible pumps with associated control	



	panels, water meter, NRV, piping, submersible cable, wire rope sling etc.,	02
27.	DJB water line 4 inch of approximate 75 meter length with associated valves, water meter etc.,	Lot
28.	RCC potable water storage tanks with associated valves, Drain lines, float valves, level indicators, level switches etc.,	
	Raw Water Tank - 181 cum	02
	Lab Building - 65 cum	01
	Utility Building - 22.5 cum	01
	Dining Hall - 10 cum	01
	Flatlet#1 - 3 cum	03
	Flatlet#2 - 3 cum	03
	Horticulture Tanks - 9 cum	06
	Parijat - 5 cum	04
	Kalpataru Block - 5 cum	03
	Kamadhenu Block - 5 cum	03
	SS tanks - 1.5 cum	02
	Sintex Tank - 500 Litre	14
	Sintex Tank - 1000 Litre	36
	Sintex Tank – 5000 Litre	05
	Sintex Tank-3000 Litre	01
29.	Magnets	17
30.	Quadrapoles	12
31.	Power Supplies	15
32.	Motor Control Centre designated as MCC-I, MCC-II, MCC-III and MCC-IV	04
33.	Motor Control Centres for Borewell Pumps	06

34.	Motor Control Centres for Horticulture Water Pumps	06
35.	High Vacuum Furnace Cooling Tower Motor KW-5.5, HP-7.5 RPM-1425, 415 V, Alstom Make	01
36.	Fume hood blower Motor H.P-7.5, 1450 RPM, Bindustan make	01
37.	Monobloc Water pumps Type KDS 538+, HP-5, KW-3.7 RPM-2870, Kirloskar Make for High Vacuum Furnace	02
38.	Monobloc Water pump Minimaster-II, HP-0.5 RPM-2870, Crompton Make for High Vacuum Furnace	01
39.	All internal and external water piping and associated valves in residential housing, flatlets (24 nos.), hostel (12 nos.), dining hall and lab complex etc.,	Lot
40.	Any other equipment connected with Water System Ph-I	Lot

(Any minor modification/addition of equipments during the contract period to be maintained in the same cost till it does not involve additional manpower)

**SCOPE OF WORK (WATER SYSTEM Ph-II&III):**

The following scope of work is only indicative and contractor is strongly advised to use his own judgement in evaluating the quantum of work involved in Operation and Maintenance of Potable water systems, soft water systems, Liquid Helium Cooling water systems, Lab Cooling Water Systems (3 nos.), Horticulture water systems for the laboratory etc., The bidder is strongly advised to understand the criticality of the application and the importance of maintaining more than 95% uptime of the system.

1. To operate the Water System of Phase-II&III complete with equipments as per Annexure - V, round the clock throughout the year (365 days of the year with three shift operation). The water system comprises of potable water system complete including utility building-II&III, 24 flats of Type IV (Kamadhenu), 16 flats of Type II (Sumeru II) and 16 flats of Type II (Sumeru III), new guest house consisting of 30 rooms, Liquid Helium Cooling water system of approx. 400TR cooling capacity, Lab Cooling Water System of approx. 115TR cooling capacity in Ph-II, Lab Cooling Water System of approx. 80TR cooling capacity in Ph-3, Lab Cooling Water System of approx. ~300TR cooling capacity in Beamhall#III circulating a controlled temperature of 20 Deg. Cent. and of desired water quality with work areas restricted to Utility Building-II, Liquid Helium Compressor Building, Utility Building#III, LEIB Building, Beamhall#II, Beamhall#III and other associated sub systems etc., (Kindly note that operation of potable water supply system and the horticulture water supply system is tricky due to elevation differences of the campus terrain and the same involves manipulation of valves and a considerable effort on the part of the operators).
2. To fill RO treated water at regular intervals to ensure that the Ph-2 lab cooling water return tank (6 cum) is always full. RO water has to be fed from Ph-1 Water System RO plant by operating monobloc pumps.
3. To fill RO treated water from the plant room -I (EL.254m.) to Beamhall#III as and when required so as to keep the lab cooling water return tank (1.5 cum) is always full of water.
4. To operate/maintain 50 Lts./hr Reverse Osmosis (RO) plant
5. To fill RO treated water at regular intervals to ensure that the lab cooling water return tank (2.5 cum) in Ph-III is always full.
6. To check and clean all electrical controls monthly by using CTC by an Electrician. To tighten all electrical controls and rectification of the same as and when required including all panel work, cabling work, fresh cable terminations in-case of burning of the same etc.,

7. To check and clean water strainers etc., monthly or less depending on the requirement.
8. To check and rectify / replace the performance of operational safeties monthly.
9. To check and clean (descale) heat exchangers as and when required but at least once in six months (the chemicals have to be arranged by the contractor at his own cost).
10. To tighten the foundation bolts monthly.
11. To check and rectify rotary equipment alignment once in three months at least or as and when required. The alignment has to be checked and rectified using three dial gauges and precision level and by fabricating suitable rigid alignment fixtures. The fixtures and the measuring instruments have to be furnished by the contractor and the alignment accuracy has to be + and - 0.05 mm on the radial and axial and level should be within ½ degree.
12. To check and replace the bearings and other spares in all the machines as and when required as per the preset preventive maintenance schedule. The preventive maintenance schedule has to be furnished by the contractor on award of the works and has to be duly concurred and approved by the concerned engineer-in charge.
13. To attend to repairs on the mechanical equipment such as pump-sets, piping, centrifugal pumps, submersible pumps, monobloc pumps, valves etc., including minor and major overhauling.
14. To lubricate motor/pumps, bearings as and when necessary and not later than at least once in three months.
15. To check electrical circuits and rectify the same by a qualified electrician as and when necessary. To clean and tighten all the electrical points.
16. To check holding (valve passing) of all valves in the system and descale them as and when required (descaling chemicals have to be arranged by the contractor).
17. To check and top-up / replace lubrication oil from the pump sump.
18. To attend to GI/MS/SS pipe leakages by threading/tightening/welding. Welder and welding machine should be arranged in a short notice of 2-4 hours depending upon the urgency of work involved.
19. To cut appropriate size gaskets from sheets as and when required.
20. To ensure adequate water level in all the overhead / underground tanks in all the systems as mentioned in item no. 1.
21. To pump RO treated water to required locations.
22. To operate Raw water Pump to feed the raw water during softener regeneration, expansion tank filling and cooling tower RCC tank filling.

23. To clean / flush / disinfect all housing and lab sintex tanks and RCC tanks once in three months.
24. To provide and operate additional water connections to the different labs / beam lines and beam halls etc.,
25. To clean the Y strainers, coils and associate piping of all magnets, quadrapole, power supplies inside the lab block, beam hall- II, vault area and the tower block and to descale the same as and when required.
26. To attend to the plumbing complaints related to fresh water in the housing, Utility building II, Beamhall – II, Beamhall-III, Pantry, C&D room II, Utility building III, LEIB Building, workshop, new guest house etc., To clear the choking in GI piping by using pressure pump or by any other means. Pressure pump has to be arranged by the contractor.
27. To properly clean all equipments and machines daily.
28. To do maintenance on all water lines including attending to leakages by threading/tightening/welding.
29. To maintain log books in each shift to be provided by IUAC.
30. To attend to minor extension of the GI pipe lines upto 2 1/2” diameter on a single work not exceeding 18 meters.
31. To operate on daily basis and do maintenance at least twice in a month for Electrostatic Scale Inhibitor at inlet to the Helium Compressor Heat Exchangers.
32. To get the spares issued from IUAC stores and to help in maintaining spares inventory
33. For the above scope of work IUAC will provide the following free of any charges to the contractor.
  - a) Free water and electricity for operation of the plant.
  - b) All spares required to maintain the plant and those that are going permanently into the installation.
  - c) IUAC will pay for additional charges for machining jobs, workshop repairs, and motor burnouts as and when necessary.
  - d) IUAC will provide gate passes to the contractor personnel. However, for the lost passes etc., general terms and conditions of IUAC may be referred to.

**DETAILS OF EQUIPMENT COVERED UNDER SCOPE OF WORK (ANNEXURE - IV)**

<b>S.No.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1.	Kirloskar make KPD-32/26 model <b>Lab Cooling Water Supply</b> Pumps Q-3.89 l/s, H-70 M, RPM-2900 with Kirloskar make 11 KW/15 HP Motor	03
2.	Kirloskar make KPD-50/32 model <b>Liquid Helium Cooling Water</b> Pumps Q-6.67 l/s, H-23 M, RPM-1450 with Kirloskar make 5.5 KW/7.5 HP Motor	03
3.	Kirloskar make CPHM-32/26 model <b>Lab Cooling Water Supply</b> Pumps Q-18 CMH, H-100 M, RPM-2930 with Kirloskar make frame SC-180M, 22 KW/30 HP Motor	03
4.	Kirloskar make CPHM-40/26 model <b>Lab Cooling Water Supply</b> Pumps Q-27 CMH, H-90 M, RPM-2900 with Kirloskar make frame PM 160 L, 18.5 KW/25 HP Motor	02
5.	Kirloskar make KPD-20/16 model <b>Soft Water Pump</b> with Kirlsokar make 0.37 KW, 0.5 HP Motor	01
6.	Micro finish make <b>Condensate Recovery Pump</b> with 1.5 KW Motor, 2900 rpm	01
7.	RO plant of 50 Lts./hr capacity along with sub systems	01
8.	Lab Cooling Water SS Piping with associated valves and fittings	Lot
9.	Liquid Helium Cooling Water MS Piping with MS valves and fittings	Lot
10.	Potable Water MS & GI Piping with associated valves and fittings	Lot
11.	Soft Water MS Piping with associated valves and fittings	Lot
12.	Non-chemical electrostatic scale inhibitor with associated valves and piping, size 2 ½ inch	02

13.	Monobloc Crompton 1 HP Pumps	02
14.	Heat Exchangers to cater to approximately 115 TR of cooling load	02
15.	Heat Exchangers to cater to approximately 80 TR of cooling load	02
16.	Heat Exchangers to cater to approximately 225 TR of cooling load	01
17.	Control circuit consisting of 3 way valve, modulating Motor and controller to control lab water temperature of 20 Deg. Centigrade in Ph-II	02
18.	Control circuit consisting of 3 way valve, modulating Motor and controller to control lab water temperature of 20 Deg. Centigrade in Ph-III	02
19.	Control circuit consisting of 3 way valve, modulating Motor and controller to control lab water temperature of 20 Deg. Centigrade in Beamhall#III	01
20.	SS tanks - 6 cum	01
	- 2.5 cum	01
	- 1.5 cum	01
21.	RCC potable water storage tanks with associated valves, Drain lines, float valves, level indicators, level switches etc.,	
	RCC Tank - 20 cum	01
	RCC Tank - 6 cum	01
	RCC Tank – 4.5 cum	04
	RCC Tank - 1.5 cum	01
	Kamadhenu II Block RCC Tank- 5 cum	06
	Sumeru II Block RCC Tank- 5 cum	04
	Sintex Tank - 500 Litre	16
	Sintex Tank - 1000 Litre	04
22.	Motor Control Centres	04
23.	Magnets	13
24.	Quadrapoles	22

- |     |  |     |
|-----|--|-----|
| 25. | Power Supplies   | 15  |
| 26. | All internal and external water piping and associated valves in residential housing Ph-II, residential housing Ph-III, new guest house etc., | Lot |
| 27. | Any other equipment connected with Water System Phase- II, III and Beamhall#II&III   | Lot |

(Any minor modification/addition of equipments during the contract period to be maintained in the same cost till it does not involve additional manpower)



**SCOPE OF WORK (150 KLD STP):**

The following scope of work is only indicative and contractor is strongly advised to use his own judgement in evaluating the quantum of work involved in Round the clock Operation and Maintenance of 150 KLD Sewage Treatment Plant (STP).

1. To operate and maintain the 150 KLD Sewage Treatment Plant (STP) complete with equipments as per Annexure - VII round the clock throughout the year. Contractor has to ensure that Sewage Treated Water confirms to parameters as laid down by Delhi Pollution Control Committee (DPCC) or any statutory Govt. body.
2. To check and clean all electrical controls monthly by using CTC by an Electrician. To tighten all electrical controls and rectification of the same as and when required including all panel work, cabling work, fresh cable terminations in-case of burning of the same etc.,
3. To check and clean water strainers/foot valves, Tanks etc., monthly or less depending on the requirement. **Please note that use of manual labour for the above is strictly prohibited as per Govt. guide lines and it should be done by Mechanised cleaning only.**
4. To check and rectify rotary equipment alignment once in three months at least or as and when required.
5. To check and replace the bearings and other spares in all the machines as and when required as per the preset preventive maintenance schedule.
6. To attend to repairs on the mechanical equipment such as pump-sets, piping, centrifugal pumps, submersible pumps, monobloc pumps, air blowers, valves etc., including minor and major overhauling.
7. To lubricate motor/pumps, bearings as and when necessary and not later than at least once in three months.
8. To check electrical circuits and rectify the same by a qualified electrician as and when necessary. To clean and tighten all the electrical points.
9. To ensure adequate water level in all the tanks in all the overhead/underground systems as mentioned in item no.1.
10. For the above scope of work IUAC will provide the following free of any charges to the contractor.
  - a) Free water and electricity for operation of the plant.

b) All spares required to maintain the plant and those that are going permanently into the installation.

## ANNEXURE - VII

### DETAILS OF UNITS / EQUIPMENT COVERED UNDER SCOPE OF WORK (ANNEXURE - VI)

#### CIVIL UNITS:

S.No.	DESCRIPTION	QTY.
1.	Bar Screen Pit of Size 0.3 x 1.3 x 0.3M	01 No.
2.	Oil & Grease Trap of Size 1.3 x 3.5 x 1.2M	01 No.
3.	Equalisation Tank of Size 4.0 x 4.0 x 3.2M	01 No.
4.	Fab Reactors of Size 1.3 x 1.3 x 5.0 M	02 Nos.
5.	Tube Settler of Size 2.8 x 2.2 x 2.7 M	01 No.
6.	Chlorine Contact Tank of Size 1.0 x 2.5 x 1.7 M	01 No.
7.	Filter Feed Tank of Size 1.0 x 2.5 x 1.6 M	01 No.
8.	Treated Water Tank of Size 2.5 x 2.0 x 1.7M	01 No.
9.	Sludge Drying Beds of Size 5.0 x 5.0 M	06 Nos.

#### MECHANICAL UNITS:

10.	HYPO Dosing Tank	01 No.
11.	Fab Feed Pumps	02 Nos.
12.	Filter feed Pumps	02 Nos.
13.	Fab Media	01 Lot
14.	Tube Settler media	01 Lot
15.	Air Grid for equalisation tank	01 Lot
16.	Air Grid for fab reactors	01 Lot
17.	Bar Screen	01 No.
18.	V-Notch Plate	01 No.

19.	Dual Media Filter	01 No.
20.	Activated Carbon Filter	01 No.
21.	Trough Weir	01 No.
22.	Constant Head Box	01 No.
23.	Distribution Board	01 No.
24.	ICPW	01 Lot
25.	Any other equipment connected with STP	01 Lot

(Any minor modification/addition of equipments during the contract period to be maintained in the same cost till it does not involve additional manpower)

**LIST OF BUILDINGS COVERED IN THE SCOPE OF WORK**

**LABORATORY/ OFFICE COMPLEX /HOUSING BUILDINGS**

1. Utility building-I
2. Utility building-II
3. Utility building-III
4. Auditorium
5. Engineering building
6. LEIBF
7. PARAS in Engineering building hall
8. LHe Compressor room
9. Beamhall#I, II & III
10. C&D room and Cryo generator room
11. Garage, Hostels, Dining Hall, Guest Houses
12. Flatlet#I&II
13. Ph-1 Housing
14. Ph-2 Housing

**ANNEXURE – IX**

**LIST OF TOOLS, EQUIPMENTS, MEASURING INSTRUMENTS**

1. Ring Spanner (6-32 mm)	1 Set of 12
2. Ring Spanner (1/4" - 1 1/4" inch)	1 Set of 12
3. Box Spanner (6 – 36 mm)	1 Set of 19
4. Box Spanner (1/4" – 1 1/4")	1 Set of 19
5. Double open end Spanners (6-36 mm)	1 Set of 12
6. Double open end Spanners (1/4"-1 1/4")	1 Set of 12
7. Pipe Vice	1 No.
8. Die set (3/8" to 2" BSP) with handle etc.,	1 Set
9. Tap set (3/8" to 2" BSP) with handle etc.,	1 Set
10. Screw Driver Set (6" to 12")	1 Set of 6
11. Screw Driver (18")	1 No.
12. Adjustable Wrench (6", 12")	1 each
13. Pipe Wrench (6, 12", 18", 24", 36")	1 each
14. Chain Pipe Wrench	1 No.
15. Measuring tape (3met, 15 met.)	1 each
16. Allen key set (1.5 – 16 mm)	1 lot
17. Allen key set (1/16"-1/2")	1 lot
18. Digital Thermometer	1 No.
19. Cutting Plier (8")	1 No.
20. Monkey Plier	1 No.
21. Circlip Plier In & Out	1 Each
22. Scissors	1 No.
23. Tin Cutter	1 No.
24. Hand Hammer 1kg	1 No.
25. Hand Hammer 500 Grams	1 No.
26. Mallet Hammer 500 Grams	1 No.
27. Hack Saw	2 No.
28. Multi Meter/Tong tester (standard make)	1 No.
29. Test Lamp	1 No.
30. Dial Indicator (Range 0.01-10 mm), 2" dial Mitutoyo make	2 Nos.
31. Dial Indicator (Range 0.01-5 mm), 1" dial Mitutoyo make	1 No.
32. Feeler Gauge (SS)	1 No.
33. Bearing puller	1 No.
34. Pulley puller	1 No.
35. Electric blower for cleaning	1 No.
36. Line Tester	2 Nos.
37. File (round, flat, half circle, triangle)	1 each
38. Chisel	1 No.
39. Electrical sleeve insulated Screw driver set	1 Lot
40. Electrical Wire Cutter	1 No.
41. Chargeable Torch	1 No.
42. Umbrella/ rain coat	2 Nos.
43. Welding Machine, Leads, welding Helmet etc.,	1 lot (On the need basis)
44. Pickaxe (Gainti), Kassi, Spade, Crowbar, Rammer, Basket	1 each (On the need basis)
45. Any other tools / fixtures as may be required for carrying out the work.	1 Lot

Note: The tools/equipments which are required on the need basis should be made available at site in a short notice depending upon the urgency

**LIST OF CONSUMABLES**

1. Insulation tape (R, Y, B, Black)	-	5 eachx4 Nos (stock all the time)
2. Teflon tape	-	10 Nos ( stock all the time)
3. Hacksaw blades	-	10 Nos ( stock all the time)
4. Thread roll	-	1 Pkt. (stock all the time)
5. Safeda	-	½ Kg (stock all the time)
6. M-Seal	-	1 Kg (stock all the time)
7. Cotton dhoti	-	20nos. (stock all the time)
8. CRC	-	2 bottles (stock all the time)
9. Emery paper (rough, fine)	-	6 eachx2 Nos. (stock all the time)
10. Petrol/Diesel for cleaning	-	2 Lts. ( stock all the time)
11. Welding Electrodes, Adore Make	-	1 Pocket (stock all the time)
12. De-scaling Chemical (Scale-2) lit. heat exchangers)	-	On demand (Approx. 120 for de-scaling of
13. Attendance Register	-	1 No.
14. Maintenance/Stock Register	-	1 No.
15. Any other consumables as may be required	-	1 Lot

**RESPONSE TIME**

Kindly note that a minimum of 95% uptime of the system has to be ensured by you. In case of lower performance standard, suitable deductions from the running bills will be made on a proportionate basis.

S.No.	Equipment Fault	Time
<b>1.</b>	<b>Centrifugal Pumps</b>	
1.1	Changing of the pump glands	Same day
1.2	Changing of the coupling	Same day
1.3	Changing of Bearings of pumps	Same day
1.4	Changing of Bearings of motor	Same day
1.5	Alignment of rotating equipments	One day
1.6	Rewinding of the motor	Two days
1.7	Remettalising of the shaft, sleeves etc	Two days
<b>2.</b>	<b>Submersible Pumps</b>	
2.1	Lifting of Submersible Pumps	Same day
2.2	Putting back of the Submersible Pumps	same day
<b>3.</b>	<b>Motor Control Centres</b>	
3.1	Attending to minor Electrical problem	Same day
3.2	Attending to major Electrical problem	Two days
<b>4.</b>	<b>Tanks</b>	
4.1	Cleaning	Same day
<b>5.</b>	<b>Monobloc Pumps</b>	
5.1	Changing of glands, bearings etc.,	Same day
5.2	Complete overhauling	One day
<b>6.</b>	<b>Plumbing complaints</b>	Same day
<b>7.</b>	<b>Cleaning of power supplies, magnets etc.,</b>	<b>Immediately in-case of breakdown</b>
	<b>o</b>	<b>or else same day</b>
<b>8.</b>	<b>Any breakdown complaints related to water system</b>	<b>Immediately</b>

**PRICE BID (PART-B)**

**SCHEDULE OF PRICES FOR OPERATION & MAINTENANCE (TO BE FILLED BY BIDDERS)**

<b>S. No.</b>	<b>Work Details</b>	<b>Monthly Total (in Rs.)</b>
1	<b>Minimum Statutory Wages</b> for Round the Clock Operation and Maintenance of Water System Ph-I,II&III, 150 KLD Sewage Treatment Plant (STP) and associated equipments as per the minimum manpower given below: a) Supervisor – 1 No. (Graduate and above category) b) Senior Mechanic – 1 No. (Graduate and above category) c) Plumber – 1 No. (Skilled category) d) STP Operator Cum Technician–1 No. (Skilled category) e) Operators – 7 Nos. (Skilled category) d) Helpers – 6 Nos. (Un skilled category)	<b>273582</b>
2	Charges towards EPF Amount (12%+1.0% Admn. charges) on item#1	<b>35566</b>
3	Charges towards ESI Amount (4.75%) on item#1	<b>12995</b>
4	Charges for Mechanised cleaning of different capacity Horticulture & STP Water Tanks (6 Nos.), holding Sewage Treated Water (Please note that use of Manual labour is strictly prohibited as per Govt. guide lines).	_____ (to be filled by Bidder)
5	Charges towards Consumables as per clause#10 of Annexure - I	_____ (to be filled by Bidder)
6	Charges towards Tools & Tackles, Safety Shoes & Uniform etc., as per clause no.11,12&13 of Annexure - I	_____ (to be filled by Bidder)
7	Overhead and Profit	_____ (to be filled by Bidder)
8	Total Amount (1+2+3+4+5+6+7)	_____ (to be filled by Bidder) In Words _____

**Notes:**

1. The wages considered in S.No.1 of the above table (Annexure-XII) are based on the prevailing minimum wages fixed by the labour department, Govt. of Delhi applicable as on 01-11-2018. Bidder is required to fill the amount only at S.No. 4,5,6,7 &8 in the above table.
2. If contractor wishes to pay more than the minimum wages to his manpower, he should take this into account in his overhead & profit component.



3. GST will be paid extra to contractor as per Govt. norms.

**(SIGNATURE) :**

**NAME) :**

**(SEAL) :**