# KALINDI COLLEGE

East Patel Nagar, New Delhi – 110 008

Ref:KC/Purchases/RO/2017

#### **Tender Notice**

Dated: 12th January, 2017

Sealed Tender for supply & Installation of RO system 2000 LPH in the College, is invited from the competent vendors, as per the terms and conditions and specification annexed with the tender form.

The tender form may be obtained from the college on any working day, before the last date (02.02.2017) from 10.00 a.m to 04.00 p.m, by paying Rs. 500/- by the way of Demand Draft made in favour of "Principal, Kalindi College." The tender form may also be downloaded from the website <a href="www.kalindi.du.ac.in">www.kalindi.du.ac.in</a>, and the demand draft be enclosed with the quotation. The quotations received without the DD of Rs. 500/- shall not be entertained.

| Name of the Works                        | Supply & Installation of RO system 2000<br>LPH |
|--|--|
| Estimated Cost                           | Rs 4.5 Lakh                                    |
| Time Allowed                             | 30 days  |
| Cost of Tender Form                      | Rs. 500/-                                      |
| Earnest Money                            | Rs. 12,000/-                                   |
| Last Date of Submission the Tender Forms | 02.02.2017 upto 05:00 PM                       |

#### Note:-

- Earnest Money in the form of Demand Draft drawn in favour of the "Principal, Kalindi College" payable at New Delhi, should accompany with the Tender. The tender without earnest money will be rejected.
- 2. Please see terms and conditions and specifications, before quoting the rate.

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**PRINCIPAL** 

## Terms and Conditions for Supply & Installation of RO System:-

#### 1. Eligibility criteria:-

- Vendor must be a registered company in India
- Vendor should have an experience of setting up of the RO plant, preferably in the government/educational institution, and should have executed atleast one such project. *Documentary evidence to be submitted*.
- Tender form may be obtained from the college on any working day, before the last date (02.02.2017) from 10.00 a.m to 04.00 p.m, by paying Rs. 500/- by the way of Demand Draft made in favour of "Principal, Kalindi College." The tender form may also be downloaded from the website <a href="www.kalindi.du.ac.in">www.kalindi.du.ac.in</a>, and the demand draft be enclosed with the quotation. The quotations received without the DD of Rs. 500/- shall not be entertained.

#### 2. Two Bid System Quotation

• Separate Technical Bids and Financial Bids, duly sealed and superscripted 'Quotations for Supply & Installation of RO system in Kalindi College - Technical Bids' and 'Quotations for Supply & Installation of RO system Kalindi College - Financial Bids' shall be submitted as per bid details given. Both the technical and financial bids should then be put into a single envelope superscribing "Quotation for RO Plant installation in Kalindi College" The quotation not submitted in the prescribed format or incomplete is liable for rejection. Kalindi College is not responsible for non receipt of quotation within the specified date and time due to any reason including postal delays or holidays.

#### 3. Envelope I (Technical Bid):

The technical bid should be complete in all respects and should contain all information asked for, *except prices*. The Technical bid should include all components asked for. The format for submission of technical offer is as follows:

- Demand Draft of Rs. 500/-
- Index
- Covering letter
- The Company profile in brief
- Documentary evidence of <u>one major project</u>, executed including completion certificate from where the project has been completed
- Warranty compliance statement
- Technical Bid with Specifications as asked.
- Earnest money (Rs 12,000/-) (Twelve Thousand Only) by draft in favour of "The Principal, Kalindi College."
- Confirmation letter accepting all terms & conditions.
- Deviation statement if any.
- Self attested affidavit on Rs. 50/- stamp paper that the company has not been blacklisted in last 3 years.

#### 4. Envelope II (Financial Bid):-

- O The Financial Bid should give all relevant price information as per specification asked, *including AMC (after the warranty period)*, and must be filled in completely, without any errors, erasures or alteration. The Financial Bid should incorporate costs of the individual items/components/materials and then the total cost, in word and figures.
- Please note that the Financial Bid & Technical Bid should not contradict in any case. Any deviation may result in rejection.

#### 5. Documentation

• The vendor shall furnish, as part of its tender offer, documents establishing the vendor's eligibility to participate in the tender and its qualifications to perform the Contract. The documentary evidence of the vendor's qualifications to perform the Contract shall be on Kalindi College's satisfaction that the vendor is eligible as per the criteria outlined in the Eligibility Criteria mentioned above.

#### 6. Delivery Period:-

The successful vendor should complete the successful commissioning of the entire process of installation of Supply & Installation of RO system within 30 days of receipt of work order, subject to the satisfaction of Kalindi College. In case the work is not completed within the prescribed period (30 days), the EMD and the Security Deposit will be forfeited.

## 7. Earnest Money:-

Technical offer should be accompanied with the demand draft drawn in favour of "The Principal, Kalindi College" for Rs 12,000/- (Twelve Thousand Only) towards earnest money. Any offer received without earnest money will summarily be rejected. No interest shall be paid on the EMD.

#### 8. Security Deposit:-

The successful bidder has to submit a Security Deposit valuing 5% of contract value by way of DD in favour of "Principal, Kalindi College" within 01 week of receipt of notification of award. *The formal contract (work order) will be awarded after receipt of Security Deposit.*. In case the successful bidder doesn't deposit the *Security amount* within the specified time period, the earnest money deposited will be forfeited and no work order shall be issued. The Security Deposit shall be refund to the contractor after 6 months from the date of *Supply & Installation of RO system in the College, in order, without interest.* 

#### 9. Payment Terms:

No advance payment shall be made to the contractor. After successful *Supply & Installation* of *RO system*, the contractor may raise the bill for payment.

#### 10. Offer validity Period

 The offer should hold good for a period of 180 days from the closing date of the tender. Any offer falling short of the validity period is liable for rejection. In case of extension of last date, the validity period of 180 days shall commence from the revised last date.

#### 11. <u>Costs</u>

Cost of the work should be inclusive of all taxes and Statutory levies.

#### 12. Clarification of Offers

 To assist in the scrutiny, evaluation and comparison of offers, Kalindi College may, at its discretion, ask some or all vendors for clarification of their offer. The request for such clarifications and the response will necessarily be in writing. If deemed necessary, the vendor may be required to give presentation on the system offered.

The decision of the Technical committee and Purchase committee shall be final and binding.

#### 13. Technical inspection and Performance Evaluation

 Kalindi College reserves its right to carry out a technical inspection and Performance evaluation (benchmarking) of the offers made by shortlisted Vendors.

#### 14. Verification

• The Kalindi College reserves the right to verify any or all statements made by the vendor in the tender document and to inspect the vendor's facilities, if necessary, to establish to its satisfaction about the vendor's capacity to perform the job.

## 15. No Commitment to Accept Lowest or Any Tender

Kalindi College shall be under no obligation to accept the lowest or any other
offer received in response to this tender notice and shall be entitled to reject any
or all offers including those received late or incomplete offers without assigning
any reason what so ever. Kalindi College Reserves the right to make any changes
in the terms and conditions of the work. Kalindi College will not be obliged to
meet and have discussions with any vendor, and or to listen to any representations.

## 16. Short listing of Vendors

- Kalindi College shall first shortlist the vendors on the basis of Technical Bid.
  Those vendors who technically qualify, their Financial Bids will be opened. The
  College reserves the right to decide whether the equipment's being quoted are as
  per the requirements of the college and are of standard/leading brands in the
  market.
- Kalindi College reserves the right to decide which offer best suits the requirement of the Campus. Further, after opening Financial Bids of the Short listed vendors, if there is a discrepancy between words and figures, the amount indicated in words will prevail.

## 17. Completeness of the contract

The contract will be deemed as incomplete until the Supply & Installation of RO system becomes fully operational. Until then the installation will be termed as incomplete and the warranty period will not commence. The warranty period will commence after installation is complete & defect free and have successfully been operational for one month.

#### 18. Warranty/ Annual Maintenance

- The vendor shall undertake to provide warranty period of **02 years** which will commence 1 month after successful commissioning of **Supply & Installation of RO system &** allied equipment. **Thereafter, AMC shall commence, the same should be quoted in the Technical bid of RO System.** This would cover all equipment and accessories including wires, switches etc. supplied by vendor at the places of installation.
- Any defect /problem noticed during the warranty period will be attended by the supplier within 24 Hrs on receipt of complaint on free of cost basis. In case of malfunction of equipment, the same will be required to be replaced at his own cost.

### 19. Order Cancellation

- Kalindi College also reserves the right to cancel the order in the event of one or more of the following circumstances:
- Delay in initiation of the work beyond 01 week from the date of issue of the work order or non-completion of work beyond a period of 15 days from the date accepted as the date of completion of the work.
- Serious discrepancy in the work being performed/installation being done noticed during inspection by our experts.
- Breach by the vendor of any of the terms and conditions of the tender.
- Any action by the vendor which is in breach of law or un- accepted practices in the commercial transactions.
- If the Vendor goes into liquidation voluntarily or otherwise.

### 20. Resolution of Disputes

• Kalindi College and the vendor shall make every effort to resolve amicably, by direct informal negotiations, any disagreement or dispute arising between them under or in connection with the contract. If after thirty days from the commencement of such informal negotiations, Kalindi College and the Vendor have been unable to resolve amicably a contract dispute; either party may require that the dispute be referred for resolution by formal arbitration. The Vice Chancellor, University of Delhi, shall appoint a sole Arbitrator of the settlement of dispute, who will not be related to the contract and whose decision shall be final and binding to both the parties.

#### 21. Jurisdiction

- The jurisdiction of the courts shall be Delhi
- 22. <u>Income Tax</u> may be deducted at source as per rules



**PRINCIPAL** 

# KALINDI COLLEGE TO BE PRINTED ON THE LETTER HEAD OF THE VENDOR AND DULY SIGNED (ENCLOSED IN SEPARATE ENVELOP)

# **TECHNICAL BID SPECIFICATION**

# TECHNICAL SPECIFICATION OF RO WITH PRE FILTRATION UNIT DESIGNED AT 2000 PPM TDS

Pure Water through RO:- 2000 LPH

| S.No | Item                   | Scope  | Specifications   |
|------|------------------------|--|--|
| •    |                        |  |  |
| 1    | RAW WATER PUMP         | To feed the Dual Media<br>Filter at pressure more<br>than 2.0 bars;<br>which is min. Operating<br>pressure for filter. | a) MOC:CI b)Type: Horizontal Centrifugal c) Flow Rate: 5000LPH d) Head: 35m e) Power Required: 1.5KW f) Electricity: 440V, Three Phase g) Cycle:2900rpm h) Make: CRI/ LUBI/GRUNDFOS/WILO i) Quantity: 1 No   |
| 2    | PRE FILTRATION DMF/MGF | To remove the total suspended solids, dirt, Iron and reduce silt density index which can foul the membranes.           | a) Make: Aventura/Pentair b) Material of Construction: FRP c) Diameter: 18inches d) Height: 65inches e) Testing Pressure: 10kg/cm² f) Opening: Top and bottom g) Quantity: 1 No  MULTIPORT VALVE: Make: PERHAR/Midas, GERMANY a) Material of Construction: Noryl b) Type: Self Operated c) Size: 1.5 inch d) Maximum Flow Rate: 10000LPH e) Working Pressure: 2-4 Bar f) Working: Down- Flow  Media:  Mixed Bed Sand media consisting of the following i. Gravel ii. Pebbles iii. Quartz Sand iv. Anthracite, Coarse Salix Average Porosity 50 micron  Pipelines & Accessories Finolex Pipe of UPVC 10 Bar tested Pressure |

| 3 | Dosing system                  | To dose Antiscalent chemical to prevent scaling on membrane surface and zeroed down the bio fouling.  | a) MOC: PP b) Type: electronic metering Type Diaphragm Pump c) MOC of Diaphragm: Teflon d) Capacity: 0-6 LPH e) Make: Seiko/ E-Dose/Aster f) Qty: 1NO.    Storage Tank ( Client Scope) 1) MOC: PP chemical Grade 2) Capacity: 200 Liters 3) Make: Gang/Syntax 4) Qty: 1No. |  |
|---|--------------------------------|---|--|--|
| 4 | Micron filter                  | To Arrest the fine particles up to 05 microns and to avoid chocking on membrane surface by foreign Particles reduce Silt density index level to acceptable level. | Cartridge Filter & Housing Housing:- FRP  a) Make Pentair/Aqua Pura b) Moc: of Housing :PP c) Length: 20" d) Diameter: 5.5" e) Quantity: 2 Nos.  |  |
|   | Cartridge Filter               |   | <ul> <li>a) Make: K FLO/H2O/MMP</li> <li>b) MOC: Polypropylene sting wound or threaded</li> <li>c) Length:20"</li> <li>d) Diameter:4"</li> <li>e) Quantity:2 Nos</li> <li>f) Micron rating:05,10 Micron</li> </ul>   |  |
| 5 | High pressure<br>pump<br>Scope | To Feed the Reverse Osmosis Membrane at pressure more than the osmotic pressure taking into consideration flux rate, flow and recovery.                           | MOC: Stainless Steel-304  a) Type Vertical Multistage High Pressure b) Flow rate: 8000 liter per hour c) Head: 145 mwc d) Power Required: 5HP-3.75KW e) Electrical: 440V, Three Phase, 50hz f) Cycle: 2900 rpm g) Make: CRI/LUBI/WILO h) Qty: 1 No.                        |  |
| 6 | Ro Membrane                    | To remove the major parts Of TDS Up to 98% by Reverse Osmosis membrane arranged and designed to give adequate flow and recovery                                   | a) Type: Spiral Wounded b) Diameter of membrane :40 Inch c) Length of Membrance:80" d) NO.of Membrane:-4 e) Salt Rejection per membrane:96%-98% f) Make of membrane :CSM/VORNTRON/DOW g) System Recovery-60% h) Membrane flux area:400 Sq. Ft.                             |  |

| _  | D - N4 - 1       | · · · ·                   | -\ MOC FDD   |  |
|----|------------------|---------------------------|--|--|
| 7  | Ro Membrane      | To pack reverse osmosis   | a) MOC: FRP  |  |
|    | Housing          | membrane and Operate      | b) Diameter of pressure vessel: 80"                    |  |
|    |                  | at high pressure up to    | c) Length of pressure vessel:40"                       |  |
|    |                  | 300 PSI                   | d) No.of pressure vessel:4                             |  |
|    |                  |                           | e) No.of membrane per vessel:2                         |  |
|    |                  |                           | f) Make:Aventura/Pentair/Vellathe                      |  |
|    |                  |                           | g) Position: Horizontal series                         |  |
|    |                  |                           | h) Arrays: Double                                      |  |
| 8  | Automatic        | Automatic control panel   | a) Completer starters, Overload relays, and            |  |
|    | Electrical Panel | is provided as a safety   | single phase preventer for pump.                       |  |
|    |                  | measure for the pump &    | b) Voltmeter, Ammeter, MCB's Indicating lights         |  |
|    |                  | other electrical items.   | c) Push Buttons  |  |
|    |                  |                           | d) Rocker Switches for Dozers                          |  |
|    |                  |                           | e) Incomers, Auto Manual Switches                      |  |
|    |                  |                           | f) Automatic Timer with solenoid valve for back        |  |
|    |                  |                           | ,  |  |
|    |                  | \                         | washing & flushing.                                    |  |
| 9  | Instrumentation  | a) Flow meter or Rota     | Rota Meter:  |  |
|    |                  | meter: to measure the     | Qty: 2No.s (Permeate & Reject line)                    |  |
|    |                  | online flow of water      | Range: 4.0 cu.m. per hour                              |  |
|    |                  | b) TDS meter: To          | Make: MMP/FLOW STAR                                    |  |
|    |                  | measure the online        |  |  |
|    |                  | TDS of water              | Digital TDS Meter:                                     |  |
|    |                  | c) Low pressure Switch:   | Qty: 1 No. (Permeate Line)                             |  |
|    |                  | To protect RO pump        | Range 0-500PPm   |  |
|    |                  | from dry running.         | Optional Features:                                     |  |
|    |                  | d) High pressure Switch:  | Make: Aster/Vats, India                                |  |
|    |                  | To Protect RO pump        | Pressure Switch  |  |
|    |                  | form back pressure.       | Qty: 2Nos. (Low & High)                                |  |
|    |                  | ,                         | Range: 0-450 psi                                       |  |
|    |                  | e)Pressure Gauges: for    | Make: Indfos, India                                    |  |
|    |                  | calculate P for each unit | Pressure Gauge:  |  |
|    |                  | in RO system              |  |  |
|    |                  | 1.0 3,360111              | Qty:4 No.  |  |
|    |                  |                           | Range:0-21bar  |  |
|    |                  |                           | Dial Gauge: 6 inches                                   |  |
|    |                  |                           | Type: Bourdon  |  |
|    |                  |                           | Make: Mass/Guru, India                                 |  |
| 10 | Plumbing &       |                           | UPVC/FINOLEX   |  |
|    | fitting          |                           |  |  |
| 11 | Automation of    |                           | To provent the entire nume from day supplies by        |  |
| 11 | Automation of    |                           | To prevent the entire pump from dry running by         |  |
|    | plant            |                           | providing the water level controller system in the raw |  |
|    |                  |                           | water tank and product water tank which will           |  |
|    |                  |                           | automatically shuts down the RO plant if the raw       |  |
|    |                  |                           | water tank is empty or the product water tanks get     |  |
|    |                  |                           | filled. Also provide automatic control panel, solenoid |  |
|    |                  |                           | valve & timer switches for fully automatic operation   |  |
|    |                  |                           | of the plant.  |  |
|    | •                |                           |  |  |

|    |   | <ul> <li>a) Water level Controller: 1 Nos.</li> <li>b) Solenoid valve</li> <li>c) Auto Timing System</li> <li>d) Automatic Control Panel/ Manually Operated</li> <li>e) Electrical wiring: 1 Lott</li> </ul> |
|----|---|--|
| 12 | SKID/ Mounting<br>Frame                           | <br>a) System will be mounted on channel Frame made of SS  |
| 13 | Auto Flushing<br>System                           | <br>One: CRI PUMP  |
| 14 | Online<br>magnetic<br>softener cum<br>conditioner |  |

Signature of the vendor With seal

<sup>&</sup>quot;I HEREBY CERTIFY TO ACCEPT THE ABOVE TECHNICAL SPECIFICATION FOR SUPPLY & INSTALLATION OF RO SYSTEM IN THE KALINDI COLLEGE (UNIVERSITY OF DELHI), EAST PATEL NAGAR, NEW DELHI-110085"

<sup>&</sup>quot;I FURTHER CERTIFY TO PROVIDE THE ABOVE INSTALLATION COVERING A WARRANTY PERIOD OF 2 YEARS."

# TO BE PRINTED ON THE LETTER HEAD OF THE VENDOR AND DULY SIGNED (ENCLOSED IN SEPARATE ENVELOP) KALINDI COLLEGE

# FINANCIAL BID DOCUMENT

# RO SYSTEM WITH PRE FILTRATION UNIT DESIGNED AT 2000PPM TDS

Pure Water through RO:- 2000 LPH

| S.No. | Item           | Scope                   | Specifications                              | Rate |
|-------|----------------|-------------------------|---|------|
| 1     | RAW WATER      | To feed the Dual Media  | a) MOC:CI                                   |      |
|       | PUMP           | Filter at pressure more | b)Type: Horizontal Centrifugal              |      |
|       |                | than 2.0 bars;          | c) Flow Rate: 5000LPH                       |      |
|       |                | which is min. Operating | d) Head: 35m                                |      |
|       |                | pressure for filter.    | e) Power Required: 1.5KW                    |      |
|       |                |                         | f) Electricity: 440V, Three Phase           |      |
|       |                |                         | g) Cycle:2900rpm                            |      |
|       |                |                         | h) Make: CRI/ LUBI/GRUNDFOS/WILO            |      |
|       |                |                         | i) Quantity: 1 No                           |      |
| 2     | PRE FILTRATION | To remove the total     | h) Make: Aventura/Pentair                   |      |
|       | DMF/MGF        | suspended solids, dirt, | i) Material of Construction: FRP            |      |
|       |                | Iron and reduce silt    | j) Diameter: 18inches                       |      |
|       |                | density index which can | k) Height: 65inches                         |      |
|       |                | foul the membranes.     | I) Testing Pressure: 10kg/cm <sup>2</sup>   |      |
|       |                |                         | m) Opening: Top and bottom                  |      |
|       |                |                         | n) Quantity: 1 No                           |      |
|       |                |                         |   |      |
|       |                |                         | MULTIPORT VALVE:                            |      |
|       |                |                         | Make: PERHAR/Midas, GERMANY                 |      |
|       |                |                         | g) Material of Construction: Noryl          |      |
|       |                |                         | h) Type: Self Operated                      |      |
|       |                |                         | i) Size: 1.5 inch                           |      |
|       |                |                         | j) Maximum Flow Rate: 10000LPH              |      |
|       |                |                         | k) Working Pressure: 2-4 Bar                |      |
|       |                |                         | I) Working: Down- Flow                      |      |
|       |                |                         | Media:                                      |      |
|       |                |                         | Mixed Bed Sand media consisting of the      |      |
|       |                |                         | following                                   |      |
|       |                |                         | v. Gravel                                   |      |
|       |                |                         | vi. Pebbles                                 |      |
|       |                |                         | vii. Quartz Sand                            |      |
|       |                |                         | viii. Anthracite, Coarse Salix              |      |
|       |                |                         | Average Porosity 50 micron                  |      |
|       |                |                         | Pipelines & Accessories                     |      |
|       |                |                         | Finolex Pipe of UPVC 10 Bar tested Pressure |      |
|       |                |                         |   |      |

| 3 | Dosing system                  | To dose Antiscalent chemical to prevent scaling on membrane surface and zeroed down the bio fouling.  | g) MOC: PP h) Type: electronic metering Type Diaphragm    Pump i) MOC of Diaphragm : Teflon j) Capacity : 0-6 LPH k) Make: Seiko/ E-Dose/Aster l) Qty: 1NO.    Storage Tank ( Client Scope) 5) MOC: PP chemical Grade 6) Capacity: 200 Liters 7) Make: Gang/Syntax 8) Qty: 1No. |
|---|--------------------------------|---|---|
| 4 | Micron filter                  | To Arrest the fine particles up to 05 microns and to avoid chocking on membrane surface by foreign Particles reduce Silt density index level to acceptable level. | Cartridge Filter & Housing Housing:- FRP f) Make Pentair/Aqua Pura g) Moc: of Housing :PP h) Length: 20" i) Diameter: 5.5" j) Quantity:2 Nos.   |
|   | Cartridge Filter               |   | a) Make: K FLO/H2O/MMP b) MOC: Polypropylene sting wound or threaded c) Length:20" e) Diameter:4" e) Quantity:2 Nos f) Micron rating:05,10 Micron   |
| 5 | High pressure<br>pump<br>Scope | To Feed the Reverse Osmosis Membrane at pressure more than the osmotic pressure taking into consideration flux rate, flow and recovery.                           | i) Type Vertical Multistage High Pressure j) Flow rate: 8000 liter per hour k) Head: 145 mwc l) Power Required: 5HP-3.75KW m) Electrical: 440V, Three Phase, 50hz n) Cycle: 2900 rpm o) Make: CRI/LUBI/WILO p) Qty: 1 No.   |
| 6 | Ro Membrane                    | To remove the major parts Of TDS Up to 98% by Reverse Osmosis membrane arranged and designed to give adequate flow and  | i) Type: Spiral Wounded j) Diameter of membrane :40 Inch k) Length of Membrance:80" l) NO.of Membrane:-4 m) Salt Rejection per membrane:96%-98% n) Make of membrane :CSM/VORNTRON/DOW   |

|    | 1                   | T                         |  |
|----|---------------------|---------------------------|--|
|    |                     | recovery                  | o) System Recovery-60%                         |
|    |                     |                           | p) Membrane flux area:400 Sq. Ft.              |
| 7  | Ro Membrane         | To pack reverse osmosis   | i) MOC: FRP                                    |
|    | Housing             | membrane and Operate      | j) Diameter of pressure vessel: 80"            |
|    |                     | at high pressure up to    | k) Length of pressure vessel:40"               |
|    |                     | 300 PSI                   | l) No.of pressure vessel:4                     |
|    |                     |                           | m) No.of membrane per vessel:2                 |
|    |                     |                           | n) Make:Aventura/Pentair/Vellathe              |
|    |                     |                           | o) Position: Horizontal series                 |
|    |                     |                           | p) Arrays: Double                              |
| 8  | Automatic           | Automatic control panel   | g) Completer starters, Overload relays, and    |
|    | Electrical Panel    | is provided as a safety   | single phase preventer for pump.               |
|    | Licetrical raner    | measure for the pump &    | h) Voltmeter, Ammeter, MCB's Indicating        |
|    |                     | other electrical items.   | lights   |
|    |                     | other electrical items.   | i) Push Buttons                                |
|    |                     |                           |  |
|    |                     |                           | ]  |
|    |                     |                           | k) Incomers, Auto Manual Switches              |
|    |                     |                           | l) Automatic Timer with solenoid valve for     |
|    | la starra satatia a | a) Flavoractor an Bata    | back washing & flushing.                       |
| 9  | Instrumentation     | e) Flow meter or Rota     | Rota Meter:                                    |
|    |                     | meter: to measure the     | Qty: 2No.s (Permeate & Reject line)            |
|    |                     | online flow of water      | Range: 4.0 cu.m. per hour                      |
|    |                     | f) TDS meter: To          | Make: MMP/FLOW STAR                            |
|    |                     | measure the online        |  |
|    |                     | TDS of water              | Digital TDS Meter:                             |
|    |                     | g) Low pressure Switch:   | Qty: 1 No. (Permeate Line)                     |
|    |                     | To protect RO pump        | Range 0-500PPm                                 |
|    |                     | from dry running.         | Optional Features:                             |
|    |                     | h) High pressure Switch:  | Make: Aster/Vats, India                        |
|    |                     | To Protect RO pump        | Pressure Switch                                |
|    |                     | form back pressure.       | Qty: 2Nos. (Low & High)                        |
|    |                     |                           | Range: 0-450 psi                               |
|    |                     | e)Pressure Gauges: for    | Make: Indfos, India                            |
|    |                     | calculate P for each unit | Pressure Gauge:                                |
|    |                     | in RO system              | Qty:4 No.                                      |
|    |                     |                           | Range:0-21bar                                  |
|    |                     |                           | Dial Gauge: 6 inches                           |
|    |                     |                           | Type: Bourdon                                  |
|    |                     |                           | Make: Mass/Guru, India                         |
| 10 | Plumbing &          |                           | UPVC/FINOLEX                                   |
|    | fitting             |                           |  |
| 11 | Automation of       |                           | To prevent the entire pump from dry running by |
|    | plant               |                           | providing the water level controller system in |
|    |                     |                           | the raw water tank and product water tank      |
|    |                     |                           | which will automatically shuts down the RO     |

|    |   | plant if the raw water tank is empty or the product water tanks get filled. Also provide automatic control panel, solenoid valve & timer switches for fully automatic operation of the plant.  f) Water level Controller: 1 Nos.  g) Solenoid valve  h) Auto Timing System  i) Automatic Control Panel/ Manually Operated j) Electrical wiring: 1 Lott |  |
|----|---|--|--|
| 12 | SKID/ Mounting Frame                              | b) System will be mounted on channel Frame made of SS  |  |
| 13 | Auto Flushing<br>System                           | One: CRI PUMP  |  |
| 14 | Online<br>magnetic<br>softener cum<br>conditioner |  |  |

| TOTAL COST (Rs.) | (In Figures) | (In words) |
|------------------|--------------|------------|
|                  |              |            |
|                  |              |            |
| <b>AMC</b> (Rs.) |              |            |

Signature of the vendor With seal