DEPARTMENT OF BIOTECHNOLOGY
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Dr. D. KARUNAGARAN

Professor and Head

Date: 04.11.2016

Ref: BT/RAYA/2016/023/SPL **Dt. 04.11.16** **Due Dt.21.11.16**

1. Quotations are invited in duplicate for the various items shown below/overleaf/ enclosed list.

2. The quotations duly sealed and super scribed on the envelope with the reference No. and due date, should be addressed to the undersigned so as to reach him on or before the due date stipulated above.

3. The quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.

4. If the item is under DGS & D Rate Contract, Rate Contract Number and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the rate contract price. If so, please send copy of the R.C. (Please note that we are not Direct Demanding Officers).

5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for should be submitted free of charges and collected back at the supplier's expenses.

6. Local Firms: Quotations should be for free delivery to this Institute. If quotations are for Ex-Godown, delivery charges should be indicated separately.

7. Firms outside Chennai: Quotations should be for F.O.R Chennai. If F.O.R. Consigner stationer freight charges by passenger train/lorry transport must be indicated. If Ex-Godown, Packing, forwarding and freight charges must be indicated.

8. The rates of Sales/General Taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for Sales/General Taxes will be admitted at any stage and on any ground whatsoever. **The taxes leviable should take into consideration that we are entitled to have**
concessional sales tax applicable to non-government educational institutions run with no profit motive for which a Concession. Sales tax certificates will be issued at the time of final settlement of the bill.

9. Goods should be supplied carriage paid and insured.

10. Goods shall not be supplied without an official supply order.

11. Payment: Every attempt will be made to make payment within 30 days from the date of receipt of bill/acceptance of goods, whichever is later.

Water purification system Specifications

* The system comprise of a single water purification unit containing Pre-treatment with ant scaling agents, reverse osmosis, electro-deionization, ion-exchange and activated carbon technologies and polishing device.

* The water purification and water delivery functions of the water purification system should be separated

* Type II part of the system should contain conductivity monitoring before RO and no softening cartridge before EDI module to reduce recurring costs.

* Mixed bed electro deionization module with auto regeneration by a weak electric current, eliminating the need for chemical regeneration or replacement of DI resin cartridges

* Delivery unit should dispense ultrapure water in two modes easily accessible: variable flow and volumetric dispensing and also 3 dispensers can be accommodated where the same can be used for HPLC & LCMS

* The water system delivery unit should incorporate a fully comprehensive, graphic color LCD display to provide information 1) on system status , 2) routine maintenance, and 3) on alarms for troubleshooting in the event of system malfunction. Graphic icons and operating control values must also be available as standard

* Type II water storage reservoir should be PE with conical bottom and drain valve enabling sanitization

* ultrapure water system built-in resistivity and TOC monitors will be calibrated according to international norms and standards monitor with a 0.5mL Quartz cell and UV lamp which accurately measures TOC online from 1-999ppb which has to pass USP suitability test.

* To ensure on-time reordering of the pre-treatment consumables, the system will have automatic warnings.

* The ultrapure water system should have a 2 years life time built-in UV lamp with emission at 185 and 254 nm wavelengths.

* To prevent deterioration of water quality during periods of non-use, the ultrapure water system will be able to recalculate water to maintain high water quality.

* The system should have a choice of point-of-use final filter options, including a 0.22 micron final filter, a point-of-use ultra filter, and an FDA-registered medical device, to meet individual needs.

Feed Water Specifications

Water Quality : Potable tap water

SDI : < 12

Free Chlorine : upto 3ppm

Conductivity : upto 2000uS/cm

TOC (ppb) : upto 2000

SYSTEM SPECIFICATION	
Pure (Type II) water:	
pure Water (Type 2) Flow Rate (L/hr)	**3 L/HR**
Pure Water Resistivity (MΩ•cm at 25°C)	**> 5 [typically 10 to 15Mohm.cm]**
Microorganisms (cfu/mL) –with Millipak or Biopak end filter on the dispenser	**< 1**
Particulates < 0.22 µm (/ mL) –with Millipak or Biopak end filter on the dispenser	**< 1**
TOC (ppb)	**< 30**
UltraPure (Type I) water:	
Ultrapure Water (Type 1) Flow Rate (L/min)	**0.05 to 2**
Ultrapure Water Resistivity (MΩ·cm at 25°C)	**18.2**
Microorganisms (cfu/mL) –with Millipak or Biopak end filter	**< 1**
Particulates < 0.22 µm (/ mL) –with Millipak or Biopak end filter	**< 1**
Pyrogen Levels (EU/mL) – with Biopak end filter	**<0.001**
RNase Level (ng/mL) – with Biopak end filter	**< 0.01**
DNase Level (pg/µL) – with Biopak end filter	**< 4**
TOC (ppb)	**< 5**

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