TENDER NOTICE

NATIONAL INSTITUTE OF PATHOLOGY – ICMR

(Indian Council of Medical Research)

"Sriramachari Bhawan"

Safdarjang Hospital Campus

Post Box No. 4909, New Delhi-110029

(Tender No.: NIP/Tender Equipment/F-498/2012-2013)

The National Institute of Pathology-ICMR, Sriramachari Bhawan, Safdarjang Hospital Campus, New Delhi, invites Sealed Tender for the Purchase / import of the following items of equipments:

S.No	Name of Equipment
1	Biosafety Hood
2	Vaccum Concentrator
3.	UV Transilluminator
4.	Personal Genomic Sequencer for next generation sequencing application
5.	Flash Gel system
6.	Microplate Illuminator
7.	Microbalance
8.	Microfuge
9.	PCR Machine
10.	Magnetic Stirrer with hot plate
11.	Vortex Mixer
12	pH Meter
13	Shaker
14	SDS Gel Apparatus
15	Horizontal Gel Apparatus
16.	Power Pack
17	Transfer Apparatus
18	Orbital shaker
19	UV Torch
20	Freezer-20 Deg.
21.	Rotospin
22	Dry Bath
23	Water Bath
24	Rocker
25	Table Top Ultracentrifuge
26	Lyophilizer
27	Real Time PCR System
28	2-D Gel Electrophoresis systems with image scanner & 2-D Gel analysis software
29	Motorized Upright Research Microscope with cytogenesis Imaging workstation.
30	Digital slide Scanning Microscope system
31	Horizontal double Door autoclave Unit
32	Illuminator
33	Refrigerated Centrifuge Machine
34	Tissue Homnogenizer
35	Elisa Plate Reader
36	Table Top short spin

The tender documents containing terms and conditions and specifications of items can be obtained from the **Stores Section** (**Room No. 107),** National Institute of Pathology, (ICMR), Sriramachari Bhawan, Safdarjang Hospital Campus, New Delhi on payment of **Rs. 500.00 (non-refundable**) and the Tender Form is also available on **website: www.instpath.gov.in** and www.icmr.nic.in Organization using downloaded tender forms must submit a separate tender fee for **Rs. 500**/- by Demand draft in favour of **Director, National Institute of Pathology, New Delhi** along with the tender. The Tender form will be available from **23.08.2012 to 25.09.2012.** The last date for submission of tender is **27.09.2012 by 4.00 P.M.** **The bid opening date will be 10/10/2012.**

The Director, National Institute of Pathology, New Delhi, reserves the right to reject any or all the tenders without assigning an reasons or to accept them in part or full.

DIRECTOR

National Institute of Pathology-ICMR

NATIONAL INSTITUTE OF PATHOLOGY – ICMR
(Indian Council of Medical Research)
"Sriramachari Bhawan"
Safdarjang Hospital Campus, Post Box No. 4909,
Tender No. NIP/Tender Equipment/F-498/2012-2013

TERMS AND CONDITIONS OF THE TENDER FOR SUPPLY OF LABORATORY EQUIPMENT.

1. The National Institute of Pathology, New Delhi, invites Sealed Tenders for the purchase / import of Laboratory Equipments (as per list enclosed). The bidders may go through the terms and conditions carefully. In case any bidder fails to follow any or more of these conditions, the offer shall be summarily rejected.

2. The number and quantity of equipment is probable and subject to change without any further notice/reason. Notwithstanding the estimate of probable numbers, the Director, National Institute of Pathology, reserves the right to reject any or all the tenders without assigning any reason.

3. **(i) Two bids system shall be followed for all the Equipment.** Technical Bids and Price Bids should be submitted separately. Technical Bid should accompany EMD. Technical Bids and Price Bids will be accepted only from manufacturers of International repute/ or their authorized agents for the supply, installation / commissioning of various equipments.

4. **The tender should accompany EMD as under:**

a. For equipment costing Rupees fifty lakhs and above	Rs. 1,00,000.00
b. For equipment costing Rupees 25,00,001 to 50,00,000/-	Rs. 75,000.00
c. For equipment costing Rupees 10,00,001 to 25,00,000/-	Rs. 40,000.00
d. For equipment costing Rupees 5,00,001 to 10,00,000/-	Rs. 20,000.00
e. For equipment costing Rupees 2,00,001 to 5,00,000/- Rs. 10,000.00	
f. For equipment costing Rupees 50,001 to 2,00,000/-	Rs. 5,000.00
g. Upto 50,000.00	Rs. 2,000.00

The EMD should be submitted alongwith the tender (technical bid) in the form Demand Bank Draft **from a Nationalized Bank** drawn in favour of **'The Director, National Institute of Pathology' payable at New Delhi.** The tender without the EMD will be rejected summarily. No interest is payable on EMD.

5. Each offer should be accompanied by the completed forms, for each item of equipment, which is enclosed herewith. Separate tender along with EMD should be submitted for each item of equipment (duly filled and signed Check list). Clubbed tender / Quotation submitted in single tender form will be rejected. Separate EMD for each equipment should be submitted in separate envelope and superscript on each envelope the name of equipment.

6. The tenders must be clearly written or typed without any cancellations/corrections or overwriting. If there exists a difference in the amount quoted in words and numeric, the lowest of them will be taken as the tender amount.

7. The tenderer should clearly mention whether they are the manufacturer or authorized dealer/ agent of the manufactures. In case of dealership distributorship / agent's latest letter of authorization from the manufacturer should be submitted along with the tender. The tenderer can also enclose the rates on the letter head of the manufacturer, if empowered to do so by manufacturers in writing, in addition to quoting in the tender form.

8. Successful tenderer will have to deposit 10% performance bank guarantee (In INR) at the total cost of the equipment at the time of placing the order which shall be released only after warranty period and which will be treated as guarantee. Letter of credit will be opened only after submission of the performance security. If the firm fails to submit the performance security within 15 days of our order, the order shall be deemed as terminated and the EMD of the firm will be forfeited.

9. Availability of spares, accessories, etc. including facility of servicing of the equipment, if available with the tenderer should be clearly mentioned.

10. A copy of specification, description and available illustrated literature should accompany the tender.

11 The availability of any required technical feature of the quoted equipments should be carefully and authentically answered with valid proof in the form of printed brochures, etc. Any default in this matter will attract rejection of the tender along with forfeiture of corresponding EMD.

12. If the equipment(s) are of Foreign Origin, **CIF, New Delhi** and **FOB Value** should be quoted separately, giving **270 days** validity period for the tender along with other terms and conditions of supply.

(**a**) The imported goods the tenderer submitted should clearly mention the agency commission, separately, failing which tender will be rejected. The agency commission will be paid in Indian Rupees in India after arrival of the goods and satisfactorily installation of the equipment.

(b) Generally no amendments in the terms and condition of Letter of Credit are permitted. If any amendment is required by the firm, the amendment charges of Letter of Credit will be borne by the firm by the firm both side (in or outside India).© The initial Letter of Credit Charges within India will be borne by the Institute at the time of opening of L/C and the outside L/C charges will be borne by the firm/beneficiary.

13. The payment will be released by wire transfer after satisfactorily installation of the equipment as per the specification of the equipment/terms & condition of tender after submission of bank guarantee.

14. All the items of equipment should be warranted **for three years comprehensive and Two years non-comprehensive warranty.** AMC charges for the subsequent five years should be clearly mentioned in the Tender Document clearly.

15. Each tender must contain the rates not only in figures but also in words. The total value of each item should invariably be entered in column specified and the total value of the tender should be mentioned both in Foreign Currency as well as in Indian Currency.

16. Increased statutory levies and duties above the rate quoted in the tender will be borne by the manufacture/tenderer and the Institute shall not extend validity period for this reason and it will not bind the Institute for supplies beyond the date specified in the Order / Tender.

17. No tenderer shall be allowed at any time on any ground whatsoever to revise or modify the rates quoted by them. The tenderer will not be allowed to withdraw the offer quoted. In the event of withdrawal the EMD deposited by the tendered shall be forfeited.

18. The Bidder should ensure that the equipment offered by them meets the specification laid down by the Institute. If at any stage (even after placement of order, shipment, installation, etc.) it is noted that the equipment offered does not meet the specification laid down by Institute, the Director, National Institute of Pathology reserves the right to take any decision with forfeit of EMD. Any dispute in this regard.

19. Concerning any terms and conditions of the tender and on the supply of equipment will be subject to New Delhi Jurisdiction only.

20. Tender should be preferably, typewritten and every correction in the tender should invariably be signed by the tenderer, failing which, the tender is liable to be rejected.

21. The EMD will be returned to unsuccessful tendered only after the tenders are finalized. In case of successful tendere, the EMD will be returned after satisfactorily installation of the equipment with the consent of the Director, NIP.

22. Telegraphic / Conditional tender will not be accepted.

23. The warranty period will start from the date of installation and satisfactory working condition of the equipment.

24. All damaged or unapproved goods shall be returned at supplier's cost and risk and the incidental expenses incurred by the Institute thereon shall be recovered from the supplier. Defective parts in equipments, if found, before installation and during the warranty period, shall be replaced within four weeks on receipt of the intimation from the office at the cost and risk of supplier including all other charges.

25. If the tenderer (s) fail to execute the order(s) within the specified time (quoted in the tender) from the date of receipt of order or as mutually agreed to in writing, the order will be cancelled and EMD will be forfeited by the Institute.

26. The firm or tenderer will not be allowed to change the name of the beneficiary in the irrevocable Letter of Credit or in the wire transfer.

27. If any of the equipment (s), supplied by the tenderer are found to be bad, damaged or defective or inferior in quality and or not in accordance with description / specification or otherwise faulty or unfit for use or unwholesome the price(s) of such equipment(s) shall be recovered from the quoting firm or Indian agent.

28. The Instrument and Software should be installed and tested as per the specification free of charge. Training of two operators and more of the Institute staff as per commitment of the tender is to be provided free of charge.

29. Manufacture's Test Certificate along with conditions and results is to be supplied along with the equipment.

30. The firms clearly should indicate the pre-installation requirements for the equipment in their tender/quotation. If the firm ignores this clause, it will be presumed that the items required at the time of installation for the equipment will be borne by the firm at their own expenses.

31. Supplier should give an undertaking that spare parts will be supplied as and when ordered for a period of ten years from the date of installation.

32. (A) If similar or identical equipment was supplied in other ICMR lab/Institute, the details of such equipment for the preceding 03 years .may also be given together with the price eventually or finally paid

(B) Based on the above information NIOP will have its option to obtain details of the equipment, it's performance, after services etc, for evaluation of the tender, directly from the concerned labs/Scientist etc.

33. The tender has to state in details the Electrical Power/UPS requirements floor Space, head room foundation needed and also to state whether Air-conditioner environment is needed to house the equipment etc. and to run the tests.

34. The equipment should be supplied with manuals and the manuals including technical drawings should be complete in all respects to operate the systems without any problem, If the manuals are on chargeable basis, the same should be specified in the offer.

35. After successful installation what will be the minimum down time of equipment/instrument in case of breakdown must be mentioned. If the identified firm or person fails to put the system into working condition, further alternative course of action should be suggested adhering to minimum down time.

36. If the supplier fails to supply, Install, Commission and Training for the equipment as per specifications mentioned in the order within the due date, the supplier is liable to pay liquidated damages of one percent value of the Purchase order awarded, per every week of delay subject to a maximum of 10% for every week beyond the due date and such money will be deducted from any money due or which may become due to the supplier.

37. Attach a copy of latest DGS&D, New Delhi registration certificate under the compulsory Scheme of Ministry of Finance regarding the registration of Indian Agent of foreign supplier wherever it is applicable.

38. All the items should be delivered within the 120 days after receiving of supply order.

39. Last Date of submission of Tender form is 27.09.2012. The cover (sealed) containing the tender should be **"Superscribed the name of equipment on the top of the Tender Envelope".**

(DIRECTOR)
NATIONAL INSTITUTE OF PATHOLOGY (New Delhi)

I/We agree to abide by all the Terms & conditions mentioned above.

Date: **Signature of the Tenderer**
Name & Address of the Firm with Seal
(Phone/Fax No/Email id may also be stated for easy communication)

Encl.

(i) List of proposed equipments with specification.
(ii) Check List (I) (To be Filled by Bidder)
(iii) Check List (II) (To be Filled by Bidder)

CHECK LIST – I

Demand Draft of E. M. D **(in separate envelope)**	**DD No:_____Dt._____ Rs._____payable at New Delhi**
Technical Bids in separate envelope (Enclosed EMD with Technical Bids)	
Price Bids in separate envelope	
Check List II duly filled in	
Technical Specifications duly filled in	
Certificate of manufacturer's/authorization of agent (s)	
Detailed Literature in original of quoted item attached	
Highlighted the specification in the literature with marker	
Copy of ISO Certification	
AMC Charges for subsequent for Five Years	
Tender Documents purchased (Vide Cash Receipt No.)	**Receipt No:_____Date_____**
Other Documents if any attached	
Attach a copy of latest DGS&D, New Delhi registration certificate	

I have gone through all the terms and conditions and undertake to abide by them. I agree that in case I have not followed any terms and conditions and have provided wrong and misleading information my offer shall be rejected.

Authorized Signatory of the firm (with Seal)

CHECK LIST-II

NAME & DESCRIPTION OF EQUIPMENT _____

1	**Name & Description of Equipment (with make & model)**	
2	**Rate per Unit**	
3	**Excise duty, if any**	
4	**Other Taxes if any**	
5	**FOB Price (if imported)**	
6	**CIF New Delhi if imported**	
7	**Indian Agency Commission**	
8	**Installation charges if any**	
9	**Total Value**	
10	**Three years comprehensive & Two years non-comprehensive warranty**	
11	**AMC charges for sub Five years**	
12	**Pre-Installation requirement of the Equipment. (if any)**	
13	**EMD Details**	**DD No._____Date_____Amount_____** **Drawn on/Branch _____**

Please Note: - **Filling up above Column is Mandatory. Form without Filling of above Detail may be ejected straightway.**

I/We have gone through the terms and conditions of the tender documents and agree to abide by them.

Authorized Signatory of the firm with the Seal

ITEM NO. 01

Technical specifications for Biosafety Hood

Class II Type A2 Bio safety cabinet with HEPA or ULPA filter

S. No.	Specifications	Features Available Yes/No
1.	Energy efficient Class II Type A2 Bio safety cabinet with HEPA or ULPA filter with efficiency of 99.995% at 0.3 µm particle size; Approximate dimensions *Exterior 1500 H x 1300 W x 800 D; * Interior 800 H x 1200 W x 500D.	
2.	Automatic adjustment of the airflow speed, automatic reduction in fan/blower motor speed to 30% when the front window sash is in closed position	
3.	Ventilation System Exhaust and Inflow air volume approx 300-350 CFM Exhaust blower on the cabinet must continue operating when the supply blower stops working. If exhaust blower should fail, the supply filter should turned off	
4.	Microprocessor controller and large LED display on the front panel for inflow and Down flow air velocity in real time and hours of operation, Audible and visual Alarms for HEPA filter failure, blower failure, airflow speed failure, Incorrect window position.	
5.	Encased pressure sensor to detect pressure drop.	
6.	Laminated safety glass front window with 8'' or 10" sash opening Painted or smooth interior and exterior parts. White color coated interior walls. The front of the cabinet must be angled 10º to help minimize glare and comfortable posture.	
7.	Taps for Vacuum, Water and Non Combustible Gas.	
8.	noise level must be less than 65 dB(A)	
9.	The interior of the front window must be accessible for cleaning without requiring the user remove or support the window.	
10.	The cabinet should be provided with fixed / adjustable Height Stand, UV Light and one set of preferably detachable arms rest and one / two electrical outlet.	
11.	NSF or EN certified	
12.	Comprehensive 3 year warranty; 2 year non-comprehensive warranty and 5 years AMC	

Authorized Signatory of the Firm (with Seal)

ITEM NO. 02

Technical Specifications for Vaccum Concentrator

Fully integrated (combines concentrator, pump and cold trap) high performance, refrigerated, microprocessor controlled digital vacuum concentrator system to support the rapid, efficient concentration of aqueous and alcohol solvent.

S.No.	Specifications	Features Available Yes/No
1.	Fully integrated (combines concentrator, pump and cold trap) high performance, refrigerated, microprocessor controlled digital vacuum concentrator system	
2.	A compact unit with dimension not more than (W x D x H) 62 x 66 x 38 cm Standard micro centrifuge rotor (64x1.5x2 ml) and a microplate rotor to hold at least 2 plates.	
3.	Chemical resistant Teflon Coated aluminum Chamber with acrylic lid cover and safety interlock.	
4.	Chamber temperature ambient to 65 ^{o}C with over temperature safety shut off. Smooth rotation speed of ~ 1500 rpm	
5.	Independently programmable heat and Run time with digital timer of 1mins-9 hrs and hold mode for continuous operation	
6.	Cold trap with min 4.0L capacity should have operating temperature of -50o C with accuracy of +1^{o} C. Cold trap glass condensation flask must have device to allow for easy and quick removal of solvents to eliminate the need to wait for defrosting and draining.	
7.	ETFE oil free diaphragm vacuum pump. With min. 30L/min capacity, vacuum level of min <10 Torr (13m bar) for fast and efficient concentrating and freeze drying of samples	
8.	Noise level must be less than <65 db; Power 220-240V; 50Hz	
9.	Suitable stabilizer. Comprehensive 3 year warranty; 2 year non-comprehensive warranty and 5 years AMC	

Authorized Signatory of the Firm (with Seal)

ITEM NO. 02 (A)

Technical specifications for Vacuum Concentrator

S. No.	Specifications	Features available (Yes/No)
1.	Fully integrated (with concentrator, pump and cold trap) high performance, refrigerated, microprocessor-controlled digital vacuum concentrator system to support rapid, efficient concentration of aqueous and acid-containing (TFA) samples, samples with non-aggressive solvents such as acetonitrile (ACN) and aggressive solvents such as acetone.	
	Centrifuge with rotors	
2.	A compact centrifuge unit resistant to acids and aggressive solvents along with standard micro centrifuge rotor (0.5 ml,1.5 ml, 2 ml) and a microplate rotor (96-well) to hold at least 2 plates.	
3.	The chamber should be with lid cover and safety interlock.	
4.	The system should have rotation speed of ~ 1400 rpm with auto start option.	
5.	The system should have chamber temperature of ambient to 65 ^{o}C with over temperature safety shut off.	
6.	Auto/Start option should be available	
	Cold trap	
7.	The cold trap should be resistant to acids and aggressive solvents, should be with min 4.0 L capacity and operating temperature of < -50^{o} C	
8.	The cold trap glass condensation flask must have device to allow for easy and quick removal of solvents	
	Vacuum Pump	
9.	The system should have, ETFE oil free diaphragm vacuum pump.	
10.	The vacuum pump must have min. 30L/min capacity, vacuum level of 9 m bar for fast and efficient concentrating and freeze drying of samples.	
11.	Noise level must be less than <65 db.	
	Others	
	International Regulatory Certification: CE certified	
12.	Power 220-240V/ 50Hz	
13.	Compatible UPS and stabilizer, Onsite Installation and performance demonstration should be provided.	
14.	The system should be with 3 years comprehensive warranty and 2 years non-comprehensive warranty and 5 year AMC after warranty period	

Authorized Signatory of the Firm (with Seal

ITEM NO. 03

Technical Specifications for Transilluminator

Transilluminator with high intensity LED array suitable for visualizing a wide range of dyes like GelGreen, GelRed, SYBR Green, SYBR Gold, SYBR Safe, UltraSafe Blue and ethidium bromide stained DNA gels.

S.No.	Specifications	Features Available Yes/No
1.	Transilluminator with high intensity LED array	
2.	Suitable for visualizing a wide range of dyes like GelGreen, GelRed, SYBR Green, SYBR Gold, SYBR Safe, UltraSafe Blue and ethidium bromide stained DNA gels.	
3.	Uniform < 5% CV (coefficient of variance) and bright excitation at 470nm with variable intensity from 10 to 100%	
4.	Sensitivity: up to 0.1 ng	
5.	LED life: 50,000 hours	
6.	Small foot print not more than 35.0W x 30.0D cm Field of view not less than 6.5X6.5 inch	
7.	Blue light filter shield for the visual observation of the excited gel structure	
8.	Comprehensive 3 year warranty; 2 year non-comprehensive warranty and 5 years AMC	

Authorized Signatory of the Firm (with Seal)

ITEM NO. 03 (A)

Technical Specifications for UV- Transilluminator

S. No.	Specifications	Features available (Yes/No)
1.	UV transilluminator for selection of 365nm, 302nm and 254nm (high/ medium/low) in one compact unit Filter size at least 20 x 25 cm	
2.	A hinged, clear UV blocking cover	
3.	A converter plate for viewing protein gels, coomassie blue stained or silver stained gels	
3.	Power supply- upto 230 V, 50 Hz	
4.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

Authorized Signatory of the Firm (with seal)

ITEM NO. 04

TECHNICAL SPECIFICATION FOR PERSONAL GENOME SEQUENCER FOR NEXT GENERATION SEQUENCING APPLICATION

S/N	Specification of the Equipment	Feature Available Yes/No
1	The System should be a bench top instrument to support various applications like: Targeted Sequencing, RNA sequencing, Deep sequencing, DNA methylation studies, Chromatin Precipitation, Cancer and Parasite SNP and Mutation screening, Genomic sequencing (de novo/ re-sequencing) for parasites and other small pathogens and more advance applications like CHiP seq, mi RNA and small RNA profiling and sequencing.	
2	System should be user friendly with chemistry for varying read lengths from 100 base pairs to 400 base pairs	
3	System should have scalability with throughput of at least 1GB data.	
4	It should also have an option of barcodes for at least 96 sample multiplexing.	
5	System should have more than 10 million qualified reads for Tag counting application	
6	Sequencing run time should be 2 to 4 hrs	
7	Base calling accuracy should be at least Q20 or more	
8	All necessary reagents and ancillary equipments for complete workflow like sample preparation, sequencing, data analysis, library prep. etc should be quoted with main equipment.	
9	The system produce simple and clear report for every sequencing run in HTML and PDF versions for easy viewing and data distribution.	
10	All necessary server support should be a part of the system with necessary data analysis tool. Server should be able to store upto 20 runs; data generated should be in FASTA or equivalent format. Advance data analysis software for DNA and RNA applications, and variant identifiers should be included.	

Contdd…

11	A separate branded PC for advanced data analysis should be quoted along with the system - Latest Processor compatible with the system - 16GB RAM - 3.4 Ghz, 64 bit - 500 GB (for application) - 1 x3 TB for data storage and back up - 21 TFT Monitor	
12	On site dedicated trained person for application and data analysis for 3 years should be provided and quoted separately	
13	Current users list and Track record of installation in other Institutions in India to be provided	
14	Price list for associated consumables and reagents of cancer and parasitology applications should be quoted separately	
15	All consumables and spare parts should be available for at least 10 yrs after installation	
16	**Training, service and application support :** • The Vendor should have a good service and application support back up along with Instruments to provide an effective application related troubleshooting and support • The Vendor should provide comprehensive Training at training centre on the operation of the instrument, Chemistry options and software	
17	**The above features should be supported by product/technical brochures, highlighted on Point-to-point basis.**	
18	**3 years comprehensive and 2 years non-comprehensive warranty and post warranty AMC for 5 years**	

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ITEM NO. 05

TECHNICAL SPECIFICATION FOR FLASH GEL SYSTEM

S.No	Specification of the Equipment	Feature Available Yes/No
1	The system should able to optimize DNA and RNA analysis	
2	The system should also capable of DNA recovery	
3	System should be cassette based so that it doesn't required preparation of gel, buffer, stain, UV light	
4	Complete separation and capture of gel image should be in 5 mins.	
5	Migration and separation of DNA should be in real time	
6	System should able to take photographs of the gels at the bench without the use of harmful UV light	
7	The system should able to recover direct DNA from wells without band excision, purification and UV light	
8	Sample volume : < 5 ul	
9	DNA detection limit : < 0.1 ng	
10	RNA detection limit : < 10 ng	
11	Starter kits for DNA and RNA should be quoted with the main equipment	
12	Power supply : compatible with standard Indian condition	
13	Spare parts should be available for at least 10 yrs after installation	
14	The above features should be supported by product/technical brochures, highlighted on point-to-point basis.	
15	**3 years comprehensive and 2 years non-comprehensive warranty and post warranty AMC for 5 years**	

Authorized Signatory of the firm (With Seal)

ITEM NO. 06

TECHNICAL SPECIFICATION FOR MICROPLATE ILLUMINATOR

S/N	Specification of the Equipment	Feature Available Yes/No
1	System should able to track pipetting of colourless reagents or small liquid volume	
2	It should be 96-well plate format	
3	LED light should be illuminated under specific wells, columns or rows of the microplate	
4	System should able to use either as a single or more units for dispensing into microplate and plate to plate transfer	
5	The sequence of the illuminator should be controlled by board mounted button or by an optional footswitch for hand free operation if both hands are busy	
6	System should be programmable with software to illuminate in rows, columns or individual wells	
7	The software should have facility to label and assign wells as standards or controls and identification of wells, the date, the user name and pipetting sequence should also be able to record	
8	The software should able to select automatically a subset of wells by comparing well reading using Excel Files.	
9.	Power supply : compatible with standard Indian condition	
10.	Spare parts should be available for at least 10 yrs after installation	
11.	The above features should be supported by product/technical brochures, highlighted on point-to-point basis.	
12.	**3 years comprehensive and 2 years non-comprehensive warranty and post warranty AMC for 5 years**	

Authorized Signatory of the Firm (with seal)

ITEM NO. 07

Technical specifications for Micro balance

S. No.	Specifications	Features available (Yes/No)
1.	An electronic semi-micro balance with maximum capacity of around 100 g and Readability of 0.01 mg with pan sitting on the top	
2.	Repeatability ± 0.05 milligrams	
3.	Linearity (mg) ± 0.1 milligrams	
4.	Response Time (avg) 3 seconds	
5.	Minimum weight (acc. to 1%, k=2) should be ≤3 mg	
6.	Tare Range FULL to Capacity	
7.	Selectable Weight Units g, mg	
8.	Selectable Application Programs- Mass unit conversion by toggling, tare memory	
9.	Display- LCD with backlit/HCD	
10.	Ambient Operating Temperature- 0°C to 40°C	
11.	Sensitivity offset 0.3 mg	
12.	Pan Size -weighing pan of atleast ø80 mm	
13.	With RS-232 Interface	
14.	Automatic Time and Temperature controlled Internal Calibration option	
15.	International Regulatory Certification: ISO 9001/ISO 14001/IP54	
16.	**Safety Features:** Protection against dust and water, Over-load protection, Chemical-resistant body, level locking is preferred	
17.	Power supply upto 230V /50 Hz	
18.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

Authorized Signatory of the Firm (With seal)

ITEM NO. 08
Technical specifications for Microfuge

S. No.	Specifications	Features available (Yes/No)
1.	Refrigerated Benchtop centrifugefuge with an aerosol-tight 24 x 1.5/2.0 mL tubes rotor (autoclavable), adapters for 0.6 ml tubes and 0.2 ml tubes and fixed angle rotor for 15 and 50 ml falcon tubes with max speed of 8000 rpm	
2.	Automatic rotor detection	
3.	Speed up to 13,000 rpm or more	
4.	Separate rpm/rcf converter button	
5.	Temperature range: 0 °C to +37 °C	
6.	Maintains constant 4 °C at max. speed	
7.	Noise level should be low <65 dB(A)	
8.	Fast pre-cooling of the centrifuge	
9.	Brushless motor to provide maintenance free drive	
10.	Microprocessor control Acceleration and break time to max rpm of 15 sec. each	
11.	IVD (In vitro diagnostics) and CE Compliance	
12.	Power supply upto 230V/50Hz	
13.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

Authorized signatory of the Firm (with seal)

ITEM NO. 09
Technical specifications for PCR Machine

	Specifications	Features available (Yes/No)
1.	Fast Gradient Thermal Cycler with 96 well. With a block ramp rate of 4 °C/sec	
2.	Gradient range from 30°C – 99°C.	
3.	The system should have a Temp accuracy of +/- 0.2 °C and temp uniformity of +/- 0.4 °C	
4.	The system must support dual block of 48 wells with independent gradient program.	
5.	Should have an option of interchangeable block of 384 well f for high throughput future applications.	
6.	Should have protocol auto writer for easier programming.	
7.	The system must have a touch screen for easy navigation and operation of the system.	
8.	Option for USB should be available for easy transfer of data and option of using the instrument through a PC should be there.	
9.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 10

Technical specifications for Magnetic stirrer with hot plate

S. No.	Item	Features available (Yes/No)
1.	A Magnetic stirrer with hot plate (18x18 cm) made up of ceramic top plate	
2.	Temperature range maintained 50-500°C and should be able to take a load of 10 Kg	
3.	Stirring speed of 100-1200 rpm and should be able to take a load of 5 L during stirring	
4.	Power supply upto 230V /50 Hz	
5.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 11

Technical specifications for Vortex Mixer

S. No.	Item	Features available (Yes/No)
1.	Vortex mixer with speed control, max speed should be 3000 rpm	
2.	Accessories:	
	Spare Cup Attachment	
	Spare One hand attachment	
	Spare One hand insert	
	Spare microtube insert	
3.	Power supply upto 230V /50 Hz	
4.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 12

Technical specifications for pH meter

S. No.	Specifications	Features available (Yes/No)
1.	A pH meter with glass electrode with plastic coating	
2.	pH Range -2.000 to 16.000	
3.	pH Resolution 0.1, 0.01, 0.001	
4.	pH Relative Accuracy ±0.002	
5.	mV Range ±1800.0	
6.	mV Resolution 0.1	
7.	mV Relative Accuracy ±0.2 mV or ±0.05% of reading whichever is greater	
8.	Temperature Range -5 to 105 degrees	
9.	Temperature Resolution 0.1 and Temperature Relative Accuracy ±0.1	
10.	Auto read option with indicator to alert when readings are stable	
11.	Up to 3 point pH calibration	
12.	RS 232 connection available	
13.	CE Compliance	
14.	Power supply upto 230 V, 50 Hz	
15.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 13

Technical specifications for Shaker

S. No.	Specifications	Features available (Yes/No)
1.	Performs mixing of samples in microfuge tubes in horizontal orbital motion	
2.	Universal holder for 0.5 ml micro test tubes (atleast 24 places), 1.5 ml micro test tubes, 2.0 ml micro test tubes (atleast 12 places)	
3.	Mixing frequency 300 to 2,500 rpm	
4.	Mixing and vortexing radius appx 1.5 mm (appx 3 mm mixing stroke)	
5.	Adjustable mixing time 15 s to 99.0 h or continuous	
6.	Noise level < 50 dB(A)	
7.	Digital display	
8.	ISO certification	
9.	Power supply upto 230 V, 50 Hz	
10.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 14

Technical specifications for SDS Gel apparatus

S. No.	Specifications	Features available (Yes/No)
1.	Vertical gel electrophoresis system to run atleast 2 gels with capability to accommodate upto 4 gels.	
2.	Gel Casting: To run hand cast gels with casting units, preferable if compatible for precast gels	
3.	Gel size: Approx 8.5 cm × 7.5 cm	
4.	The same buffer tank should be able to run electrophoresis and western blot for atleast 2 gels.	
5.	Max buffer volume should be 1 L or less (for 2 gels)	
6.	Run time : Not more than 1 hr (at 200V constant)	
7.	Spacer integrated glass plates with 0.75 and 1 mm thickness. .	
8.	Relevant accessories such as electrode assembly, gel casting assembly including glass plates, combs, tank, lid with power cables should be provided.	
9.	Regulatory Certification : IEC 1010, CE preferable	
10.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 14 (A)

Technical specifications for SDS Gel Apparatus

S. No.	Specifications	Features available (Yes/No)
1.	Vertical gel electrophoresis system to run atleast 2 medium-size gels	
2.	Gel Casting: To run handcast gels with casting units, preferable if compatible for precast gels	
3.	Gel size should be around 13 cm × 8.5 cm gels so as to accommodate 11 cm IPG strip	
4.	Max buffer volume should be 1 L or less (for 2 gels)	
5.	Run time should not be more than 2 hr at 200V constant	
6.	Casting accessories: Casting frames and casting stands with leak-free hand-casting should be provided.	
7.	Relevant accessories such as electrode assembly, gel casting assembly including glass plates, combs and spacers (1.0 mm), tank, lid with power cables should be provided.	
8.	Regulatory Certification : IEC 1010	
9.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 15

Technical specifications for Horizontal Gel Apparatus

S. No.	Item	Features available (Yes/No)
1.	**Mini Sub System: Small model gel size 10 X 7 cm (for 8 samples) and 13X13 cm**	
2.	**ACCESSORIES for Mini Sub Systems:**	
	Spare electrodes 2 nos.	
	Levelling table for gel casting 15 x 15 cm	
	UV transparent gel running tray 70 x 50 mm	
	UV transparent gel running tray 100 x 70 mm	
	Acrylic comb MINI 8 well 1.5 mm	
	Acrylic comb MINI 3 well preparative 3.0 mm	
	Compatible Power pack to run the gel	

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ITEM NO. 16

Technical Specifications for Power Pack System

S. No.	Specifications	Features available (Yes/No)
1.	A Power pack with programmable output range: 10 – 200V, 4–2000 mA, 1-200 W	
2.	Output Type : Contant V and Contant C	
3.	Built-in timer : 0 – 99 h	
4.	Output Terminal: Two (02) pair jacks in parallel.	
5.	Digital Display	
6.	Operating Conditions : 0 – 40 deg C; 0 – 95% humidity	
7.	Safety Features: No-load detection; Sudden load change detection; Over-load/short-circuit detection; Overload protection.	
8.	Compatible with medium-sized gel (13 cm × 8.5 cm) electrophoresis unit and Transblot apparatus (Wet/Semi-dry apparatus).	
9.	Regulatory certification: EN-61010, CE Certified.	
10.	Power supply upto 230 V, 50 Hz	
11.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 17

Technical specifications for Transfer Apparatus

S. No.	Specifications	Features available (Yes/No)
1.	A transfer apparatus suitable for transfer of four mini format gels (8.5 cm × 7.5 cm) or two medium-sized gels (13 cm × 8.5 cm)	
2.	Method of Transfer should be Semi-dry	
3.	Plate Electrodes (platinum-coated titanium anode and stainless steel cathode) for efficient transfer, efficient transfer of low and high MW proteins	
4.	Transfer time should not be more than 45 min	
5.	Integrated power supply	
6.	Notify the power failure during run	
7.	Regulatory certification : EN61010	
8.	Power supply upto 230 V, 50 Hz	
9.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 18

Technical specifications for Orbital Shaker:

S. No.	Specifications	Features available (Yes/No)
1.	Benchtop Open air orbital shaker with Flat Platform with around 12 x 12 inches and non-slippary mat	
2.	Speed Range should be 40- 200 rpm	
3.	Orbit should be around 1.2 cm	
4.	Timer 1 to 60 min. or continuous	
5.	Operating Temperature Range 4° to 40°C	
6.	Platform Load Capacity atleast 4.0 kg	
7.	Power supply upto 230 V, 50 Hz	
8.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 19
Technical specifications for UV Torch

S. No.	Specifications	Features available (Yes/No)
1.	UV torch/lamp with dual wavelength 254 and 365 nm with two UV tubes.	
2.	Power supply upto 230 V, 50 Hz	

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ITEM NO. 20

Technical specifications for Freezer (-20îC)

S. No.	Specifications	Features available (Yes/No)
1.	Vertical-type deep freezer with temp. upto -20°C and control panel at the top of cabinet with thermometer or temperature warning light and alarm	
2.	Built in condenser providing low energy consumption.	
3.	Combination of pull out drawers and fast freeze shelves.	
4.	Thermostat with 3-4 hour temperature backup.	
5.	Fast freeze button and lamp.	
6.	Digital controller for temperature	
7.	Mains warning lamp.	
8.	Single door, Lock facility	
9.	CFC free heavy duty compressor.	
10.	Net Capacity: 300-400 Litres	
11.	Compatible UPS and stabilizer	
12.	ISO 9001 & 14001 Certified	
13.	Power supply upto 230V /50 Hz	
14.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 21

Technical specifications for Rotospin

S. No.	Item	Features available (Yes/No)
1.	Test Tube Rotator with angle of rotation adjustable from horizontal to vertical for mixing	
2.	Rotation should be set from 5-50 rpm	
3.	Timer should be set from 0-99 hrs/1-59 min	
4.	**Accessories:**	
	Disk for 24 x 1.5 ml tube	
	Disk for 18 x 15 ml tubes	
	Disk for 12 x 50 ml tubes	
5.	Power supply upto 230V /50 Hz	

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ITEM NO. 22
Technical specifications for Dry Bath

S. No.	Item	Features available (Yes/No)
1.	Dry bath with digital temperature control	
2.	Should be able to maintain temperature range from ambient to 100 °C with temperature accuracy of ±0.5	
3.	Block having capacity for holding 8 tubes of 0.2 ml, 0.5 ml, 1.5 ml size each	
4.	Power supply upto 230V /50 Hz	
5.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 23

Technical specifications for Water bath

S. No.	Specifications	Features available (Yes/No)
1.	Water bath with reciprocal shaking frequency of 30 - 180 cycles per minute adjustable, shaking stroke 12 mm	
2.	Temperature should be Ambient-99.99 °C with ± 0.2 °C temp. stability	
3.	Electronic timer for setting the run time.	
4.	Keypad for actual, setpoint values, high and low temperature warning functions	
5.	Shaking frequency adjustable from 20 to 180 rpm and displayed on Multi-Display (LED)	
6.	Drain screw for conveniently emptying the bath	
7.	Bath tank should be made up of steel and bath volume should be atleast 8-20 L.	
8.	Bath area should be (W x L / D) 50x30/20cm	
9.	Lift up cover should be provided for water bath to avoid contamination of samples	
10.	All purpose spring tray for Erlenmeyer flasks Incl. Set of springs for Erlenmeyer flasks of various sizes	
11.	Safety features: 1) Water and shock-proof mains switch 2) If the liquid in the bath reaches a minimum, a complete shut-down of the system and alert sound option should be available in the system.	
12.	Power supply upto 230V /50 Hz	
13.	3 years comprehensive warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 24

Technical specifications for Rocker

S. No.	Item	Features available (Yes/No)
1.	Dual Platform rocker with platform size of 25X25 cm	
2.	Digital timer with Time range of 1-99 min/Continous	
3.	Capacity of holding 5 Kg weight	
4.	Power supply upto 230V /50 Hz	

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ITEM NO. 25

Technical specifications for Table Top Ultracentrifuge

S no	Specifications	Features available (Yes/No)
1	Table-top model	
2	Max Speed-1,50,000 RPM	
3	MAX G Force- 10,00,000 or better	
4	Speed Control Accuracy: +/- 50 rpm of set speed	
5	Maximum Volume > 150ml	
6	Temp Control System: Thermo module cooling system CFC/HCFC free	
7	Set temperature range:- 0 to 40 Deg C in 1Deg C increment temperature Control	
8	Ambient Operating Temp: 5 to 35 Deg C	
9	User settable Programmes: 15-20 stored programmes in 9 steps	
10	Acceleration/deceleration rate : 9/10 or 10/11	
11	Timer: with HOLD function,	
12	low noise	
13	Self Locking Rotors	
14	Rotors: Fixed angle Rotors: 2ml x 6-8 , rpm 150,000 Fixed angle Rotors: 12-15 ml x 6-8, rpm 50,000	
15	Tubes required for rotors of above capacity should be quoted along with the main machine.	
16	Machine should have features like keypad or touch screen and user locking facility, delayed start, stop, dual display of RUN & SET parameters, RPM/RCF mode, Run scheduling etc.	
17	10 KVA servo stabilizer for proper functioning of machine	
18	3 years comprehensive and 2 years non-comprehensive Warranty and 5 year AMC after warranty period	
19	International certification	

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ITEM NO. 26

Technical specifications for Lyophilizer

S no	Features	Compliance (Yes/No)
1	Table-top model	
2	Capacity: 2.5 to 3 litre	
3	Capable of removing 2-2.5 ltrs per day with holding capacity of 2.5-3 ltrs of ice before defrosting	
4	Collector temperature:-75^{0}C to -80^{0}C	
5	2-stage Rotary vane Vacuum Pump with regulator/controller	
6	Vacuum pressure: 0.001-0.004 mbar, ultimate pressure	
7	Circular individually heating racks fitted in cylindrical manifold with temp. Control System for Petri dish, tray and beaker etc freeze drying.	
8	Displacement capacity :85-100 lts/min	
9	LCD/LED display for vacuum and temperature, setting of parameters, operational hours display for vacuum and refrigeration	
10	Alarm with beep (if temp is >-40, moisture in collector, 800-1000hrs of vacuum pump operation)	
11	Vacuum break valve (if more than 5 mins power outage)	
12	1/3 hp CFC/HCFC free refrigeration system	
13	Flask with adapters and retainers capable of holding microcentrifuge tubes	
14	Drying chamber with 8-12 ports and product shelves	
15	Facility for water drain.	
16	Power Supply: 220-230V, 50Hz.	
17	UPS 2KVa for 30 mins back-up	
18	3 years comprehensive and 2 years non-comprehensive Warranty and 5 year AMC after warranty period	
19	International certification	

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ITEM NO. 27

TECHNICAL SPECIFICATION FOR REAL TIME PCR

(An Integrated system for both Real-time PCR and post-PCR (end-point) analysis using in-built Peltier based PCR machine)

S/N	Specification of the Equipment	Feature available Yes/No
1	**Thermal Cycling System :** • Peltier-based • 96 well block with minimum of four filter • Should be capable of gradient PCR • Should be equipped with multiple block design with capable for both standard and fast reactions set • System should have two or more separate peltier blocks to provide independent temperature zones to run – multiple assays with varying annealing temperatures at the same time	
2	**Optical System :** • System should be LED excitation source with Photodiode detector • System should able to collect data for all filters for all wells regardless of plate setup	
3	**Sensitivity :** The system should be able to detect 1 copy of template for a single reaction	
4	**Chemistry support :** The instrument should be open system capable of running various chemistries so that different chemistries using TaqMan, SYBR green etc all can be performed	
5	**Dyes Calibrated** : • Factory Pre calibrated for dyes preferably FAM™/SYBR® Green, VIC®/JOE™, NED/TAMRA and ROX™ dyes which can be detected in a single run •The system should provide addition of new dyes without any hardware change within the wavelength range.	
6	**Selection of Passive reference Dyes** : • The normalization of reaction due to non-PCR related fluctuations such as pipetting variations or fluorescent fluctuations should be possible by using ROX™ or any calibrated dye • Selection or de-selection of passive reference during the run should be optional	
7	**Run Time** : < 40 minutes	
8	**Reaction volumes** : • at least 10 ul	
9	**Supported plastic ware** : • 96 well micro plate • Individual PCR tubes • 8-well strip PCR tubes	
10	**Ramp Rate** : should have at least 4.5ºC/Sec	
11	**Temperature Range** : 4°C - 100°C	
12	**Uniformity** : +/- 0.50°C	

13	**Accuracy :** +/- 0.25°C	
14	**Installation Kit** : • It should offer a chemical installation kit with atleast 2-fold resolution for a singlplex reaction. •This kit performance should be demonstrated during installation with over 99% confidence level	
15	**Softwares Application :** • Absolute quantitation • Relative quantitation • Allelic discrimination/SNP (Single Nucleotide Polymorphism) detection • Plus/minus assays	
16	Primer & probe designing software should be provided	
17	Relative Quantification Software which has the ability to simultaneously Visualize and analyze unlimited number of 96-well plates of gene expression data, with Multiple dye chemistries.	
18	System should provide Touch Screen feature to avoid dependency on computer for operation. However, it should be possible to use computer for system control, operation, analysis, net-working of multiple system and a USB port for data export	
19	High Resolution Melting (HRM) software for mutation scanning and genotyping should be included	
20	All software should be upgraded free of cost for atleast 5 yrs after installation	
21	Multiplexing capability : should capable of at least four targets per well	
22	**Accessories :** • Computer of latest compatible configuration available at the time of supply of equipment • suitable adaptors/tray retainer for individual PCR tubes and 8 well strip PCR tubes should be quoted	
23	Current users list and Track record of installation in other Institutions in India to be provided	
24	All consumables and spare parts should be available for at least 10 yrs after installation	
25	**Training, service and application support :** • The Vendor should have a good service and application support back up along with Instruments to provide an effective application related troubleshooting and support • The Vendor should provide comprehensive Training at training centre on the operation of the instrument, Chemistry options and software	
26	**The above features should be supported by product/technical brochures, highlighted on Point-to-point basis.**	
27	**3 years comprehensive and 2 years non-comprehensive warranty and post warranty AMC for 5 years**	

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ITEM NO. 28
Technical Specifications for Two-dimensional Gel Electrophoresis system with image scanner and 2-D gel analysis software

S. No.	Item with specifications	Features available Yes/No
I	**IEF cell (Qty 1)**	
	1. The IEF cell should be capable of running 12 IPG strips simultaneously of different sizes such as 7, 11, 17, 24 cm. The system capable to run each strip at different current is preferable.	
	2. 'IEF focusing trays' of different sizes, 7 cm, 11 cm, 18 cm and 24 cm and 'cup loading tray' alongwith cup holders should be provided with the system	
	3. IEF focusing trays should be made up of polycarbonate with gold/platinum coated electrodes	
	4. The Platform of the IEF cell should have peltier cooling to maintain temperature (10-25 degrees) and secured for light protection for CyDye labeled samples	
	5. The system should have integrated power supply	
	6. Voltage per lane should be 50-10,000 V and Current range should be 0–100 μA per lane at 1 μA interval	
	7. Accessories: Rehydration trays for all the above mentioned sizes ; strip holder; mineral oil; electrode wicks etc should be provided alongwith the instrument	
	USB port to export IEF focusing data to excel	
II	**SDS-PAGE (Total Qty 4)**	
	A) For Small gels (Qty 2)	
	1. Vertical Mini Gel electrophoresis apparatus with a capacity to run atleast 2 gels (1-D, 2-D and native gels with Gel size of approx 8.5 cm × 7.5 cm)	
	2. Gel Casting: The system should be compatible for hand-cast gels and precast gels in the same assembly.	
	3. Run time : Not more than 1 hr (at 200V constant)	
	4. The same buffer tank should be able to run electrophoresis and western blot for atleast 2 gels.	
	5. Plates: At least 5 glass plate set should be provided with each unit alongwith spacers, glass plates with integrated spacers are preferred.	
	6. Casting accessories: Casting frames and casting stands with leak-free hand-casting should be provided.	
	7. Plastic Combs: Ten well combs (1.0 mm thickness) should be provided	
	8. Other accessories: Electrode assembly, tank, lid with power Cables, blotting module for transfer of proteins from 2 gels	
	B) For Medium size gels (Qty 1)	
	1. Vertical gel electrophoresis system to run atleast 2 gels (1-D, 2-D and native gels) of gel size around 13 cm × 8.5 cm gels so as to accommodate 11 cm IPG strip	

	2. Gel Casting: To run handcast gels with casting units, preferable if compatible for precast gels of medium size	
	3. Max buffer volume should be 1 L or less (for 2 gels)	
	4. Run time should not be more than 2 hr at 200V constant	
	5. a) Glass plates (12 sets), b) Spacers (1.0 mm) (12 No) and (1.5 mm) (4No) **Glass plates with integrated spacers are preferred* c) 10-well combs 1.0 mm (4 No.), d) 10-well combs 1.5 mm (4 No.), e) 15-well combs 1.5 mm (4 No.) and f) 1-well comb to run IPG strips (4 No.)	
	6. Relevant accessories such as electrode assembly, gel casting assembly including tank, lid with power cables should be provided.	
	C) For Large size gels (Qty 1)	
	1. SDS-PAGE apparatus to run 18-28 cm gels that can accommodate upto 6 gels, capable of running IPG strips and 1-D gels of different thickness 1.5mm and 1.0 mm	
	2. Refrigerated circulating bath along with pump operational at -10 degrees to 80 degrees, Temperature stability ± 0.1 ºC, Maximum Flow Rate 15 L/min; Maximum Pressure 300 mbar; Internal tank volume 2.5 L with barbed fittings for tubing should be provided. Safety features should include water and shock-proof main switch, Over temperature protection and with International Regulatory Certification: DIN 12876-1.	
	3. Compatible gel casting module should be provided	
	4. Glass plates should be provided to run SDS-PAGE that can accomodate 17 cm and 24 cm IPG strips (6 sets of both sizes) *Glass plates with integrated spacers OR glass plates and spacers separately to run atleast 6 gels of above mentioned sizes.*	
	Other Accessories required to run hand cast and pre-cast gels of 18-24 cm size should be provided	
III	**Transfer apparatus for small and medium sized gels (Qty 1)**	
	1. A Semi-dry transfer apparatus suitable for transferring proteins from two midi fomat gels (13 cm × 8.5 cm)	
	3. Plate Electrodes (platinum-coated titanium anode and stainless steel cathode) for efficient transfer, efficient transfer of low and high MW proteins	
	4. Transfer time: not more than 60 min	
	5. Integrated power supply	
	Notify the power failure during run.	
IV	**Power Supply (Qty 1)**	
	1. A power supply with programmable output range : 10 – 500V, 400 mA; Stores upto 3 methods, compatible with electrophoresis system to run 6 gels	
	8. Compatible with large size gel electrophoresis unit	
	2. Output Type : Contant V and Contant C	

	3. Built-in timer : 0 – 99 h; Volt hour control 99000 V-hr	
	4. Output Terminal: Atleast two (02) pair jacks in parallel.	
	5. Digital Display	
	6. Operating Conditions : 0 – 40 deg C; 0 – 95% humidity	
	7. Safety Features: No-load detection; Sudden load change detection; Over-load / short-circuit detection; Overload protection. Automatic recovery after power failure.	
	8. *Regulatory Certification: IEC 1010 for all the electrophoresis units, transfer apparatus and power supply.*	
V	**Gel imaging system -** System to support wide range of applications such as imaging of gels and western blots	
	1. Should be able to capture image of 2-D gels with gel size of 24 cm ×20 cm coomassie or silver stained gels with high resolution	
	2. 16-bit pixel depth for accurate quantitation and supported by a software that can provide image display, optimization and quantitation	
	Should be able to capture image of Western blots from medium-sized gels (13 cm × 8.5 cm) developed using visible and chemiluminescence probes detection system and gel with ethidium bromide containing samples. System that can detect stain free protein gels will be preferable.	
	Upgradable for imaging gels with proteins labeled with fluorescent dyes	
	3. System with true 16 bit CCD, with more than 3.0 Megapixel image resolution	
	Cooled CCD with cooling range of -30°C absolute temperature using peltier cooling system (Not air cooled)	
	4. Sensitive detection of less than 40 pg of protein on a Western blot.	
	5. Low noise for longer exposure times and lower background, important for precise quantitation of very weak signals	
	6. Distortion, dark frame, and flat frame corrections are applied to each imaging mode for optimal precision and uniform quantitation	
	7. Chemiluminescent and colorimetric signals can be captured in the same image without changing the lens. With UV transillumination for documenting EtBr-stained gels.	
	8. Focusing, illuminators, and exposure time are remotely controlled by a computer. With autofocusing technology.	
	9. For image analysis, advanced license software should be provided separately and for analysis applications to provide high levels of automation and accuracy in analysis of gels and blots.	
	10. Instrument should have auto focus technology that is system should automatically take the best focus depending on any zoom level without the movement of sample platform. The sample platform should be fixed at one position to ensure minimal mechanical movement.	

	11. Pixel size should be 6.0 µm or bigger.	
	12. Instrument should have a minimum 5 position filter wheel for capturing images of various dyes effectively. The filter wheel should be motorized and automatic without the requirement of manually changing or moving the filter wheel.	
	13. Dynamic range should be ≥4 orders of magnitude for good quantification.	
	14. Software for Image acquisition and 1-Dimensional Analysis: *Image optimization for gel or blot application with applications including Chemiluminescent, colorimetric western blots, nucleic acid and protein detection via colorimetric dyes.* *Automatic generation of customizable reports; Snapshot tool to copy images, lane profiles, and graphs; Complete flexibility with automatic and manual detection of lanes and bands, using several algorithms* *Easy copy/paste functionality, crop, zoom, and colors.* *16-bit and 8-bit tiff images with Publishing resolution (dpi) and export option. The Software should automatically select the appropriate filters, light sources, and camera settings for all applications.* *Software should produce customizable reports with data organized as desired, including, Lane and band identification, molecular weight or base pair evaluation.* *Window PC compatible software*	
	15. Computer of latest compatible configuration available at the time of purchase of the equipment with suitable colour printer and compatible online UPS with atleast 30 min backup	
VI	**2-D Gel Image analysis Software (Qty 1)**	
	1. Sofware to analyze 2-D gels with license	
	2. Sophisticated algorithms for Automatic Spot Detection & Quantification.	
	3. Spot detection summary matching summary, replicate group consensus tool to optimize spot detection and matching parameter	
	4. Removal of background speckles.	
	5. Simultaneous analysis of unlimited number of gels	
	6. Batch processing of experiments	
	7. Statistical analysis using wilcoxon paired sample algorithm for providing accurate statistical comparison.	
	8. Can able to compare experiments and warp matching	
	9. Multiplex Gel Normalization with normalization table feature.	

	10. Gel land marking and automatic spot matching	
	11. Can be integrated with data from IMAGING SYSTEM, SPOTCUTTER etc	
	12. Can Export XML data and JPEG file format	
	13. Single-user license with an option of network license support for 10 computers or more	
	14. Computer of latest compatible configuration available at the time of purchase of the equipment	
VII	**Others**	
	Comprehensive warranty of 3 years, non-comprehensive warranty of 2 years and 5 year AMC after the warranty period	
	Spare parts to be available for 10 years after installation	

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ITEM NO. 29

Technical specifications for MOTORISED UPRIGHT RESEARCH MICROSCOPE WITH CYTOGENETICS IMAGING WORKSTATION

Complete workstation for handling cytogenetics applications i.e. karyotyping, FISH and automated metaphase finder with following features:

S.No.	Apparatus	Specifications	Features Available Yes/No
1	Microscope	High resolution fully automated upright motorized microscope for bright field/ phase contrast/ fluorescence Motorized X, Y and Z focus drive. Atleast 8 position or more motorized florescence filter wheel Atleast 7 position or more motorized nosepiece TFT/Touch Screen to control the microscope	
2	Observation Tube:	Trinocular observation tube. Observation of full light path in the camera as well as in the observation tube.	
3	Condenser	Automated universal condenser	
4	Objectives	High resolution apochromat objectives from 4x/5x, 10x, 20x, 40x, 60x oil and 100x oil with oil dispenser.	
5	Phase Contrast	Condenser and Plan Flour objectives (10x, 40x) suitable for phase contrast should be quoted with the main equipment	
6	Eyepieces	Paired widefield eyepieces of 10X with minimum field of view about 25mm or better, focusable and adjustable diopter setting	
7	Illumination:	LED illumination	
8	Motorized Stage	X-Y scanning stage with adapter for slide feeder stage (atleast 4 slides at a time)	
9	Fluorescence Filters	Complete fluorescence filter set for all FISH/ MFISH Applications (FITC, Spectrum Orange, Texas Red, DEAC, Cy5, DAPI, Rhodamine, Acridine Oranage). All the filters should be narrow band pass filters.	
10	Monochrome Camera	High resolution Peltier cooled monochrome CCD camera for Cytogenetic and FISH applications Resolution: At least 1.4 mega pixels or better Frame rate: At least 14 fps at full resolution or better Pixel Size: At least 6.45 x 6.45 µm or better	
11	Workstation	Compatible latest branded computer with atleast 8GB Ram,1TB HDD, Quad Core/ latest high speed processor, atleast 24 inch or more TFT screen with suitable printer and compatible online UPS	

12	Softwares for Cytogenetics Applications	Automated Meta Phase finder, Software for karyotyping analysis, Automatic separation of touching and over lapping chromosomes, Count function, Software for image cquisition, Automatic and interactive background correction and threshold for each color channel, Mfish- Q Fish, Mband, CGH, Telomere, Color Karyotyping & Comet Assay	
13	Compliance	Point wise technical compliance statement to be attached. (Mentioning the page no of quotation and catalogue)	
14	Upgradation	Free software upgrades for 10 years	
15	Power Supply	For standard Indian conditions	
		Compatible online UPS with 30 minutes backup to support the entire system.	
16	Warranty	Comprehensive warranty of 3 years and non comprehensive warranty of 2 years and Post warranty AMC for 5 years	
17	Spare Parts	To be available for 10 years after installation	
18	Accessories	All necessary reagents and accessories for complete workflow and smooth functioning and maintainance of the system should be quoted with the main equipment	
19	Training	On site training for all experimental procedures and software applications to be provided	

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ITEM NO. 30

Technical specifications for Digital Slide Scanning Microscope System

1.	General Specifications	The system should be based on a fully motorized research microscope with fully automated slide handling and digitization for Histopathology.
2.	motorized upright microscope	1. Motorized Research microscope stand with 10nm or better Z-resolution, with adjustable height stop and torque of focusing. 2. A separate monitor/panel to display all microscope parameters and controls including the motorized functions. 3. Revolving DIC nosepiece of minimum 6 positions with inward tilt. 4. Semi-Plan Apochromatic Objectives 2.5x and Plan Apochromat objectives 10X, 20x, 40x, Plan Apochromat 100x Oil 5. Camera port to accommodate a colour high resolution CCD camera. 6. Diopter setting on both the eye pieces with 10X/25mm 7. Motorized scanning stage with holder for at least 4 slides at a time. 8. Power supply for 100W halogen lamp, stabilized for transmitted light path 9. All necessary interfaces (TCP/IP interfaces, RS232 and USB for smooth complete microscope system and its controlling via workstation
3.	CCD Cameras	12 Bit High resolution Colour Cameras with resolution of 1360X 1024 pixels or higher, 2/3" CCD chip size.
5.	Data Collection and processing unit	Xeon Quad core Processor, 3 GHZ or better speed, 8 GBDDR3, 1TB integrated HDD and 1TB external HDD, 512 MB or better NVIDIA Graphic Acceration card, 64 Bit Window 7 Operating Sytem, 24 inch or better with High Resolution Monitor, Ethernet connectivity, Key Board & mouse.
6.	Digital slide software	System should be capable of scanning automatically at least 4 slides and to digitize the slides at a selected magnification and resolution. The system should be capable of digitization with low magnification i.e 2.5x objective and up to 100x objectives fully automated and un-attended. Software upgradation should be provided when available and latest version supplied at the time of installation
8	Warranty	3 year of comprehensive and 2 years non-comprehensive warranty and Post warranty AMC for 5 years The manufacturer should give in writing support of the product for minimum 10 years of operation.
10.	Power requirements	230V AC; 50Hz; Standard make true online UPS with at least 30 Minutes of backup

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ITEM NO. 31

Technical specifications for Horizontal double Door Autoclave Unit

S.No	Specifications	Feature available Yes / No
1.	Horizontal rectangular steam sterilizer.	
2.	Semi-automatic and manual control system.	
3.	Double door.	
4.	Steam jacketed.	
5.	Chamber size: 2' x 2' x 4' (L x W x H).	
6.	Chamber size: 400 to 450 litres.	
7.	Electric load: 18 KW.	
8.	Working pressure: 1.2 Kg / cm^2.	
9.	Working temperature: 121^o C.	
10.	Chamber should be made of SS 316 and covered with proper insulation and SS cover.	
11. s	Door should be made of SS 316 quality with silicone door gasket.	
12.	Door should have two locks: One automatic & one manual with interlocking system as a safety feature.	
13.	Automatic lock should operate when chamber pressure is about 0.35 Kg/cm^2 or less.	
14.	Autoclave should have chamber & jacket discharge line with steam trap and swing check valve.	
15.	Chamber discharge line should have dial thermometer.	
16.	Provision of mechanical steam ejector and self-sterilizing vacuum drier.	
17.	Provision of safety valve and vacuum breaker valve to prevent accidental vacuum in the jacket.	
18.	Fitted with pressure and compound gauge to indicate pressure of steam in the jacket and chamber.	
19.	Stainless steel electric boiler should be provided with interconnecting steam pipes with automatic water feeding system.	
20.	Boiler should be complete with at least three immersion heaters of 6 KW mounted on stainless steel plate.	
21.	Electric controls should comprise of pressure controller and indicators for low water protection.	
22.	Digital display at front panel should show the chamber temperature, time & date, alarm indicator, error code and low water indicator.	
23.	ISI marked.	
24	Warranty: Comprehensive warranty of 3 years and non comprehensive warranty of 2 years and Post warranty AMC for 5 years	

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ITEM NO. 32
Technical specifications for Illuminator

S. No.	Specifications	Feature available Yes / No
1	The Instrument should have Luminescence, Fluorescence Detection Modes with UV, Blue filters; so that it facilitate quantification of Luciferase, Enhanced Green Fluorescent Protein, Hoechst dye, Fluorescein.	
2	The Instrument should facilitate dual luciferase assays and should have dual injectors, up to -300 ul volume	
3	The Spectral coverage should include 350 - 650 nm	
4	The instrument should be sensitive with ability to detect at least 1 x 10-20 moles of Luciferase	
5	The instrument should have Linear Dynamic Range of detection > 6 logs	
6	Sample Holder: 12 mm x 50 mm test tubes, 1.5 ml microcentrifuge tubes, minicell vials Sample Adapter should be quoted.	
7	Sample tubes for sizes: 12 mm x 50 mm test tubes, 1.5 ml microcentrifuge tubes, and minicell vials each 1000 should be quoted and supplied along with the instrument	
8	Should supply with a Personal Computer and a voltage stabilizer	
9	Warranty: Comprehensive warranty of 3 years and non comprehensive warranty of 2 years and Post warranty AMC for 5 years	

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ITEM NO. 33
Technical specifications for Refrigerated Centrifuge Machine

S.No.	Specifications	Features Available Yes/No
1.	Refrigerated table top centrifuge for high and low volume applications Temp. range –5 to + 40 deg C	
2.	Sould support high speed with RCF should be > 20,000 g and RPM > 14000	
3.	Fully auto-clavable light weight Rotors with aerosol tight lid Quick Lock facility	
4.	Should have option of quick spin, with rapid cool & stand by cooling option	
5.	Facility to put "at set rpm" function, Energy efficient	
6.	System must have drainage facility for spill over liquid	
7.	Program memory with programmable acceleration and deceleration steps.	
8.	Emergency lid release should be integrated in to front panel of the instrument for easy access.	
9.	Noise level should be less than 50 dB	
10.	Should be IvD, ISO& CE approved	
11.	Machine should be supplied with following rotors • Fix angle **6x50 ml Rotor** with ability to spin 15ml and 50ml conical bottom tubes at 12000 rpm or more and 20000 x g or more • **4x250 ml swing out rotor with aerosol tight lid.** Speed 4000 rpm and 3000 g force or more. Adapter required: 36 x 15 ml, 1 x 6-7 ml tubes, and 16 Micro Titre plates • Fixed angle **30x 1.5/2 ml rotor** Speed upto 14000 RPM and 20,500 g force or more	
12.	Suitable stabilizer	
13.	Comprehensive 3 year warranty; 2 year non-comprehensive warranty and 5 years AMC	

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ITEM NO. 34

Technical specification for Tissue Homogenizer

S. No.	Specifications	Features available (Yes/No)
1.	For disruption of biological samples such as animal tissues, for isolation of RNA, DNA and protein	
2.	low – to medium throughput samples disruption	
3.	Speed range: 15 to 50 Hz.	
4.	Runtime: 1 second to 1 hour 59 minutes	
5.	Display and control panel for speed and time	
6.	Noise level <85 dB(A)	
7.	Voltage range: 210–-240 V, 50/60 Hz	
8.	System should have Cool able adapter	
9.	System should be thoroughly tested with the Sample Tubes RB (2 ml)	
10.	The disruption module should provide rapid and efficient disruption of 12 samples.	
11.	The disruption should be based on beating & grinding using tungsten or stainless steel beads with disruption time not exceeding 5 minutes.	
12.	The disruption should be based on beating & grinding using tungsten or stainless steel beads with disruption time not exceeding 5 minutes.	
13.	Power supply upto 230V /50 Hz	
14.	3 years comprehensive warranty and 2 years non- comprehensive warranty and 5 year AMC after warranty period	

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ITEM NO. 35

Technical specifications for Elisa Plate Reader

S. No.	Specifications	Features available (Yes/No)
1.	Light source: Xenon flash lamp	
2.	Read method: End point, kinetics, spectral scanning, well area scanning	
3.	Microplate types: 6 well to 384 well	
4.	Detection method: Absorbance	
5.	Temperature control: upto 65°C	
6.	Shaking: Orbital and linear	
7.	Software: Data Analysis Software	
8.	Dynamic range: 0-4 OD	
9.	Bandpass: 2.4 nm	
10.	Option for Cuvette port	
11.	Absorbance wavelength selection: Monochromator, range: 200 - 999 nm	
12.	wavelength accuracy: ±2 nm	
13.	Reading speed: 96 wells: less than 10 seconds	
14.	Power supply upto 230V /50 Hz	
15.	3 years comprehensive Internet Explorer.lnk warranty and 2 non-comprehensive warranty and 5 year AMC after warranty period	

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Item No. 36
Technical specifications for Table Top short spin

S. No.	Item	Features available (Yes/No)
1.	Microcentrifuge with a capacity to run 6 tubes of 0.2 ml, 1.5/2.0 ml at room temperature	
2.	Maximum Speed of 6000 rpm	
3.	Power supply upto 230V /50 Hz	

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