



Offline- Open Tender

SHORT TENDER ENQUIRY DOCUMENT

FOR SUPPLY OF VARIOUS EQUIPMENTS

For & on behalf of

**KALPANA CHAWLA GOVT. MEDICAL
COLLEGE, KARNAL**

Short Tender Enquiry Document No.:
HSCC/KCGMC/Medical Items/2017/OFF/MC-03
Dated 20.02.2017

BY



HSCC (INDIA) LTD

(A GOVERNMENT OF INDIA ENTERPRISE)

Plot No. 6-A, Block-E, Sector-1, NOIDA (U.P.) - 201 301

PHONE: 0120-2540153

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KALPANA CHAWLA GOVT. MEDICAL COLLEGE, KARNAL, HARYANA

GOVT OF HARYANA

Tender Enquiry No.: HSCC/KCGMC/Medical Items/2017/OFF/MC-03 Dated 20.02.2017

NOTICE INVITING TENDERS (NIT) - Offline

Director General, Medical Education & Research, Panchkula, Govt. of Haryana through its Consultant HSCC (India) Ltd., invites **Off-line bids** from eligible bidders, in single stage two bid system for Supply, Testing & Handing-over of various **Equipments for Medical College at Kalpana Chawla Govt. Medical College, Karnal, Haryana** for the following Departments:

Sr. No.	MEDICAL EQUIPMENTS & DEPARTMENTS	Closing date & time for submission &	Date and time of Opening of Techno – Commercial
I	Department of Physiology Equipment	06.03.2017 at 14:30	06.03.2017 at 14:30
II	Department of Pharmacology Equipment		
III	Department of Community Medicine		
IV	Department of Biochemistry		
V	Department of Pathology Equipment		
VI	Department of Microbiology Equipment		
VII	Department of Forensic Medicine Equipment		

For viewing, submission and other details please refer HSCC web site www.hsccltd.com. Bidders may also visit www.kcgmkarnal.org for viewing the Tender Document only.

Complete set of Bid Documents have been made available at HSCC web site www.hsccltd.com, (URL: www.hsccltd.co.in) from **20.02.2017 to 06.03.2017**. Prospective bidders are advised to regularly visit / scan through above referred HSCC website, as corrigendum/modification/amendments etc, if any, shall only be notified on this portal and no separate advertisement / correspondences shall be made for this.

**CHIEF GENERAL MANAGER, HSCC (I) Ltd.
For & on behalf of DGMR, Panchkula.**

**NOTICE INVITING TENDERS (NIT) -
Offline**

Director General, Medical Education & Research, Panchkula, Govt. of Haryana through its Consultant HSCC (India) Ltd., invites **Off-line bids** from eligible bidders, in single stage two bid system for Supply, Testing & Handing-over of various **Equipments for Medical College at Kalpana Chawla Govt. Medical College, Karnal, Haryana** for the following Departments:

I. Department of Physiology, KCGMC, Karnal

SL NO.	NAME OF EQUIPMENT	QTY (Nos)	EMD INR (Rs.)
A. HUMAN AND OTHER EXPERIMENTS			
1	HEMOGLOBINOMETER	Various Qty	3,000.00
2	HEMOCYTOMETER	Various Qty	3,000.00
B. AMPHIBIAN AND MAMMALIAN EXPERIMENTS			
3	PHYSIOGRAPH 2 CHANNEL COMPLETE WITH ACCESSORIES	2	5,000.00
C. EQUIPMENT FOR RESEARCH LAB			
4	PORTABLE SPIROMETER	1	5,000.00

II) Department of Pharmacology, KCGMC, Karnal

SL NO.	NAME OF EQUIPMENT	QTY (Nos)	EMD INR (Rs.)
1	Water bath 4 hole electrically heated	12	2,500.00
2	Physiographs - Double channel	2	4,000.00
3	Standard power tables	3	4,000.00
4	Ideal respiratory pump	3	2,500.00
5	Copper tray	100	4,500.00
6	Frog Board Palmer C 20	100	2,000.00
7	Plethysmograph digital	1	5,000.00

III) Department of Community Medicine, KCGMC, Karnal

SL NO.	NAME OF EQUIPMENT	QTY (Nos)	EMD INR (Rs.)
1	Ice Lined Refrigerator (300 Ltr)	1	2,000.00
2	DEEP FREEZER	1	2,000.00

IV) Department of BIOCHEMISTRY, KCGMC, Karnal

SL NO.	NAME OF EQUIPMENT	QTY (Nos)	EMD INR (Rs.)
1	Autoclave Electric	2	2,000.00
2	Centrifuge Clinical	8	5,000.00

V. DEPARTMENT OF PATHOLOGY

SL NO.	NAME OF EQUIPMENT	QTY (Nos)	EMD INR (Rs.)
1	Hot Air (50 deg Celsius) oven for special staining	2	2,000.00
2	Autoclave Electric	2	3,200.00
3	Autopsy Tables	2	4,000.00
4	Band Saw	1	10,000.00
5	pH Meter with ultra micro blood pH electrodes	3	2,100.00
6	Haemocytometer with red & white pipettes	60	1,800.00
7	Haemoglobinometer – Sahli Type	60	1,800.00
8	Syringes Disposable – 20cc, 10cc, 5cc and 2cc	100 sets	4,000.00
9	Lab Refrigerators	6	1,800.00

VI. DEPARTMENT OF MICROBIOLOGY

SL NO.	NAME OF EQUIPMENT	QTY (Nos)	EMD INR (Rs.)
1	INCUBATORS BACTERIOLOGICAL ELECTRICAL (LARGE) 37 DEGREE CELSIUS	1	1,000.00
2	AUTOCLAVE: HORIZONTAL	2	3,200.00
3	AUTOCLAVE: 1 VERTICAL	4	6,400.00
4	HOT AIR OVEN	4	2,000.00
5	REFRIGERATORS	9	2,700.00
6	CENTRIFUGE ELECTRICAL HIGH POWER (24 TUBES)	3	3,000.00
7	CENTRIFUGE ELECTRICAL HIGH POWER (60-70 TUBES)	2	3,000.00
8	REFRIGERATED CENTRIFUGE	1	3,000.00
9	DROPPING BOTTLES FOR STAINS LASTIC)	500	3,000.00
10	DEEP FREEZE (-20DEGREE CELSIUS)	1	1,700.00

11	SLIDE BOX FOR 100 SLIDES FOR STUDENTS	150	2,400.00
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VII. DEPARTMENT OF FORENSIC PHARMACY ITEMS

SL NO.	NAME OF EQUIPMENT	QTY (Nos)	EMD INR (Rs.)
1	SLR camera with accessories.	1	4,000.00
2	Digital Spectrophotometer	1	8,000.00
3	Refrigerator	1	2,000.00
4	Deep freezer for keeping tissues (-80°C)	2	7,000.00
5	LED TV with DVD Player with USB Slot	1 each	2,000.00
6	Instrument Trolley	4	4,800.00

Sl. No.	Description	Schedule
i.	On line sale of tender enquiry documents	20.02.2017 to 06.03.2017 upto 14:30 hrs
ii.	Place of sale of Tender Enquiry Documents	HSCC (India) Ltd, Plot No. 6-A, Block-E, Sector-1, Noida (U.P.)-
iii.	Cost of the Tender Enquiry Document	INR 1000/-
iv.	Pre Tender Meeting Date & Time	27.02.2017 , 11:00 hrs. IST
v.	Pre Tender Meeting Venue	Same as (ii) above
vi.	Closing date & time for receipt of Tender	06.03.2017 , 15:00 hrs IST
vii.	Time and date of opening of Techno – Commercial tenders	06.03.2017 , 15:30 hrs IST
viii	Venue of Opening of Techno Commercial Tender	Same as Sr no. (ii) above

- TE Document fee Rs. **1000/-** would be set in the form of account payee Demand Draft/Pay Order/Cashier's Cheque/Banker's Cheque drawn on a scheduled Bank in India/ cash in favour of **"HSCC (India) Ltd"** payable at New Delhi/ Noida.
- Bidder shall download the TE documents from the web site <http://eprocure.gov.in/cppp>, www.hsccltd.com, and submit its tender by utilizing the downloaded document, along with the required non-refundable fee as mentioned in Para 1 above.
- All prospective bidders may attend the Pre Tender meeting. The venue, date and time indicated above.
- Bidder shall ensure that their bid, complete in all respects, are dropped in the Tender Box located at **HSCC (India) Ltd, Plot No. 6-A, Block-E, Sector-1, NOIDA (U.P.) – 201 301** on or before the closing date and time, failing which the bid will be treated as late and rejected.
- In the event of any of the above mentioned dates being declared as a holiday / closed day for the purchase organisation, the tenders will be sold/received/opened on the next working day at the appointed time.

6. The TE Document is not transferable.

7. **Bidder qualification Criteria:** Bidder should have turnover **Rs. 50 lakhs** per annum during last three financial years (i.e. 2013-14, 2014-15 & 2015-16)

8. Sealing of bid:

Envelop I:

- a. **Bid Security (EMD)/ Registration certificate for the item quoted issued by NSIC/ DGS&D for exemption of EMD and bid document fee**
- b. **Tender Document fee @ Rs. 1000/-**

Envelop II:

- a. **Tender Form duly filled and signed**
- b. **Turnover certificate during last three financial years (i.e. 2013-14, 2014-15 & 2015-16 certified by Chartered Accountant (with supporting Audited Balance Sheet).**
- c. **Technical compliance sheet with technical leaflets**

Envelop III: Price Bid /Financial Bid

These above envelopes I, II & III shall be further sealed in one outer envelope super scribing name of item, item no. and TE document No.

9. Rejection of bid:

- If EMD & tender document fee / **Registration certificate for the item quoted issued by NSIC/ DGS&D for exemption of EMD and bid document fee**, as mentioned in the tender document not found in envelop-I, their bid will be rejected and Envelop –II & III will not open by the committee.

CHIEF GENERAL MANAGER HSCC (I) Ltd.
For & on behalf of DGMER, Panchkula.

Terms & conditions:-

1. **Period of Validity:** A bid shall remain valid for **120 days** from the date of opening of bid.
2. **EMD:** Tenderer shall furnish along with its tender, earnest money for amount as shown in the NIT. The earnest money shall be furnished in one of the following forms:
 - i) Account Payee Demand
Draft
 - ii) Banker's cheque
and iii) Bank
Guarantee

The demand draft or banker's cheque shall be drawn on any commercial bank in India or country of the tenderer, in favour of the "HSCC (India) Ltd" payable at New Delhi/Noida. In case of bank guarantee, the same is to be provided from any commercial bank in India (as per the format in tender enquiry document). EMD to be valid for 165 days from the initial date of opening of the bid.

The tenderer who are currently registered and, also, will continue to remain registered during the tender validity period with Directorate General of Supplies & Disposals or with National Small Industries Corporation, New Delhi for the specific goods as per tender enquiry specification shall be eligible for exemption from EMD. Vague stipulations in the Registration Certificate such as "to customers' specification" etc. will not be acceptable for exemption from furnishing of earnest money. In case the tenderer falls in these categories, it should furnish copy of its valid registration details in its bid (with DGS&D or NSIC, as the case may be)

3. **Rate:** (a) The Prices should be quoted in Indian Rupees only. The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account. All duties, taxes and other levies payable by the contractor under the contract shall be included in the quoted price. The rate quoted must be inclusive of Excise Duty, Packing & Forwarding charges, Sales Tax, Freight charges and Insurance charges. (b) CMC price has to be quoted as per the format given in the bid.
4. **Sales Tax/ Vat:** Should be mentioned on price format.
5. **Evaluation:** The tenderers will be evaluated and compared separately for each item. The tenderer has to quote for the complete requirement given under the item. Comparison of the responsive tenders shall be carried out on all inclusive quoted price at Consignee site basis, inclusive of applicable taxes, duties, incidental services. The quoted CMC prices, **if applicable**, will also be added for comparison & ranking purpose for evaluation.
6. The bid submitted by MSME bidders shall be dealt as per the prevailing laws
7. **Name of Consignee:** The Director
Kalpana Chawla Govt. Medical
College, KARNAL (Haryana)
Name of the Purchaser : Director General, Medical Education & Research, Panchkula, Govt.
of Haryana
Name of the Consultant: HSCC(I) Ltd. Plot No. 6-A, Block-E, Sector-1, NOIDA
(U.P.)
8. **Delivery Period: 10 days from date of Notification of Award/Purchaser order at consignee site.** The date of delivery will be the date of delivery at consignee site.
9. **Installation and commissioning:** Installation and commissioning, if applicable, shall be done **within 15 days** of receipt of the stores/ goods at site or within two weeks of handing over the site for installation, whichever is later.
10. **Despatch Clearance:** No goods shall be despatched before issue of Despatch note issued by HSCC/KCGMC, failing which entire responsibility shall rest on the supplier.

11. **Warranty:** Warranty of equipments will be two years (on site) from date of commissioning & handing over to KCGMC/ Client.
12. **Performance Security:** Within fifteen (15) days from date of the issue of notification of award by the Purchaser/Consignee, the supplier, shall furnish performance security in the of any of the forms indicated under EMD Clause (as per the format in tender enquiry document - in case of PBG) to the Purchaser/Consignee for an amount equal to ten percent (10%) of the total value of the contract, valid up to sixty (60) days after the date of completion of all contractual obligations by the supplier, including the warranty obligations, initially valid for a period of minimum 26 months (as applicable warranty period of 2 years) from the date of Notification of Award:
13. The Notification of Award/Purchaser order Constitutes the formation of legal binding contract between the parties, scope of supply will be governed by the technical specifications & other terms & conditions of the aforesaid Tender Enquiry document and its amendments /corrigendum (if any) issued.
14. The Time take on the part of HSCC / KCGMC / on account of despatch clearance will not be counted for delivery period /installation period.

15. Payment Terms:

- (i) 80% payment on submission of following document:-
- Copy of Purchase order.
 - Consignee receipt in original issued by KCGMC/HSCC.
 - Invoice in favour of Director, KCGMC through HSCC (I) Ltd for 80% claim
 - Warranty Certificate.
 - Copy of Performance Security
- (ii) 20% payment on submission of following documents:
- Copy of Purchase order.
 - Copy Consignee receipt issued by KCGMC/ HSCC.
 - Installation & commissioning or final acceptance certificate issued by KCGMC.
 - Invoice in favour of Director, KCGMC through HSCC (I) Ltd for 20% claim.
 - Copy of Performance Security

16. Supply shall be accepted only after inspection and approval by the concerned authority at KCGMC.
17. **Liquidated Damage:** If the supplier fails to deliver any or all of the goods or fails to perform the services within the time frame(s) incorporated in the contract, the Purchaser/Consignee shall, without prejudice to other rights and remedies available to the Purchaser/Consignee under the contract, deduct from the contract price, as liquidated damages, a sum equivalent to 0.5% per week of delay or part thereof on delayed supply of goods and/or services until actual delivery or performance subject to a maximum of 10% of the contract price. Once the maximum is reached Purchaser/Consignee may consider termination of the contract.
18. **Insurance:** The supplier shall make arrangements for insuring the goods against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the following manner:

The supplier shall be responsible till the entire stores contracted for arrival in good condition at destination. The transit risk in this respect shall be covered by the Supplier by getting the stores duly insured for an amount equal to 110% of the value of the goods from ware house to ware house (consignee site) on all risk basis. The insurance cover shall be obtained by the Supplier and should be valid till 3 months after the receipt of goods by the Consignee.

19. Termination of Contract

- 19.1 The Purchaser/Consignee , without prejudice to any other contractual rights and remedies available to it (the Purchaser/Consignee), may, by written notice terminate the contract in whole or in part, if the supplier fails to deliver any or all of the goods or fails to perform any other contractual obligation(s) within the time period specified in the contract, or within

any extension thereof granted by the Purchaser/Consignee

- 19.2 In the event of the Purchaser/Consignee terminates the contract in whole or in part, pursuant to sub-clause 19.1 above, the Purchaser/Consignee may procure goods and/or services similar to those cancelled, with such terms and conditions and in such manner as it deems fit and the supplier shall be liable to the Purchaser/Consignee for the extra expenditure, if any, incurred by the Purchaser/Consignee for arranging such procurement.

Unless otherwise instructed by the Purchaser/Consignee, the supplier shall continue to perform the contract to the extent not terminated.

20. Resolution of disputes

- 20.1 If dispute or difference of any kind shall arise between the Purchaser/Consignee and the supplier in connection with or relating to the contract, the parties shall make every effort to resolve the same amicably by mutual consultations.
- 20.2 If the parties fail to resolve their dispute or difference by such mutual consultation within twenty-one days of its occurrence, then, such dispute or difference shall be referred to the sole arbitrator appointed by **Director General Medical Education and Research, Govt. Of Haryana, Panchkula**. The award of the arbitrator shall be final and binding on the parties to the contract subject to the provision that the Arbitrator shall give reasoned award
- 20.3 Venue/seat of Arbitration: The venue of arbitration shall be at New Delhi, India.

21. Applicable Law and Jurisdiction

The contract shall be governed by and interpreted in accordance with the laws of India for the time being in force. The contract shall be subject to the jurisdiction of Delhi court to the exclusion of all other courts.

22. Delivery/Delay in the supplier's performance

- 22.1 The supplier shall deliver of the goods and perform the services under the contract within the time schedule specified in the documents. The time for and the date of delivery of the goods stipulated in the schedule shall be deemed to be of the essence of the contract and the delivery must be completed not later than the date(s) as specified in the contract.
- 22.2 Any unexcused delay by the supplier in maintaining its contractual obligations towards delivery of goods and performance of services shall render the supplier liable to any or all of the following actions:
- (i) imposition of liquidated damages,
 - (ii) forfeiture of its performance security and
 - (iii) termination of the contract for default.
- 23 The bid submitted by the bidder should be accompanied with Power of Attorney in favour of signatory of TE documents.
- 24 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.

TENDER FORM

Date:

To,

Chief General Manager, HSCC
For & on Behalf of Director General Medical Education & Research (DGMER),
Govt. Of Haryana,
Panchkula

Ref. TE document no. Item

no:-

We, the undersigned have examined the above mentioned TE document, including all amendment/corrigendum issued the receipt of which is hereby confirmed. We now offer to supply and deliver, installation, commissioning _____ (*Description of goods and services*) in conformity with your above referred document terms for the sum of ____ (**NOT TO MENTION ANY PRICE DURING SUBMISSION IN TECHNICAL OFFER**) _____ (total tender amount in figures and words), as shown in the price schedule(s), attached herewith and made part of this tender.

If our tender is accepted, we undertake to supply the goods and perform the services as mentioned above, in accordance with the delivery schedule specified in the List of Requirements. We further confirm that, if our tender is accepted, we shall provide you with a performance security of required amount in an acceptable form in terms of tender condition clause 12, for due performance of the contract.

We agree to keep our tender valid for acceptance as required in the tender clause condition 1, or for subsequently extended period, if any, agreed to by us. We also accordingly confirm to abide by this tender up to the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.

We confirm that we do not stand deregistered/banned/blacklisted by any Govt. Authorities.

We confirm that we fully agree to the terms and conditions specified in above mentioned TE document, including amendment/ corrigendum if any

We are fully agreed all the terms and conditions of TE document including amendment/ corrigendum /technical specification issued before opening of bid. In case, anywhere any conditional terms found in our bid, the same shall be treated as deleted/cancelled/ withdrawn from our bid. Whenever there is a conflict, the acceptance of all terms and conditions of TE document in the tender form shall prevail only

(Signature with date)

(Name and designation) Duly authorised to sign tender for and on behalf of

Price Bid

Item no:

Name of item

Sr no.	Description of Goods	Make	Model no.	Qty.	Unit Price Rs.	Rate of VAT/Sales Tax e % added in Unit price	Total Unit Price (Inclusive of Tax) Rs.	Total Price Rs.
a	b	c	d	e	f	g	h=f+g	i=eXh
1.								

Amount in words: _____

Note: 1. Sales tax/VAT should be mentioned separately.

2. Unit price shall include all packing & forwarding, freight, insurance charges from ware house to consignee, local tax, duties, two year warranty, VAT/ taxes and other levies payable by the supplier under the contract.

Authorised Signatory
Name of the Company with Address

**PRICE SCHEDULE FOR ANNUAL COMPREHENSIVE MAINTENANCE CONTRACT
AFTER WARRANTY PERIOD**

1	2	3	4					5
Item no.	BRIEF DESCRIPTION OF GOODS	QUANTITY. (Nos.)	Annual Comprehensive Maintenance Contract Cost for Each Unit year wise* (Inclusive of service tax) INR					Total Annual Comprehensive Maintenance Contract Cost for 5 Years [3 x (4a+4b+4c+4d+4e)] (Inclusive of service tax) INR
			1	2	3	4	5	
			a	b	c	d	e	

*** After completion of warranty period**

Authorised Signatory
Name of the Company with Address

BANK GUARANTEE FORM FOR EMD

To
HSCC I Ltd.
E-6A, Sector-1, Noida -201301

Whereas _____ (hereinafter called the "Tenderer") has submitted its quotation dated _____ for the supply of _____ (hereinafter called the "tender") against the purchaser's tender enquiry No. _____
Know all persons by these presents that we _____ of _____ (Hereinafter called the "Bank") having our registered office at _____ are bound unto _____ (hereinafter called the "Purchaser) in the sum of _____ for which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this _____ day of _____ 20____. The conditions of this obligation are:

(1) If the Tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.

(2) If the Tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity:-

a) fails or refuses to furnish the performance security for the due performance of the contract.

or

b) fails or refuses to accept/execute the contract. or

c) if it comes to notice that the information/documents furnished in its tender is incorrect, false, misleading or forged

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition(s).

This guarantee will remain in force for a period of forty-five days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

(Signature of the authorised officer of the Bank) Name
and designation of the officer

Seal, name & address of the Bank and address of the Branch

**BANK GUARANTEE FORM FOR PERFORMANCE SECURITY/ CMC*
SECURITY**

To
Chief General Manager, HSCC I Ltd.
For & on Behalf of Director General Medical Education & Research (DGMER), Govt.
Of Haryana,
Panchkula

WHEREAS _____ (Name and address of the supplier) (Hereinafter called “the supplier”) has undertaken, in pursuance of contract no _____ dated _____ to supply (description of goods and services) (herein after called “the contract”). AND WHEREAS it has been stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognised by you for the sum specified therein as security for compliance with its obligations in accordance with the contract; AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of _____ (Amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid up to 26 months from the date of Notification of Award i.e. up to ----- (indicate date)

For CMC the BG shall be addressed to the Consignee

.....
.....
(Signature with date of the authorised officer of the Bank)

.....
.....
Name and designation of the officer

.....
.....
..... Seal, name & address of the Bank and address of the Branch

TECHNICAL SPECIFICATIONS

I) Department of Physiology, KCGMC, Karnal

TECHNICAL SPECIFICATIONS FOR ITEMS OF PHYSIOLOGY DEPARTMENT

Sr. No	NAME OF EQUIPMENT	SPECIFICATION
1	HEMOGLOBINOMETER	SAHLIS OR HELLIGS (WITH SQUARE GRADUATION TUBES) -GRADUATION TUBES (EXTRA) -Hb PIPPETTE (EXTRA)
2	HEMOCYTOMETER	COMPLETE WITH IMPROVED NEUBAUER'S CHAMBER NEUBAEURS CHAMBER (EXTRA) RBC & WBC PIPPETTES (EXTRA)
3	PHYSIOGRAPH 2 CHANNEL COMPLETE WITH ACCESSORIES	Double channel with transducers and all relevant accessories (Student Physiograph Two channel with time & event channel main console with 9 speed (100, 50, 25, 10, 5, 2.5, 1, .5, .25 mm/sec.) chart drive and stimulator. Main Console :Made up of non magnetic material aluminium. Couplers :- Strain Gauge, Pulse Respiration, temperature, EKG and Bio-Potential Transducers :- Pressure, muscle activity/ force respiration belt, pulse, respiration & temperature. Accessories :- EKG electrode, EEG & EMG paste, V-pin junction box, III Pin junction box action potential electrode, 2 Pkts of chart paper Z- fold and fuse. Supplied with two unit organ bath, micromotion attachment and plain stand.)
4	PORTABLE SPIROMETER	<ol style="list-style-type: none"> 1. Color TFT display with inbuilt thermal printer. 2. Features – FVC, SVE and MVV test; pre and post results. 3. Internal memory 2500 tests. Copy severity, overlapped FVC graph. Auto interpretation. 4. Spirometer- 10-16L and max volume 8L. 5. Measured parameter- FVC, SVC, MVV parameter. 6. Power supply 220-240V on/off button 12v/1.2Am and accessory.

II) Department of Pharmacology, KCGMC, Karnal

Sr. No	NAME OF ITEMS	SPECIFICATIONS
1	Water bath 4 hole electrically heated	Water Bath Rectangular - Double Wall, size inside (Stainless Steel) : 300x250x100 mm. 6 holes of 75 mm. dia. Capacity 8 ltrs. - <u>Thermostatic Control</u> .
2	Physiographs - Double channel	Double channel with transducers and all relevant accessories (Student Physiograph Two channel with time & event channel main console with 9 speed (100, 50, 25, 10, 5, 2.5, 1, .5, .25 mm/sec.) chart drive and stimulator. Main Console :Made up of non magnetic material aluminium. Couplers :- Strain Gauge, Pulse Respiration, temperature, EKG and Bio-Potential Transducers :- Pressure, muscle activity/ force respiration belt, pulse, respiration & temperature. Accessories :- EKG electrode, EEG & EMG paste, V-pin junction box, III Pin junction box action potential electrode, 2 Pkts of chart paper Z- fold and fuse. Supplied with two unit organ bath, micromotion attachment and plain stand.
3	Standard power tables	with gear system. Height : 36" Width : 24" Length : 40" Motor : 1 H.P. With 2 shaft and pulleys and belts. Voltage : 220 V AC 50 Hz.

4	Ideal respiratory pump	Variable rate, variable stock (V.R.V.S.) Respiration Pump with variable calibrated stroke arm, Respiration rate is in finitely, variable through, speed controlled by a knob which can be effected during the course of experiment. Mounted all metal platform with castors. Capacity 500cc.
5	Copper tray	10"x8"x1" :- Material- Copper Size 10"x8"x1" ,Thickness 0.6mm
6	Frog Board Palmer C 20	Frog board 15x10 cm. Hard wood board. Cork topped with clamp and fork.
7	Plethysmograph digital	Digital Plethysmograph with LCD display for direct volume displacement, readout permitting simple off line functioning with inbuilt computer base graphical and numerical mode upto 10 experimental data storage per experiment. Supplied with software having facility to save experimental subject data. Unique normal tap water based transducer. No special fluid or conductivity control needed. Simple user friendly operation without PC and printer.

III) Department of Community Medicine, KCGMC, Karnal

1. Ice Lined Refrigerator (300 Ltr):

- 1 No.

Ice-lined refrigerators to maintain temperature of vaccines at +2°C to +8°C. Not more than 8 hrs continuous or intermittent power should be sufficient per 24 hrs. to maintain vaccine temperature below 8 deg. C.

Operational Requirements

Vaccine storage is required for RI, Campaign and new vaccine introduction.

Designed for tropical climates.

Target holdover time should be 20 hrs or more in a continuous external temperature of 43 C.

Provision for drainage for the waste water.

Should have legs in the base with rotating screw type height adjustments to balance the weight on uneven floor.

The unit should have ground clearance of minimum 100 mm.

Net Vaccine Storage Capacity: 90 to 105 liters within basket in place

Body made of Stainless steel

External: Corrosion Resistance (CR at least 1 mm thickness)

Solid door with lock and handle

The temperature difference between any two points in the cabinet should not be more than +2 deg.C once stabilized.

ON/OFF Switch and power indicator should be available

A Microprocessor based control unit should be provided for setting of temperature and display following features:

3 digit digital display (to one decimal point) of cabinet temperature. The sensor should be placed 25 to 50 mm above base of storage chamber.

Power on LED/LCD indicator

Audio (minimum 65 dBA) and visual alarm against the violation of temperature range (less than +2 and more than +8 degree C)

Min. & Max.cabinet temperature digital display of last 24 hrs. and breaches during last 24 hrs.

The unit should be sealed protected from dust, moisture or condensed water falling over it.

Accuracy for digital controller +- 0.5 degree centigrade

Programmable Micro-processor control unit with child lock facility

Should have provision to set minimum and maximum temperature at 0.1 degree Centigrade to programme the unit for continuous operation
Should have provision for defrosting program.

• **Accessories, spares and warrantee:**

Vaccine Storage Basket allowing free circulation of air, having the size to be able to accommodate 4 to 6 of them in the unit and suitable to match the net volume requirement. It should be minimum 5 wire basket.

Stem Alcohol thermometer (specifications and standard as per MOHFW guideline) - one piece per unit range of -30 to +50 degree centigrade.

compressor along with the Starting device for compressor

Capacitor for compressor

Thermostat for refrigerator use

2. DEEP FREEZER

- 1 No.

Internal minimum capacity about 300 L, double door with adjustable at least 4-5 shelves each with separate inner door for better sample protection through minimum sample warming.

External casing should be MS sheet made and duly powder coated body, non-corrosive; and stainlesssteel inner chamber.

Range of temperature should be up to -20 to -40C (adjustable), temperature deviation of maximum +/-3C with proper display.

Control unit should be Microprocessor controlled.

Freezer condition monitor – Alarm indicators, maintenance indicator to take care of eventualities like power failure, high or low temperature, door open, probe failure etc.

No condensation on storing material with automatic electric defrost

Temperature date logger, Temp chart recorder.

Rechargeable battery backup including charger maintenance free.

Dual door system with inner glass door, suitable for ambience with temperature of 100C to 400C.

Voltage 220VAC, 50Hz.

Three years warranty, 5 yrs comprehensive AMC should be available with service centers in close proximity.

Should have all the accessories required for the functioning of the equipment.

CE / ISI mark or other equivalent quality certification.

Training of laboratory staff for the purchased equipment.

There should be provision for demonstration before final approval of equipment.

Operational manual should be provided.

IV) Department of BIOCHEMISTRY, KCGMC, Karnal

1. Autoclave Electric

- 2 Nos.

1. The water reservoir shall have a capacity that is sufficient for minimum 10 cycles.

2. The reservoir shall have a float that reads the level of the water that indicates on the display when the reservoir needs to be refilled.

3. The sterilization chamber shall have a capacity of at least 5 litres, constructed of stainless steel.

4. The sterilizer shall function with a micro - processor which controls a defined volume of distilled water that is pumped into a boiler, converted into steam, and then injected into the sterilizing chamber.

5. The micro processor shall accurately control and monitor the sterilizing temperature and pressure.

6. The sterilizer shall have a keypad, which controls the pre-set programs and the start control with a single touch.

7. Unwrapped Cycle - To sterilize unwrapped instruments the sterilizing cycle shall be constant at 134°C for 3.5 minutes. The total cycle time including warm up, pressurization and de-pressurization shall not be more than 11 minutes.

8. Wrapped Cycle - To sterilize wrapped instruments the sterilizing cycle shall be constant at 134°C for 6 minutes. The total cycle time including warm up, pressurization and de-pressurization shall not be more than 15 minutes.

9. Cycle for Delicate Items - To sterilize certain rubber, plastic and delicate items the sterilizing cycle shall be constant at 121 degrees C for 15 minutes. The total cycle time including warm up pressurization

and de-pressurization shall not be more than 24 minutes.

10. Digital Display for monitoring the systems throughout the processing cycle including the temperature, pressure and time elapsed.

11. Power supply - 220V, 50 Hz.

12. The product should be European CE or FDA Certified

2. Centrifuge Clinical

- 8 Nos.

- Centrifuges are required in the Laboratory to separate various components of Blood and any other liquid sample for analysis.
- Operational Requirements: Aerodynamic compact construction for vibration free performance, Table top version
- Should have multiple swing out rotors/heads (minimum 3) for different tube sizes
- Tube Capacity of rotor heads: maximum 24 tubes, maximum tube size 15 mL
- Should have a digital timer and digital speed control
- Body should be made of strong fabricated & corrosion resistant steel
- Start/stop switch
- Power breaks, auto break if lid opened
- start switch & digital speed indicator with timer and protective fuses.
- Door interlock
- Maintenance-free brushless drive motor with exact speed pre-selection and display.
- Speed range- RPM 100 to 6000 rpm and above, accuracy 1 rpm.
- All required accessories, spares and consumables
- Tube Holders as appropriate
- Environmental factors- Shall meet IEC-60601-1-2 :2001 (Or Equivalent BIS) General Requirements of Safety for
- Electromagnetic Compatibility: The unit shall be capable of operating continuously in ambient temperature of 10 -40 deg C and relative humidity of 15-90%
- The unit shall be capable of being stored continuously in ambient temperature of 0 – 50 deg C and relative humidity of 15-90%
- Power Supply: Power input to be 220-240VAC, 50Hz as appropriate fitted with Indian plug
- Voltage corrector/stabilizer of appropriate ratings meeting ISI Specifications. (Input 160- 260 V and output 220-240 V and 50 Hz)
- Standards, Safety and Training: The supplier should be ISO certified for quality standards. Should be FDA, CE, UL or BIS approved product. Should comply with IEC/TR 61010-3-020 :Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 3-020: Conformity verification report for IEC 61010-2-020:1992 Particular requirements for laboratory centrifuges"
- Comprehensive warranty for 2 years and 5 years AMC after warranty
- Documentation: Certificate of calibration and inspection. List of Equipments available for providing calibration and routine maintenance support as per manufacturer documentation in service / technical manual.
- List of important spare parts and accessories with their part number and costing.

V. DEPARTMENT OF PATHOLOGY

1. Hot Air (50 deg Celsius) oven for special staining

1. Capacity - Approximately 90 litres
2. Shelves - Stainless steel construction: 3 in number, must have pilot light on shelves
3. Temperature range - 50° C to 250°C. Built in thermometer
4. Walls (three layered) - Outer covered with stainless steel, Inner two walls made of stainless steel with glass wool insulation in between of minimum 15mm thickness.
5. Size - Approximately 18" X 18" X 18"
6. Controls - Thermostat control, Digital display, Rotary control
7. Heating element - Stainless steel. U shaped
8. Air circulation fan must be present

9. Power cord must be of acceptable durability, quality, length and current carrying capacity and should be compatible with Indian standard power socket
10. Electrical rating Unit should function with 200-230Vac, 50/60 Hz input power supply
11. Certification should have safety certificate from a competent authority CE / FDA (US) or valid detailed electrical and functional safety test report from ERTL.
12. Warranty - The Equipment including monitor and all accessories including bought out items should be under warranty for a period of two years and comprehensive maintenance contract for three years

2. Autoclave Electric

1. The water reservoir shall have a capacity that is sufficient for minimum 10 cycles.
2. The reservoir shall have a float that reads the level of the water that indicates on the display when the reservoir needs to be refilled.
3. The sterilization chamber shall have a capacity of at least 5 litres, constructed of stainless steel.
4. The sterilizer shall function with a micro - processor which controls a defined volume of distilled water that is pumped into a boiler, converted into steam, and then injected into the sterilizing chamber. The micro processor shall accurately control and monitor the sterilizing temperature and pressure.
5. The sterilizer shall have a keypad, which controls the pre-set programs and the start control with a single touch.
6. Unwrapped Cycle - To sterilize unwrapped instruments the sterilizing cycle shall be constant at 134°C for 3.5 minutes. The total cycle time including warm up, pressurization and de-pressurisation shall not be more than 11 minutes.
7. Wrapped Cycle - To sterilize wrapped instruments the sterilizing cycle shall be constant at 134°C for 6 minutes. The total cycle time including warm up, pressurization and de-pressurisation shall not be more than 15 minutes.
8. Cycle for Delicate Items - To sterilize certain rubber, plastic and delicate items the sterilizing cycle shall be constant at 121 degrees C for 15 minutes. The total cycle time including warm up pressurization and de-pressurisation shall not be more than 24 minutes.
9. LCD Display for monitoring the systems throughout the processing cycle including the temperature, pressure and time elapsed.
10. The unit shall have the facility for a internal printer, external printer or data logger that captures the date, time, temperature and cycle number.
11. Power supply - 220V, 50 Hz.
12. The product should be CE or FDA Certified

3. Autopsy Tables

- a. Table Top: Inner Size 260 cm (L) x 78 cm (W) x 88 cm (H) approx., jointless stainless steel top at least 16 Gauge thick sheet with no sharp corners & corners of approx 7 cm x 5 cm.
- b. Top mounted on stainless steel pipe frame for bearing at least 200 Kg weight.
- c. Graduation: One side of the Table should be graduated from 0 to 200 cm from Head side.
- d. Sink Size: 50 cm x 30 cm x 25 cm stainless steel jointless with at least 16 Gauge on foot end of the Table with two elbow operated taps for cold and hot water supply.
- e. Head End: Should have at least 10 holes connected to water supply with tap for continuous flowing spraying of water on table surface.
- f. Hand Shower: Connected to water supply of the table at one side with table top length.
- g. Strips: Seven strips of size 65 cm x 6 cm x 1.5 cm made of stainless steel.
- h. Head rest: Size at least 30 cm x 15 cm x 10 cm made of stainless steel.
- i. Foot rest: Size at least 50 cm x 25 cm X 15 cm two in numbers – one on either side moveable (not fixed with Table).
- j. Taps and shower should be stainless steel, heavy duty

4. Band Saw

1. To be used for preparing specimens of large size in the Departments. To be fitted with a large moving table and extension table operated on four ball-bearing rollers.
2. Table made of thick stainless steel sheet with heavy axle to aid in firm and smooth movement
3. Size of cutting table should be about 78 x 58 cms
4. Total Table Travel about 124 cms Size of Extension Table should be about 45 x 76 cms

5. Size of Wheel should be about 45 cms The total Height not more than 170 cms
6. To be supplied with one blade, starter, electrical cord and hospital-grade plug and spare accessories
7. Should have a Bone dust collector unit and safety hood
8. Suitable to work on 220 V, single phase, 50 Hz, AC supply.

CLINICAL Laboratory

5. pH Meter with ultra micro blood pH electrodes

Should be with alpha numeric LCD display showing pH, mV, temperature, having auto temperature compensation, 2 point calibration.

Technical Specification:

Range	:	0-14pH
Resolution	:	0.01pH
Accuracy	:	$\pm 0.01\text{pH} \pm 1$ digit
Temperature Compensation:		0-100 ⁰ C automatic with PT-100
Calibration	:	Auto as well as manual
mV Range	:	-2000mV to +2000mV
mV Resolution:		1mV
mV Accuracy	:	$\pm 0.1\%$ of range ± 1 digit
Calibration	:	Two point manual, Sensor PT-100 Probe
Data Entry	:	By soft touch keys with audible sound
Storage	:	30 samples
Functions	:	pH & Temperature simultaneously
Display	:	16 Characters x 2 lines alpha numeric LCD
Power supply	:	230 V $\pm 10\%$, 50 Hz Ac (12 V Battery optional)

To be supplied complete with pH electrode, Dust cover, Buffer solution, Electrode stand, Temp probe, Instruction manual

6. Haemocytometer with red & white pipettes

The Haemacytometers Box should be complete with new improved Neubauer's chamber having bright counting lines, RBC pipette and WBC pipette etc. & to be supplied in a durable box. It should be of high quality German make.

7. Haemoglobinometer – Sahli Type

The Haemoglobinometers Sahli's type with square haemoglobinometer tube, comparator, Hb pipette (one westergren and one wintrobe) & a brush for cleaning etc.

8. Syringes Disposable – 20cc, 10cc, 5cc and 2cc

The disposable Syringes with each set having various sizes ranging from 2cc to 20cc.

- 20cc----- 10 set
- 10cc----- 75 set
- 5cc-----10 set
- 2cc----- 5 set

9. Lab Refrigerators

- Capacity range 300-380L.
- Temperature 2-8⁰C
- Preferably roller mounted
- Adjustable shelves
- Battery backup
- Durable rust free exterior

Durable unbreakable interior
 Control panel with temperature alarm, on/off switch and digital thermometer,
 Interior lighting, Drip tray and defrosting arrangement.
 Adequate circulation of air to ensure even cooling by DUCT system
 Door with lock. Inside of door provided with racks. Door hinges and latches should be chromium plated.
 Control panel with temperature alarm, ON /OFF switch with power on indicator, digital thermometer, temperature display.
 Electronic automatic temperature control,
 Operable at 220 V, 50 Hz, single phase AC supply.
 Compressor unit to be hermetically sealed with guarantee for at least five years.
 Should have all the accessories required for the functioning of the equipment.
 CE / ISI mark or other equivalent quality certification.

VI. MICROBIOLOGY DEPARTMENT

S.NO	NAME OF THE ARTICLE	SPECIFICATIONS
1.	INCUBATORS BACTERIOLOGICAL ELECTRICAL (LARGE) 37 DEGREE CELSIUS	<ul style="list-style-type: none"> • Size of inner chamber: 100-150 liters capacity. • Double walled construction with complete inner chamber made of highly polished stainless steel • Outer chamber should be of steel sheet finished with powder coated point • Insulation to maintain desired temperature • Inner chamber should be fabricated with ribs for adjusting shelves to convenient height and 3 shelves to be supplied • Shelves should be made of polished stainless steel sheet as per chamber • Doors to be insulated and fitted with heavy hinges and should have double glass window • Temperature should be thermostatically controlled with range from 20-80° C. Air ventilators to be provided on both side • The equipment should be provided with control panel having a thermostat control knob, on-off switch, pilot lamp and timer, digital indicator • Should be supplied with power card and plug suitable to operate on 220 V, single phase, 50 Hz, AC supply. • Should be US FDA/ European CE certified. <p style="text-align: center;">Although adequate infrastructure is present for the installation, but any additional requirement in terms of infrastructure, electrical changes and ambient temperature maintenance to be done by the supplier</p>
2.	AUTOCLAVE: HORIZONTAL	<p>Fully automated horizontal autoclave suitable for sterilization under working steam pressure upto 15-30psi and temp of 121 to 134 degree celcius.</p> <p>Size of inner chamber: (DiaX Depth) 500x900mm</p> <p>Horizontal cylindrical autoclave should be triple walled.</p> <p>Body of autoclave should be of high quality stainless steel SS 316.</p> <p>Lid should have thick stainless steel plate with double safety radial locking system.</p> <p>Should have pressure gauge, pressure release valve, automatic pressure control switch, vaccum breaker and steam trap.</p> <p>Unit must be mounted on a rust proof strong tube stand of high grade steel.</p> <p>Display: time and temperature LCD display.</p> <p>Alarm: low water level alarm and cut off/ sensor open alarm.</p> <p>Power supply: 220/230 Volts AC-50Hz or suitable power supply.</p> <p>System Configuration Accessories, spares and consumables:</p> <ul style="list-style-type: none"> <input type="checkbox"/> System as specified- <input type="checkbox"/> Should provide available spares and consumables for at least 10 years <input type="checkbox"/> Should provide a sufficient quality of consumable along with the equipment <p>Standards and Safety:</p>

		<ul style="list-style-type: none"> <input type="checkbox"/> Comprehensive onsite training for lab staff and support services till familiar with the system. <input type="checkbox"/> Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450 (BIS) <input type="checkbox"/> Should be US FDA / CE certified or equivalent standard approved product. <p>Although adequate infrastructure is present for the installation, but any additional requirement in terms of infrastructure, electrical changes and ambient temperature maintenance to be done by the supplier</p>
3.	AUTOCLAVE: 1 VERTICAL	<p>Fully automated vertical autoclave. Capacity: 100-120 lit</p> <ul style="list-style-type: none"> • Technical Specifications:- <ul style="list-style-type: none"> <input type="checkbox"/> Single door high pressure steam sterilizer with double/triple walled, steam jacket and separate boiler <input type="checkbox"/> Material of construction: Sterilizer chamber SS 316; Door SS 316; Jacket MS; Loading carriage SS 316; Transfer trolley: MS, painted; Door Gasket: Silicon or better; Insulation: fiber glass resin bonded wool or better; Insulation cover: SS sheets <input type="checkbox"/> Chamber capacity as per requirement Display: time and temperature LCD display. Alarm: low water level alarm and cut off/ sensor open alarm. <input type="checkbox"/> Operating temperature 121⁰C - 138⁰C pressure 15-30 psi of steam pressure <input type="checkbox"/> Sterilizer should be provided with steam generator <input type="checkbox"/> Spring loaded safety valves and automatic vacuum breaker for jacket <input type="checkbox"/> Removable plug screen for chamber drain <input type="checkbox"/> SS baffle for even steam distribution in the chamber <input type="checkbox"/> Safety valve protection against poor pressure. <input type="checkbox"/> Safety lock for door :pressure lock safety device <input type="checkbox"/> Low water off • System Configuration Accessories, spares and consumables: <ul style="list-style-type: none"> <input type="checkbox"/> System as specified- <input type="checkbox"/> Should provide available spares and consumables for at least 10 years <input type="checkbox"/> Should provide a sufficient quality of consumable along with the equipment • Environmental factors: Shall meet IEC-60601-1-2 :200(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility. • Power Supply: Power input to be 220-240VAC, 50Hz,/440 V 3 Phase as appropriate and fitted with plug compatible with local sockets • Standards and Safety: <ul style="list-style-type: none"> <input type="checkbox"/> Comprehensive onsite training for lab staff and support services till familiar with the system. <input type="checkbox"/> Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450 (BIS) <input type="checkbox"/> Should be US FDA / CE certified or equivalent standard approved product. • Documentation: <ul style="list-style-type: none"> <input type="checkbox"/> User/Technical/Maintenance manuals to be supplied <input type="checkbox"/> Certificate of calibration and inspection from factory. <input type="checkbox"/> List of important spare parts and accessories with their part number and costing. <input type="checkbox"/> Should submit a report of quality checks using biological indicator. <p>Although adequate infrastructure is present for the installation, but any additional requirement in terms of infrastructure, electrical changes and ambient temperature maintenance to be done by the supplier</p>

4.	HOT AIR OVEN	<ul style="list-style-type: none"> •Should be Microprocessor based digitally controlled equipment suitable for daily usage. •Should have double walled construction, special high quality insulated stainless steel SS316. •Facility for adjustable shelves, 10 removable shelves to be provided. •Size of inner chamber approx 55x55x70 cm with internal lighting facility •Insulated door fitted with heavy hinges, mechanical door lock. •Temperature range 30-250⁰C, digitally temperature setting accuracy •Separate PT 100 sensor and display for temperature (LCD). •Forced uniform air circulation, Digital safety thermostat. •Delayed start and stop function, high quality heating element •Supplied with cord & plug, operate at 220V/50 Hz AC supply •List of users and Satisfactory Report of quoted model from reputed institute / hospital •Should have all the accessories required for the functioning of the equipment. •FDA/ CE certified or other equivalent quality certification. •All electrical peripherals required for smooth functioning e.g. voltage stabilizer provided with the equipment •There should be provision for demonstration before final approval of equipment <p>Although adequate infrastructure is present for the installation, but any additional requirement in terms of infrastructure, electrical changes and ambient temperature maintenance to be done by the supplier</p>
5.	REFRIGERATORS	<ul style="list-style-type: none"> • Capacity 350-400 Liters. • Temperature 2-8⁰C <p>Refrigerators preferably should not have a freezer compartment.</p> <ul style="list-style-type: none"> • Preferably roller mounted • Adjustable shelves • Battery backup • Durable rust free exterior • Durable unbreakable interior • Control panel with temperature alarm, on/off switch and digital thermometer, • Interior lighting, Drip tray and defrosting arrangement. • Adequate circulation of air to ensure even cooling by DUCT system • Door with lock. Inside of door provided with racks. Door hinges and latches should be chromium plated. • Electronic automatic temperature control, • Operable at 220 V, 50 Hz. • Compressor unit to be hermetically sealed with guarantee for at least five years. • Three years warranty, 5 yrs comprehensive AMC should be available with service centers in close proximity • Should have all the accessories required for the functioning of the equipment. • CE / ISI mark or other equivalent quality certification. • All electrical peripherals required for smooth functioning e.g. voltage stabilizer provided with the equipment • There should be provision for demonstration before final approval of equipment.
6.	CENTRIFUGE ELECTRICAL HIGH POWER (24 TUBES)	<ul style="list-style-type: none"> • Centrifuges are required in the Laboratory to separate various components of Blood and another liquid sample for analysis. • Operational Requirements: Aerodynamic compact construction for vibration free performance, Table top version • Should have multiple swing out rotors/heads(minimum 3) for different tube sizes • Tube Capacity of rotor heads: maximum 24 tubes , maximum tube size 30 mL

		<ul style="list-style-type: none"> • Should have a digital timer and digital speed control • Body should be made of strong fabricated & corrosion resistant steel • Start/stop switch • Power breaks, auto break if lid opened • start switch & digital speed indicator with timer and protective fuses. • Door interlock • Maintenance-free brushless drive motor with exact speed pre-selection and display. • Speed range- RPM 6000 rpm and above, accuracy 1 rpm. • All required accessories, spares and consumables • Tube Holders as appropriate • Environmental factors- Shall meet IEC-60601-1-2 :2001(Or Equivalent BIS) General Requirements of Safety for • Electromagnetic Compatibility: The unit shall be capable of operating continuously in ambient temperature of 10 -40 deg C and relative humidity of 15-90% • The unit shall be capable of being stored continuously in ambient temperature of 0 – 50 deg C and relative humidity of 15-90% • Power Supply: Power input to be 220-240VAC, 50Hz as appropriate fitted with Indian plug • Voltage corrector/stabilizer of appropriate ratings meeting ISI Specifications.(Input 160- 260 Vand output 220-240 V and 50 Hz) • Standards, Safety and Training: The supplier should be ISO certified for quality standards. Should be FDA , CE, UL or BIS approved product. Should comply with IEC/TR 61010-3-020 :Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 3-020: Conformity verification report for IEC 61010-2-020:1992 Particular requirements for laboratory centrifuges" • Comprehensive warranty for 2 years and 5 years AMC after warranty • Documentation: Certificate of calibration and inspection. List of Equipments available for providing calibration and routine maintenance support as per manufacturer documentation in service / technical manual. • List of important spare parts and accessories with their part number and costing. • Atleast 100 graduated plastic centrifuge tubes should be provided with the equipment.
7.	CENTRIFUGE ELECTRICAL HIGH POWER (60-70 TUBES)	<ul style="list-style-type: none"> • Centrifuges are required in the Laboratory to separate various components of Blood and another liquid sample for analysis. • Operational Requirements: Aerodynamic compact construction for vibration free performance, Table top version • Should have multiple swing out rotors/heads(minimum 3) for different tube sizes • Tube Capacity of rotor heads: maximum 60-70 tubes , maximum tube size 30 mL • Should have a digital timer and digital speed control • Body should be made of strong fabricated & corrosion resistant steel • Start/stop switch • Power breaks, auto break if lid opened • start switch & digital speed indicator with timer and protective fuses. • Door interlock • Maintenance-free brushless drive motor with exact speed pre-selection and display. • Speed range- RPM 6000 rpm and above, accuracy 1 rpm. • All required accessories, spares and consumables • Tube Holders as appropriate • Environmental factors- Shall meet IEC-60601-1-2 :2001(Or Equivalent BIS) General Requirements of Safety for • Electromagnetic Compatibility: The unit shall be capable of operating continuously in ambient temperature of 10 -40 deg C and relative

		<p>humidity of 15-90%</p> <ul style="list-style-type: none"> The unit shall be capable of being stored continuously in ambient temperature of 0 – 50 deg C and relative humidity of 15-90% Power Supply: Power input to be 220-240VAC, 50Hz as appropriate fitted with Indian plug Voltage corrector/stabilizer of appropriate ratings meeting ISI Specifications.(Input 160- 260 Vand output 220-240 V and 50 Hz) Standards, Safety and Training: The supplier should be ISO certified for quality standards. Should be FDA , CE, UL or BIS approved product. Should comply with IEC/TR 61010-3-020 :Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 3-020: Conformity verification report for IEC 61010-2-020:1992 Particular requirements for laboratory centrifuges" Comprehensive warranty for 2 years and 5 years AMC after warranty Documentation: Certificate of calibration and inspection. List of Equipments available for providing calibration and routine maintenance support as per manufacturer documentation in service / technical manual. List of important spare parts and accessories with their part number and costing. <p>Atleast 100 graduated plastic centrifuge tubes should be provided with the equipment.</p>
8.	REFRIGERATED CENTRIFUGE	<ul style="list-style-type: none"> Should be Microprocessor Controlled with large LC Display of time, speed and temperature. Programmable speed with separate short spin key (in seconds). Programmes 90-99 and with program recall facility. Brushless maintenance free motor drive with low noise levels less than 63 db at Max speed. Automatic rotor recognition and automatic imbalance detection. Double lid locking system for maximum safety. Maximum speed 15,000 to 18,000 rpm with maximum RCF 20,000 to 30,000 x g with speed/RCF increment in steps of 1,000. Wide temperature range of -150⁰C to +40 C and must be able to maintain 40C at Max speed. Angle rotor accommodating 24 X 1.5/2.0 ml Micro centrifuge Tubes with Max speed/RCF. fixed angle rotor 15ml and 50 ml tubes, optional rotor fixed angle, 24 x 1.5 ml tubes 250 ml swing out rotor and adaptor for 5-10 ml tubes, 15 ml, 50ml and 250 ml tubes, microplate Rotor and Chamber should be made of chemical resistant and rust free material. Suitable constant power supply backup / UPS.
9.	DROPPING BOTTLES FOR STAINS (PLASTIC)	The Dropping Bottles of capacity 4 ounce to be provided & to be made of Hydensity plastic.
10.	DEEP FREEZE (-20DEGREE CELSIUS)	<p>1 Description of Function</p> <p>1.1 Deep Freezers are required to preserve blood and blood products, vaccinations etc at specified temperature.</p> <p>2 Operational Requirements</p> <p>2.1 Vertical Freezer, single door with adjustable 6 to 9 shelves (frost free).</p> <p>2.2 Separate Chamber racks to be pulled out for easy handling</p> <p>2.3 Non-CFC refrigerant</p> <p>3 Technical Specifications</p> <p>3.1 Capacity within 600 -700Lt</p> <p>3.2 microprocessor controlled, Digital display of set and actual temperature, with audiovisual alarm, power failure alarm.</p> <p>3.3 No condensation on storing material with automatic electric defrost</p> <p>3.4 Construction: Solid rust free cabinet to prevent corrosion and lockable castor wheels.</p>

		<p>3.5 Refrigeration System: Heavy Duty refrigeration system, maintenance free, below -20 deg C (+ 10C) with hermetically sealed refrigeration compressor and reliable refrigeration to minimize noise and vibration, air cooled with security key lock to prevent unintentional switch off shall be supplied. It should have maximum cooling time hours at maximum ambient temperature of 33deg C. The equipment should be of continuous duty and frost free.</p> <p>3.6 Alarm: It should also have audio visual Electronic Alarm System independent of power supply. 3.7 Insulation: High density polyurethane or equivalent Gaskets - Double seal silicon.</p> <p>3.7 System Configuration Accessories, spares and consumables</p> <p>4 Environmental factors</p> <p>4.1 The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%</p> <p>4.2 The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%</p> <p>5 Power Supply</p> <p>5.1 Power input to be 220-240VAC, 50Hz.</p> <p>5.2 Resettable over current breaker shall be fitted for protection.</p> <p>Should be provided with stablizer</p> <p>6 Standards</p> <p>6.1 Should be CE or FDA or BIS approved product</p>
11.	SLIDE BOX FOR 100 SLIDES FOR STUDENTS	Wooden, with aluminium slide tray

VII. Specifications of Items for Department of Forensic Medicine

Sr. No.	Item Name	Specifications
1	SLR camera with accessories.	<p>DSLR camera with accessories (Made of Sony/Nikon/Canon)</p> <p>1. Min 16MP with external flash with 16GB Class 10 SD card and twin Lens kit (18-55mm and 55-250mm with original manufacturer lens)</p> <p>2. UV Lens filter and CP Lens filter (Hoya)</p> <p>3. Lens hood petal type, silicon rubber</p> <p>4. Tripod: 2 way fluid head, quick release mechanism, spirit level, geared lockable center column with braced 3 section leg, rubber legs.</p> <p>5. Flash: Wireless flash. Approx 60m (197ft.) at ISO 100. AA/LR6 battery with battery charger.</p> <p>6. Accessory to be supplied: Carrying case, AV cord, HDMI cord, Lens cleaning kit, battery charger.</p>
2	Digital Spectrophotometer	<p>Imported</p> <p>Digital spectrophotometer with PC control through software for programmable measurements, compatible for data storage on USB stick</p> <p>U.V. Visible type, wavelength range: 190 – 1100nm</p> <p>Optical system: true dual beam</p> <p>Detector: Silicon photodiode</p> <p>Band pass/bandwidth 0.5 nm - 4 nm (variable)</p> <p>Absorbance range of greater than 5 A, stray light measurements greater than 0.00003 %T @340 nm in the UV/Vis wavelength range.</p> <p>Scan speed upto 3600 nm/min</p> <p>Facility for small sample volumes (of 50µL, 25µL and 5µL micro-volume cells) measurement with required accessory should be included</p> <p>Appropriate CE certification or equivalent</p> <p>Compatible with 240 V AC 50 Hz power supply</p> <p>ISO-9001 manufacturing standards complaint</p> <p>2 years warranty and then 3 years CMC</p>

3	Refrigerator	<p>Capacity range 300-380 L Temperature 2-8°C Preferably roller mounted. Adjustable shelves. Battery backup. Durable rust free exterior. Durable unbreakable interior. Control panel with temperature alarm, on/off switch and digital thermometer, interior lighting, drip tray and defrosting arrangement. Adequate circulation of air to ensure even cooling by DUCT system. Door with lock. Inside of door provided with rack. Door hinges and latches should be chromium plated. Control panel with temperature alarm, ON/OFF switch with power on indicator, digital thermometer, temperature display. Electronic automatic temperature control, operable at 220 V, 50 Hz, single phase AC supply. Compressor unit to be hermetically sealed with guarantee for at least five years. Should have all the accessories required for the functioning of equipment. CE/ISI mark or other equivalent quality certification.</p>
4	Deep freezer for keeping tissues (-80°C)	<p>-80 °C Freezer, upright cabinet, Direct cooling, manual defrost mode, CFC- Free refrigerant, Low noise (Noise Level (dB) 49), Cooling to -80°C. Microprocessor controlled, LED display, programmable to set temperature and alarms, Power Supply(V/Hz) 220-240/50, energy efficient, Capacity more than 700 litre, USB Interface, should include the inner doors, racks and boxes, Cabinet temperature can reach -80°C with temp uniformity within 5°C, alarms for door ajar, power failure, low voltage, high ambient temperature, Opening one inner door should not affect temperature in other compartments, ISI/ CE (Conformité Européenne) or other relevant standards complaint and marked. 2yrs warranty and then 3 yrs CMC</p>
5	LED TV with DVD Player with USB Slot	<p>40 INCHES along with DVD Player 1. USB 2 Side Support. 2. Fully HD & HDMI Support. 3. AV/Composite input slot compatible with newer devices. 4. Built in Woofer & Wi-Fi 5. Photo Sharing Plus 6. Photo Frame Mode 7. USB - Super Multi Format Play09oi 8. Mobile High-Definition link (MHL) 9. FM Radio 10. Solid Durability With Enhanced Protection Features. Power: AC 100-240 V 50/60 Hz Other: Five Star Rating</p>
6	Instrument Trolley	<p>Stainless steel instrument trolley with three shelves with guard rails on three sides. -With swivel castors Small :- 66x44x87 cm (LxWxH) Large :- 91x45x82 cm (LxWxH)</p>