

# 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/2016/OFF/MC-02**  
**Dated 10.02.2017**

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**

**FAX: 0120-2542447**

# KALPANA CHAWLA GOVT. MEDICAL COLLEGE, KARNAL, HARYANA

GOVT OF HARYANA

Tender Enquiry No.: HSCC/KCGMC/Medical Items/2016/OFF/MC-02 Dated 10.02.2017

## 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 & receipt of tender	Date and time of Opening of Techno – Commercial Tenders
I	Department of Physiology Equipment	27.02.2017 at 14:30	27.02.2017 at 14:30
II	Department of Pharmacology Equipment		
III	Department of Community Medicine Equipment		
IV	Department of Biochemistry		

For viewing, submission and other details please refer HSCC web site [www.hsccltd.com](http://www.hsccltd.com). Bidders may also visit [www.kcgmkarnal.org](http://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](http://www.hsccltd.com), (URL: [www.hsccltd.co.in](http://www.hsccltd.co.in)) from **10.02.2017 to 27.02.2017**. 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.**

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

Tender Enquiry No.: HSCC/KCGMC/Medical Items/2016/OFF/MC-02 Dated 10.02.2017

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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	NUMBER OF ITEMS	QUANTITY	EMD (in INR)
I	Department of Physiology Equipment	14	Mentioned against each items	Rs. 10,000 for each Department
II	Department of Pharmacology Equipment	10		
III	Department of Community Medicine Equipment	2		
IV	Department of Biochemistry	5		

**NOTE:** For any one Department (irrespective of number of items quoted - Bidder may quote one or more item/s in any one Department), bidder is to submit Rs. 10,000/- as EMD.

Sl. No.	Description	Schedule
i.	On line sale of tender enquiry documents	<b>10.02.2017 to 27.02.2017</b> 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)-201301
iii.	Cost of the Tender Enquiry Document	INR 1000/-
iv.	Pre Tender Meeting Date & Time	<b>15.02.2017</b> , 11:00 hrs. IST
v.	Pre Tender Meeting Venue	Same as (ii) above
vi.	Closing date & time for receipt of Tender	<b>27.02.2017</b> , 15:00 hrs IST
vii.	Time and date of opening of Techno – Commercial tenders	<b>27.02.2017</b> , 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](http://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.

4. 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.
5. 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 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	
			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	QUANTITY
<b>A. HUMAN AND OTHER EXPERIMENTS</b>			
1	PERIMETER	WIDE ARC LISTER MODEL Automatically records field to 90 degree in all meridians. The Carrier mechanism is smooth, silent and invisible. The patient perceives only the test object to move. Spring check, giving an Audible click to each 15 degree of rotation of the arc in either direction Renders close scrutiny of dial plate unnecessary, and ensures accurate registration. The device can be thrown out of action if silent movement is desired The marker a needle is housed in a retractable tube, sprung to Sheath the pint when not actually marking. A set of interchangeable and permanent washable test objects is included with the instrument. The objects subtend angles of 4 degree, 2 degree, 1 degree, ½degree, ¼ degree and are in white, green and red blue objects in the last three sizes are also included. Supplies complete with Transformer to work on 220 Volt A/C mains With 100 charts	20
2	HEMOGLOBINOMETER	SAHLIS OR HELIGS (WITH SQUARE GRADUATION TUBES) -GRADUATION TUBES (EXTRA) -Hb PIPPETTE (EXTRA)	64 100 100
3	HEMOCYTOMETER	COMPLETE WITH IMPROVED NEUBAUER'S CHAMBER NEUBAEURS CHAMBER (EXTRA) RBC & WBC PIPPETTES (EXTRA)	64 25 25
4	GAS ANALYSIS APPRATUS - HALDANES STUDENT TYPE	<b>AS PER SPECIFICATIONS PROVIDED BELOW</b>	1
5	GAS ANALYSER AUTOMATIC FOR CO <sub>2</sub> , O <sub>2</sub>	<b>AS PER SPECIFICATIONS PROVIDED BELOW</b>	1
<b>B. AMPHIBIAN AND MAMMALIAN EXPERIMENTS</b>			
6	GLASSWARE (BOROSIL MAKE)	-BEAKERS 25ML (50 Nos) 50ML (50 Nos) 100ML (200 Nos)  -STAIN BOTTLES 50ML (50 Nos) -BOTTLE FOR CEDAR WOOD OIL 20ML (100 Nos) -WATCH GLASS (200 Nos)  -GLASS ROD 12" LENGTH AND 4MM DIAMETER (FOR SLIDE STAINING STAND) (200 Nos)  -GLASS TUBE 8MM BORE AND LENGTH 12" (100 Nos)  -CAPPILARIES 1MM BORE (100 pkts) -GLASS SLIDE (50 pkts) -COVER SLIPS (FOR SLIDES) (50 pkts) -COVER SLIPS (FOR HEMOCYTOMETER) (50 pkts) -PASTEUR'S PIPPETTE (100 Nos) -TEST TUBES 3", 4", 5" (5 Doz of each size) -VISCOMETER (25 Nos) -SLIDE FOR BLOOD GROUP TESTING (100 Nos)	50 50 200  50 100 200  200  100  100 pkts 50 pkts 50 pkts 50 pkts 100 5 DOZEN EACH 25 100

7	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.)	2
8	RECORDING DRUM (KYMOGRAPH)	NEW ELECTRICAL STUDENT KYMOGRAPH WITH SPECIAL HEAVY DUTY MOTOR, OIL LAPEL GEAR SYSTEM, SPEED FROM 0.12 MM/SEC TO 640MM/SEC IN EIGHT STEP JERK FREE RUNNING INSTUCTIONING WITH ONE START AND STOP CLUTCH, STAINLESS STEEL SPINDLE WITH SCREW LIFT 15 X 15 METERS CYLINDER	50
9	POLYGRAPH FOUR CHANNEL	<b>AS PER SPECIFICATIONS PROVIDED BELOW</b>	2

**C. EQUIPMENT FOR RESEARCH LAB**

10	EXERCISE TEST SYSTEM	<b>AS PER SPECIFICATIONS PROVIDED BELOW</b>	1
11	COGNITIVE FUNCTION TESTING SYSTEM	<b>AS PER SPECIFICATIONS PROVIDED BELOW</b>	1
12	PORTABLE SPIROMETER	<b>AS PER SPECIFICATIONS PROVIDED BELOW</b>	1
13	DIGITAL EMG, NERVE CONDUCTION & EVOKED POTENTIALS MACHINE	<b>AS PER SPECIFICATIONS PROVIDED BELOW</b>	1
14	COMPUTERISED AUTONOMIC FUNCTION TESTING SYSTEM	<b>AS PER SPECIFICATIONS PROVIDED BELOW</b>	1

## **DETAILED TECHNICAL SPECIFICATIONS OF SOME ITEMS MENTIONED / LISTED ABOVE**

### **4. Gas Analysis Apparatus, Haldane's students type (Ref Item No. A - 4 above):**

- Should be supplied with multichannel recording unit with a range of +2 mV to + 10 V
- Sampling rate of 100 KHz per channel and option for variable sampling speed on each channel.
- ADC resolution of 16 bits on all gain ranges.
- Facility for recording ECG leads (I, II, III, aVL, aVF, aVR and VI to V6) for real time cardiac axis & vector analysis etc.
- Amplifiers & Transducers for ECG; Spirometer with respiratory flow head and mouth pieces. Pulse, respiration rate, Heart rate, hand dynamometer, Blood pressure, heart sound etc.
- The Software should calculate VE Expired minute volume, V02 oxygen consumption, VCO2, carbon dioxide production, RER respiratory exchange ratio, ECG, HRV, Body Temperature and Pressure Saturate BTPS, Standard Temperature and Pressure Dry STPD, (VE I V02), (VE / VCO2) etc. and should generates a number of graphs like Metabolic Log Window, VE (BTPS) vs. V02, VE (BTPS) vs. VCO2, VCO2 vs. V02, RER vs. time, V02 vs. time, VCO2 vs. time, VE (BTPS) vs. time.
- Accessories:-Mouth piece, head gear, tubing and flow sensors, mixing chamber connectors, ECG electrodes, cream, paste, filters and Douglas bags to be provided.
- Compatible Computer/Laptop & trolley should be provided.
- Gas Analyzer should have an Oxygen sensor with minimum range of 5-1 00% oxygen and resolution of at least ,0.02% & the carbon dioxide sensor with minimum range 0-8% of carbon dioxide and resolution of at least 0.1 % and variable flow range of 0-185 nil/min for best performance and results and must have following specifications»
- Operating Temperature Range: +5 to 40°C
- Humidity: 0 to 90% non-condensing
- Warm-up time: 10 mins @ 20°C
- Should be supplied with Gas Mixing Chamber, tubing and connecting tubings and cable.
- Must have an analogue outputs for connecting it to data recoding unit and software.
- The instrument should be approved to IEC, CE.& ISO and other safety standards.
- Manufacturer should have experience of Manufacturing & Installation of the quoted product for atleast 05 years. Documentary proof should be attached.

### **5. Gas Analyzer Automatic for CO<sub>2</sub>, O<sub>2</sub> (Ref Item No. A - 5 above):**

- The system should measure VO<sub>2</sub>, VCO<sub>2</sub>, RQ, VE, spirometry/flow volume, etc.
- The system should be interfaced to computer (latest configuration) with 17" Colour
- LCD/TFT monitor, printer and other required accessories.
- The system should be able to record & measure VO<sub>2</sub> oxygen consumption, VCO<sub>2</sub> carbon dioxide production, VE Expired minute volume, RER respiratory exchange ratio, ECG, HRV, Body Temperature and Pressure Saturate BTPS, Standard Temperature and Pressure Dry STPD, (VE /VO<sub>2</sub>), (VE/VCO<sub>2</sub>) etc. and should generates a number of Metabolic graphs.
- Facility to perform complete heart rate variability analysis (Time & Frequency domains), ECG interpretation, PQRST amplitudes and ST elevation, cardiac axis analysis during exercise.
- Should have high sensitive oxygen and carbon dioxide sensor with adequate variable flow range for best performance and results.
- The system should simultaneously record and analyse all the required parameter in a single screen for interpretation and computation of results.
- Should have a noise free Multichannel ECG, R-R interval, Heart Rate, Skin temp, GSR, Respiration rate, Oxygen saturation, pulse blood flow, Accelerometer activity integrated into the system



- Should provide automatic BP recording device to record BP at different stages of exercise and record in the software along with other parameters.
- The system should be provided with physical mixing chamber suitable for extremely high and low ventilation ranges.
- Accessories:-Mouth piece, head gear, tubing and flow sensors, mixing chamber connectors, ECG electrodes, cream, paste, filters and Douglas bags to be provided.
- Free Software upgrades and updates should be provided for next 5 years.
- It should be supplied or interfaced with a compatible branded Bicycle Ergometer
- Manufacturer/Supplier should have ISO certification for quality standards
- Should be US FOA/European CE /IEC/BIS other safety standards approved product.
- Demonstration of the equipment and necessary training to be provided by the experts.
- Manufacturer should have experience of Manufacturing & Installation of the quoted product for atleast 05 years. Documentary proof should be attached.

## 9. SPECIFICATIONS FOR POLYGRAPH MULTICHANNEL (Ref Item No. B - 9 above)

### THE SYSTEM SHOULD BE ABLE TO RECORD AND ANALYSE:

1. PULSE, PPG, BP, ECG, PULSE TRANSIT TIME, HEART RATE VARIABILITY.
2. ECG MULTILEADS CONFIGURATIONS FOR REAL TIME CARDIAC AXIS AND VECTOR ANALYSIS.
3. DIGITAL MICROPHONE FOR HEART AND LUNG SOUND STUDIES.
4. PULSE WAVE VELOCITY, DEEP BREATHING TEST, VALSALVA MANEUVER.
5. SPO<sub>2</sub>, ACCELERATION (3 AXIS), ACTIVITY, GSR AND TEMPERATURE, EEG, EMG, NCV, ETC.
6. DYNAMOMETER TO STUDY HAND GRIP TESTING.
7. FOUR CHANNEL BALANCE BOARD FOR STATIC POSTUROGRAPHY OR BODY SWAY STUDIES.

### HARDWARE SPECIFICATIONS:

1. SIMULTANEOUS RECORDING FOR ATLEAST 12 AND MORE PARAMETERS.
2. HIGH SAMPLING RATE OF 40KHz OR MORE.
3. SHOULD HAVE FULLY ISOLATED STIMULATOR FOR CONSTANT CURRENT AND VOLTAGE STIMULATION OUTPUT RANGE (0-20mA) with pulse stimulation 50-200microsec.
4. MUST HAVE PREFERRED PARAMETERS FOR WIRELESS MONITORING ECG, SPO<sub>2</sub>, PPG, RESPIRATION, GSR AND TEMPERATURE WITH DATA LOGGING ON 8GB AND REAL TIME ACQUISITION AND ANALYSIS MODE.
5. THE SOFTWARE SHOULD HAVE STEP BY STEP INSTRUCTIONS, PROTOCOL AND EXPERIMENTAL DESIGN FOR PERFORMING VARIOUS EXPERIMENTS IN PHYSIOLOGY TEACHING APPLICATIONS. ALSO SHOULD HAVE SAMPLE DATA FOR ANIMAL EXPERIMENTS FOR DEMONSTRATING TO THE STUDENTS.
6. FACILITY FOR AUTOMATIC ANALYSIS WHILE DATA RECORDING AND AFTER RECORDING; FOR ECG, HRV, BP, PEAK ANALYSIS, SPECTRUM ANALYSIS, ETC.
7. SHOULD HAVE AN OPTION FOR MATHEMATICAL FUNCTION AND STATISTICAL ANALYSIS AND EXPORT OPTIONS TO OTHER SOFTWARE LIKE MAT LAB, EXCEL, QUICKTIME, WAVE, TEXT, ETC FOR DESIRED INTERPRETATION OF DATA.
8. THE SOFTWARE SHOULD PROVIDE AN EASY FILE SHARING OPTION TO A DISTANT USER WITHOUT INVOLVING ANY COST WITH A 5 YEAR OF FREE UPDATES AND UPGRADES.
9. COMPATIBLE DESKTOP COMPUTER (i3, 4GB RAM, 500GB HDD, 18 INCH MONITOR, WINDOWS OS), LASERJET PRINTER AND 1 KVA UPS.
10. DOCUMENTATIONS CE/FDA/ISO AND OTHER SAFETY CERTIFICATES MUST BE PROVIDED.
11. MANUFACTURER SHOULD HAVE EXPERIENCE OF MANUFACTURING AND INSTALLATION OF THE QUOTED PRODUCT FOR ATLEAST 5 YEARS.

## 10. SPECIFICATIONS FOR EXERCISE TEST SYSTEM (Ref Item No. C - 10 above)

Should be compact and trolley mounted system comprising:-

1. State of the art computerized exercise test assembly for online measurement of work load, ventilation, anaerobic threshold, oxygen consumption, CO<sub>2</sub> production, cardiac frequency, respiratory rate, ventilatory equivalent, O<sub>2</sub> pulse, respiratory exchange ratio, nutritional assessment, VO<sub>2</sub> max, etc.
2. Cardioscope with rate meter for 3 lead ECG monitoring.
3. The system should have built in barometric/sample pressure transducers and temperature sensors for monitoring of ambient condition.
4. Should be capable of doing sampling analysis of gases by breath.
5. System should have the facility for automatic calibration of analysers with internal quality assurance, volume transducer calibrator with precision calibration syringe with quality control.
6. The system should include pneumotachograph with very low flow resistance and should not be influenced by humidity (Gold standard).
7. Minimum range 0-14L/sec. accuracy <3%.
8. Flow transducer should be connected to analyser by light weight/small dia tubing (dead space <50ml).
9. Should have fast response CO<sub>2</sub> analyser (infra red absorption/spectrophotometry) gold standard.
10. Range 0-10% CO<sub>2</sub>. Relative accuracy 0.01%. response time <90msec.
11. Should have fast response O<sub>2</sub> analyser (paramagnetic/spectrophotometer) gold standard.
12. Range 0-100% . Relative accuracy 0.01%. response time <90msec.
13. Software should support windows 2000/XP in incorporate customized predicted normal equations. Software should be capable of changing graphic displays during real time testing.
14. Programmable cycle ergometer with minimum load range 20-750watts. Loads should be adjustable in steps as well as in ramp fashion (speed independent).
15. Work load accuracy <2% above 25watts.
16. Should run on microprocessor controlled electrically braked principle.
17. Handle and seat height should be easily adjustable.
18. Should have user definable/ programmed protocols with manual programmable work load LCD display for RPM and watts.
19. Should be supplied with software , standard accessories and manual.
20. System should be supplied with additional accessories for atleast 2years operation.
21. Intel core 2 duo processor, 4GB Ram, 17" TFT color monitor, 320GB HDD, CDR/w drive , windows 7, HP laserjet printer and UPS.
22. The above specifications are of generalized nature.

## 11. SPECIFICATIONS FOR COGNITIVE FUNCTION TESTING SYSTEM WITH WORKSTATION (Ref Item No. C - 11 above)

The requirements for the cognitive function testing are as follows:

1. Workstation - HP Z series workstations. Recommended configuration - HP Z240 with Intel Xeon processor, NVIDIA Quadro graphics card and maximum RAM possible. Monitor should have best resolution preferably around 1400 X 1020.
2. Stimulus presentation software - E-Prime 3

DETAILS OF SOFTWARE ARE AS BELOW:

### **E-Prime® 3.0 Overview**

E-Prime® is the most comprehensive software available for behavioral research. Build your own experiments using E-Prime's easy-to-use graphical interface. Design, collect, and analyze data - all within a few hours! With more than 100,000 users in research institutions and laboratories in over 60 countries, E-Prime is the world-leading behavioral experiment software. E-Prime provides a truly easy-to-use environment for computerized experiment design, data

collection, and analysis. E-Prime provides millisecond precision timing to ensure the accuracy of your data. E-Prime's flexibility to create simple to complex experiments is ideal for both novice and advanced users.

**The E-Prime suite of applications includes:**

- E-Studio - Drag and drop graphical interface for experiment design.
- E-Basic - Underlying scripting language of E-Prime (nearly identical to Visual Basic for Applications™).
- E-Run - Once experiment design is complete, a single mouse click generates it into an E-Basic script. E-Run then affords you the millisecond precision of stimulus presentation, synchronizations, and data collection.
- E-Merge - Quickly and easily combines your single session data files for group analysis.
- E-DataAid - Data management utility that allows you to filter, edit, analyze, and export your data.
- E-Recovery - Recovers data files in the event of early terminated experiments, or lost or corrupted files.

**New with version 3.0**

- Support for tablets and touchscreens
- SlideButton sub-object for an area of response collection without using script
- SlideChoice sub-object to design multiple choice surveys, recognitions, recalls
- SlideSlider sub-object to design scales and sliders
- Slide Layout Templates for quick design
- Improved interface with tabbed workspace and easier access to windows
- Find and replace properties in an experiment
- Run an experiment in a floating window for quicker inspection and debugging
- Run desired List rows at runtime with Interactive order selection
- Interactively run List rows for debugging purposes
- Create conditional Task Events using subroutines in User Script
- Improved Audio/Video playback and load times
- Start an experiment from any List object
- Play movie and audio files in additional formats
- Online Experiment Library
- E-Prime Command Reference and online documentation
- New experiment design templates
- Access Full and User Script in the Structure window
- Automatically generate text data files upon completion of experiment
- Save a definition of columns of interest in E-DataAid
- Correct, Incorrect, Omission Task Events
- Check for Update checks web and prompts when updates are available

E-Prime® is intended for research use only.

**12. SPECIFICATIONS FOR PORTABLE SPIROMETER (Ref Item No. C - 12 above)**

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.

### **13. SPECIFICATION FOR DIGITAL EMG, NERVE CONDUCTION AND EVOKED POTENTIAL MACHINE (Ref Item No. C - 13 above)**

The system should have:

- Store 1 minute of free EMG, Reviewed and Replayed with Audio.

Sweep Speed and Sensitivity changed after acquisition for single channel or all channels simultaneously.

- Sweep speed changed in following steps i.e.  
1, 1.5, 2, 3, 5, 7.5, 10, 15, 20, 30, 50, 75, 100, 150, 200, 300, 500, 1000 ms/D
- Screen Separator for viewing M and F or H waves side by side, with separate sensitivities.
- Patient Isolation for patient safety provided by optically isolating acquisition module from input box.
  - User Programmable Rates for all Stimulators.
  - 13 different check sizes which can be viewed in 16 different fields in VEP test.
  - Optional LED GOGGELS and FLASH STIMULATORS.
  - User definable marker names. All markers are automatic.
  - Individual settings for all nerves.
  - All study like NCV, SSR, EMG, EPs.
  - Double buffered averaging for easy understanding of EP replication.
  - Auto Protocol for BERA test where you can define intensities for different traces.
  - Tones/Envelopes stimulation for different audio tests such as LLR, MLR, P300.
  - Facility of selecting dB in nHL or SPL.
  - Compatible TDS 39 Headphones.
  - Latency/Intensity graph.
  - Simultaneous 4 Channels EMG Acquisition.
  - Easy muscle scoring with pre-defined groups.
  - Detailed list of muscles for easy selection.
  - Play Stored EMG on a multimedia speaker.
  - Exhaustive EMG with split screen facility to show selected MUPs. Detailed calculation such as turns, phases, amp, Duration, Rise time for each MUP can be easily viewed.
  - Fuzzy adaptive algorithm for rejection in Eps.

- User definable latencies, marker names and interpretation latencies for all SEP's.
- Automatic averaging by the software for all EP's test. and simultaneously acquisition of left and right sides for all EP with 8 traces on each side.
- EMG trigger to adjusted while acquiring and reviewing the data through software.
- Facility of reviewing EMG data with raster.
- F wave separator to adjust through software while acquiring and reviewing the data.
- Fine variation in current in steps of 0.1 mA.
- Padiatric shock stimulator.
- Online guide to locate various Muscles/Nerves.
- Padiatric Head band for Neonatles.

Pentium D or higher processor computer (4 MB Cache, 2 GB RAM, 160 GB HDD, DVD combo, Optical mouse, 19" TFT monitor and laser printer (16 page per minute printing) operative in all windows platform (98, XP).

- Impedance check for noise free acquisition.
- CE Certified.
- 4 channels.
- CMRR > 100 Db.
- Input Impedance > 100 m  $\Omega$  (common mode).
- Noise 0.5  $\mu$ V RMS (1 Hz to 10 kHz).
- 14 bit analog-digital conversion.
- Number of averages per channels up to 9999.
- Duration of electrical stimulation 0.02, 0.05, 0.10, 0.20, 0.50, 1.0 ms.
- Repetition rates of electrical stimulation 0.5, 1, 3, 5, 7, 10, 15, 20, 30, PPS standard or any user definable value.
- Hand held, constant current electrical stimulator with stimulus intensity dial and stimulus trigger on handle. Save and Start/Stop switches are provided on stimhandle.
- Electrically isolated stimulator with independent controls.
- Electrical range of 0-100 mA with adjustable duration , intensity and repetitive rate.
- Headphone.
- Type of stimulus Click (Rare, Comp., Alt), Tone bursts, Pips, Pure tone
- Frequency range of 250 Hz to 8000 Hz.
- Intensity range of 0-110 dB nHL or 30-140 DbSPL.
- Present of both left and right ears.
- Click duration of 100  $\mu$ s square wave clicks. Rarefaction, condensation or alternating polarity.

- Types of Envelopes like Linear, Gaussian, Blackman, Hanning.
- White Noise contra lateral masking from 0 dB to 80 dB nHL.
- User definable Rate.
- Monochrome VEP monitor for black and white, pattern reversal check board stimulation, vertical bars, horizontal bars. Features center fixation target, independent quadrant and half field stimulation. Color monitor optional with user programmable colors.
- Square sizes of video monitor 2, 3, 4, 5, 7, 8, 9, 11, 13, 16, 21, 32, 64.
- Flash mode.
- User definable Rate

Five year warranty as per Haryana Govt. norms.

#### **14. SPECIFICATIONS FOR COMPUTERIZED AUTONOMIC FUNCTION TESTING SYSTEM (Ref Item No. C - 14 above)**

The system should be able to record and analyse.

1. Non Invasive beat to beat Blood pressure monitoring in Human with Systolic, Diastolic and other hemodynamic parameters (CO, SV, TPR, Baro-reflex sensitivity, Blood Pressure variability etc.) by finger arterial pressure measurement.
2. Continuous ECG monitoring and recording with real time HRV Analysis.
3. Pulse, respiration, airflow, GSR, temperature measurements.
4. Dynamometer to study handgrip strength profile with balance board for static posturography studies.
5. Non-Invasive Tonometer for Vascular function Testing
6. Number of channels: 8 or more channels high speed USB Data Acquisition system.
7. Range:  $\pm 2$  mV to  $\pm 10$  V and Sampling rate of 10 KHz or more per channel (aggregate speed),
8. ADC resolution = 16 bits on all gain ranges
9. Multichannel Universal Bio-amplifier for recoding 12 leads ECG.
10. The Beat to beat Blood pressure monitor should be supplied with HCU and Finger cuffs of 3 different sizes (i.e. small, medium & large) and should have accuracy: 1% of full scale (max. 3 mmHg), zeroing automatic.
11. Transducers for Pressure, Pulse Plethysmography, and Respiration, Surface Temperature probe, Non-Invasive tonometer, Hand dynamometer and Wireless Heart rate kit with other accessories as required.
12. Licensed Software: It should have various automatic analysis modules for ECG, HRV, Blood Pressure, Cardiac output, Peak analysis, spike histogram etc.
13. Online & offline analysis with various export options for common formats.
14. The software should be provided with a 5 year of free updates and upgrades.
15. Computer: The system should be desktop based system with at least Intel Core i7, Genuine Windows 8 professional, 20 inch LED Monitor, 4GB RAM, 500GB SATA Hard Drive, DVD. Facility for internet connectivity, Laser printer.
16. Proper Demonstrations to be carried out before finalizing.
17. Onsite training should be provided by the company experts for 7 -10 days.
18. CE, ISO, FDA and other safety certificates must be provided.
19. The system should have world-wide installation, acceptance and recognition in published research papers globally. Performance certificates should be provided from the users using the system in India/abroad.

## II) Department of Pharmacology, KCGMC, Karnal

Sr. No	NAME OF ITEMS	SPECIFICATIONS	QUANTITY
1	Starling's Long Extension kymographs with time markers	Superior quality metal gears, accurate mill cut ratio 40, 10, 2.5 & 0.625 mm per sec, speed change clutch with immediate change position. Cylinder 6x11" with crown metal engaging shaft; turning by hand if necessary. Moving in slot in bed allowing variation in paper length for 60" to 66". Rigid cast iron stand which should work up down by large screws with fine adjustment facility. To be supplied with accessories e.g., double time marker, mercury manometer, separate smoking varnishing apparatus and smoking burner.	3
2	Spectrophotometer Model Du-Bachman (UV visible range)	Range 340 to 960 nm with facility of automatic concentration, transmission and absorbance measurements. Data display & LED display for wavelength in nm and equipped with extra sets of test tubes.	1
3	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>	12
4	Physiographs - Single channel	Single channel with transducers and all relevant accessories (Student Physiograph Single 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 :- 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 Mono bath, X-Block and Plain Stand.	40
5	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.	2
6	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.	3
7	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.	3 (One No. for Large Animals like Dog, Cats etc & Two Nos. for small animals)
8	Copper tray	10"x8"x1" :- Material- Copper Size 10"x8"x1" ,Thickness 0.6mm	100
9	Frog Board Palmer C 20	Frog board 15x10 cm. Hard wood board. Cork topped with clamp and fork.	100
10	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.	1



### 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 be 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. Colorimeter

- 6 Nos.

Wavelength Range: 400-700nm with 8 filters

Filter's peak: 420nm, 440nm etc.

Wavelength(Typical): 490nm, 520nm, 540nm, 570nm, 600nm, 700nm

Measuring Modes: % T, ABS, CONC and K Factor

Photometric resolution: 0.1%T, 0.01 ABS up to 1.99 ABS (O.D.)

Display: 3 – Digit LCD

Concentration Setting Limit: absorbance read out (with decimal point removed)

Sample value (Min.): 1ml in 4ml cuvet/test tubes

Detector: hermetically sealed photodiode

Power: 230V+/-10%, 50Hz.

ISI / ISO/ appropriate certification and standardized equipment with calibration report

2 years warranty

##### **Accessories:**

Test Tubes 5 Nos.

Light Source Bulb

Dust Cover

Instruction Manual

### 3. Centrifuge Clinical

- 8 Nos.

- Centrifuges are required in the Laboratory to separate various components of Blood and anyother 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 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 permanufacturer documentation in service / technical manual.
- List of important spare parts and accessories with their part number and costing.

### 4. Spectrophotometer

- 1 No.

- Digital spectrophotometer with PC control through software for programmable measurements, compatible for data storage on USB stick
- U.V. Visible type, wavelength range: 190 – 1100nm
- Optical system: true dual beam
- Detector: Silicon photodiode
- Band pass/bandwidth 0.5 nm - 4 nm (variable)
- Absorbance range of greater than 5 A, stray light measurements greater than 0.00003 %T @340 nm in the UV/Vis wavelength range.
- Scan speed upto 3600 nm/min
- Facility for small sample volumes (of 50 $\mu$ L, 25 $\mu$ L and 5 $\mu$ L micro-volume cells) measurement with required accessory should be included
- Appropriate CE certification or equivalent
- Compatible with 240 V AC 50 Hz power supply
- ISO-9001 manufacturing standards complaint
- 2 years warranty and then 3 years CMC

## 5. Glassware

- Quantity - (as below)

S. No.	Name of the Glassware item	Quantity
1.	Burette with holder and clamp	100
2.	Burette stand	100
3.	Beaker 1000 ml	70
4.	Beaker 500 ml	100
5.	Beaker 250 ml	100
6.	Beaker 100 ml	100
7.	Beaker 50 ml	100
8.	Beaker 25 ml	100
9.	Conical Flask Narrow Mouth 500 ml	150
10.	Conical Flask Narrow Mouth 250 ml	150
11.	Conical Flask Narrow Mouth 150 ml	250
12.	Conical Flask Narrow Mouth 50 ml	250
13.	Volumetric Flask with interchangeable Stopper 1000 ml	50
14.	Volumetric Flask with interchangeable Stopper 500 ml	50
15.	Volumetric Flask with interchangeable Stopper 250 ml	50
16.	Volumetric Flask with interchangeable Stopper 100 ml	50
17.	Glass Funnel 75 mm	100
18.	Glass Funnel 100 mm	100
19.	Measuring cylinder 1000 ml	40
20.	Measuring cylinder 500 ml	40
21.	Measuring cylinder 250 ml	80
22.	Measuring cylinder 100 ml	100
23.	Measuring cylinder 50 ml	100
24.	Measuring cylinder 25 ml	60
25.	Measuring cylinder 10 ml	60
26.	Centrifuge Tube 15 ml	100
27.	Cover slip 18 mm x 18 mm, 100/pkt	06
28.	Glass reagent Bottles Amber 500 ml	100
29.	Glass reagent Bottles Amber 250 ml	100
30.	Glass Reagent Bottles Amber 125	100
31.	Glass Reagent Bottles 500 ml	100
32.	Glass Reagent Bottles 250 ml	100
33.	Glass Reagent Bottles 125 ml	100
34.	Glass Slides 50/ pkt	06
35.	Test tubes 12 x 75 ml	3000
36.	Test tubes 12 x 100 ml	3000
37.	Test tubes 15 x 125 ml	3000
38.	Test tubes 18 x 150 ml	3000
39.	Test tubes 25 x 150 ml	1000
40.	Glass Pipette 0.1 ml	200
41.	Glass Pipette 0.2 ml	200
42.	Glass Pipette 1 ml	200
43.	Glass Pipette 2 ml	200
44.	Glass Pipette 5 ml	200
45.	Glass Pipette 10 ml	200
46.	Glass Pipette 20 ml	50
47.	Porcelain China Dish	100
48.	Glass Petri Dish 3"	50
49.	Glass Petri Dish 4"	50
50.	Test Tube Stands (Metallic) 20mmx40 holes	100
51.	Test Tube Stands (Plastic) 20mmx40 holes	100
52.	Test Tube Stands (Metallic)13mmx48 holes	100
53.	Test Tube Stands (Plastic) 13mmx48 holes	100

- Note:
- The glassware demanded above should be preferably of the following make:  
**A) Borosil or B) Corning or C) Thermo fisher**
  - Bidder quoting glassware must quote for all the 53 glassware items. The bidder shall be summarily rejected, if any one or more items are not quoted by the bidder.