

**INVITATION FOR QUOTATION**

**HSCC/PUR/KCGMC/Low Value/Medical College Items/2017/MC-Feb**

**Dated: 9<sup>th</sup> February, 2017**

**To**

**All Bidders**

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**Subject:** Invitation for Quotations for supply of Low Value Items for Various Medical College Departments of Kalpana Chawla Medical College, Karnal, Haryana.

Dear Sirs,

1. Director General, Medical Education & Research, Panchkula, Govt. of Haryana through its Consultant HSCC (India) Ltd. invites most competitive quotation for the following goods of the respective Departments as detailed below:

**Annexure - I (Including name of items, Specification and Quantity)**

- (I). Department of Pharmacology Equipment
  - (II). Department of Physiology Equipment
  - (III). Physiology Charts
  - (IV). Significant Contribution of Photo Charts of Scientist in Physiology
  - (V). Department of Community Medicine Equipment
2. Quotation:
    - 2.1 The contract shall be for the full quantity as described above.
    - 2.2 Corrections, if any, shall be made by crossing out, initialling, dating and rewriting.
    - 2.3 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
    - 2.4 The unit price/ rate of the item should be clearly indicated in the tender. Rates /Prices quoted shall be Inclusive of all taxes, duties, forwarding, and insurance & transportation up to the destination, Kalpana Chawla Medical College – Karnal.
  3. Each bidder shall submit only one quotation.

4. Evaluation of Quotations:

The Purchaser shall evaluate and compare the quotations determined to be substantially responsive i.e. which;

- 4.1 are properly signed; and
- 4.2 confirm to the terms and conditions, and specifications.
- 4.3 final considerations of equipments shall be based on the quality of equipments during demonstration / inspection.

5. The Quotations would be evaluated item wise.

6. Award of contract:

- 6.1 The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest rate for the item subject to quality of the items during demonstration / inspection.
- 6.2 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and cancel the bidding process and reject all quotations at any time prior to the issue of Purchase Order, without assigning any reason.

7. Delivery period shall be within **07** days from date of placement of order.

8. Payment shall be made only in Indian Rupees as follows:

**Satisfactory Acceptance and delivery - 100% of total cost**

100% Payment on submission of following documents (Duly signed & stamped at your end):-

- Copy of Purchase order.
- Consignee receipt in original issued by KCGMC/HSCC
- Invoice in favour of consignee/Director, KCGMC, Karnal through HSCC (I) Ltd
- Warranty Certificate in original.

9. All supplied items shall be under warranty of **12** months from the date of delivery/successful acceptance.

10. You are requested to provide your offer as follows:

Sr. No.	DESCRIPTION	ITEM No.	Closing date & time for submission & receipt of tender	Date and time of Opening of Techno – Commercial Tenders
I	Department of Pharmacology Equipment	1 to 25	16.02.2017 at 14:00	16.02.2017 at 14:30
II	Department of Physiology Equipment	1 to 69		
III	Physiology Charts	1 to 79		
IV	Significant Contribution of Photo charts of Scientist	1 to 25		
V	Department of Community Medicine Equipment	1 to 18		

**NOTE:** (Under any unforeseen circumstances if the due date for submission of Tender is declared as holiday then the tender shall be submitted & opened on the next working day at the scheduled time).

The quotations will be opened in HSCC office, NOIDA as mentioned above in the presence of tenderer or their authorised representative as they may choose to attend.

11. Information brochures/ Product catalogue, if any, must be accompanied with the quotation clearly indicating the model quoted for.
12. Sealed quotation to be submitted/ delivered at the address mentioned below:

**General Manager (Procurement)  
HSCC (India) Ltd.  
E- 6 (A), Sector -1.  
NOIDA – 201 301.**

**THE COVER SHOULD BE SUPERSCRIBED WITH THE FOLLOWING:**

Reference to letter of enquiry.  
Due date of opening.  
Serial No of the Items.

13. Quoted amount should be in Indian Rupees only.
14. For all items, the Technical Evaluation Committee may opt for Demonstration of the items. The Committee may also ask for Demonstration / Inspection before supply / delivery of the items for quality assurance.
15. Insurance shall be arranged/borne by supplier.

**Note:** Please indicate the quotation reference no. (Given at the top of page 1 of this letter) and Serial No of the Items on the top of the envelope.

The details of various medical equipment shall be also made available at [www.hsccltd.co.in](http://www.hsccltd.co.in), and modification/amendments etc, if any, shall only be notified on website only.

We look forward to receiving your quotation and thank you for your interest in this project.

General Manager (Procurement)

## I. DEPARTMENT OF PHARMACOLOGY EQUIPMENTS

DEPARTMENT OF PHARMACOLOGY (LIST OF INSTRUMENTS)			
Sl No.	Name of item	Specification	Qty (Nos)
1.	Assembly perfusion apparatus for mammalian heart	Thermostatic Assembly for perfusion of excised mammalian heart. Serving both for heart perfusion and all purpose two unit thermostatic bath. Complete assembly with stainless upright stand, double reservoir, mercury manometer & with special accessories. DOUBLE UNIT	4
2.	Colorimeters	<ol style="list-style-type: none"> <li>1. Photoelectric colorimeter with 8 filter digital (490, 520,540,570,600, 700 nm)</li> <li>2. Digital colorimeter should be highly stable and accurate ideal clinical instruments for blood and chemical analysis.</li> <li>3. Should have 5 / 8 filters with battery option.</li> <li>4. Range: 400mm to 700mm filters 5 high standard filters, Accuracy: +/-0.010.Abs</li> <li>5. Output Optional, Density 0 to 1.99, display 2.5 digit LED display, detector selenium photo cell light.</li> <li>6. Source 6.2V 0.3 Amp. Tungsten filament Lamp,</li> <li>7. Min volume 1 ml</li> <li>8. Power 230V+I- 10 50Hz Ac.</li> <li>9. Size (LxBxH) 225 x 230 x 150mm (Appox),</li> <li>10. Weight: 4 kg. (Approx)</li> <li>11. ISI certified</li> <li>12. 2 year warranty</li> </ol> <b>Accessories:</b> Test Tubes 5 Nos. Light Source Bulb Dust Cover Instruction Manual	3
3.	Cautery machine, electric blendsone	250-300 watts model with bipolar and unipolar modes(Lower model for animal experiments)	1
4.	Four Unit isolated organ bath palmer F 67	For internal organs with stirring arrangements, made of transparent acrylic sheet, chemically welded to make leak proof. Complete with uprights, organ & oxygen tubes, capillary tubing, and frontal lever etc. Temperature by immersion heater and control by thermostat	1
5.	Apparatus for isolated rabbit intestine etc	Complete on a base board with uprights, organs and oxygen tubes, capillary tubing, frontal lever. Temperature to be controlled by a working heater with control by a thermostat.	100
6.	Chemical balance-ordinary Apothecary's	Chemical balance in double door glass panelled wooden case with wt. Box. (200gm.)	2
7.	Chemical balance-sensitive	Digital, capacity- 100gms, sensitivity-0.1 mg)	2
8.	Operating lamps-Phillips	Philips Make or equivalent	4
9.	Animal trolley with 12 cages	Animal trolley with min. 12 cages each - Should be made of SS-304 rack on castor's with PP Moulded to accommodate Mice, Rat, Guinea Pig, Rabbit cages. Each Trolley should be exclusively for each of the above animals. each Trolley should accommodate min 12 cages. There should be preferably 3 to 4 racks in each trolley based on the size of the cages.	4 Trolley
10.	Electrodes	ordinary	3
11.	Levers	Simple lever, Starling's heart lever, Frontal lever, Myograph lever, Gimble lever	2 each
12.	Dissection board	Animal (Rat, Mice, Guinea pig, Rabbit) dissection board lead lined with fixing elastic bands with boss head.	5
13.	Water bath metal	Water Bath Rectangular - Double Wall, size inside (Stainless Steel) : 300x250x100 mm.6 holes of 75 mm. dia. Capacity 8 ltrs. - <u>Thermostatic Control.</u>	10
14.	Glass rod	Glass Rod size: Dia 5mm, Length 200 mm.	100

15.	Funnel	Funnel filtering 60 degree angle with stem with filter papers 100 Nos.	50
16.	Antihistamine chamber with manometer	Antihistamine chamber with special perforated removable partition with inbuilt pressurised filtered air delivery electric pump and fine mist nebulizer eliminates need for oxygen cylinder manual efforts Size 14x12x9 inch	1
17.	Kymographs	ELECTRICAL E-8 SHERRINGTON KYMOGRAPH; oil lapped brass gear system; speeds from 0.12mm/ sec. to 640 mm/sec. in 8 steps. Jerk free running, 8 gear changes through a dial type knob; stainless steel spindle with screw lift. 15x15 cm. cylinder with pilot lamp, plug & cord.	2
18.	Assembly for mammalian classes	Assembly for Mammalian Classes :- a) Kymograph (slow speed recording drum - Super ten electrical kymograph For Pharmacology & Drug Assay; close mesh gear train; 10 speeds; 1 rev. in 1 min. to 1 rev. in 12 hours, 30 mts. Speed selection through a convenient dial knob. Special heavy duty motor; no backlash; no slow starting on slow speeds; jerk free movement; stainless steel spindle with screw lift 15x15 cm. cylinder, with levelling screws, pilot lamp, plug & cord.= (1) b) Long paper extension twin bed with 15 cm. high cylinder. = (1) c) Adjustable Stand, with quick tangential adjustment, 38 cm. high stainless upright. = (1) d) Standard Mercury Manometer, without stop cock; with adjustable scale & 9 mm. dia. stem. (without mercury) = (1) e) Time Marker with power supply = (1) f) Dale,s Mono Bath for internal organs thermostatic controlled with stirrer, glass inner vessel, oxygen tube & frontal lever from stainless steel capillary.= (1) g) Standard X Block, machined from solid brass rod not cast to hold 9 mm. & 6 mm. dia. Rods. = (1)	4
19.	Hot air oven	Size 14''x14''x14''(Digital) Hot Air Oven temperature upto 250 degree C accuracy +/- 1 degree C, Double walled, inner chamber of Stainless Steel, Elements of three Sides. Chamber Size : 350x350x350 mm. No. of Shelves 2, Capacity 45 ltrs. With Air Circulation Fan.	1
20.	Incubator	Size 14''x14''x14''(Digital) automatic, complete with connecting cord & plug to work on 220 V AC, laboratory type) Incubator Bacteriological temp. range from room to 90 degree C. Double Door, with glass window. Inner chamber of Stainless Steel Sheet. Chamber Size : 350x350x350 mm. (No. of Shelves 2, Capacity 45 ltrs. With Air Circulation Fan.	2
21.	Autoclave	Autoclave Electric Double drum vertical (12''x15'') 300x500mm All SS. With pressure gauge, safety Valve, water level indicator, Max.15 PSI. With SS perforated Basket.	1
22.	Plethysmograph manual	Rat Paw Plethysmograph mercury column method demo model.	3
23.	Metal Distillation Apparatus	Distilled water still Manesty Electrical Cap. 2 gallon per hour	2
24.	Reagent Bottle with Stopper	500 cc (50 Qty) & 300 cc (50 Qty)	100
25.	Amber Colour Bottle	500 cc (10 Qty) & 300 cc (10 Qty)	20

## II. DEPARTMENT OF PHYSIOLOGY EQUIPMENT

<b>A. HUMAN AND OTHER EXPERIMENTS</b>			
Sr. No	NAME OF EQUIPMENT	SPECIFICATION	Qty(Nos)
1.	WINTROBE'S TUBES FOR ESR ON STAND		60
2.	ISHIHARA'S CHART	FOR COLOR VISION	8
3.	SNELLENS CHART	FOR FAR VISION	12
4.	JAGGERS CHARTS	FOR NEAR VISION	12
5.	HOT PLATES	FOR DRYING SLIDES, WORKABLE ON 220/230V THERMOSTATICALLY CONTROLLED BETWEEN 40-70 DEGREE CELCIUS WITH COPPER COVER OF SIZE 9X12 INCHES.	1
6.	WOODEN STEP (MASTER STEP)	HEIGHT ONE SIDE 16" OTHER SIDE 19" LENGTH 47" WIDTH 37"	1
7.	VITALOGRAPH	-	1
8.	PEAK FLOW METER	-	2
9.	TORCH	BIG SIZE WITH RADIO CELLS; MEDIUM SIZE WITH PENCIL CELLS	4 20
10	ECG MACHINE	SINGLE CHANNEL WITH ALL ACCESSORIES	2
11	SCHEMATIC EYE MODEL	--	1
12	WESTRERGREN'S PIPETTE FOR ESR ON STAND (WITH SPACE PIPETTES)	--	25
13	SYPHGMOMANOMETER	MERCURY TYPE LONGER CUFF WITH TAPERING END AND INSERTING PLASTIC HOOK TO BE SUPPLIED SEPERATELY WITH EACH	38
14	STETHOSCOPES	STUDENT TYPE	38
15	STETHOSCOPES DEMONSTRATION WITH MULTIPLE EARPIECE	-	2
16	SPIROMETERS	DOUBLE SPEED; 6L CAPACITY WITH ACCESSORIES - UNIDIRECTIONAL BREATHING VALVE - ADAPTOR - SPIROMETER FLOAT - WITH CO2 ABSORBER	6
17	TUNING FORK FOR HEARING TESTS	128Hz 256Hz 512Hz 1024Hz	4 10 6 2
18	STOP WATCHES	DIAL TYPE; DIAMOND MAKE, MANUAL 6 DIGITAL STOPWATCHES HAVE BEEN RECEIVED. THE PENDING 6 ITEMS CURRENTLY REQUIRED SHOULD BE MANUAL DIAL TYPE.	6
19	STETHOGRAPHS	FITTED WITH CORRUGATED TUBE WITH CHAIN FOR TYING TO THE CHEST AND MARY'S TAMBOUR -PRESSURE TUBING 8MM AND 10MM BORE -RUBBER TUBING 8MM AND 10MM	40 10+10 meter 10+10 meter
20	ERGOGRAPH MOSSO'S	WITH PAPER RECORDING DEVICE	12
21	CLINICAL THERMOMETER	-	20
22	TEMPERATURE AESTHESIOMETER	HEAT AND COLD SPOT HAMMER, <ul style="list-style-type: none"> <li>• Should microprocessor controlled.</li> <li>• Should have computer connectivity for data logging.</li> <li>• Should work on the temperature range of 5 Deg to 55 Deg</li> <li>• Should have sampling rate of 18 samples/sec</li> <li>• Should have a starting temperature 25° to 40°</li> <li>• Temperature increment rate 0.2 deg/s to 2.5 deg/s</li> <li>• Temperature decrement rate 0.2 deg/s to 2.5 deg/s</li> <li>• Delay between the repeats should be 3 to 30 secs</li> <li>• Power supply – 220v 50Hz</li> <li>• The product should be CE or FDA or BIS Certified</li> </ul>	12

23	ALGOMETER	-	10
24	KNEE HAMMER	PERCUSSION HAMMER, STUDENT TYPE	38
25	COMPASS	-	3
26	BICYCLE ERGOMETER		4
27	OLFACTOMETER	FOR TESTING OLFACTION *Detection Technique: Human Nose * Discrete Dilution Ratios: 2, 4, 7, 15, 30, 60 D/T's * (Standard Dilution-to-Threshold Ratios) * Response Time: As fast as 10-seconds or better(2 inhalations) * Accuracy: +/- 10% of D/T * Repeatability: +/- 2% * Inhalation Rate: 16-20 liters per minute * Operating Temperature Range: 32° to 104°F, 0° to 40°C * Odor Filter Cartridge - of suitable size * Nasal Mask – of suitable size * Provision for 9 inlet and outlet port. * Power supply - 220V,50Hz  The product should be CE or FDA or BIS Certified	1
28	PHAKOSCOPE	-	1
29	COLOUR PERCEPTION LANTERN EDRIDGE GREEN	FOR COLOUR VISION	1
30	HAND GRIP DYNAMOMETER	-	1
31	STAGE INCUBATOR	WARMER FOR MICROSCOPE STAGE WITH GLASS COVERED PETRI DISH	1
32	VOLUME RECORDER		6
<b>B. AMPHIBIAN AND MAMMALIAN EXPERIMENTS</b>			
33	VENOUS AND ARTERIAL CANNULA DIFFERENT SIZES		10 each
34	MAMMALIAN HEART PERFUSION ASSEMBLY; COMPLETE WITH ACCESSORIES		1
35	SPIRIT LAMP		12
36	DUBOIS RAYMOND INDUCTION COIL		6
37	SIMPLE KEY		6
38	SHORT CIRCUITING KEY	SWITCHING TYPE	6
39	MUSCLE TROUGH		6
40	ISOTONIC MUSCLE LEVER	WITH AFTER LOAD SCREW	6
41	ISOMETRIC MUSCLE LEVER		6
42	STARLING HEART LEVER		6
43	FRONTAL LEVER	FOR RECORDING INTESTINAL MOVEMENT	6
44	CONDUCTION VELOCITY LEVER		3
45	HOOK AND WEIGHT SET		6
46	MYOBOARD	STARLING CRANK MYOGRAPH FROG BOARD WITH 5" X 3.5" CORK TOP, FROG BOARD TO FIT ON STAND	12
47	ENAMEL TRAY	BIG SMALL	12 Each
48	MEASURING JAR	5.0 L 1.0 L 0.5 L	4 20 10
49	TRACHEAL CANNULA	WITH 8MM NOZZLE 6MM NOZZLE	2EACH
50	RESEARCH STIMULATOR	WITH RF ISOLATION UNIT PROVIDES	2

		RECTANGULAR PULSE OF CONTROLLED AMPLITUDE 1.5MV – 150 MV; FREQUENCY 0.1 – 10 K, DELAY 10 MICROSEC – 1 SEC, WIDTH 10 MICROSEC – 1 SEC	
51	STUDENTS STIMULATOR	WITH VARIABLE VOLTAGE, FREQUENCY AND DELAY	12
52	QT AND VT STAND		15
53	INK WRITING PEN		100
54	SIGNAL MARKER	FOR REACTION TIME	25
55	ELECTRONIC STIMULATOR	WITH RF ISOLATION UNIT TO PROVIDE RECTANGULAR PULSE OF CONTROLLED POLARITY/ AMPLITUDE 15MV-150MV, FREQUENCY 0.1 -10 HZ, DELAY 10 MICROSECONDS-1 SECOND AND WIDTH 10 MICROSEC – 1 SECOND AS PER GRASS SOLID STATE.	1
56	COPPER WIRES		10 KG
57	ELECTRIC TIME MARKERS 5/SEC AND 30/SEC		6
58	ELECTRODES, BURRETTE CLAMPS, ENAMEL BOWLS, BRASS UPRIGHTS, WITH COARSE AND FINE ADJUSTMENT BASIN		5 EACH
59	KYMOGRAPH PAPER; GLAZED	22inches X 6 inches	10 rims (of 100 nos each)
60	BALANCES; COMPLETE WITH WEIGHTS	PHYSICAL ANALYTICAL	1 EACH
61	X-BLOCKS		50
62	KYMOGRAPH BRODIE STARLING TYPE; COMPLETE WITH RESPIRATION PUMP MOTOR TIME MARKER MANOMETER		1
63	SMOKING OUTFIT WITH FUME CUPBOARD		1
64	VARNISHING OUTFIT FOR LONG AND SHORT PAPERS		1 EACH
65	ANAESTHESIA BOX		1
66	INSTRUMENT TROLLEY		1
67	OXYGEN CYLINDER WITH TROLLEY		6
68	CO2 CYLINDER WITH TROLLEY		2
69	Animal weighing machine	<b>Animal weighing machine</b> , for <b>big</b> and <b>small</b> animals. Animal weighing scale; livestock scale: Slipproof -pan, waterproof-design, with railing and door. High legs for rough ground	1 each



### III) LIST OF PHYSIOLOGY CHARTS

#### 1. CELL PHYSIOLOGY

Qty-01 Nos each

- PH1. The cell Membrane
- PH2. Membrane Transport (In 3 Charts)
- PH5. Ionic Equilibrium and Resting membrane Potential
- PH6. Action Potential
- PH7. Conduction Velocity
- PH8. Signal Transduction (In 2 charts)

#### 2. NEUROPHYSIOLOGY

Qty-01 Nos each

- PH9. Organization of Brain: Cerebrum
- PH10. Organisation of Brain : Cell Types
- PH11. Blood-Brain barrier
- PH12. Synaptic transmission: Morphology of Synapses
- PH13. Synaptic transmission: Neuromuscular Junction
- PH14. Synaptic transmission: Visceral Efferent Endings
- PH15. Synaptic transmission: Inhibitory Mechanisms
- PH16. Synaptic transmission: Chemical Synaptial Transmission
- PH17. Synaptic transmission: Temporal'and Spatial Summation
- PH18. Cerebrospinal Fluid(CSF): Brain Ventricles and CSF Composition
- PH19. Cerebrospinal fluid (CFT): Circulation of CSF
- PH 20. Spinal cord: Ventral Rami
- PH 21. Spinal cord: Membranes and Nerve Roots
- PH22. Peripheral nervous system
- PH23. Autonomic nervous system: Schema
- PH 24. Autonomic nervous system: Cholinergic and Adrenergic Synapses
- PH 25. Hypothalamus
- PH 26. Limbic System
- PH27. The Cerebral Cortex
- PH 28. Descending motor pathways
- PH29. Cerebellum: Afferent Pathways
- PH30. Cerebellum: Efferent Pathways
- PH 31. Cutaneous sensory receptors
- PH 32. Cutaneous receptors: Pacinian Corpuscle
- PH 33. Proprioception and reflex pathways (In 2 charts)
- PH35. Sensory pathways (In 3 charts)
- PH 38. Visual system: Receptors
- PH39. Visual System: Visual Pathway
- PH40. Auditory System: Cochlea
- PH41. Auditory System: Pathways
- PH 42. Vestibular system: Receptors
- PH43. Vestibular system: Vestibulospinal Tracts
- PH44. Gustatory (taste) system: Receptors
- PH 45. Gustatory (taste) system: Pathways
- PH 46. Olfactory system: Receptors
- PH 47. Olfactory system: Pathway

#### 3. MUSCLE PHYSIOLOGY

Qty-01 Nos each

- PH 48. Skeletal muscle: Organization
- PH 49. Skeletal muscle: Sarcoplasmic Reticulum
- PH 50. Skeletal muscle: Excitation-Contraction Coupling (In 3 charts)
- PH53. Skeletal muscle: Length-Tension Relationship
- PH54. Cardiac muscle: Structure
- PH55. Smooth muscle: Excitation-Contraction Coupling (In 2 charts)

#### 4. CARDIOVASCULAR PHYSIOLOGY

Qty-01 Nos each

- PH 57. Overview of the Cardiovascular system
- PH 58. Body Fluid Compartments
- PH 59. Structure of the Heart
- PH 60. Conduction System of the Heart
- PH 61. Electrical Activity of the Heart
- PH 62. Electrocardiogram (In 3 charts)
- PH 65. Cardiac Cycle
- PH 66. Cardiac Output: Pressure-Volume Loop
- PH 67. Cardiac Output: Function Curves
- PH 68. Coronary circulation
- PH 69. Hemodynamic
- PH 70. Arterial Pressure
- PH 71. Control of arteriolar tone
- PH 72. Microcirculation
- PH 73. Circulation to special regions
- PH 74. Monitoring of Blood pressure
- PH 75. Short-Term Regulation of Blood Pressure
- PH 76. Long-Term Regulation of Blood Pressure
- PH 77. Response of Exercise
- PH 78. Fetal circulation

#### 5. RESPIRATORY PHYSIOLOGY

Qty-01 Nos each

- PH 79. Lungs
- PH 80. Airway structure: Trachea and Major Bronchi
- PH 81. Airway Structure: Intrapulmonary Airways
- PH 82. Airway Structure: Epithellum
- PH 83. Respiratory muscles
- PH 84. Lung Volumes
- PH 85. Mechanics of respiration: Forces during Quiet Breathing
- PH 86. Mechanics of respiration: Elastic Properties (In 2 Charts)
- PH 88. Mechanics of respiration: Surface Force
- PH 89. Mechanics of respiration: Airway Flow
- PH 90. Mechanics of respiration: Flow-volume

**NOTE: All the Charts should be Laminated & PVC Mounted & must be quoted separately for each charts.**

#### IV) List of Scientists having significant contributions in Human Physiology

S.No	Name Of Physiologist	Qty(Nos)
1.	Arthur Clifton Guyton	01
2.	William Francis Ganong	01
3.	Claude Bernard	01
4.	Autar Singh Paintal	01
5.	Ernest Henry Starling	01
6.	Frederick Banting	01
7.	Walter Bradford Canon	01
8.	Ivan Petrovich Pavlov	01
9.	Charles Best	01
10.	William Maddock Bayliss	01
11.	Andrew Fielding Huxley	01
12.	Karl Landsteiner	01
13.	Adolf Eugen Fick	01
14.	Thomas Addison	01
15.	Camilo Golgi	01
16.	William Einthoven	01

17.	Charles Scott Sherrington	01
18.	Earl W Sutherland	01
19.	Eric R Kandel	01
20.	Linda B Buck	01
21.	Yoshinuri Ohsumi	01
22.	George Von Bekesy	01
23.	Joseph Erlanger	01
24.	Robert Barany	01
25.	Henry Hallett Dale	01

**Note:1.** The portraits of all the scientists should preferably be provided on a laminated, wall mountable board. Each portrait should also be accompanied with the following details below each of the Photograph:

- Name of scientist
- Birth year – Death year (if applicable)
- A brief mention of their most significant contribution in the field of Human Physiology (upto 30 words or less).
- All charts must be quoted separate for each charts

Following details should be mentioned above each of the Photograph:

**"DEPARTMENT OF PHYSIOLOGY, KCGMC, KARNAL"** in single line.

**All portrait Charts should be Laminated& PVC Mounted & must be quoted separately for each charts.**

#### **V). DEPARTMENT OF COMMUNITY MEDICINE**

##### **1. Barometer - Precision, Fortin (Manual)**

**- 1 No.**

1. Made of metal, mounted on wood structure
2. The instrument should consists of a scale, mercury –filled glass tube and Cistern.
3. Scale should be graduated in hPa (mb) and mmHg on a brass tube marking, apex of ivory pointer as cardinal point and is read by the vernier in 0.1 mm graduation.
4. Measuring method –mercury column.
5. Measuring range – 870 to 1090 hPa / 650 to 820 mmHg Min graduation – 1 hPa/1mmHg.
6. Vernier readings – 0.1hPa/0.1mmHg Accuracy - +/- 0.5hPa.
7. Mounted Thermometer – Mercury filled glass thermometer, measuring range - -20° C to 50°C, Minimum graduation – 0.5°C

##### **2. Extraction Apparatus Fat Complete with accessories**

**- 1 No.**

1. Extraction Apparatus, fat, complete
2. Fat Extractor used to determine fat and oil content in samples.
3. Frame is constructed of metal
4. Spring-loaded heater elements operated by control knobs / Key pads with variable heat input from 20-100% capacity;
5. Red pilot light
6. Metal condensers with Type 304 stainless steel heads with automatic pressure-release valves
7. On/Off switch
8. Control valve for connection to cold water supply
9. Water outlet for connection to an open drain

##### **3. Filter, Pasteur Chamber Land, Complete Set**

**- 1 No.**

The essential part of a filter is the candle, which is made of unglazed porcelain in Pasteur Chamber land type. Made of porcelain tube that contains a ring of enameled porcelain through which inflow pipe fits the core of a porcelain pipe. Outflow made up of metal pipe with holes through which water flows out and is collected.

- 4. Filter Berke Field** **- 1 No**  
 The essential part of a filter is the candle, which is made of Kieselgurh in Berkefield type. Container capacity: 8 lit. Typical output per day: 80 lit. Candle two in no. 2.75"x5" (Approx.) Imperial Supersterasyl ATC ceramic candle, empty weight: 2.7 kg
- 5. Museum Jars** **- 60 Nos.**  
 Acrylic jars having good clarity, circular in shape, should be air tight and leak proof and must be provided with lid. sizes required in inch are – max 6 inch diameter & height 6 inch approximately
- 6. Centrifuge Clinical** **- 1 Nos**  
 Centrifuges are required in the Laboratory to separate various components of Blood and any other liquid sample for analysis
- Specifications:**  
 Aerodynamic compact construction for vibration free performance  
 Table top version, complete with power lead  
 Tube Capacity: No. 8: Size 5 – 15 ml  
 Should have a digital timer  
 Body should be made of strong fabricated & corrosion resistant steel  
 Control panel – for start/stop switch, dynamic brakes, step less speed regulator with zero start switch & speed indicator with timer and protective fuses.  
 Door interlock  
 Maintenance-free brushless drive motor with exact speed pre-selection and display.  
 Speed range 100 to 6000 rpm and above, accuracy 1 rpm. RPM : Up to 6500-7000  
 power consumption 500 watt, power requirement 220 V & 50 to 60 Hz,
- 7. Salter's Baby weighing machine** **-04 Nos**  
 Capacity 25 Kg. x 100 gm, material: metal and cloth.
- 8. Aqua Guard - standard available** **- 1 No.**
- 9. Digital Haemoglobinometer** **-02 Nos**
- Measuring Method : Cyanmethemoglobin
  - Measuring Range : 0 – 30 gm/dl of Hb.
  - Dilution Ratio : 1:25 I Sample Volume : 1 ml Display : 3 Digit 7-Segment Red LED Display  
 Wavelength : 546 nm
  - Keyboard : 3 Keys, Soft Touch Membrane Type Zero Setting : Automatic
  - Calibration : Automatic
  - Detector : Highly sensitive silicon photodiode Power : 230 V ± 10% AC, 50 Hz
  - Dimensions (L x B x H) : 195 x 235 x 105 mm (Approx.) Weight : 2.5 Kg. (Approx.)  
 Accessories: Matched Test Tube: (A set of 5), Spare Lamp,
  - Operation Manual and Dust Cover
- 10. Sling Psychrometer** **-02 Nos**  
 Approx. 7.5"long×1" diameter.  
 Dual range (high & low temperature) scales for better resolution.  
 Slide rule construction should quickly convert temperature to relative humidity, with either red spirit-filled thermometers or mercury-filled thermometers.  
 Thermometers telescope into handle for protection when not in use.  
 Built-in water reservoir to hold sufficient water for several hours of testing.
- 11. SPRING BALANCE ( To Measure misc. weight )** **-02 Nos**  
 A **spring balance** apparatus is simply a spring fixed at one end with a hook to attach an object at the other to weigh upto 5 Kg.

**12. Digital clinical THERMOMETER****-04 Nos**

Should be able to measure body temperature.

It should consist of a glass bulb attached to a fine tube of glass.

Accuracy  $\pm 0.1^{\circ}\text{C}$  &  $\pm 0.2^{\circ}\text{F}$ .

It should be supplied in individual plastic case.

Manufacturer should have ISO certification for quality standards

- For measuring temperatures and displaying it with LCD/LED
- Portable battery operated system is required.
- Temperature measurement range:- 40 deg C to 210 deg C
- LCD readout
- Temperature measurement accuracy :  $\pm 0.1^{\circ}\text{C}$
- System as specified-
- Temperature probe-(quote prices for both surface and internal probes)
- Battery operated.

**13. Horrock's Apparatus –complete set****-02 Nos**

To detect chlorine demand of water with all the chemicals along with the Manual

**14. Chlorine Testing Kit****-01 Nos**

- Field & Lab Use: An optional AC adapter
- Large Display: RS-232 Interface: An RS-232 port to interface with a data logger on computer. Optional cable
- 0-4 ppm Chlorine: No need to select a low or high range. The 1200 covers the entire critical chlorine range of 0-4 ppm with a 0.05 sensitivity.
- 1200 Chlorine Colorimeter Kit with enough tablets for 100 tests or liquid reagents for 140 tests, six sample vials with screw caps, instruction manual, and sturdy carrying case. Water Resistant Design:
- Auto-Zero: facility
- Hinged Light Cover: Flip-top lid over sample chamber

**15. Fluoride Testing Kit****-01 Nos**

- Range:0.00 to 2.00 mg/L
- Resolution:0.01 mg/L
- Accuracy (@20°C/68°F)  $\pm 5\%$  of reading or  $\pm 3\%$  of reading Typical EMC
- Deviation:  $\pm 0.01$  mg/L Light Source, Light Emitting Diode @ 585 nm
- Light Life of the instrument Light Detector Silicon Photocell Battery Type/Life 1 x 9V / Approximately 40 hours of continuous use Dimensions / Weight 180 x 83 x 46mm (7.1 x 3.3 x 1.8") / 290g (10 oz.) method. Adaptation of the SPADNS method. Reaction between fluoride and reagent causes a red tint in the sample.

**16. Slides –****Qty-01 each****1. COMMUNICABLE DISEASE SLIDES**

Full set e.g. Mycobacterium TB, Mycobacterium Leprae, Microfilaria, Staph. Aureus , streptococcus Pyogenes, clostridium tetani, Malaria parasite ( vivax, falciparum- various stages), Corynebacterium diphtheria, Pertussis etc.

**2. VECTOR SLIDES ( Full Set)**

Mosquitoes – male and females (anopheles, aedes, culex, mansonias- adult females, mouth parts, eggs, larvae, pupa), Housefly, Ticks (hard and soft), Mites (trombiculid, scabies), sand-fly, flea, louse, Cyclops etc.

**17. Specimens – (vaccines, contraceptives etc)****[LIST GIVEN BELOW]****Qty-01 each**

**18. Models, Charts, Diagrams [LIST GIVEN BELOW]**

**- 01 each**

**Environmental Models – A**

**Structured models – B**

1. Nutritional disorders – marasmus, kwashiorkar, xerophthalmia, bitot-spots, rickets, scurvy, dental caries
2. Communicable diseases- measles, chicken-pox, small-pox
3. Parasitological – E. histolytica, L. donovani, G. lamblia, Roundworm, Tapeworm, Hookworm, Filaria
4. Virus – HIV, Hepatitis-B

**Charts** - List given – Wall Mounted on PVC Board and laminated

**A. ENVIRONMENTAL MODELS:**

Sr. No.	NAME OF ITEMS	QTY (Nos)
1	Sanitary Well	1
2	Insanitary Well	1
3	Slow Sand Filter	1
4	Rapid Sand Filter	1
6	Biogas Plant	1
7	Incinerator	1
8	Model of Sanitary House	1
9	Septic Tank	1
	Flow Diagram Showing Large Scale treatment of	
10	Water for Community Supply	1
11	Community Sewage	1
12	Smokeless Burner	1
13	Rain water harvesting	1
14	Gobar gas plant	1

**B. STRUCTURAL MODELS:**

VIRUS MODELS		
1	STRUCTURE OF HEPATITIS B VIRUS	1
2	HIV VIRUS	1
TESTING KITS		
1	MBI testing kit for testing iodine in salt	1
2	Water pollution testing kit	1
CHART		
Nutritional Disorder		
1	Marasmus ( PEM)	1
2	Kwashiorkar (PEM)	1
3	Xerophthalmia	1
4	Bitot spot	1
5	Rickets	1
6	Scurvy	1
7	Dental caries	1
Communicable Diseases		

1	Measles	1
2	Spread of Tuberculosis	1
3	Control of Tuberculosis	1
4	Spread of Typhoid	1
5	Prevention of Typhoid Fever	1
6	Spread of Diarrhea and Dysentery	1
7	Spread and Prevention of Cholera	1
8	Life cycle of plasmodium vivax	1
9	Prevention and control of malaria	1
10	Different characteristic of Anopheles, Aedes and Culex	1
11	Manifestation of Dengue	1
12	Life cycle of Housefly	1
13	Scabies	1
14	Skin Leprosy with minimum Nodulation	1
15	Life Cycle of Sandfly	1
16	Life Cycle of itchmite	1
<b>Biomedical Waste</b>		
1	Colour coding of biomedical waste	1
2	Biomedical waste	1
3	Categories of Biomedical Waste	1
<b>FAMOUS SCIENTISTS</b>		
1	Louis Pasteur	1
2	Edward Jenner	1
3	Ronald Ross	1
<b>PARASITOLOGICAL CHARTS</b>		
1	LIFE CYCLE OF ENTAMOEBIA HISTOLYTICA	1
2	LIFE CYCLE OF GIARDIA LAMBLIA	1
3	LIFE CYCLE LEISHMANIA DONOVANI	1
4	LIFE CYCLE OF ROUND WORM	1
5	LIFE CYCLE OF HOOKWORM	1
6	LIFE CYCLE OF GUINEA WORM	1
7	LIFE CYCLE OF PIN WORM	1
8	LIFE CYCLE OF FILARIA	1
<b>MISCELLANEOUS</b>		
1	SUMMARY OF HEPATITIS A , B, AND C	1
2	STRUCTURE OF HIV VIRUS	1
3	COMMON MODES OF TRANSMISSION OF HIV	1
4	VECTORS OF HUMAN DISEASES	1
5	METHODS OF STERILISATION	1
6	IMMUNE RESPONSE TO INFECTION	1
7	HUMORAL AND CELL MEDIATED IMMUNITY	1
<b>LIFE STYLE DISORDERS</b>		
1	RISK OF OBESITY	1
2	DANGERS OF SMOKING	1

3	WEIGHT CONTROL	1
4	CARDIOVASCULAR DISESASES	1
5	BALANCED DIET (NUTRITION)	1
FIRST AID CHARTS		
1	BANDAGING	1
2	FRACTURES	1
3	TRANSPORT OF INJURED	1
4	ARTIFICIAL RESPIRATION	1
5	ELECTRIC SHOCK MANAGEMENT	1
6	BURNS AND SCALDS	1
7	SNAKES AND SNAKE BITES	1
8	POISONS AND THEIR ANTIDOTES	1
SPECIMENS		
PARASITOLOGICAL SPECIMENS		
1	TAPE WORM	1
2	ROUND WORM	1
3	HOOK WORM	1
4	PIN WORM	1
5	Echinococcus	1
6	Tape Worm	1
7	AscarisLumbricoides	1
8	TaenisSolium	1
9	TaeniaSaginata	1
ANTHROPOD SPECIMENS		
1	FLEA	1
2	MOSQUITO AEDES	1
3	MOSQUITO ANOPHELES	1
4	MOSQUITO CULES	1
5	LOUSE	1
6	MITE	1
7	HOUSE FLY	1
8	SAND FLY	1
9	TICK	1
10	BUG	1
11	Anopheles Female	1
12	Culex	1
13	AedesMosqnito	1
CONTRACEPTIVE DEVICES		
1	Male Condom	4
2	Diaphragm	4
3	Vaginal Sponge	4
4	Foams	4
5	Aerosols	4
6	Suppositories	4



7	Oral Contra-ceptive Pill	4
8	Mala-N	4
9	Weekly Oral Pills	4
10	Saheli or Centchroman	4
11	Cu-T 200 B	4
12	Cu-T 200 Ag	4
13	T -Cu380	4
14	Multiload Devices	4
15	Hormonal Devices	4
VACCINES		
1	D.P.T. (Vial)	4
2	T.T.	4
3	B.C.G. with Diluents	4
4	Measles with Diluents	4
5	O.P.V, Inactivated Polio Vaccine	4
6	M.M.R.	4
7	Hepatitis Vaccine	4
8	Typhoid (Typh oral) Vaccine	4
9	A.R.V.	
10	A.D. Syringe	4
11	Needle Cutter	4
12	Vaccine Carrier	4
13	Day Carrier	4
14	Ice Pack	2
15	Dai delivery kit	1
16	Growth Chart (W.H.O. Growth Standard)	2
17	Shakir's Tape	2
18	Salter Weighing Scale	2
19	I.F.A. Tablets	2 Strips
20	Large I.F.A., Small (Pediatrics)I.F.A. Tablets	2 Strips
21	Vitamin A Solution	1 Bottle
22	O.R.S.	4
23	RTI/STI Medicine Kit	1

**Note: All the Charts should be Laminated & PVC Mounted & must be quoted separately for each Items**