



प्रधान कार्यालय :
ई-6 (ए), सेक्टर-1, नोएडा (उ.प्र.)-201 301

एच एस सी सी (इंडिया) लिमिटेड
(भारत सरकार का उद्यम)
HSCC (INDIA) LIMITED
(A Government of India Enterprise)



Corporate Office :
E-6 (A), Sector-1, NOIDA (U.P.)-201 301

INVITATION FOR QUOTATION

HSCC/PUR/Low Value/Medical Equipment/2016

Dated: 16th Sept 2016

To,

All Bidders

Subject: Invitation for Quotations for supply of Low Value Items for Various Departments
Kalpana Chawla Medical College – Karnal

Dear Sirs,

1. You are invited to submit your most competitive quotation for the following goods
the detailed specifications are given at **Annexure I** (attached) :-
2. Quotation,
 - 3.1 The contract shall be for the full quantity as described above.
 - 3.2 Corrections, if any, shall be made by crossing out, initialing, dating and re writing.
 - 3.5 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.
 - 3.6 The unit price/ rate of the item should be clearly indicated in the tender. Rates /Prices
quoted Inclusive of all taxes, duties, forwarding, insurance & transportation upto
destination (Kalpana Chawla Medical College – Karnal.
3. Each bidder shall submit only one quotation.
4. Evaluation of Quotations,
The Purchaser will evaluate and compare the quotations determined to be
substantially responsive i.e. which
 - 6.1 are properly signed; and
 - 6.2 confirm to the terms and conditions, and specifications.
5. The Quotations would be evaluated item wise.
6. Award of contract:
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.

Handwritten signature

EPABX: (0120) - 2542436 - 40, 2519996 - 98 Voice Mail: (0120) - 2542443, 48 Fax: (0120) - 2542447, 2533001
CIN: U74140DL1983GOI015459 E-mail: hsccltd@hsccltd.co.in Web Site: http://www.hsccltd.com
पंजीकृत कार्यालय : 205, ईस्टर्न प्लाजा, प्लॉट नं. 4, डी.डी.ए. - एन.एन.पी., सेक्टर-11, वासुंधरा एन्क्लेव, दिल्ली - 110096
Regd. Office : 205, Eastern Plaza, Plot No. 4, D.D.A. - L.S.C., Centre-11, Vasundhara Enclave, Delhi - 110096

- 6.1 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 10 days from date of placement of order.
8. Payment shall be made in Indian Rupees as follows:
Satisfactory Acceptance - 100% of total cost
9. All supplied items shall under warranty of 12 months from the date of successful acceptance of items.
10. You are requested to provide your offer latest by 14:00 hours on 20th -Sep-2016 . The quotations will be opened in HSCC office at 15:00 hours on 20th -Sep-2016 in the presence of tenderer or their authorised agents such 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.
13. We look forward to receiving your quotation and thank you for your interest in this project.
14. Quoted amount should be in Indian Rupees only.
15. 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.
16. Insurance Shall be arranged by supplier

Note: Please indicate the quotation reference no. (given at the top of page 1 of this letter) on the quotation envelope.

MIS
1609 2016
General Manager (Procurement)

MEDICAL EQUIPMENT/LOW VALUE ITEMS - KCGMC KARNAL
GENERAL - NON CONSUMABLES

Sr. No.	1. (General non consumables)	Specifications	Make / Model if Any	Qty
1	BP Apparatus LED Type		Diamond / Heinz/ Welch Allyn or equivalent	100
2	Emergency lights		Philips/BPL Everready or equivalent	25
3	Rubber Hammer		Titus or Equivalent or equivalent	30
4	Torch (2 Cell)		Eveready / Jeep Maglite or equivalent	50
5	Three Cell Torch		Eveready / Jeep Maglite or equivalent	50
6	X-Ray Viewing Box Four in one	LED Type	Bio -X or equivalent	20

7	X-Ray Viewing Box Double		Bio -X or equivalent	100
9	Nebulizer		Omron/ Philips/Plumoaid or equivalent	25
10	Glucometer	With pencil , 100 strip & 100 Picker also Price of Strip to be quoted seperately.	Accucheck / one touch or equivalent	25
11	Measuring Tape			50
12	Shakir's Tape			10
13	Thermometer Oral (Digital)		Omron /Optima or equivalent	100
14	ECG Machine 6 Channel		Nihon Koden /Philips/Omron or equivalent	10
15	Height Scale			20
16	Laryngoscope: Infant Children	LED Type	Admco or equivalent or equivalent	10
	Laryngoscope: Adult		Admco or equivalent or equivalent	30
17	Ambu Bag: Infant		Ambu or equivalent	8

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18	Ambu Bag: Children		Ambu or equivalent	8
19	Ambu Bag: Adults		Ambu or equivalent	20
20	Suction Apparatus		Supreme or equivalent	20
21	Sterilizer (Electric) Large (SS)			10
22	Stethoscope		Doctor / Microtone or equivalent	100
23	Weighing Machine (Digital)		Philips/Dr. Morepan / Omron or equivalent	60
24	Skin Fold Caliper		Titus or equivalent	5
26	Suction Machine		SST/Supreme	25
27	Suction Machine electric Foot operated		SST/Supreme	10
28	Spirit Lamp		Hospito or equivalent	20
29	Resusitaton Tray (Adults) Laryngoscope, ET Tube, Ambu Bag, Suction Catheter, essential drugs.			11

GENERAL - CONSUMABLES

Sr. No.	2.(General consumables)	Required Make or Model if Any	Qty
1	Gloves 6.5, 7 & 7.5	Medismart or equivalent	(500 Each) 1500
2	Syringes 2 ml	Dispovan or equivalent	500
	Syringes 5 ml	Dispovan or equivalent	500
	Syringes 10 ml	Dispovan or equivalent	500
3	Needles 18"	BD / Dispovan or equivalent	500
	Needles 20"	BD / Dispovan or equivalent	500
	Needles 22"	BD / Dispovan or equivalent	500
4	ET Tube 6", 6.5", 7.5", 8"	Smith Medical or equivalent	50 each
5	Suction Catheter 12, 14, 16	POLYMED / Romson or equivalent	500 each
6	Essential Drugs		
7	HIV Kit	J mitra, Span diagnostics or equivalent	100
8	Diagnostic Kit	Welch or equivalent	
9	Aspiration Needle	Pricon / Comet or equivalent	50
10	Fine Needle Aspiration		50
11	Liver Biopsy Needle (Disposable)	BD / Dispovan or equivalent	100
12	Lumbar Puncture Needle	Pricon / Comet or equivalent	20
13	Nasal Suction Catheter		10
14	Drug Delivery Equipment		
15	Intracath 18, 20, 22	Dispovan / BD or equivalent	200

16	Feeding Tubes	Romson / Polymed or equivalent	100
17	Measured Volume Set	Romson / Polymed or equivalent	100
18	IV Drip Set	Romson / Polymed or equivalent	100
19	BT Set	Romson / Polymed or equivalent	100
20	Pleural Aspiration Needle	Pricon / Comet or equivalent	100
21	IV Cannula Butterfly Set	Romson / Polymed or equivalent	100
22	Malecot's Cathe of rubber 26", 28", 30", 32"		100
23	New Born Chamber	Romson / Polymed or equivalent	2
24	Test Tube	Borosil or equivalent	4
25	LP Needle	BD / Romson / or equivalent	100
26	Biopsy Needle (Mengneiz)	BD / B Braun / Bard or equivalent	100
27	Face Mask	Ramson / Polymed or equivalent	100

MEDICAL EQUIPMENT/LOW VALUE ITEMS - KCGMC KARNAL
HAND INSTRUMENTS

Sr. No.	3. Hand Instruments	Specification -	Required Make / Model if any	Qty.
1	Proctoscope- Small			10
	Proctoscope- Medium			20
	Proctoscope- Large			20
	Proctoscope with Light Source			5
2	Stich Removal set	<p style="text-align: center;">Stitch Removal Set</p> SS Tray with lid –Length 250mm, Width 200mm, Height 50mm 1 Tooth Forceps Dissecting -150mm 2 Galliot's (10cms) 1 Artery Force {straight} - 1 Kidney Tray (Length 150mm, Width 70mm, Height 30mm) 1 Stich Removal Scissors 2 Towel Clips (Mayos / Backhaus) –Length 10 cms 2 Sponge Holding Forceps – 240mm 1	SISCO /TUFFT / Kalelker or equivalent	25

3	Dressing set	As per Norms	SISCO /TUFFT / Kalelker or equivalent	10+10+10
4	Gabriel Syringe			4
5	Nasal Speculum thudicum nasal speculum small, medium and large		SISCO /TUFFT / Kalelker or equivalent	20 sets
6	Killian's nasal speculum : small ,medium and large		SISCO /TUFFT / Kalelker or equivalent	10 sets
7	Tongue Depressors (Small, Medium & Large)		SISCO /TUFFT / Kalelker or equivalent	30 sets
8	Naso Pharyngeal Mirror with handle		SISCO /TUFFT / Kalelker or equivalent	10 Sets
9	Aural speculum Hartmann: micosuction cannula varhoeven of different sizes: 3/4/5/6/mm black		SISCO /TUFFT / Kalelker or equivalent	10 sets
10	Ear Suction		SISCO /TUFFT / Kalelker or equivalent	10 Sets
11	Nasal Suction suction cannula straight and curved Size 2.5mm/3mm Lumen circumference diameter 15 cm		SISCO /TUFFT / Kalelker or equivalent	15 sets (10 Set - Straight 5 Set - Curved)

12	Cataract Set (ECCE)	<p>INSTRUMENTS SETS FOR CATARACT SURGERY (ECCE)</p> <ol style="list-style-type: none"> 1 . Barraquer wire speculum -(titanium) - small standard wire 15 mm blades 1 2 . Kelman McPherson IOL forceps-(titanium)- 1 3 . McPherson tying forceps-(titanium)- 1 4 . Barraquer colibri forceps-(titanium)- 1x2 teeth, 0.12mm tip, total length 75mm 1 5 . Lims forceps-(titanium)- 0.12mm tip, 1x2 teeth , length 93 mm 1 6 . Sinsky hook-(titanium)- angled 1 7 . castroviejo corneal scissors-(titanium)- universal 1 8 . McPherson Westcott scissors-(titanium)- 3 3/8' angled, 11mm blades, sharp tip 1 9 . Gills Vanas scissors-(titanium)-curved, 10 mm blades ,sharp tips 1 10 . Barraquer iris scissors-(steel)- 1 11 . Barraquer needle holder-(titanium)-5 1/4' gently curved, 9 mm jaw without lock 1 12 . Dastoor superior rectus forceps-(steel)- serrated shaft 1 13 . Eye dressing forceps-(steel)- 1 14 . Castroviejo calliper-(steel)- straight, measures 0-20 mm 1 15 . cyclodialysis spatula-(steel)- double end 1 16 . serrafine clamps-(steel)- 1 17 . Iris repositor-(steel)- double ended 1 18 . wire vectis -(steel)- angled , serrated 1 19 . Smith lens expressor vectis-(steel)- double ended 1 20 . Irrigating vectis -(titanium)- serrated 1 21 . Simcoe I/A canula-(steel)- direct 23 G 1 22 . Air injection canula-(steel)- 23 G 1 23 . A.C. wash canula-(steel)-16 G 1 24 . Pearce hydrodissection canula -(steel)- 25G ,flattened tip 1 25 . sterilization case (steel) 8x12x 0.75 " 1 	7	7
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13

Cataract Set
(Phacoemulsification / SICS
Set)

1. Kratz Barraquer wire speculum-(titanium)- standard wire 15 mm blades 1
2. Tenant tying forceps-(titanium)- 4" straight, 6mm platform, extra delicate 1 smooth jaw.
3. Tenant tying forceps-(titanium)-3 1/8" curved, 6 mm platform, extra delicate 1 smooth jaw
4. Barraquer colibri forceps-(titanium)-2 7/8" delicate, 0.12mm, 1x2 teeth, 5.5 mm 1 tying platform
5. phaco chopper - (titanium)- 1mm cutting edge sharp 1
6. nucleus spatula-(steel) 1
7. Gills capsulotomy scissors (titanium)- straight, 7.5 mm blades, sharp tip 1
8. Vanas Micro scissors angled (titanium)-extra thin 10mm blade sharp tip 1
9. Westcott scissors (steel)-4 3/4" slightly curved, 21mm blade 1
10. Iris scissors (steel) 1
11. Dastoor superior rectus forcep(steel)-115mm, 3 hole handle 1
12. Lens folding forceps (titanium) 1
13. Lens holding forceps (titanium) 1
14. Utrata capsularhexis forceps(titanium)-3 1/4" angled 12mm shaft, fine serrated sharp tips, flat serrated handle 1
15. Air injection Cannula(steel)-30 G, 5mm angled 45 degree tip 1
16. A.C wash cannula(steel) 1
17. Nichman Hydro dissection cannula(steel)- 25 G, 13mm bend tip 1
18. Chang Hydro dissection cannula(steel)- 27G, standard 1.25mm tip 1
19. Sinsky II hook-lens manipulating hook (titanium), 4 1/2" straight, 0.2mm diameter 1 blunt tip, flat handle
20. sterilization case (steel) with silicon mat, 8x12x0.75" silicon finger mat. 1
21. Aruga's capsule forcep(steel) 1
22. A.C maintainer with tubing 1
23. Kansas Nucleus bisector(steel) 1
24. Kansas Nucleus removal forceps(steel) 1
25. Shapiro posterior capsule polisher(titanium) 1
26. Salz nucleus splitter(titanium) 1
27. Fixation ring (steel)- 5 1/4" c shaped, 13 mm diameter 1

12	Glaucoma Set (attachment Opthal. 2-A)	<p style="text-align: center;">Instruments set for Glaucoma surgery</p> <ol style="list-style-type: none"> 1. castroviejo forceps-(titanium)- 0.12 mm tip 1 2. Bishop Harmon tissue forceps -(titanium)- fine 1.8 mm tip , 1x2 teeth 1 3 . Eye dressing forceps (steel)- 1 4 . Jaffe tying forceps (titanium)- curved 1 5 . Jaffe tying forceps (titanium)- straight 1 6 . Fechtner conjunctival forceps (titanium)- 7 mm sharp tip 1 7 . vannas scissors straight (titanium) -7mm blades sharp tip 1 8 . vannas scissors angled (titanium) -5" fine curved, 11 mm Blade. 1 9 . Barraquer needle holder (titanium) -4 1/8" straight 8 mm extra fine jaw 1 10 . westcott tenotomy scissors (titanium) -4 1/2" curved,19 mm blades,blunt tip 1 11 . kelly descmet memb.punch (steel)-5 1/8 produces 0.75 mm squeez -action handle 1 12 . McPherson/harms trabecular probe right (steel) -0.28 mm,80 mm length 1 12 . McPherson/harms trabecular probe left (steel) -0.28 mm,80 mm length 1 13 . castroviejo anterior synechia spatula (steel) 1 14 . willium/barraquer speculum (titanium)-standard wire 10 mm blades 1 15 . A.C. wash canula (steel) 1 16 . air injection canula (steel) 27 G 1 17 . goniotomy knife (titanium) -straight 2mm blade,115 mm length 1 18 . iris spatula (steel) straight,1.7 mmblade,117 mm length 1 19 . sterlization case (steel) 10x12 x0.75" with 2 mats 1 	Indogerman, Medelec, Epsicon Or equivalent	2
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13	Entropion Set (attachment Opthal. 4-A)/Enucleation Set/ Evisceration Set	<ol style="list-style-type: none"> 1 . snellen entropion clamp right (steel) 1 2 . snellen entropion clamp left (steel) 1 3 . Berke ptosis clamp (steel) 1 4 . stallard ptosis plate (steel) 1 5 . jager's lid plate (steel) 1 6 . Beer cilia forceps (steel) 1 7 . lins forceps (titanium) 0.12 mm tip, 1 8 . Harms tying forceps straight (titanium) 1 9 . Harms tying forceps curved (titanium) 1 10 . eye dressing forceps (steel) 1 11 . barraquer needle holder (titanium) -5 1/4" straight 9mm jaw 1 12 . westcott tenotomy scissors (steel) sharp tip 1 13 . conjunctival scissors (steel) curved 1 14 . Mule evisceration spoon (steel) 1 15 . wells enucleation spoon (steel) 1 16 . steven's tenotomy hook (steel) 1 17 . Helvesten tissue retractor (steel) 1 18 . Pierse forceps straight (steel) 1 19 . stevens tenotomy scissors (steel) blunt tip 1 20 . enucleation scissos (steel) curved 1 21 . chalazion forceps 8mm & 12 mm 1 each 22 . Meyer hoffer chalazion currete(steel)- size 1-4 1set 23 . copper ball cautery 1 24 . iris scissors (steel) 1 	Indogerman, Medelec, Epsicon Or equivalent	2
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13	Entropion Set (attachment Opthal. 4-A)/Enucleation Set/ Evisceration Set	<p>Cont..... SPECIFICATION FOR TITANIUM INSTRUMENTS:</p> <ol style="list-style-type: none">1. All instruments should be of international quality and made from surgical grade titanium.2. The "Hinges" should be rust proof.3. The instruments should be guaranteed against metal fatigue and rust for at least 02 years. Further repair should be available for next 5 years.4. The instruments surface should be non-reflective.5. The brand name along with catalogue number should be etched on the instruments.6. Satisfactory Performance Certificate from a Central Government Hospital is mandatory.7. Prior demonstration of instruments for approval if needed . It is the sole discretion of the department to approve or disapprove the quality.8 .Preferably Europeon CE & US FDA approved.		
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14	Squint Set (attachment Opthal. 3-A)	<p>Instruments set for squint surgery</p> <ol style="list-style-type: none"> 1 . Prince/worth muscle forceps right (steel) 1 2 . Prince/worth muscle forceps left (steel) 1 3 . bishop harmon forceps (steel) 1 4 . Lims forceps (titanium) -0.12 mm tip ,93 mm length 1 5 . serrefine clamp curved (steel) 1 6 . serrefine clamps straight (steel) 1 7 . westcott scissors (steel) -blunt tip 1 8 . stevens tenotomy scissors (steel) 1 9 . Barraquer needle holder (titanium) -curved, 5 1/4" tapered 9 mmjaw with lock 1 10 . strabismus scissors (steel)- curved,5 3/8", 10 mm tapered jaw without lock 1 11 . barraquer needle holder (titanium)- curved, without lock, 12 mm jaw 1 12 . weiss speculum (titanium) 1 13 . wright/lancaster speculum (titanium) 1 14 . Desmarres lid retractor(titanium)- all 4 sizes- 0,1,2,3 1 each 15 . Grafe muscle hook (steel) 2 16 . Jammeson muscle hook (steel) 2 17 . wash canula (steel) 16 G 1 18 . sterlization box with silicon matt(steel) 8"x12"x0.75" 1 	Indogerman, Medelec, Epsicon Or equivalent	2
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15	DCR Set (attachment Ophthal. 3-D)	Instruments for DCR set 1. Kerrison bone punch(steel) 1 2. Bowman's lacrimal probe set (steel) (set of 4) 1 set 3. Nettleship punctum dilator (steel) 1 4. Citelli's punch(steel) (different sizes-set of 4) 1 set 5. Lacrimal dilator infant (steel) -delicate taper 22mm length 1 6. Lacrimal cannulas set (steel) 23G straight & curved 1 each 24G straight & curved 1 each	Indogerman, Medelec, Epsicon Or equivalent t	2
16	Set for Nasal Bone Fracture (attachment ENT-1 B)	Nasal bone fracture (1 Set) Asch forceps Walsham forceps	SISCO /TUFFT / Kalelker or equivalent	1 set

17	Caldwel Luc set (attachment ENT-4 B)	<p style="text-align: center;">Caldwell luc set (1Set)</p> +C8Nasal gouge Mallet Ribbon retractor Cheek retractor	SISCO /TUFFT / Kalelker or equivalent	1 set
18	Antrostomy Set (attachment ENT-4 C)	<p style="text-align: center;">Antrostomy set (1 Set)</p> Antral retrograde gouge Antral rasp	SISCO /TUFFT / Kalelker or equivalent	1 set

19	Tracheostomy Set (attachment ENT-3 D)	<ul style="list-style-type: none"> • Alley Forceps 4 Needle holder 1 Bard parker knife handle 1 Right angled retractor 2 Curved artery 4 Straight artery 4 Cricoid hook 2 Tracheal dilator 2 • BP Handle 1 • Scissors for tissue cutting 1 	SISCO /TUFFT / Kalelker or equivalent	15 Sets
20	Aural Syringe		SISCO /TUFFT / Kalelker or equivalent	1
21	Laryngel Forceps		SISCO /TUFFT / Kalelker or equivalent	1
22	Aural Snare		SISCO /TUFFT / Kalelker or equivalent	1
23	Arual Cup Forceps		SISCO /TUFFT / Kalelker or equivalent	1

24	Tonsillectomy and Adenoidectomy Set (attachment ENT -1 A)	<p style="text-align: center;">Tonsillectomy & adenoidectomy set (2 sets)</p> Bipod stands Boyles davis mouth gag with blade Tonsil holding forceps: dennis brown large 20 cm /8" Toothed Forceps Tonsil dissector and retractor: blunt edge broad ,20cm/8" Tonsil snare Straight artery forceps Curved artery forceps Burkitt artery forceps Tonsil Scissors Vulsellum Negus artery forcep Tonsil Scissors: 18 cm /7" Adenotome Adenoid Curette Yaunker Suction Lighting System (3 sets of the following) Head Light Adjustable & comfortable head band Vertical & side to side adjustment App 180 cm fiber optic cord Focal length 20 - 30 cm variable light spot Light source Fibre optic cable	SISCO /TUFFT / Kalelker or equivalent	2 sets
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25	Septoplasty Set (attachement ENT 2-A)	<p style="text-align: center;">Septoplasty set</p> <ul style="list-style-type: none"> • Thudicum Nasal Speculum • Killian's Nasal Speculum • BP Handle • Freer elevator • Suction elevator • Nasal Suctions • Ballenger's Swivel Knife • Takahashi Forceps • Tilley's Nasal Packing Forceps • Toothed Forceps • Needle Holder • Bayonet forceps • Septal Scissors 	SISCO /TUFFT / Kalelker or equivalent	2 sets
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26	Tympanoplasty Set (attachement ENT 2-B)	<p style="text-align: center;">Tympanoplasty set</p> <p>Hartmann aural speculum – 4 Ear curette Rosen round knife: 45 degree Angle 2.5mm tip, shaft 160cm Rosen ground knife : 45 degrees 2.0 mm tip ,shaft 160 cm Micro ear suction Micro raspatory 160mm length Plester flag knife 165 mm length Plester sickle knife 165 mm length Freer elevator 200 mm Plester retractor: 2x2 prongs 130mm length Wullstein postaural retractor: 3x3 sharp prongs 110 mm length Wullstein needle: straight, sharp 165 mm length Wullstein needle : gentle curve , sharp 165 mm length Wullstein needle ; strong curve , sharp 165 mm length Belluci micro ear scissors: straight 4mm blade 80mm length Belluci micro ear scissors: straight 8mm blade 80 mm length Dieter malleus nipper 80 mm up biting Crocodile forcep Micro ear oval cupped straight : 80mm shaft 1.5mm thick Fisch micro ear forcep curretted : 0.6 x4mm 80mm length shaft 1.5mm House currett double ended , sharp curved : round cup 1.2mm 170mm House currett double ended , sharp curved : oval cup 1.8mm 170 mm House currett double ended , sharp curved : oval cup 2.2 mm 170mm Antral seeker Farabous elevator Right angle pick Graft repositor Suction connector / adaptor</p>	SISCO /TUFFT / Kalelker or equivalent	2 sets
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27	Stapedectomy Set (attachement ENT 3-A)	Stapedectomy Set Micro pick 90 degrees angled : 165 mmlength 0.2mm Micro pick 90 degrees angled : 165 mm length 0.2mm Micro pick straight Fisch perforator 160 mm length diameter 0.3mm Fisch perforator 160 mm length diameter 0.5mm Stapes piston Measuring rod Prosthesis crimper 80mm Fisch crurotomy scissor curved to right Fisch crurotomy scissor curved to left Fisch Perforator : 0.7mm Fisch Perforator : 0.2mm Hand Burr of All Sizes Piston Measuring Plate	SISCO /TUFFT / Kalelker or equivalent	2 sets
28	Antral Wash Set		SISCO /TUFFT / Kalelker or equivalent	1 set
29	Circothyrotomy Set		SISCO /TUFFT / Kalelker or equivalent	1 set
30	PCT Forceps		SISCO /TUFFT / Kalelker or equivalent	10

31	Cervical Exploration Set (Attachment Gynae. 11)		SISCO /TUFFT / Kalelker or equivalent	4
32	Uterine Packing Forceps		SISCO /TUFFT / Kalelker or equivalent	10
33	Decapitation Hook		SISCO /TUFFT / Kalelker or equivalent	2

34	Cutdownm Set Venus	<p>CUT DOWN SETS.No. Description of item</p> <p>1 Forceps, Artery, Curved, 145mm</p> <p>2 32 Forceps, Artery, straight, 145mm</p> <p>2 33 Forceps, dissecting, straight, 1/2 Teeth, 145mm 1 1</p> <p>4 Forceps, dissecting, straight, Plain 180mm 1 1</p> <p>5 Hook, Skin, Gilles, 180mm 1 1</p> <p>6 Handle for Surgical blade No. 3 1 1</p> <p>7 Needle holder, Mayo, 150mm 1 1</p> <p>8 Scissors, ligature, Spencer, 115 mm 1 1</p> <p>9 Instrument Container, s/s with cover 1</p>	SISCO /TUFFT / Kalelker or equivalent	100
35	Sims Sepculum standrad x series No. 1, 2, 3		SISCO /TUFFT / Kalelker or equivalent	60
36	Cuscov Sepculum		SISCO /TUFFT / Kalelker or equivalent	60

37	Anterior Vaginal Wall Retractor		SISCO /TUFFT / Kalelker or equivalent	60
38	Cervical Biopsy Set (Attachment Gynae. 12)	Tray S.S. Medium 12" x 10" with cover. Hospito heavy duty * Sponge Holding Forcep 10" SIMS Speculum Standard X's series No.1, 2, 3 (set of 3pcs) Anterior Vaginal Wall Retractor x' series Bowl S.S. Scissors straight 18cm/7" Towel clip 16.5cm/6.5" Needle holder 8" 20cm/8" Needle holder 9" Artery forceps 19cm/8" Cervical Punch biopsy forceps	SISCO /TUFFT / Kalelker or equivalent	8

39	IUCD Insertion/removal set (Attachment Gynae. 13)	Tray S.S. Medium 12" x 10" with cover. Hospito heavy duty * Sponge Holding Forcep 10" SIMS Speculum Standard X's series No.1, 2, 3 (set of 3pcs) Anterior Vaginal Wall Retractor x' series Bowl S.S. Scissors straight 18cm/7" Artery forceps 19cm/8" Vulsellum3:4 teeth 9"	SISCO /TUFFT / Kalelker or equivalent	15
40	Outer Forceps		SISCO /TUFFT / Kalelker or equivalent	6
41	Low Mid Cavity Forceps/Kielland Forceps		SISCO /TUFFT / Kalelker or equivalent	6
42	Cranioclast with cephalotribe		SISCO /TUFFT / Kalelker or equivalent	2
43	Nasal Prongs		SISCO /TUFFT / Kalelker or equivalent	10

44	Stiching Set	<p style="text-align: center;">Suture Set</p> SS Tray with lid –Length 250mm, Width 200mm, Height 50mm 1 Kidney Tray (Length 150mm, Width 70mm, Height 30mm) 1 Galliot's (10cms) 1 Scalpel Handle No.4 1 Sponge Holding Forceps –8" 1 Tooth Forceps 1 Needle (1/2 Circle, Cutting) (Size 20mm, 30mm) 1 Scissor Mayo – 150mm 1 Towel clip (Mayo/Backhaus) – Length 10 cms 1 Needle Holder (Hegar's) -150mm 1 Artery Forceps (Mosquito)- 150mm 6	SISCO /TUFFT / Kalelker or equivalent	30
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45	ICD Insertion Set	<ol style="list-style-type: none"> 1. Mosquito Curved Forceps Curved, Comfort Loop 2. Scissor Sharp/Blunt, 5.5" (14 cm), Comfort Loop 3. Needle Holder, Satin, No Snag, 5 in (13 cm) 4. Roch Pean Forceps Curved, 5.5" in (14 cm) 5. Scapel No. 11 6. Sponge holding forcep 9" 7. Tooth forcep 6" 	<p style="text-align: right;">1 1 1 1 1 1 1</p>	SISCO /TUFFT / Kalelker or equivalent	10
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46	Microsurgical Instrument Set	<p>Microsurgical set</p> <ol style="list-style-type: none"> 1. Non-locking needle-holder with a rounded, fine-curved tip (13.5 or 15 cm in length); 2. Straight, fine-tip forceps with suture platform (13.5 or 15 cm in length); 3. Straight, fine tissue forceps with teeth (13.5 or 15 cm in length); 4. Curved, blunt-tip dissecting scissors; 5. Sharp, Iris scissors; 6. Angled vessel dilator with a slender, tapered tip; 7. Vas approximator clamp for vasovasostomy and vasoepididymostomy, such as the Goldstein microspike approximator, available in different sizes to accommodate various luminal diameters, as well as end-to-end and end-to-side configurations (ASSI Inc., Westbury, NY, USA); 8. Microsurgical bipolar cautery with fine-tipped forceps; 9. Non-sterile Sharpoint microsurgical single-armed 9-0 and single- or double-armed 10-0 nylon sutures (Angiotech Pharmaceutical Inc., Vancouver, BC, Canada); 10. Sharpoint microsurgical suturing practice cards (Angiotech Pharmaceutical Inc.); 11. Microtip surgical marking pen, such as Kendall Devon fine-tip surgical skin marker (KDL-311145942) (Devon Industries, Buffalo, NY, USA). 	SISCO /TUFFT / Kalelker or equivalent	2
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47	Non Microsurgical Unit	Non-microsurgical set 1. Basic set of instruments for small animal surgery, including small needle holder, smooth and toothed forceps, suture scissors, curved dissecting scissors, and clip applier; 2. Operating board, at least 35 cm×35 cm in size; 3. Soft silicone tubing or preserved segments of vas deferens; 4. Tape for fixing practice objects to operating board;	SISCO /TUFFT / Kalelker or equivalent	2
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MEDICAL EQUIPMENT/LOW VALUE ITEMS - KCGMC KARNAL

4. Specific Instruments

Sr. No.	4. Specific Instruments	Qty.	Specifications	Required Make or Model if Any
1	Light Microscope	2		
2	Urino Meter	2		
3	Infanto Meter	1		
4	Ophthalmo Scope	1		Heinz, Welch Allyn or Equivalent
5	Infant (Digital) Weighing Machine	1		
6	Child Weighing Machine	1		Omron, Philips or Equivalent
7	Neonates (Digital) Weighing Machine	1		Omron, Philips or Equivalent
8	Rectal Thermometer	100		Omron, Philips or Equivalent
9	Adult Weighing Machine	2		10 sets
10	Peak Flow Meters (Aspirators)	2		
11	Naso Pharyngeal Mirror with handle	4		

12	Aural speculum Hartmann: micosuction cannula varhoeven of different sizes: 3/4/5/6/mm black	4		
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13	Trial set with trial frame both for adult and children	4	<p>Lenses should be of standard size in aluminium frame, anodized red for minus and black for plus. The sphere lenses with handle and cylinder without handle.</p> <p>2. Trial lenses of good quality, case made of melamine polished wood, sturdy and attractive finish.</p> <p>3. Lenses – Spheres 128 pieces and cylinders 80 pieces</p> <p>a. Concave and convex 0.12</p> <p>b. 0.25 to 4.0 in 0.25 steps</p> <p>c. 4.5 to 6.0 in 0.5 steps</p> <p>d. 7.0 to 14.0 in 1.0 steps</p> <p>e. 16.0 to 20.0 in 2.0 steps</p> <p>f. Cylinders 0.25 to 3.5 in 0.25 steps</p> <p>g. 4.0 to 6.0 in 0.5 steps</p> <p>h. Prisms(10)- ½,1,2,3,4,5,6,8,10,12.</p> <p>4. Accessories: Trial frames – one adult size and one for children, adjustable with Four slots</p> <p>a. Red glass.</p> <p>b. Green glass.</p> <p>c. Pin hole.</p> <p>d. Slit.</p> <p>e. Two blank discs.</p> <p>f. Two occluders.</p> <p>g. Cross cylinder +/-0.25 and +/-0.5</p> <p>5. Illuminated carrying case</p>	
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14	Bjerrurn Screen	2	Wall mounted 2m/ 1m standard screen with sets of white and colored targets of various sizes with foldable pointers.
15	Colour vision chart	3	<ol style="list-style-type: none"> 1. Original Ishihara's Pseudoisochromatic Colour vision chart with good quality prints. 2. Complete edition(38 plates)
16	Near vision chart with different language	3	<p>Near vision chart</p> <ol style="list-style-type: none"> 1. Jaeger's near vision chart or equivalent 2. Should be in different Indian languages and for testing near vision for both adults and children; literate and illiterate.

17	Synoptophore	1	<p>Synoptophore</p> <p>1. Movement of optical tubesi. Horizontal Adduction +50 degrees- Abduction of -40 degrees ii.. Vertical Hyperphoria 30 degrees – hyperphoria 30 degreesiii.. Torsional Incyclophoria 20 degrees – Excyclophoria 20 degrees2. Slide Illumination- Rheostat controlled 6-12 V lamp for each slide and high intensity 12 V lamps for after image illumination. Five mode of slide illumination namely normal flashing right, flashing left, flashing right + left and auto flashing (auto flashing either simultaneous or alternate in rapid and variable modes)3. Pupil adjusting distance 48-80mm4. Chinrest height adjustment 60-130 mm5. A set of slides containing 9 pairs at leastIncluding slides fori. Simultaneous macular/parafoveal/foveal perception ii. Fusioniii. Stereopsis iv. After image test v. For angle kappa6. 2 spare bulbs7. Haidinger brushes8. Original Motorized table9. Should be preferably USFDA and European CE approved.</p>	
18	Maddox Rod	1	Red Maddox rod with red lens and handle	

19	Maddox wing	Nasal bone fracture (1 Set) Asch forceps Walsham forceps	Maddox Wing 1. For measuring heterophoria 2. Should be light weight and made of cast iron with septum	
20	Diplopia Goggles	1	Diplopia goggle Red green diplopia charting adjustable goggles with adjustable strap	
21	Gonioscope	1	Gonioscope/Goldmann 3-mirror lens 1. 3 mirror optics angled at 60, 66 and 76 degrees. 2. Laser/AR coated and bonded protective glass cover 3. Image magnification- 1.06× 4. Contact Diameter- 15 mm 5. Light weight with solid plastic design 6. Advanced no fluid contact design for methylcellulose free use	

22	Placido disc	1	Placido disc - Standard placido disc for detecting astigmatism - Preferably of ebonised wood, light weight (100-125gms) - Approximate size 180×180×32 mm	
23	Prism Bar	1	Prism Bar with loose prisms	
24	Schoutz Tonometer	3	Schiotz Tonometer 1. Original and imported Schiotz Tonometer with 3 weights (5.5gm, 7.5gm and 10gm) and a conversion table. 2. High quality bearings and stainless steel parts	Reister

25	Indirect Ophthalmoscope	2	<p style="text-align: center;">Indirect Ophthalmoscope</p> <ol style="list-style-type: none"> 1. Should have small pupil feature. 2. Halogen illumination. 3. Stereo optical system. 4. Cobalt blue and green filters. 5. Compact and light weight instrument. 6. Controls for adjusting the headband. 7. Inter pupillary distance adjustment: 50-75 mm. 8. Should be wireless. 9. Preferably European CE & US FDA approved. <p>Accessories:</p> <ol style="list-style-type: none"> a. Fundus chart - 50 sheets. b. Scleral Depressor. c. Transformer with power cord. d. Pencils : 3. e. Carrying case. f. 2 spare halogen bulbs 	Heinz, Welch Allyn or Equivalent
26	Keratometer	2		
27	Quinsy Forceps	1		
28	ESR Tube			
29	Micro ESR Tube	100		
30	Filter Paper	100		

31	Vim Silver Man	4		
32	Streak Retinoscope	2		Heinz, Welch Allyn or Equivalent

MEDICAL EQUIPMENT/LOW VALUE ITEMS - KCGMC KARNAL

4. ENT

Sr. No.	4 ENT	Qty.	Specifications	Required Make or Model if Any
1	Tuning forks: (256 hz,512 hz,1024hz) : Gardiner brown with base	6 sets		Titus or equivalent
2	Otoscope 3.5V, halogen bulb with charger	4		Heinz or Welch Allyn or equivalent
3	Bayonete Forceps	2	SISCO /TUFFT / Kalelker or equivalent	
4	Bull Lamp Halogen light	4		
5	Head mirror	4		
6	Tilley's Nasal Packing forceps	20		
7	Jobson Horne Probe	20		
8	Foreign Body Hook	10		
9	Ear Packing forceps	10		
10	Laryngeal mirrors with handle	25	SISCO /TUFFT / Kalelker or equivalent	
11	Aural suction: microsuction cannula varhoeven of different sizes.	10 sets	SISCO /TUFFT / Kalelker or equivalent	
12	Siegels pneumatic speculum	2	SISCO /TUFFT / Kalelker or equivalent	
13	Naso Pharyngeal Mirror with handle	20	SISCO /TUFFT / Kalelker or equivalent	
14	Aural speculum Hartmann: micosuction cannula varhoeven of different sizes: 3/4/5/6/mm black	10	SISCO /TUFFT / Kalelker or equivalent	
15	Ear packing forceps	10	Cricothyrotomy set	

16	Oesophagoscopy set (attachement ENT-3 C)	1 set	Oesophagoscopy set Oesophagoscopes 50cm 12x16cm robert jesberg oval tube 30cm10x12 , 27cm, 8x12 Biopsy Forceps broncho- oesophagoscope forceps single action jaws, sheath diameter 2.5 mm, width 3.5 mm, working length 55 cm Foreign Body Removal Forceps Forceps, alligator, spoon-shaped, single action jaws, semi-flexible, sheath diam 1 mm, length 35 cm Suction Long suction L- 20, 25cm, 40cm, 2mm diameter Oesophageal Dilators 1 set	
17	Cricothyrotomy set (attachement ENT-4 A)	1 set	Cricothyrotomy set	
18	Skin hooks	Nasal bone fracture (1 Set) Asch forceps Walsham forceps	SISCO /TUFFT / Kalelker or equivalent	
19	BP handle	2		
20	Curved arteries	2		
21	Straight arteries	2		

22	Needle holder	2		
23	Right angled retractors	2		
24	Tissue cutting scissors	2		
25	Suture cutting scissors	2		
26	Golden handle scissors	2		
27	Toothed forceps	2		
28	Non toothed forceps	2		
29	Intubation set	1		
30	Bronchoscopy set	1	<p>Bronchoscopes with light carrier 27.5cm, 3.5mm; 35/30, 7mm ; 45/40cm, lumen 9mm negus broyle 3 Biopsy Forceps forceps alligator sheath diam 1mm, length 40 cm, semi flexible Foreign Body Removal Forceps sheath diam 2.5mm, width 4mm, length 50 cm 1 Suction 40 cm,30 cm, 25 cm for brochoscopes diameter 2.5mm, 2mm</p>	
31	Portable rechargeable Head Light with Charger	2	Kalelker / Serwell/ GTB or equivalent	

32	General Instruments (Sets)	2 sets	Skin hooks 2 BP Handle – 1 Curved Arteries – 4 Straight arteries – 4 Needle holder – 1 Right angled retractors – 2 Tissue cutting scissors – 1 Suture cutting scissors – 1 Golden handle scissors – 1 Toothed forceps – 2 Non Toothed forceps – 2 Babcock's forceps – 1 Alley's forceps – 2 Kocher's Clamps - 1	
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MEDICAL EQUIPMENT/LOW VALUE ITEMS - KCGMC KARNAL

4. Gynae

Sr. No.	4 Gynae	Qty.	Specifications	Required Make or Model if Any
1	MR Syringe	10		
2	Simple Fetal Doppler	10	European CE	
3	Female Pelvis with Dummy	2	European CE	
4	Vaccum Extractor	4	Cooper / Equivalent	
11	Tuboplasty set (attachment Gynae. 10)	4 sets	Microsurgical Instruments – Needle Holder - 1 Microscissors - 1 (extra Thin , 10mm curved blade. Westcot scissors : 10mm blade, curved with blunt tip Small straight blade 1 Needle holder straight - 1 & curved - 1 Blade : 150 angled blade with lance tip Suturing / tying forceps (Straight 0.5 mm, curved (angled at 7.5mm) - 0.5mm Blunt tipped guide wire - 1 Tubal dilator - 1 Bipolar forceps - 2 Cautery ball tip All Micro surgical instruments to be provided in autoclavable box of same manufacturer. Should be European CE / U FDA. It should be made up of German stainless steel, heat resistance, antiglare .	
12	Myoma screws set small medium large	2 sets		
13	Myoma handle	2		
14	TOT Needles (reusable)	2 sets	Lotus or equivalent	

16	Centrifuge Machine	2		
17	Haemocyto Meter	4		
18	Haemoglobino Meter	9		
19	Naso Pharyngeal Mirror with handle			
20	Aural speculum Hartmann: micosuction cannula varhoeven of different sizes: 3/4/5/6/mm black			

KALPANA CHAWALA MEDICAL COLLEGE - ANATOMY, PHYSIOLOGY & BIOCHEMISTRY

Sl. No.	Name of the Article	ANATOMY	PHYSIOLOGY	BIOCHEMISTRY
2	Tables with marble tops or stainless steel, Half standard size.	5		
3	Drill machine	2		
4	Hand saw	3		
5	Band saw for sectioning body and limbs	1		
6	Stools, preferably metal with cushion	60		
7	Brain knife	3		
11	Trolley Table (Steel, Light)	3		
12	Projectors including overhead projectors	4		
14	Charts, Diagrams, Models, Slides etc.	1		
	i) Charts			
	ii) Diagrams			
15	Dissecting instruments	1		
16	Meat cutting machine for thin body sections (trans and vertical) for gross anatomy sectional study.	1		
18	Dissection Microscope	5		
19	Micro tomes, rotary	2		
20	Micro tomes, Sludgy, large cutting	1		
21	Cabinet for Slides (1000)	6		
22	Incubator	1		
23	Paraffin embedding bath	1		
24	Hot plates for flattening sections	2		
25	Hot air cover for drying slides (45C)	1		
27	Balance Ear anger capacity 6 kilos sensitivity, 1/5 gram	2		
28	Refrigerators			
	300 Ltr.	2		

30	Distilled water still-menesty type capacity gallon per hour	2		
31	Diamond pencils	4		
32	7 colours marking pencils	2		
33	Skeletons articulated	5		
34	Bones (Dis-articulated) sets	25		
35	Specimen jars	200		
36	Racks Steel	30		
37	Embalming machines for cadavers	2		
38	Computer for keeping student records, marks, stores etc. with Printer	6		
39	Electric time markers, 100/sec.		6	
40	Tuning fork, time marker, 100/sec.		6	
42	Large extension kymographs-Brodie-Starling complete with respiration pump, motor time marker manometer.		1	
43	Operation table		1	
45	Dale's bath for internal organs		15	
46	Isolated organs, bath for students complete with liver etc.		25	
48	Mary's tambour		20	
52	Anesthesia box		3	

53	Surgical instruments for operative procedures, syringes, pulleys, etc.		50	
55	Demonstrations eye piece		3	
56	Double Demonstration eye piece		3	
58	Wintergreen's Pipettes for E.S.R. on Stand (with space pipettes)		35	
60	Haemoglobinometer, sahli or helige (with spaces)		36	
61	Haemocytometers		36	
62	Sphygmomanometer		12	
63	Stethoscopes		12	
64	Stethoscopes, Demonstration with multiple ear pieces		2	
66	Venus pressure apparatus		2	
67	Spiro meter, Ordinary		6	
68	Gas analysis apparatus, Hal Dane's students type		1	
69	Van Slyko's apparatus manometric		2	
70	Gas analysis –automatic for CO ₂ , O ₂ N ₂		1	
71	Douglas bag, complete		6	
72	Basal metabolism apparatus		1	
73	Erogograph Mosse's		6	
74	Clinical Thermometer		12	
75	Compass		10	
76	Thermanaesthesiometer		3	
77	Algometer		3	
78	Apparatus for passive movement		1	
79	Knee hammer		12	
80	Stethograph		10	
81	Bicycle ergo meter		4	
82	Olfactometer		1	
83	Ophthalmoscope		2	
84	SCHEMATIC EYE		2	
85	Phakoscope		1	
86	Perimeters, with charts		2	
87	Colour perception lantern Edridge Green		1	
88	Maddox rod		1	

89	Newton's colour wheel		1	
90	Tuning forks to test hearing 32- 10000cps (sets)		2	
91	Dynamometer		1	
91	Otorhinolaryngoscope		3	
93	Sterilizer Electric		2	
94	Instrument trolley		1	
95	Stop watches		6	
96	Physiograph, 3 Channels, complete with accessories		1	
98	Centrifuge, high speed with techno meter etc.		1	
99	Calorimeter, photo-electric		1	
100	pH meter, electric,		1	
101	Refrigerator, 9-10c ft.		1	
102	Oxygen cylinder with trolley		6	
103	Co2 Cylinder with trolley		2	
104	Electronic stimulator		1	
105	Water distillation still, with spare heating elements		1	
106	All glass distillation apparatus double stag		1	
107	Voltage Stabilizer			
	i) 1 KVA		3	
	ii) 5 KVA			
108	Step-down transformers		1	
108	Thermometers, balances, microslides and glassware etc.		1	
110	Fume cupboards			2
111	Boiling water baths, with lids having 8-12 holes			6
113	Balance open pan			6
114	Balance Semi micro			2
115	Balance Micro			1
116	Vortex mixers			2
117	Urinometers			50
118	Constant temperature water bath			4
119	Ryles tube			4
120	Incubator electric with thermostat			4
121	Hot air oven			4

122	Magnetic stirrer			2
123	Pump vacuum			2
125	Refrigerators 300Ltr.			4
126	Flame Photometer			2
127	Thermometers 0-250C			4
128	Thermometers 0-110C			4
129	Cork borer set			1
130	Stop watch			4
131	Spirit lamp			50
132	Chromatographic chamber			2
133	Water distillation plant (metallic)			5
134	All glass distillation apparatus			4
135	Desiccators large size			30
136	Desiccators small size			30
137	Centrifuge clinical for 12 tubes			6
138	pH meters			10
139	Homogenizer			3
140	Microscopes Monocular			6
141	Ultra Violet (U.V.) lamp			1
142	Tools for small workshop for glass blowing and mending			1
143	Bottles dispensers			15
144	Samplers (auto pipettes) different volume range			15
145	Electrophoresis apparatus with power supply for paper PAGE AGAROSE			6
147	Binocular research microscopes			2
148	Glassware as required by standard lab kits, chemical, pipettes, beakers and conical flasks, etc.			1

HUMAN ANATOMY

ITEM No. 1

Is entirely made of S.S. (steel grade 1.4301), with a frame made of rugged torsion resistant S.S. profiles and 4 S.S. swivel locking castors (125mm dia.). The table top has a depth of approx. 15mm sloping towards the drain. Large radii on all inside corners provided for easy cleaning. A 10 L container with bayonet lock, mounted beneath the down spout, is applied to a rack in the base frame. An air tight compartment mounted beneath the table top serves for an odour free storage of drapes. It features a stainless steel full extension drawer and a removable S.S. tray provided with perforated plate and a removable lid.

Good Quality steel of adequate thickness

Size of top – Length 73.5 inch

Width – 24 inch

With edges folded of 1.5 inch & no sharp border

With drainage site at the centre of diameter 1.5 inc

Supported by 4 legs of good quality

Legs height – 34.5 inch with foot rest

With rubber boots of good quality

ITEM No. 2

Is entirely made of S.S. (steel grade 1.4301), with a frame made of rugged torsion resistant S.S. profiles and 4 S.S. swivel locking castors (125mm dia.). the table top has a depth of approx. 15mm sloping towards the drain. Large radii on all inside corners provided for easy cleaning. A 10 L container with bayonet lock, mounted beneath the down spout, is applied to a rack in the base frame. An air tight compartment mounted beneath the table top serves for an odour free storage of drapes. It features a stainless steel full extension drawer and a removable S.S. tray provided with perforated plate and a removable lid with wheels. Size: 3"X2"3".

ITEM No. 3

Hand drill machine with set of bits

Technical Specifications:

1. The table top drill mounted on stand should have spring loaded lever of high Quality.
 2. Should have variable speed operation, high speed drill.
 3. The single phase ac motor should have approx 690 W.
 4. It should be compact with overall length (320mm Approx.) and weight (Approx. 1.8Kg)
 5. Aluminum die-casting inner cover and gear cover should be used for increased durability.
 6. Should be easy-to operate with a 2-finger sized trigger switch and a speed control dial
 7. It should have a reliable and convenient push button type forward/reverse changeover switch.
 8. Should have 2-speed transmission with slow / high speed
 9. shortest chuck offset (23.5mm(15/16"))
 10. It should have soft grip handle for comfortable operation
 11. It should have low operation noise 79dB
 12. To be provided with high speed tungsten carbide bits of 1/2", 3/8", 1/4", 3/16", 1/8" or equivalent mm size.
 13. with 10 mm drill check
 14. With Clockwise & Anti clockwise rotation
 15. With Hammer function
-

Item No. 4

Hand Saw

- 1.1 Should be high carbon steel blades , hard and durable, anti rust and smooth, which leads to less friction.
- 1.2 Blades should be chrome plated to prevent body fluid /chemical corrosion.
- 1.3 For HRC, Blade materials should reach 52 degrees and teeth reaches 60 degrees (+ / - 3)
- 1.4 Chrome treatment, antirust smoothening should be done to reduce the friction.
- 1.5 It should have strong handles.
- 1.6 It should be ergonomic and rust proof.
- 1.7 Special teeth design which should be sharp at edges
- 1.8 Should be supplied with essential accessories (Name the accessories specifically)

ITEM No. 5

Band Saw For Sectioning Body And Limbs

1. Body & meat cutting band saw
2. It should attach with a large movable stainless steel work table (electrically powered)
3. It should be fitted with 1 H.P. motor , 50 Hz,230V
4. Should be supplied with stand, protection and spare blades (2nos.)

ITEM NO. 6

Medical stool –revolving with back rest

The counter height medical stools with a stool height that can be adjusted for 21" to 31" by using the hands-released pneumatic mechanism.

The stool with 5 star polished aluminium based and column with 2 " hooded casters , both the 14" diameter round and 16" square seats for constructed of 3" high density foam and upholstered in choice of different vinyl colours .Counter height Adjustable back rest

ITEM No. 7

BRAIN KNIFE(S.S.) SLICING / MEAT KNIFE

- 1.1 Knives should have premium quality. Standard size for anatomy lab.
- 1.2 It should be high quality stainless steel with heat-treated and tempered blades.
- 1.3 The blade should be sharp and easier to re-sharpen.
- 1.4 Handle material should be selected from natural or synthetic materials, providing the best appearance and performance or it should be of S.S. to prevent corrosion.

ITEM No. 8

Mortuary cooler / refrigerator with arrangement to keep 6-8 bodies

1. Corrosion free interior and exterior.
2. Audio visual alarm for high and low temperature.
3. Designed for long storage of cadaverous.
4. PUF insulation on all sides.
5. Special design ensuring best hygiene with washing & draining facility.
6. Reliable
7. Tray or Trolley should be available in the mortuary chamber so that the cadaver can be pushed inside or pulled outside the chamber smoothly.
8. Energy efficient and sturdy construction.
9. Light weight.
10. Digital temperature indication.
11. Low maintenance.
12. Microprocessor based / PLC temperature control.
13. Outer body of the mortuary chamber is constructed out of thick S.S sheets. The inner chamber made of heavy gauge stainless steel sheet of SS-304 grade. The 100mm gap between the walls filled high grade poly urethane

- insulation, which ensures maximum thermal efficiency.
14. The doors connected by very sturdy chrome plate hinges and fitted with hard chrome plated lubricated latches for opening of the door.
 15. The doors made of galvanized steel sheets, lined with stainless steel for extra protection and long life.
 16. All the doors fitted with high quality neoprene rubber gaskets for airtight fittings with very sturdy casters.
 17. CFC free compressors, conforming to latest international standards and guidelines.
 18. Vapor proof lamp inside.
 19. Temperature range -2 to 4 deg C with temp failure alarms.
 20. Suitable Voltage automatic stabilizer O/P 230 +/-10% I/P 150 – 280Volts.
 21. To be installed at each site as per the site conditions.
 22. The unit should be (3 x 2) x 2 or (2 x 2) x 3 format.

ITEM No. 9.

Storage tank to hold 10 cadavers, made of concrete with copper lid

ITEM NO. 10

Plastic tanks for storing soft and dissected parts. HDP tanks for keeping the organs with rib reinforcement.

ITEM NO. 11 Trolley Table (Steel, Light)

Trolley Table steel light (Approx Size 3' X 2'X3')

ITEM No. 12

Portable LCD Projector Computer system

- Intel Dual core 2.5 Ghz processor with 02 MB cache memory
- Intel chipset G 31 motherboard (make will be gigabyte or asus)
- 1GB DDR2 667 Mhz RAM
- 250GB sata Seagate hard disk (7200RPM)
- 18.5" LCD
- 22X LG Double layer DVD Writer
- ATX Cabinet (Black Silver) or (Red and Black)

- Multimedia Key Board & Optical mouse.
- Sound on board
- AGP on Board
- LAN on Board

ITEM No. 13

X RAY VIEWING LOBBY

1. Four Panel Side by Side X-Ray View Box Illuminators; High quality with aesthetic finish.
2. Should have the following Standard Features:
3. LED light source (blue type) lasting several thousand hours.
4. Roller gravity film holding system
5. Durable steel construction
6. Thin 3" profile
7. Chip resistant hospital white finish
8. Continuous bottom film ledge
9. Even view reflective system, with white acrylic translucent surface.
10. Centralized cluster On/Off switching
11. Optional Features:
12. FAS – Film Activated Switching
13. MS - Master Switch
14. HGP - Hospital Grade Plug Specs: Surface Wall Mount 3 Panels Side by Side 56" x 17" Viewing Area.
15. Overall Dimensions approx: 56" (L) 21" (H) 3 3/8" (D) (approx.)
16. Illumination: 2000 cd/m²
17. It should be aesthetic and high quality, thin type and mountable on wall.
18. Power Supply
19. Power input to be 220-240VAC, 50Hz.
20. US FDA & CE European Certified.

X – Ray Lobby

Should work on 220 -240 V, 50 Hz AC
 Should provide with a detachable dripping tray made up of fiber.
 The light illumination should be uniform
 The body should be compatible to view 14 x 17" Film

ITEM No. 14

CHARTS

All should be 26" x 20" sized, multi color, thick laminated, wall hanging type charts with rollers on upper and lower end.

NAME OF ART CHARTS ON ANATOMY

1. The Muscular Systems
2. The Skeletal Systems
3. The Vertebral Column
4. Rib, Vert, System & hyoid Bone
5. The Nervous System
6. The Brain
7. The Anatomy of the Brain
8. The Spinal nerves
9. The Autonomic nervous System
10. The vascular System and Viscera

11. The Heart
12. The Lymphatic System
13. The Human Skull
14. Skull External and Internal Surfaces
15. The Head and Neck
16. The Respiratory System
17. The Eye
18. The structural Anatomy of the eye
19. The Eye. Anterior & Posterior chambers
20. The Ear, Nose & Throat
21. The Ear - Organs of hearing & Balance
22. Pharynx & Larynx
23. Anatomy of the inner ear
24. Temporomandibular Joint (TMJ)

25. The Skin
26. The Female Reproductive System
27. The Male Reproductive System
28. Pregnancy & Birth
29. Female Reproductive Systems (Ant. & Patho)
 30. The Female External Genitalis (Ant.& Patho)
 31. Body surface area & body weight
 32. Birth Weight
 33. Obstetrical Table
 34. Critical Stages of foetal development. 1st.lunar month - 10th lunar month
35. The Endocrine System
36. The Shoulder and Elbow (Ligament)
37. Shoulder, Arm, Elbow, forearm & Head
38. The Hand and Wrist (Ligament)
39. Male, Female pelvis, Sacrum, Coccyx, Hip and Knee
40. Hip Thighs, Knee and Leg
41. The Foot and Ankle (Ligament)
42. Ankle and Foot
43. Skeletal Maturation & Growth
44. The Digestive System
45. The liver
46. The Urinary Tract
47. The Kidney
48. The Prostate
49. The portal System
50. Gastroesophageal Disorders and Digestive Anatomy

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51. Origins, Development & Structure Cells
52. Soft Tissues of the Lower Limb
53. Soft Tissues of the Foot
54. Bones of the pelvis and Lower Limb
55. Varicose Veins
56. (a) External Morphological Features in Male Female (b) Sex Differentiating Features in
- Skull
(One
Char
t)
- 57 (a) Sex Differentiating Features in Mandible. (b) Sex Differentiating Features in hip Bone.
- (c) Sex Differentiating Features in Sacrum (One Chart)
- 58 (a) Sex Differentiating Features in Articulated pelvis In addition to those present in hip bone & sacrum.
- (b) Sex Differentiating Features in Femur (One Chart)
- 59 (a) Estimation of Age-Ages of Eruption of teeth
- (b) International system of numbering the Teeth (One Chart)
- 60 (a) Aged of appearance and fusion of different Ossification of bones
- (b) Multiplication factor for different bones .for calculation of persons of different parts of India (One Chart).

Item No. 14

MODELS

ANATOMY

1. Model of Man or Woman....(Normal Size)....Adult

Showing superficial dissection on one side. And

other side intact.

Arms and legs are detachable. The internal organs in abdominal & thoracic wall are shown in situ and they are detachable.

2. Human Torso with Head Life size. (Male or Female)

Height 38 inches excluding arms & legs. Showing superficial dissection on one side and other side intact. The internal organs in abdominal & thoracic wall are shown in situ. Half of the skull cap can be removed and brain can be taken out.

3. Principal Structures found within tissue Cells

4. Head and NeckLongitudinal Section of Head and Neck

5. Brain with Skull

6. Brain in 4 Parts

7. Nervous system

8. Mid sagittal Section through the Brain

9. Structure of the Cerebellum.

10. A Superior View. An Interior View. A Sagittal View

11. Sagittal section through the Medulla Oblongata and pons showing

12. The Cranial Nerve Nuclei of Gray Matter

13. The Autonomic Nervous System

14. Spinal Cord with Spinal Nerves

15. Stretch Reflex

16. Tendon Reflex

17. Flexor (Withdrawal) Reflex

18. Crossed Extensor Reflex

19. Spinal nerves of the hand Anterior View

20. Spinal nerves of the leg. (Distribution of Nerves from Lumber & sacral Plexuses)

21. Posterior view of the brain Stem

22. Lymphatic System

Types of Neurons

23. Multipolar Neuron. Bipolar Neuron. Unipolar Neuron
24. Reflex Arc. Including the Sensory receptor, Afferent Neuron, Association Neuron, Efferent neuron and Effector organ.
25. Converging Circuit in the Spinal Cord
26. Diverging Circuit in the spinal Cord
27. Ascending Pathway: The Dorsal Column Descending Pathway: The Pyramidal System (2

M
o
d
e
l
s
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28. Somaesthetic pathway
29. Relationship of the Lymphatic System to the Cardio vascular system.
30. The cervicle sympathetic Ganglia
31. Human Eye ... Vertical SectionGreatly Enlarged Showing Muscle, Optic Nerves, Crystalline

Lens,
Iris,
Cornea
etc..

32. Human Eye ball.... 100 times enlarged (Detachable)
 33. Visual Central nervous System pathways (Superior View)
-
34. Ear ... Large Size ... Dissectible in 4 parts
 35. Structure within the inner ear including the cochlea & Vestibular Apparatus
 36. Ear ... Sagittal Section ... On board. (External, middle & Inner Ear)
 37. Larynx.... Anterior View, Posterior View, Side View, Cut away Side View & Sagittal Section (5

Models)

38. Functional Model of Larynx...
39. LarynxDeep side-View
40. The Pharynx.....Posterior View
41. PharynxSagittal Section
42. Tonsils Pharyngeal, Palatine & Lingual Tonsil
43. Teeth (Lower jaw) with structure shown
44. the Structure of tooth
45. The Cavity in tooth
46. The Tongue Dorsal Surface
47. Pituitary Gland Hypothalamus
48. Thyroid & Parathyroid Glands
49. Sagittal Section through Nasal Cavity and Pharynx Viewed From medical Side
50. Lungs One side sectioned with Respiratory Tract, Bronchial Tubes, Arteries & Veins
51. Pulmonary circulation
52. The Respiratory System
53. Liver Enlarged showing Gall Bladder
54. Liver with Gall Bladder & Pancreas (On Stand)
55. Blood Supply of the Liver
56. Duct System with Gall Stones in common sites
57. Duct Hepatic Portal System
58. Endocrine System
59. Pancreas Enlarged
60. Structure of the pancreas
61. Stomach.....Enlarged.....with duodenum, sectioned showing details
62. An Anterior view of Abdominal aorta & its principles branches

63. Spleen..... Normal size with details
 64. Gall bladder, Pancreas & Duodenum
 65. Blood supply of the Intestine
 65. Rectum (Anal Canal)
 67. Large Intestine
 68. Small Intestine.
 69. The Digestive System
 70. Heart EnlargedSeparable in 4 Parts
 71. Fat depositions in the arteries
 72. Death of an Artery.
 73. Artery section with Blockage. (Plaque built up on artery body)
 74. Principal Arteries of the body.
 75. Principal Veins of the body .
 76. Veins that drain the head & Neck
 77. An Anterior view of the Veins that the upper right extremity
 78. Veins of the lower Extremities.
 79. Circulatory System
 80. Relationship of the lymphatic system to the Cardio vascular system.
 81. Fetal Circulations
 82. A Schematic Model of Circulatory System
 83. Arteries of the Neck and Head. Major branches of the right Common carotid and right subclavian arteries
 84. An Anterior view of the Major Arteries of the Upper Extremity
-
85. Arteries of the pelvic Region
 86. Arteries of the right lower Extremity (Anterior view & posterior view)
 87. Urinary System With Kidney and Urinary Bladder

88. Kidneyin 2 Parts.....on stand
 89. Blood supply of the kidney
 90. Urinary BladderSectioned
 91. testisX Section
 92. Cross Section of the Penis..... Anterior view (Oblique section)
 93. Structure of the Penis showing the Attachment, Blood & Nerve supply and the arrangement of the erectile tissue
 94. Longitudinal Section of the Female Urethra
 95. Organs of the Male Reproductive System.(A Sagittal View)
 96. Organs of the Female Reproductive System (A Sagittal Section)
 97. The Size & Position of the Uterus in a full term Pregnant Woman in a Sagittal Section
 98. UterusSagittal Sectionwith fallopian tube with details
 99. Uterus in section showing sperm & Ovum in process of Fertilization.
 100. Ovarian Cycle, Fertilization and the Morphofenic events of the first week.
 101. Blood supply of the uterus.
 102. Vascular Supply to the Uterus
 103. Tubal Ligation involves removal of a portion of each uterine tube.
 104. Structure of the Breast and Mammary glands (A sagittal section and anterior view partially sectioned)
 105. The skin 1000 times Enlarged
 106. Types of Skin Lesions.....Macule, Papule, Nodule, Wheel, vesicle, Intra or Sub epidermal blister, Pustule, Cyst, fissure and Ulcer
 107. Bone Structure..... Cross Section
 108. Hair Structure.....Cross Section
- Anatomy & Physiology of Pregnancy
109. Human Ovum Enlarged
 110. Structure of Human Spermatozoon

111. Spermatogenesis and Oogenesis

112. Uterus in section showing Sperm and Ovum in Process of fertilization

113. Foetal Surface of Placenta

114. Maternal Surface of Placenta

115. Breast (Made of fibre
Glass Material) Before
Puberty

At Puberty

Adolescent

Adult, conical type

Adult, well developed hemispherical type

In Pregnancy

In Lactation

Pendulous, in older multiparous woman

116. Breast in Pregnancy (Made of Silicon Material German-Make) Looks natural,
Feels natural.

117. Gradual Development of Uterus from 1st month to 9 months (9 Models)

118. Model showing First, Second & third stage of Labour.

MODEL ON ANATOMY (DISSECTION OF UPPER & LOWER EXTRIMITIES)

Made of fibre glass

Material for Understanding dissection

1. Superficial branches of cervical plexus.

2. Dissection of the right mammary gland.

3. Contents of axilla exposed by reflexion of pectoralis major nodes. and the fascia,
and removal of fat and lymph. Part of auxiliary vein has been removed to
display the medial cutaneous nerve of forearm and unlar nerve.

4. Lymph nodes and lymph vessels of axilla and mamma.
5. Dissection of auxiliary artery and its branches.
6. Dissection of lower part of posterior triangle of neck showing the supraclavicular part of branchial plexus.
7. Dissection of superficial muscles and nerves of the back.
8. Superficial veins at bend of elbow in a specimen in which the median vein was larg.
9. Superficial lymph vessels and lymph nodes of front of upper limb.
10. Superficial lymph vessels of back of upper limb.
11. Superficial veins and nerves of front of upper limb.
12. Superficial veins and nerves of back of upper limb.
13. Deltoid muscle and lateral aspect of arm.
14. Dissection of scapular region and back of arm to show the auxiliary and turned. The lateral head spiral groove on the humerus for the radial nerve
15. Anastomosing arteries around the scapula.
16. Dissection of left cubital fossa. The fat has been removed and the bicipital aponeurosis cut away with the rest of the deep fascia.
17. Dissection of back shoulder and arm. The lateral head of triceps has been divided and turned aside to expose the spiral groove on the humerus for the radial nerve
18. Dissection of superficial muscles, arteries, and nerves of front of forearm. Part of the radial artery was removed to show the muscles deep to it.
19. Deep dissection of muscles, and nerves of front of forearm. The division of the branchial artery is slightly lower than usual.
20. Deep dissection of front of forearm. The elbow is partially flexed, the forearm semi-pronated.

The superficial muscles are cut short and turned aside. The deeper parts are still further displayed by the separation of the flexor digitorum superficial from the flexor carpi ulnaris.
21. Superficial dissection of palm to show the palmar aponeurosis. The deep fascia has been removed from the thenar and hypothenar eminences.
22. Structure in palm displayed by removal of palmar aponeurosis. In this

specimen the radialis indicis and the princeps pollicis arteries took origin from the superficial palmar arch.

23. Superficial dissection of back of forearm.
 24. Deep dissection of back of forearm.
 25. Dissection of right forearm triangle.
 26. Dissection of adductor canal in the right thigh. A portion of the sartorius has been removed.
 27. Scheme of adductor group of muscles and obturator nerve.
 28. Dissection of left gluteal region. Gluteus maximus and gluteus medius have been removed, and quadratus femoris has been reflected. In the specimen, the inferior gluteal artery was medial to the internal pudendal instead of lateral to it.
 29. Left popliteal region after removal of the deep fascia- the muscles and fat being left undisturbed
 30. Dissection of left popliteal fossa. The upper boundaries have been pulled apart and the aponeurosis to which the two heads of the gastrocnemius are attached has been split and the heads separated. For deeper dissection.
 31. Dissection of left popliteal fossa. The two heads of the gastrocnemius and portions of the semimembranosus and semitendinosus have been removed. For more superficial dissection.
 32. Left popliteal artery and its branches.
 33. Dissection of gluteal region and back of thigh.
 34. Synovial sheaths of dorsum of foot.
 35. Dissection of front and lateral side of leg.
 36. Dissection of dorsum of foot.
 37. Dissection of showing synovial sheaths of tendons of lateral aspect of foot.
-
38. Superficial dissection of leg viewed from posteromedial side, showing veins and nerves. Note the numerous anastomosis between the great and the small saphenous veins.
 39. Superficial dissection of leg viewed from posterolateral side showing veins and nerves. In the specimen were numerous large anastomosing channels between the small and the great saphenous veins.

40. Deep dissection of back of leg.
41. Dissection of medial side of ankle, showing the relations of the flexor retinaculum. (model no.-1)

dissection of leg and foot showing synovial sheaths.(model no.-2)
42. Superficial dissections of sole of foot to show plantar sponeurosis. The skin and superficial Fascia, except the superficial transverse ligament, have been removed, and the fobrous flexor sheaths partially opened.
43. Superficial dissection of sole of foot. The plantar aponeurosis has been removed. The abductor digiti minimi and the abductor hallucis have been pulled aside
44. Dissection of sole of foot. Most of the flexor digitorum brevis has been removed.
45. Deep dissection of sole of foot.

ITEM No. 15.

Dissecting instruments

- 1.1 Student Anatomy Dissecting Kit
- 1.2 Should contain most widely used instruments of high quality.
- 2.0 Dissection Kit contents:
 - 2.1 Cartilage knife 2" blade
 - 2.2 · Scalpel with screw lock blade
 - 2.3 · Narrow blade scalpel 1.5" blade
 - 2.4· Forceps 4.5" with guide pin, medium points
 - 2.5· Forceps 4.5" with guide pin curved, fine points
 - 2.6· Dissecting scissors, Iris 4.5"
 - 2.7· Probe and hook chrome
 - 2.8· Dissecting scissors with one point sharp & one point blunt 5.5"
 - 2.9· Teasing needle straight
 - 2.1· Teasing needle bent
 - 2.11· Ruler 6" plastic
 - 2.12· Dissecting chain and hook chrome
 - 2.13· Dissecting blow pipe 6"
 - 2.14· Double fold vinyl case
 - 2.15 Toothed forceps

ITEM No. 16

Meat cutting machine for thin body sections (trans &vertical) for gross anatomy sectional study

Bone and meat cutting machine' useful for specimen of big size in anatomy, fitted with large moving table and extension table operator on 4 ball bearing rollers.

Specifications:

Size of cutting table 785x585 mm. approximate , total table travel 1245 mm approximate, extension table 455x765 mm, size of wheel 455 mm approximate , height 1700 mm approximate , the table is made of thick SS sheet with special heavy axles for easy and firm movement . Supplier complete with one blade, stater, cord and plug. Suitable to work on 220v , single page, 50HZ A.C.capacity.

APPARATUS & INSTRUMENTS FOR HISTOLOGY

ITEM No. 17

MONOCULAR MICROSCOPES

ITEM No. 18

DISSECTION MICROSCOPE

Eye piece: Straight binocular type wide field (10 x and 20 x)

Optic carrier with five steps magnification

Fine focusing- manual

Objective 250mm f & 400 mm f

Cold light co-axial illumination additional 10 spare bulbs

Solid metallic body with sturdy stand riding on heavy duty castor wheels with locking breaks.

Provided with detachable hand rests.

Glass stage (85mm x 75mm) with spring clip.

Option for inserting white/black metal plate as background.

Sub- stage plano concave mirror

Halogen illumination 150W with power supply.

Should have 3 spare lamps with each unit.

To be supplied in wooden box with locking arrangement.

Accessories, spares and consumables

Spare Bulb

Power Supply

Power input to be 220-240VAC, 50Hz

Standards, Safety and Training

BIS approved product or equivalent

ITEM No. 19

MICRO TOMES ROTARY

Rotary Microtome with knives/ Blades

Rotary microtome complete with standard accessories e.g. disposable blade holder, specimen clamp, tool kit operating manual.

1. High precision machine suitable for both delicate as well as hard tissue sectioning

2. Section thickness settings 1-60 μm with settings in 1, 2, 5 increment at different levels
3. Specimen advance 28 mm or more
4. Vertical stroke 60 mm or more
5. Provision of step trimming
6. Adjustable specimen clamp at least 50 x 45 mm with orientation in X,Y axis
7. Single disposable blade holder for accommodating both high and low profile blades
8. Lateral coarse feed
9. Integrate removable section waste tray
10. Spare low and high profile blades in dispenser pack of 50 blades: 6 packets each
11. Microtome knives – 02 nos.
12. Specimen holders – Plastic (as many as required)
13. The equipment should conform to ISO 9001 & CE/BIS

ITEM No. 20

MICROTOME,SLEDGE,LARGE CUTTING

Sledge microtome for cutting large blocks of paraffin and resin embedded material for life microscopy. The knife holding clamps shall allow the knife to be opset to the direction of cut, a major advantage when suctioning large, hard blocks. The microtome which is very heavy for stability and not usually subject to vibration with a feed range of 0-20 microns.

ITEM NO. 21

CABINET FOR SLIDES(1000 WOODEN)

Wrap proof, break proof moulded wooden boxes for storage of prepared microscopic slides. Have slots to accommodate 1000 slides with lid /wooden with hinged lid, Slides are held in number slots and there is an index inside the lid

ITEM No. 22

INCUBATOR

A. Technical specifications:

1. Capacity: 100 – 150 L
2. Interior chamber: Stainless steel for easy cleaning and decontamination
3. Timer: 1 min. to 100 hours and hold position
4. Minimum turbulence and no cross contamination
5. Adjustable safety thermostat for temp setting at 1° deg C increment
6. Temp Accuracy +/-1% of required temp, with inbuilt Temperature Sensor
7. Internal glass door for the observation
8. With minimum two adjustable shelves
9. Audiovisual Alarm to Indicate when temperature deviates more than 1°C from set point, and when program or time has finished. Alarm may be muted.
10. Peltier or Jacket or Blanket heating with continuous air circulation and Heating by natural/forced convection for homogenous temperature distribution.
11. Temperature range: +5° C to 80°C
12. There should be a Membrane Keypad with LCD/LED to set and display operating parameters, current status, running time and alarm conditions for time and temperature.
13. Interior lighting facilities, insulated door fitted with heavy hinges handle locking, mechanical door lock.

B. Power Supply:

1. Power input to be 220-240VAC, 50Hz fitted with Indian plug

ITEM No. 23

PARAFFIN EMBEDDING SYSTEM

A Technical Specifications

1. Should have single module design.
2. Electronically controlled for dependability and performance.
3. The heating function should be controlled by accurate digital thermostat
4. Low and flat work-surface to facilitate operator efficiency.
5. User friendly membrane switches.
6. 4-liter capacity paraffin reservoir which minimizes refilling frequency.
7. Forceps warmer and illuminated paraffin dispenser.

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8. Warming oven with removable shelf and double hinged lid for convenient access to preheated base mould.
 9. Wax bath complete with drainage shelf, debris screen, and hinged lid.
 10. Heated work area which provides a flat working surface with the excess paraffin draining under the surface into the wax bath; complete with a hand and foot switch for activating the dispensing head.
 11. Bright illuminations for convenient working.
 12. The cold plate should have 170 sq. in. (1100cm²) of efficient refrigerated cooled working surface with removable stainless steel drainage tray beneath.
 13. Tactile membrane touch-pad for easy temperature setting and monitoring.
 14. Height of Work Surface: Work stage 2.75"(7cm) above countertop
 15. Wax Reservoir Dimension (approx): .75"(L) x 4.75"(W) x 4"(D) (19.5 x 12 x 9.5cm)
 16. Wax Bath Dimension (Approx): 10.25"(L) x 8.5"(W) x 1.75"(D) (26 x 21.5 x 4cm)
 17. Warming Oven Dimension (approx): 6.5"(L) x 7.5"(W) x min 2.5" max 6" (14 - 16.5cm)
 18. Cold Plate Dimension (Approx): 11.75"(L) x 14.5"(W) (29.5 x 36.6cm) Temp Ranges:
 19. Wax Reservoirs: 40° - 70°C +/-2°C
 20. Work Surface: 40° - 70°C +/-5°C
 21. Wax Bath: 40° - 70°C +/-2°C
 22. Cold Plate working surface:
ambient to -5°C
- B Accessories,
spares and consumables
1. Spare Bulb - 3
 2. Thermostats - 1
 3. Power input to be 220-240VAC, 50Hz
- C Standards, Safety and Training
1. CE or BIS approved product.
 2. Suitable UPS with maintenance free batteries for minimum one-hour back-up should be supplied with the system.
- C. Standards:
1. Should be CE or FDA or BIS approved product.

Item No. 24

Hot Plates for Flattering Sections (Slide warming tablet) 18X12" (Approx.)

Rectangular or round Hot plate
Cast Iron top 200mm, with Energy regulator
Sizes: 250X400X150mm, digitally controlled (optional); S.S. Top; works on 220V AC

ITEM No. 25

Hot air oven for drying slides (45 degree Celsius) 18"X18"X18" (Approx.)

Lab model with three side heating elements

Construction: with double walled construction. Inner chamber made of Aluminium or stainless steel sheet. Outer chamber is made of mild steel sheet, finished with powder coated paint. The gap between the walls is filled up with special grade glass wool for proper insulation to avoid heat losses. Inner chamber has ribs for placing the shelves at convenient levels. Supplied with 2 or 3 removable shelves. It is fitted with heavy hinges with a ball catcher, spring loaded door closing device. Door is duly insulated.

Elements: heating elements are made of high quality nickel/chrome plated nichrome wire which are put inside beads and placed at the bottom and in both the side ribs for uniform temperature all over the work space.

Temperature Control: temperature is controlled by imported capillary type thermostat from 50°C to 250°C +/- 1°C. Temperature control knob is graduated in centigrade degrees. Ovens are supplied without thermometer.

Ventilation: air ventilators are placed near the top of the both sides to remove hot gasses and fumes if any.

Control Panel: comprising of switch to ON/OFF the power, switch to select high or low rates of heating, thermostat control knob and indicators for mains and thermostats. Supplied with cord and plug. Suitable to operate on 220 volts, 1ph, 50Hz, AC Supply.

Optional Accessories: Air circulating fan, digital display temp indicator, digital display temp controller cum indicator in lieu of thermostat., microprocessor based PID temp. Controller cum indicator in lieu of thermostat., L shaped thermometer (Mercury) or straight type. Timer Size of inner chamber WXHXD = 455X455X455mm, No. shelves=2.

ITEM No. 26

Balance analytical

☑ Standard features:

☑ Easy to read Large back light GRAPHICAL LCD display with A.E.P.(Advanced Eye protection)(NEW)

☑ Standard RS 232C Interface Ps/2 output

☑ Hanger for Below Balance weighing

☑ Fully automatic internal Calibration with built in weight

☑ Complies GLP/GMP.

- ☑ Dye cast aluminium design for long term stability and accurate results.
- ☑ Various weighing units like, mg, ct. oz, dwt, mon, GN
- ☑ User selectable Stability and filter level Spacious draft shield interior.

Technical data:

Capacity 220 gm: Readability 0.1mg: REPEATABILITY (+/-) 0.1mg; linearity (+/-) 0.2mg; PAN Size (mm/inch) 90Ø; response time: 03 sec, display Back light LCD graphical display; calibration automatic external units of measure; G,mg, ct, GN, mo, oz,dwt, T are range full operating; temperature 5deg. C to 40 deg.C., housing dimension (342.5mmX212mmX341mm - WDH)

ITEM No. 27

Balance Ear anger capacity 6 kilos sensitivity 1/5 grams

-Capacity: 6 Kilos,
Sensitivity 1/5gram, plastic scale Hanger Type circular weighing scales
-1 Dial type analog display; light weight aluminium die cast body; unbreakable convex lens; matching body and lens ring; sturdy durable and maintenance free; Or Spring Type: In graduated tubular aluminium with zero adjustment, provided with top suspension loop and hook, with dual scale in metric and newton range. 5000grms with precision of 100 grms.

ITEM No. 28

REFRIGERATOR - 300 L. (LABORATORY TYPE)

For storing blood plasma and other blood products, vaccines, other medical or pharmaceutical supplies. Also to cool samples or specimens for preservation . For faster pull-down and recovery times, it should have a bypass refrigeration and microprocessor-based controls

Technical Specifications

- 1 Laboratory refrigerator should have 300- 380 ltr capacities
2. Temperature range from 2 deg C to 8 deg C.
3. It should have galvanized sheet steel construction, powder coated and adjustable feet
- 4 No welded joint to be exposed for rusting.
- 5 Insulation of high-grade pressure – foam material.
- 6 Lockable door with **tight sealing surround to prevent cold loss**

- 7 Automatic defrosting and condensed melt water evaporation.
- 8 Re-circulating air-cooling system.
- 9 Control panel with thermometer, main switch and temperature selection.
- 10 Hermetically enclosed, low noise, vibration proof/low vibration compressor.
- 11 Visual and a caustic signal alarm system.
- 12 Epoxy coated outside finish and GS interior.
- 13 Low noise, automatic defrosting, CFC free & HCFC free
- 14 Should be CFC free.
- 15 Digital temperature display should be provided.
- 16 Power input to be 220-240VAC, 50Hz.
- 17 Should be CE or FDA or BIS approved product.

ITEM No. 29.

Distilled water still with stainless steel , wall mountable model

Manesty type water still: made of all stainless steel; output 4Lt./hr approx.; work on 220VAC; the condenser can be opened easily for periodic cleaning., designed to provide pyrogen free distilled water easily. Complete unit made of stainless steel. The lid perfectly rest and get sealed inside the collar on the head of the tank which avoids loss of steam and jumping of lid., easy wall mounting.

ITEM No. 30

Diamond pencils or glass marking pencils

ITEM No. 31

COLOUR MARKERS:

☐ Permanent marking pen

☐ Permanent marker pen is an aluminium cigar type rigid tube with hemispherical rubber at one end, when pumped slightly compressed in towards a fine ball point for sharp and fine marking . Basically using a slotted template for marking datum line when testing dimensional stability (shrinkage) to washing and processing on fabrics.

Product Codes	Yellow	Red	Orange	Black	Blue	Green	White
Plastic tip							
Metal tip							

ANATOMY MUSEUM

ITEM No. 32

Human Skeleton Articulated (Real Bones)

Description of Function

1.1 Mounted skeleton, one with the various parts connected in such a way as to demonstrate normal relationships and allow motion between components as in the living body.

Technical Specifications

2.1 The articulated skeleton should be ideal for teaching the basics of human anatomy.

i. Adult Male & Female - 1 set each

ii. Old age Male & Female - 1 set each

iii. Adolescent Male & Female - 1 set each

iv. Child Male & Female - 1 set each

v. Paediatric Male & Female - 1 set each

2.2 It should be real skeleton of a life size human skeleton and should show all skeleton part in high details

2.3 The arms, legs and skull cap should be removable for study.

2.4 All of the joints, sutures, fissure, foramina and processes should be portrayed with at most accuracy/ intact.

2.5 Should be supplied with 5 caster roller stand.

2.6. It should be neat and clean.

2.7 Origin of bone should be marked & painted in RED colour and insertions should be marked and painted in BLUE colour.

ITEM No. 33

Complete human bones set dis articulated (Real Bones)

1. Real skeleton of life size human bone and should show all skeleton part in high details
2. The disarticulated adult bone set should be ideal for teaching the basics of human anatomy
3. It should be neat and clean.

ITEM No. 34

SPECIMEN JAR

Small, medium sizes starting from 200x125x125 mm to 250x250x250 mm or 360x150x100 .

ITEM No. 35

RACKS STEEL (STAINLESS STEEL)

Rack of Anatomy Museum Specimens-Museum Racks with study table Facilities-Special Designs

Height adjustable with back rest.

ITEM No. 36

Embaling Machine

1. Fluid delivery rate should be 10 ltrs/hr.
2. Inner tank to store embalming fluid with capacity 15- 20 ltrs. Should be of stainless steel.
3. Pump: pump should be of electromagnetic/ diaphragm dosing pump with capacity 0-5 ltrs Per hour and pressure 3 kg/cm square.
4. The equipment should be mounted on castors for easy movement and the hand grip should be provided for lifting.
5. I.V. stand fixed for mounting cannula tubing and mains cable.
6. Indicator for mains on & in use should be present.
7. The outer body should be of complete stainless steel.
8. Power supply: 220 V AC with trip facility.

PHYSIOLOGY SPECIFICATION

- **Electric time markers 100/sec**
- Standard & Should be accurate
- 2. Tuning fork time marker 100/Sec.**
 - I. Should be chrome plated with frequency marked
 - II. Should have frequency sets of 128, & 512H
- 3. Electrodes, X-blocks, burette clamps, enamel bowls brass uprights, with coarse and fine adjustments basin, spirit lamps, copper wire (double cotton covered) Kymograph paper etc.

Mammalian Laboratory

BRODIE STARLING KYMOGRAPH

Technical Specifications

- Kymograph used to record mechanical activity of muscle.
- It should have a cylinder 6x11"(approx.) with crown wheel engaging shaft
- A spring loaded device should allow turning by hand if necessary
- Moving in slot in the bed should allow variation in paper length for 60" to 66"
- Rigid cast iron stand should work up & down by a large screw
- Should have fine adjustment which ensure return of outer arm to exactly the same position after change of another paper
- instantaneous speed change clutch with slow, medium & fast speeds & intermediate 'off' positions
- should be compatible for smoke / ink writing models
- System Configuration Accessories, spares and consumables
- Double Time Maker
- Mercury Manometer
- Separate smoking & Varnishing apparatus
- Smoking Burner (Only if providing smoke writer)

OPERATING TABLE-ANIMAL

Technical Specifications:

- ☒ Should be designed to use for animal surgery
- ☒ Should be stainless steel with 304 material
- ☒ Should have a design supporting for variety of applications
- ☒ Table top should be made of stainless steel, non corrosive grade.
- ☒ Size should be around 125cm(L) x 48 cm(W)
- ☒ Height should be adjustable 70-90 cm (approx.)
- ☒ Should have flat railing all along the length on both sides to take accessories
- ☒ The table top should be provided with drainage system, with fine vertical adjustment through latest pinion-lift system replacing hydraulic system
- ☒ The frame should be sturdy and provides sufficient leg space and is provided with foot-rest.
- ☒ The tie -cleats should be made of stainless steel.
- ☒ The table should be provided with universal clamps for accessories, animal support plate and uprights which can be fixed to the side-rails in any desired position.

System Configuration Accessories, spares and consumables

- ☒ Clamps
- ☒ Animal support plate
- ☒ Uprights

Documentation

- ☒ Manufacturer should have ISO certification for quality standards

VOLUME RECORDER

- Voice-activation function for hands-free recording
- Record in the popular MP3 format
- Clear Voice for clear and vivid voice playback
- Rapidly transfer recordings and data via USB
- Instant one-touch recording
- Voice volume indicator for clear volume feedback
- Plug and play in Windows, Mac OS and Linux
- Lightweight and ergonomic design
- Front speaker for crystal-clear voice playback
- Comfortable hands-free headset

DALE'S BATH FOR INTERNAL ORGANS

Technical Specifications

- ☑ Dale's tissue organ bath should record intestinal movements and effects of drugs
- ☑ Should be thermostatically controlled with stirrer, Uprights, glass inner vessel & Oxygen tube with platinum tip, warming coil and frontal lever from SS capillary tubing.

Documentation

- ☑ Manufacturer should have ISO certification for quality standards

ISOLATED ORGAN BATH

Technical Specifications

- 1.1 The isolated organ bath should provide accurate recording of isometric or isotonic tissue contraction / release
- 1.2 The complete compartment should be transparent for easy visualization
- 1.3 It should have easy and quick attachment of tissues
- 1.4 Diffusion between chambers and temperature equilibrating coils should be prevented by syringe valves
- 1.5 System should have precision water temperature control
- 1.6 The tissue washing should be achieved by without exposing tissue to the air
- 1.7 The water jet bath stirring should be provided by a noiseless vibration free centrifugal pump
- 1.8 A precise thermostat should maintain the temperature with an accuracy of +/-0.1 deg
- 1.9 The system should be supplied with all essential accessories like one muscle chamber, temperature equilibrating coil, holder, supporting rod, isometric and isotonic transducers.
- 1.10 Should be supplied with a suitable data acquisition system & software
- 1.11 System should work with 230 V,50 Hz power supply.

2. Standards, Safety and Training

- 2.1 Should be CE / BIS approved product
- 2.2 Calibration/Acceptance test certificate from the factory required.
- 2.3 Manufacturer/Supplier should have ISO certification for quality standards.

3. Documentation

- 3.1 User/Technical/Service manual should be provided
- 3.2 Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/para number of original catalogue/data sheet. Any point, if not substantiated with authenticated catalogue/manual, will not be considered.

ANIMAL WEIGHING MACHINE

Suitable animal weighing machine for small and big animal like dog

MAREY'S TAMBOUR

Technical Specifications

☒ This device should convert changes in air pressure into movements of a stylus that scribes a kymograph.

☒ Should have Dia. 22mm or 28mm (Approx)

☒ Should have Stainless Steel capillary lever

☒ Should have ¼ " hollow stem

☒ Should have sliding adjustment to writing point

☒ Should have tie-on Diaphragm

Documentation

☒ Manufacturer should have ISO certification for quality standards

VENUS AND ARTERIAL CANULA

VENUS AND ARTERIAL CANULA of different size

SMOKING OUTFIT, WITH FUME CUPBOARD

Fume Cupboards / Fume Hood 3'x'2'x2' Powder Coated MS construction, SS 304 work surface, counter balanced vertical sliding perspex door, Fitted with Gas cock, Water faucet, SS basin and flexible drain pipe, Fitted with one under table drawer and one utility cabinet with openable door, one openable door for maintenance access. Supplied without external plumbing and external exhaust pipework. Supplied with exhaust pipe connecting socket. Smoking Stand, with turning handle, for all sizes of cylinders. Smoking Burner, Kerosene, with 3" wick & winding up gear.

VARNISHING OUTFIT, FOR LONG AND SHORT PAPERS

- **Standard**

ANAESTHESIA INSTRUMENTS

Suitable all instruments required for provide the anaesthesia for small and big animal like dog

SURGICAL INSTRUMENTS FOR OPERATIVE PROCEDURES (SYRINGES, PULLEYS ETC)

Surgical **instruments** for operative procedures, syringes, pulleys, etc. for small animals

MICROSCOPES, OIL IMMERSION

☑ Should be identical for Physiology labs with high quality optics, having 4 objectives- low, high, oil immersion and scanner lenses, Halogen /Tungsten light source.

☑ **Optical System:**

Infinity corrected optics par focal, plan achromatic lenses with anti fungal properties.

☑ **Illumination:**

Built in transmitted Koehler illumination.

6 V, 20 to 30 W Halogen /Tungsten light source.

☑ **Power supply:** 220-240V 50Hz

Focusing:

Stage height movement by roller guide (rack & pinion)

Upper limit stopper

Tension adjustable on coarse focus adjustment knob

Revolving nosepiece

Quintuple

☑ **Observation tube:**

Tube inclination – 30° / 45°

Inter-pupillary distance adjustment range – minimum 50 to 70 mm

Stage Movement range – (75+/-5) mm X - direction X (50+/-5) mm Y - direction

Rectangular scratch resistant stage with right hand control with double slide holder and vernier scale on X Y axis.

☑ **Condenser**

☑ Type – Abbe condenser

☑ N.A. ≥ 1.25

☑ Aperture iris diaphragm - built – in

☑ **Objectives** - Plan Achromat 4x, 10x, 20x, 40x & 100x (oil)

☑ **Eyepiece**

10X with F.N 20

☑ All the necessary adapters and power cords should be provided for functioning of microscope.

☑ **Accessories:**

o Eyepiece with pointers

o Eyepiece with millimeter scale grid

☑ The product should be CE or FDA or BIS Certified

☑ Demonstration of the product is must

DEMONSTRATIONS EYE PIECE

- 10x hygroscopic with pointer

DOUBLE DEMONSTRATION EYE PIECE

Demonstration Eye piece should fit any standard 23 mm dia. eye piece, making it possible for two persons to see the same object at the same time. Should be fitted with a pointer. Instrument should be supplied with top class quality optical components. This instrument should have a Beam Splitting Prism to optical Glass Pointer should cover the entire field and should enable clear vision to the observer and subobserver. It should have 360° rotation. It should be held in the desired viewing position by a knurled headed pinch screw.

STAGE INCUBATOR

- Electric CO₂ Microscope Stage Incubator

- Temperature range should be 3°C above room temperature to 50°C
- Temperature control accuracy should be as follows: ±0.3°C (Chamber temperature feedback) ±0.2°C (Specimen temperature feedback)
- Should have Electric Heating Technology
- Should have Chamber temperature feedback and Specimen temperature feedback
- CO₂ range should be 0 to 100%
- Manufacturer should have ISO certification for quality standards

PIPETTES FOR ESR

Should be of Cornig

Perimeters, with charts (Priestly Smith model)

1. Should have a calibrated arc, revolving chart holder.
2. Should be able to rotate in any direction and fix at any position with a tightening screw. The arc should be graduated from 0° to 90° with a movable test object.
3. At the back of the arc arrangement should be provided for fixing of chart which has concentric circles corresponding to the degrees of arc.
4. Adjustable chin rest.
5. The above mentioned should be fitted over a sturdy base with receptacle for keeping charts.
6. Should be supplied with 20 packets each containing consist of 100 charts
7. **Accessories** – Objects should be of minimum 2 sizes, round and square shaped and of 5 different colors.

The product should be CE or FDA or BIS Certified

SAHLI (SAHLI- ADAMS) HAEMOGLOBINOMETER OR HAEMOMETER

- Should be able to determine the haemoglobin in the blood by diluting an acidified sample and comparing it with a coloured standard.
- Should have permanent non-fading colour standards made with optical precision for accurate and exact matching of colour. Technical Specifications
- Measuring range should be 40-360 g/litre.
- It should measure optical density of a solution with precision not worse than 1 %.
- The total error of definition of concentration of a haemoglobin (in view of an error of a method, and also errors of dosing of a blood and solutions), obtained at comparative medical tests, should not exceed 2 %.
- The volume of liquid for photometry should be not less than 1 ml.
- Optical length of a cuvette or cylindrical test tube should be 10 ± 0.1 mm. System Configuration Accessories, spares and consumables
- Graduated dilution tube
- Dropping pipette
- Haemoglobin pipette
- Brush • Glass rod • Stirrer • Amber coloured acid vial • Pasteur pipette etc • Blood pipette • Suction tube

Power Supply

- Power input to be 220-240VAC, 50Hz Documentation
- Manufacturer should have ISO certification for quality standards
- Should be FDA , CE,UL or BIS approved product
- Warranty period of 2 years, subsequent 5 years comprehensive CMC

HEMO CYTOMETER

Technical Specifications

Hemocytometer counting chamber should be able to determine the number of particles per volume of blood. Particles are counted under the microscope It should contain improved Neubauer chamber mercury coated cover slips, RBC & WBC pipette Documentation

- Manufacturer should have ISO certification for quality standards

Sphygmamometer- Small Aneroid type:

- ☑ Should be Latex Inflation System
- ☑ Should have standard air release valve
- ☑ Should have 300 mm Hg gauge
- ☑ Calibration with Accuracy of +/- 3mm Hg
- ☑ Bold, Black gradations on white faceplate
- ☑ **Rubber Bag with Tubing & Rubber Bulb**
- ☑ Calibrated cuff with artery label and manometer tab

- ☑ Manufacturer should be ISO certified

Sphygmamometer- Large Aneroid type:

Maximum error tolerance should be +/- 3mmHg Precision air release valve, wear free with regulation Cuff should be with two tube rubber bladder, Superior quality cuff with extra wide Velcro fastener Metal face plate with easy to read scale upto 300mmHg (bore size 5mm) Fold down cover should have spring lock mechanism Should have large storage compartment for cuff + Rubber bulb

STETHESCOPE (for students)

- ☑ Should be able listen the lung and heart sounds
 - ☑ Should be Dual Head
 - ☑ Should have high quality sound transmission.
 - ☑ Length should be 27" to 29"
 - ☑ Should be light weight
 - ☑ Chest piece - Ø45mm(adult) , - Ø35mm (paediatric)
 - ☑ Preferable colour -black
 - ☑ Should have tight and soft sealing ear tips
- System Configuration Accessories, spares and consumables:
- ☑ Diaphragms
 - ☑ Eartips
 - ☑ Binaurals
 - ☑ Rims

Documentation:

- ☑ Manufacturer should have ISO certification for quality standards

Stethoscope advanced

Should be able to listen the lung and heart sounds

Should be Dual Head

Should have high quality sound transmission.

Length should be 27" to 29"

Should be light weight Chest piece- Ø45mm(adult) , -Ø35mm (paediatric) Preferable colour - black Should have tight and soft sealing ear tips System

Configuration Accessories, spares and consumables: Diaphragms Eartips Binaurals Rims

Documentation: Manufacturer should have ISO certification for quality standards

PHYSIOGRAPH (4 CHANNEL)-2

The system should have:-

A high speed USB 2.0 interface four channel data recorder with inbuilt dual bio-amplifier & isolated stimulator with a recording range of 2m V to 10 V & a sampling rate 100 KHz on each channel.

? The software should have a pre-configured, ready-to use experiments with background information and step-by-step instructions for a wide range of experiments including human, animal physiology, pharmacology, exercise physiology, psychophysiology and medical case laboratories studies.

? Must upgrade experiment free of cost for 5 years.

Only Software controlled filtering for pre and post data recording/analysis ?

Isolated Stimulator :- Constant-current stimulator with output current: 0-20m A in 0.1 mA steps and Pulse duration: 50-200 μ s (software-selectable)

? Transducers & accessories:- Pulse Transducers, Respiratory Belt Transducers, Sphygmomanometer, Push Button Switch, Cardio Microscope Hand Dynamometer, dry Earth Strap, EEG Flat Electrodes, Reusable ECG/Electrodes Disposable ECG Electrodes, needles electrodes, Temp & wireless heart rate kit.

? The system should be supplied with single channel Isolated tissue set up including peristaltic pump based organ bath with isometric force transducer and Nerve and muscle bath.

? The unit must be approved to the IEC 6060-1 patient safety standard, making them safe for with human subjects and should comply with other safety standard.

? Desktop Computer

? Optional Kits:- Human respiratory EOG Kit, Reflex Kit, etc

SPIROMETER ORDINARY –

Ordinary students Spirometer 6l capacity, chain, calibrated wheel, counter weight, stainless steel water chamber with drainage facility, aluminum or plastic inverted chamber, complete with corrugated rubber and mouth piece.

GAS ANALYSIS APPARATUS,

Haldane's Students Type The computerized metabolic system provides all vital parameters such as ECG, heart rate, pulmonary volumes and capacities, respiratory gases and metabolic measurements.

- The system should calculate VE Expired minute volume , VO₂ 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 / VO₂), (VE / VCO₂) etc. and should generates a number of graphs like Metabolic Log Window , VE (BTPS) vs. VO₂, VE (BTPS) vs. VCO₂, VCO₂ vs. VO₂, RER vs. time, VO₂ vs. time, VCO₂ vs. time , VE (BTPS) vs. time. It should plot real time flow & volume loops. ECG switch box (lead I, II, III, aVL, aVF, aVR and V1 to V6) for real time cardiac axis & vector analysis etc. The Oxygen sensor should have minimum

range of 5-100% 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 ml/min for best performance and results. The bio-potentials signal conditioners, supplied must be approved to IEC, CE & ISO.

VAN SLYKO'S APPARATUS MANOMETRIC

- ☑ Apparatus for analyzing gases in microlitre samples of blood or other solutions ☑ Based on vacuum extraction principle
- ☑ Should be accurate and reproducible
- ☑ Product should be CE/BIS/US FDA/ISO certified
- ☑ Bidder has to give demonstration of the product if required.

AUTOMATIC GAS ANALYSIS CO₂ AND O₂

The system should be able to

- Record & measure VO₂ oxygen consumption , VCO₂ 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 / VO₂), (VE / VCO₂) etc. and should generates a number of graphs like Metabolic Log Window , VE (BTPS) vs. VO₂, VE (BTPS) vs. VCO₂, VCO₂ vs. VO₂, RER vs. time, VO₂ vs. time, VCO₂ vs. time , VE (BTPS) vs. time.
- High speed USB based recording unit along with Gas analysers, spirometer amplifier, flow-head and other transducers and accessories.
- Have oxygen sensor with minimum range of 5-100% oxygen and resolution of at least 0.02%, and 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 ml/min for best performance and results.
- To perform online and offline analysis up to 32 channels
- Supplied with breathing accessories and Douglas bags.
- To plot real time flow & volume loops. ECG switch box (lead I, II, III, aVL, aVF, aVR and V1 to V6) for real time cardiac axis and vector analysis.
- IEC 60601-1 & ISO 9001:2008 certified & making them safe for use with human subjects
- An obligatory demonstration of the equipment and necessary training.
- To be supplied with Bicycle ergometer, branded computer & UPS.

BASAL METABOLISM APPARATUS

Spirometer has a 4 speed electrical recording unit with gravity writing ink. Valves are easily accessible, soda lime chamber with screw connection in the centre chamber, drain to all the tubes and container. 14 Sampling cock for connecting the patient to spirometer or atmosphere. The unit is fitted on portable frame, complete with valves, tube, mouth piece, nose clip, ink writing well and 50 charts.

MOSSO'S ERGOGRAPH

Mosso's ergograph with metronome and weights. Ergograph containing the advantageous features of both bubios and mossos ergograph with weight set and recorder with writing device.

CLINICAL THERMOMETER

Should be able to measure body temperature

☑ Should be glass clinical thermometer instrument for determining temperature.
☑ It should consist of a glass bulb attached to a fine tube of glass with a numbered scale, and should contain a liquid (as mercury) that is sealed in and rises and falls with changes of temperature.

☑ Range should include: 35-42°C & 95-108°F.

☑ Accuracy: $\pm 0.1^{\circ}\text{C}$ & $\pm 0.2^{\circ}\text{F}$,

☑ It should be supplied in individual plastic case.

System Configuration Accessories, spares and consumables:

☑ Plastic case

Documentation:

☑ Manufacturer should have ISO certification for quality standards

THERMAL AESTHESIOMETER

Should microprocessor controlled should have computer connectivity for data logging.

Should work on the temperature range of 5 Deg to 55 Deg Should have sampling rate of 18 samples/sec

Should have a starting temperature 25° to 40°

Temperature increment rate 0.2 deg/s to 2.5 deg/s

Temperature decrement rate 0.2 deg/s to 2.5 deg/s

Delay between the repeats should be 3 to 30 secs

Power supply – 220v 50Hz

The product should be CE or FDA or BIS Certified

ALGOMETER

Accuracy should be $\pm 3\%$ of reading LCD Display should be 5 digits,

Display Update should be 8 per second Power: 220 VAC charger Should have rechargeable battery
Battery backup should be up to 50 hours Tip Size

should be 1 cm² Should have Bi-Directional RS232 (include RS232-USB convertor) communication with the computer

Should have auto calibration facility Should have internal memory of 500 data

Should have USB patient response unit to record patient response during stimulation

The product should be CE or FDA or BIS Certified

APPARATUS FOR CONTINUOUS PASSIVE MOTION.

CPM is used to treat joints of the lower limb after an injury, disease or following surgery. Based on a concept originated by SALTER IN 1970, this device has varied applications namely treatment of intra articular fractures, septic arthritis, ligaments tendon healing and also following total joint replacement to ensure a sufficient range of motion.

To prevent stiffening , the joint have to be moved continuously which results in the following. ·
Minimize swelling and pain after operation ·

Ensures faster recovery and shortened hospital stay ·

Prevents extra articular contractures and adhesions.

Ext/Flex Angle indicator at knee position ·

Compact and elegant construction ·

Electronic controls enable all adjustment of angle to be made on the front panel. ·

Smooth and silent movement ·

Digital timer with alarm ·

Patient safety switch for stopping and reversing the motion.

Specifications Treatment time 0 – 99 minutes Reset time 1 to 5 seconds Angle Extension 0 Power 230V/AC/50Hz, 75VA

KNEE HAMMER

A. LONG HANDLE

B. SHORT HANDLE

Technical Specifications:

Should be able to test deep tendon reflexes

A rubber component should be attached to a flat metallic handle.

It should have T-Shape, double point solid rubber with reflex point and brush Taylor (fish type) should be with brass nickel plated solid handle, with brush and pin end Cane type should be with rubber ring and plastic stem Rubber ring should be available in red or black colour

STETHOGRAPH

a. Kymographs with pen writing device

b. Mary's tambour, Corrugated rubber tube 16 c. Connecting rubber tube.

BICYCLE ERGOMETER

1. Should be menu based programs
2. Should have multi lingual options.
3. Should Provide constant workload independent of pedal speed.
4. Work may be power (watts or kpm/min), force (kp or Newton) or VO 2 (ml/kg/min).
5. Should have built-in digital timer.
6. Heart rate should be measured with telemetry type or with ear sensor.
7. Energy consumption calculator in calories (kcal).
8. Should have remote controller with backlit LCD-display.
9. Should have serial communication port for remote PC or ECG machine.
10. Should have direct printer connection port.
11. Direct calculation of aerobic capacity with built-in protocols; Åstrand, Bruce, YMCA and Naughton.
12. Can be pre-set for step-by-step change in workload and time intervals, i.e. ramp and incremental.
13. Individual exercise protocols should be programmed and stored
14. Training protocol; workload is adjusted automatically to achieve and maintain target heart rate.
15. Brake-power 0-1400 W (depending on rpm).
16. Large, well-balanced flywheel 22 kg (48 lbs).
17. Adjustable saddle; vertically and forward/backwards.
18. Adjustable handlebar with quick release lever.
19. Stable frame, with square tubing.
20. Powder painted.
21. Wheels for easy transport. Length 1150 mm (45").
22. Width 530 mm (21") at handlebar.
23. Width 460 mm (18") at support tubes.
24. Height 760-1135 mm (30-45") at handlebar..
25. Height 800-1120 mm (30-44") at seat.
26. Weight 56 kg (123 lbs).

27. Manufacturer should be ISO certified for quality standards.

OLFACTOMETER

- 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 3-seconds (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
- Power Requirements: Standard 9-Volt Alkaline Battery
- Odor Filter Cartridge: 3.5" diameter x 1.5" (H)
- (8.9 cm diameter x 7 cm)
- Nasal Mask: 2.75" (H) x 2.25" (W) (7 cm x 5.7 cm)
- The supplier should be ISO certified for quality standards.

OPHTHALMOSCOPE

1. Illumination: 3.5V, 2.8W Mini Halogen Bulb
2. Recharging unit:
3. Input Voltage: 220V ± 10%V
4. Input Frequency should be 50 Hz ± 1Hz
5. Input Power should be around 8VA
6. Battery should be rechargeable
7. Viewing Lenses: 0, ±1, ±2, ±3, ±4, ±5, ±6, ±8, ±10, ±12, ±16, ±20, -25, -35 (D)
8. Apertures: Large Spot, Small Spot, Slit, Central Network, and Red-free
9. Instrument should comply with Medical Electrical Equipment Part I General Safety Standard. Class Two, Type B.
10. Manufacturer should be ISO certified for quality standards.

SCHEMATIC EYE

- Should be a mathematical or physical model that represents the basic optical features of the real eye.
- Should be made of plastic or fiber
- It should have a semi detachable arrangement for demonstration

PHAKOSCOPE

Should have good quality lens, prism

PERIMETERS, WITH CHARTS (PRIESTLY SMITH MODEL)

1. An instrument for accurate charting of the field of vision.
2. Consists of: A vertical stand on which a metallic arc is pivoted.
3. It also bear a circular black disc to read the meridian in which the arc in shape of a semicircle with radius 330 mm.
4. The apparatus comprises of a calibrated arc, revolving chart holder.
5. Its rotating in any direction and fix at any position with a tightening screw. The arc is graduated from 0° to 90° with a movable test object
6. The object carrier which moves over the arc, contains five colours and five apertures of different diameter, calibrated scale.
7. At the back of the arc arrangement is provided for fixing of chart which has concentric circles corresponding to the degrees of arc.
8. Adjustable chin rest.
9. All fitted over a sturdy base with receptacle for keeping charts.
10. For table top use.
11. Complete with 100 charts

Colour Perception Edridge Gren Lantern

MADDOX ROD

- Should be able to measure heterophoria by placing it in front of one eye of a subject viewing a spot of light binocularly.
- For screen test; Maddox Rod Lens; Red / White / Green Rim &
- Should have a copper handle.
- Length should be 70mm
- Manufacturer should have ISO certification for quality standards

NEWTON'S COLOUR WHEEL

The seven colors in Newton's optical spectrum (red, orange, yellow, green, blue, indigo and violet) should be recombined in a number of ways, including the seven-mirror device and the oscillating prism

- Newton's Colour Wheel should have a multi-coloured disc mounted on wooden stand rotated by a hand wheel

TUNING FORK (128 & 512Hz)

Should be chrome plated with frequency marked

- ☑ Should have frequency sets of 128, & 512Hz

DYNAMOMETER

Durable sensor used to measure handgrip and pinch force

- Range: 0-135 lb-F (0-600 N)
- Sensitivity: 26.7 mV / lb-F (6 mV / N)
- Manufacturer should be ISO certified for quality standards

OTORHINOLARYNGOSCOPE

- Should be wide angle straight forward telescope 0°
- Enlarged view Dia 4mm Length 18cm
- Should be autoclavable
- Fiber optic light transmission Incorporated
- Color Code: Green
- Manufacturer should be ISO certified for quality standards.

STERILIZER ELECTRIC (MEDIUM SIZE)

Volume : 5 L Temp range : 30 to 2000 C Automatic thermostat cut off Thermostatic control desirable Stainless steel construction Perforated stainless steel plate which can be lifted, Provided with instrument prongs

Instrument Trolley

SS; frame work of SS tubes mounted on four 50mm dia swiveling castors. There are two stainless steel shelves with three side railings on top shelf only in these instrument trolleys. Pre treated and epoxy powder coated. Overall approximate size : 680mm (L)X450mm (W)X820mm (H).

STOP WATCH DIGITAL DIGITAL.

Digital stop watch is perfect for any laboratory applications .

The large LED display,high resolution enhances the functionality in several of situation . These are available in two ranges as per specification.Range 1:99:59:59Hrs :minutes:second.Resolution :1sec (for range one) minute:sec:milli sec.range 2:99:59:99hrs:minu:sec.Resolution :10millisec (for range 2). Display :6digit LED display.Alarm :buzzer after set time.

PHYSIOGRAPH WITH 3 CHANNEL WITH STANDARD ACCESSORIES

Technical Specifications

- Should be able to record Bio-Electrical Potential e.g. EEG, ECG, ENG, EMG, Pulse, Respiration, Blood Pressure etc.
- It should be made of light metal for compactness and lightness.
- Student physiograph should be three channel console with 9 speed (.5,1,2,5,10,20,25,30 & 50 mm/sec) chart drive, time & event chart, transducers and stimulator
- Couplers: Strain Gauge, isotonic, Pulse Respiration, temperature, EKG and Bio- Potential
- Transducers: Pressure, volume, muscle activity/ force respiration belt, Isotonic fine movement, pulse, respiration & temperature
 - Data Acquisition System to convert data from physiograph to a computer with HRY and independent ECG Recording system with software and computer. System Configuration Accessories, spares and consumables
- Earth Lead
- EKG electrode
- EEG & EMG paste
- III Pin junction box, action potential electrode
- V-pin junction box
- Chart paper Z- fold
- Fuse Power Supply
- Power input to be 220-240VAC, 50Hz Documentation
 - Manufacturer should have ISO certification for quality standards
- Should have FDA/CE/BIS certification

Physiograph, Single Channel, complete with accessories

Should be able to record simple muscle and nerve responses to nerve stimulations

- ☒ It should be made of light metal for compactness and lightness.
- ☒ Student Physiograph should be single channel console with 9 speed (.5,1,2,5,10,20,25,30 & 50 mm/sec) chart drive, time & event markers and appropriate transducers and stimulator
- ☒ Couplers: Strain Gauge and isotonic
- ☒ Transducers: Pressure, volume, muscle activity/ force, Isotonic fine movement
- ☒ Accessories, spares and consumables
- ☒ Earth Lead
- ☒ Ink bottle
- ☒ EP to EP lead
- ☒ Perpex pen
- ☒ Steel wire
- ☒ Motor Belt
- ☒ Chart paper Z- fold
- ☒ Fuse
- ☒ Cover
- ☒ Power Supply
- ☒ Power input to be 220-240VAC, 50Hz
- ☒ The product should be CE or FDA or BIS or ISO Certified
- ☒ Demonstration of the product is must

Centrifuge, High Speed With Tachometer Etc.

Laboratory equipment centrifuge machine high speed – heavy duty Sturdy MS Body, well painted finish, with maximum speed of 6000RPM at 10/12 tube of 15ml total square body, with lid lock manual type, speed control by analogue knob, digital display of timer, timer time 0-60 minutes speed display is digital, speed setting with help of knob, auto off if lid is open, lid breaking system provided, power consumption 500Watt, power requirement 220V and 50 to 60Hz, weight approx. 15Kgs, total noiseless operation, non vibration, complete with head and power lead.

COLORIMETER

Filter : Seven Glass filter

Photometric Range : 0-100%T(Transmittance)

0- 2.0Abs(Absorbance)

Should be with digital readout

Sample Container : Square cuvette 10x10x45(mm)

Round cuvette 10(ID),12(OD),105(L)mm

Should work on 230V,50 Hz

Accessories

Filter case-1 pc

Filter-7 Pc

Analog output cable-1 Pc

Power cord-1 Pc

Operation manual -1 copy

Bulbs-3 nos

Extra Cuvettes -10 nos

The supplier should be ISO certified for quality standards.
Should be FDA/CE or BIS approved product

PH Meter

- ☒☒ Should be microprocessor based for fast and accurate pH measurement with splash/water proof keyboard
 - ☒☒ Should have 3 point calibration.
 - ☒☒ pH range should be 0-14 with resolution 0.01 pH and Accuracy - +/- 0.02 pH
 - ☒☒ pH and temperature on LCD display
 - ☒☒ Calibration Points – 4.00 , 7.00 , 9.20
 - ☒☒ mV Range – 0 to +/- 1999.9 mV, resolution +/- 0.1 mV , Accuracy : +/- 0.2 mV
 - ☒☒ Should have Probe check mode to check Electrode Aging.
 - ☒☒ Should have built in ATV with PT 100 Sensor (Range 0 – 100 deg C)
 - ☒☒ Should have Temperature range – 0 – 99.9 deg C with resolution 0.1 deg and accuracy +/- 0.2 deg)
 - ☒☒ Should have Temperature compensation Auto/Manual
 - ☒☒ Should have Data Storage
 - ☒☒ Should have Glass pH Electrode
 - ☒☒ Should be ISO and CE certified
- Accessories:
- ☒☒ Standard buffers 1 set
 - ☒☒ Electrode 1 set extra
 - ☒☒ electrode cleaning solution

REFRIGERATOR, 9-10 CFT.

- ☒☒ Capacity range 9-10 cft..
 - ☒☒ Temperature 2-8oC
 - ☒☒ Preferably roller or caster mounted
 - ☒☒ Adjustable shelves
 - ☒☒ Battery backup for display and alarms.
 - ☒☒ Durable rust free exterior
 - ☒☒ Durable interior.
- Control panel with temperature alarm, on/off switch and digital thermometer, Interior lighting, auto or manual defrosting arrangement.
- ☒☒ Adequate circulation of air to ensure even cooling.
 - ☒☒ Door with lock.
 - ☒☒ Control panel with temperature alarm, ON /OFF switch with power on indicator, digital thermometer, temperature display.
 - ☒☒ Electronic automatic temperature control,
 - ☒☒ Operable at 220 V, 50 Hz, single phase AC supply.
 - ☒☒ Compressor unit to be hermetically sealed with guarantee for at least five years.
 - ☒☒ Training of laboratory staff for the purchased equipment
 - ☒☒ Availability of spares/ disposables for at least 10 years.
 - ☒☒ List of users and satisfactory report of quoted model from reputed institute preferably Government institute/ hospitals
 - ☒☒ Should have all the accessories required for the functioning of the equipment.
 - ☒☒ CE / ISI/US FDA mark or other equivalent quality certification.
 - ☒☒ All electrical peripherals required for smooth functioning e.g. voltage stabilizer provided with the equipment
 - ☒☒ Demonstration of the product is must

Oxygen Cylinder with Trolley

CO2 Cylinder with Trolley

ELECTRONIC STIMULATORS

- Should be student type, can be used instead of low voltage units Nife cells. Induction coil interrupter, transistor
- Mode: single external and repetitive , pause width,0.5 and 1.5 ms switch selectable.
- Repetitive frequency: 0.5, 1,2,3,5,7,10,15,20,50,100 Hz output 0-30 volts. (two positions 0-3, 0-30 volts version controlled).

DISTILLED WATER STILL WITH STAINLESS STEEL , WALL MOUNTABLE MANESTY TYPE WATER STILL:

made of all stainless steel; output 4Lt./hr approx.; work on 220VAC; the condenser can be opened easily for periodic cleaning., designed to provide pyrogen free distilled water easily. Complete unit made of stainless steel. The lid perfectly rest and get sealed inside the collar on the head of the tank which avoids loss of steam and jumping of lid., easy wall mounting.

ALL GLASS DISTILLATION APPARATUS DOUBLE STAGE

Application: General laboratory purpose water distillation plant

Specification:

1. The complete outer and inner jacket, condenser tubes are made of Stainless steel.
2. The apparatus capable of producing pyrogen free distilled water as per IP/BP standards.
3. The instrument should have low water cut off device, water level indicator and control panel.
4. Capacity : 5-6 ltrs/hr
5. Chamber -: Stainless Steel 304 quality
6. Air Heater: should have ISI Mark
7. Heat up Time: 20- 30 min. from Ambient
8. Mounting: Clamp for wall mounting
9. Top Lid: Stainless Steel
10. It should have BIS/CE/ISO/US FDA certified
11. Demonstration of the equipment is must

Voltage Stabilizer i. 1 KVA ii. 5 KVA

Step Down Transformer

Thermometeres, balances, microslides & Glaswares ect

C. BIOCHEMISTRY

1. Fume Cupboard (Bio Safety Cabinet Class IIA):

- 2 Nos.

- Biosafety cabinet of class II, Type B2 (Total Exhaust) with vertical laminar airflow
- complying to EN12469:2000 with microprocessor based monitoring system.
- Automatic control of all functions and all safety alarm systems with double centrifugal fan to provide complete operator, product and environmental protection. Suitable for handling pathogens namely *Mycobacterium paratuberculosis*.
- Internal dimension (WxDxH) should be approximately 850X 700X 550 mm or more
- The cabinet should be fitted with 1 automatic safety service connection for gas, 1 for vacuum and 1 electrical socket
- Dual, long life ULPA/HEPA (H-14 grade, according to EN1822) filters for supply and exhaust airflow. The cabinet should consist of ducting facility on the top of the cabinet for direct ducting to facility exhaust system.
- The Cabinet should be supplied with a UV sterilizing lamp
- Frameless, shatter-proof sash with automatic UV shut-off on sash opening
- Machine should have low noise level (below < 53 dB)
- The cabinet should have user friendly practical keyboard and display to inform
- laminar airflow and frontal air barrier velocity , residual lifetime of HEPA filter , UV lamp , total number of hours of operation, saturation level of HEPA filter, inside and outside Temperature
- Audio and visual alarms required for power failure, out of range or incorrect
- laminar airflow velocity and frontal air barrier velocity, end of life-cycle of UV lamp , fan-motor malfunction ,saturation of HEPA filters , un-correct position of front sash-window, blockage in the exhaust duct.
- Interior work area of a single piece of stainless steel and single piece HIGH GRADE stainless steel. Work surface should be consisted of sections easily removable for carrying out routine cleaning and/or require autoclaving sterilization procedures if so desired.
- Cabinet should be preferably coated with anti bacterial treatment/ solution to prevent microbial contamination.
- Cabinet should also be supplied with modular stand with castors.
- Air flow velocity should be at least 90 fpm; efficiency should be > 99.99% at 0.1 micron to 0.3 micron to provide 100% exhaust.
- Safety device: (i) Dual-wall construction surrounds the work zone with negative pressure plenums for maximum safety. (ii) Fail-safe system ensures that in case of exhaust failure
- Must meet American (NSF/ANSI) or European standard EN 12469 (type tested) or both. Must submit a copy of EN 12469 or NSF/ANSI certification along with the quote (it is mandatory and without the valid certificate the quote will be considered as non-responsive).

2. Boiling Water Baths with lids having 8 – 12 holes

- 6 Nos.

1. Useful for dual purpose. It is a routine rectangular water bath with stainless steel lids having 8 to 12 holes and concentric rings.
2. Standard double wall construction. Inner chamber made out of highly polished stainless steel sheet and exterior made out of thick mild steel duly finished power coated paint.
3. Glass wool insulation between sheets
4. Immersion heaters are provided for heating to attain temperature range from 5° C above ambient to 95° C \pm 1 °C.
5. Digital temp. Indicator-cum-Controller. The equipment to work on 220v AC 50 Hz single phase.
6. Chamber size in mm & inches L x W x H 300 x 225 x 175 mm Approx Capacity approx 15 ltrs. Approx.
7. Should be CE or FDA or BIS approved product

3. Autoclave Electric

- 2 Nos.

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

4. Balance Open Pan

- 6 Nos.

1 Description of Function

- 1.1 Electronic Balance is required for precision weighing of Lab samples.

2 Operational Requirements

- 2.1 Microprocessor based single pan Analytical Balance with High accuracy & precision is required.
- 2.2 Reading of the weight by digital display.
- 2.3 Electronic top loading balances with transparent case
- 2.4 The balance should have functions of piece counting, percent weighing, formulation, dynamic weighing with automatic and manual start and provision for data interface

3 Technical Specifications

- 3.1 Weigh accurately up to 3rd decimal place of one gm.
- 3.2 Fully automatic Time and/or temperature controlled internal calibration and balance should be capable to adjust itself.
- 3.3 Auto zero Setting
- 3.5 Weighing capacity 210 gm
- 3.6 Readability: 0.001g
- 3.7 Repeatability: 0.9mg
- 3.8 Settling time 1.5 second
- 3.9 Suitable internal and external adjustment weights.
- 3.10 Pace-setting interfacing flexibility - Port should be available for data capture and network integration

3.11 Balance should have the following features:-

- * LCD Display with button
- * Stainless Steel Large Square/round weighing Pan
- * IR Sensor for Hands-free operation for personnel security and automatic draft shield opening and Closing.
- * Warns if the Balance is not correctly leveled to ensure accuracy of the result.
- * Automatic & detachable draft shield.
- * Toolbox, including user administration and password protection.
- * Integrated Automatic Safety Functions for external routine operations.
- * Alphanumeric data entry of 4 ID's.

4 System Configuration Accessories, spares and consumables

- 4.1 System as specified-
- 4.2 Should be supplied with standard external and internal weights as specified.

5 Environmental factors

- 5.1 Shall meet IEC-60601-1-2:2001 (Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility. or should comply with 89/366/EEC; EMC-directive.
- 5.2 The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and

relative humidity of 15-90%

5.3 This unit shall be capable of operating in ambient temperature of 20-30 deg C and relative humidity of less than 70%

6 Power Supply

6.1 Power input to be 220-240VAC, 50Hz fitted with Indian plug

6.2 Resettable over-current breaker shall be fitted for protection

7 Standards, Safety and Training

7.1 should comply with ISO/GLP with auto validation with ink jet printer

7.2 Should be FDA or CE or BIS approved product

7.3 Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450

7.4 Manufacturer/Supplier should have ISO certification for quality standard

5. Balance Semi Micro

- 2 Nos.

1 Description of Function

1.1 Electronic Balance is required for precision weighing of Lab samples.

2 Operational Requirements

2.1 Microprocessor based single pan Analytical Balance with High accuracy & precision is required.

2.2 Reading of the weight by digital display.

2.3 Electronic top loading balances with transparent case

2.4 The balance should have functions of piece counting, percent weighing, and formulation, dynamic weighing with automatic and manual start and provision for data interface

3 Technical Specifications

3.1 Weigh accurately up to 3rd decimal place of one gm.

3.2 Fully automatic Time and/or temperature controlled internal calibration and balance should be capable to adjust itself.

3.3 Auto zero Setting

3.5 Weighing capacity 210 gm

3.6 Readability: 0.001g

3.7 Repeatability: 0.09mg

3.8 Settling time 1.5 second

3.9 Suitable internal and external adjustment weights.

3.10 Pace-setting interfacing flexibility - including Ethernet, Bluetooth (wireless connection) and PS/2 -for efficient data capture and easy network integration.

3.11 Balance should have the following features:-

- * Touch Screen/LCD Display.
- * Stainless Steel Large Square/round weighing Pan
- * IR Sensor for Hands-free operation for personnel security and automatic draft shield opening and Closing.
- * Warns if the Balance is not correctly leveled to ensure accuracy of the result.
- * Automatic & detachable draft shield.
- * Toolbox, including user administration and password protection.
- * Integrated Automatic Safety Functions for external routine operations.
- * Alphanumeric data entry of 4 ID's.

4 System Configuration Accessories, spares and consumables

4.1 System as specified-

4.2 Should be supplied with standard external and internal weights as specified.

5 Environmental factors

5.1 Shall meet IEC-60601-1-2:2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility or should comply with 89/366/EEC; EMC-directive.

5.2 The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%

5.3 Thu unit shall be capable of operating in ambient temperature of 20-30 deg C and relative

humidity of less than 70%

6 Power Supply

6.1 Power input to be 220-240VAC, 50Hz fitted with Indian plug

6.2 Resettable over-current breaker shall be fitted for protection

7 Standards, Safety and Training

7.1 should comply with ISO/GLP with auto validation with ink jet printer

7.2 Should be FDA or CE or BIS approved product

7.3 Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450

7.4 Manufacturer/Supplier should have ISO certification for quality standards

6. Balance – Micro

- 1 No.

1 Description of Function

1.1 Electronic Balance is required for precision weighing of Lab samples.

2 Operational Requirements

2.1 Microprocessor based single pan Analytical Balance with High accuracy & precision is required.

2.2 Reading of the weight by digital display.

2.3 Electronic top loading balances with transparent case

2.4 The balance should have functions of piece counting, percent weighing, formulation,

Dynamic weighing with automatic and manual start and provision for data interface

3 Technical Specifications

3.1 Weigh accurately up to 4th decimal place of one gm.

3.2 Auto self-calibration facility

3.3 Auto zero Setting

3.4 One touch calibration

3.5 Weighing capacity upto 200 gms.

3.6 Repeatability and resolution: 0.1 mg

3.7 Linearity: + 0.2m

3.8 Stabilization time < 5 second

3.9 Adjustment weight (Int. wt.) 200g

3.10 Adjustment weight (Ex. Wt.): 500 mg, 1 gm, 10gm, 50gm, 100 gm, 200gm

3.11 Balance should have the following features:-

- * Touch Screen/LCD Display.
- * Stainless Steel Large Square/round weighing Pan
- * IR Sensor for Hands-free operation for personnel security and automatic draft shield opening and Closing.
- * Warns if the Balance is not correctly leveled to ensure accuracy of the result.
- * Automatic & detachable draft shield.
- * Toolbox, including user administration and password protection.
- * Integrated Automatic Safety Functions for external routine operations.
- * Alphanumeric data entry of 4 ID's.

4 System Configuration Accessories, spares and consumables

4.1 System as specified

4.2 Should be supplied with standard external and internal weights as specified.

5 Environmental factors

5.1 Shall meet IEC-60601-1-2 :2001(Or Equivalent BIS) General Requirements of Safety for Electromagnetic Compatibility.or should comply with 89/366/EEC; EMC-directive.

5.2 The unit shall be capable of being stored continuously in ambient temperature of 0 -50 deg C and relative humidity of 15-90%

5.3 Thu unit shall be capable of operating in ambient temperature of 20-30 deg C and relative humidity of less than 70%

6 Power Supply

- 6.1 Power input to be 220-240VAC, 50Hz fitted with Indian plug
- 6.2 UPS of suitable rating with voltage regulation and spike protection for 60 minutes backup.
- 6.3 Resettable overcurrent breaker shall be fitted for protection

7 Standards, Safety and Training

- 7.1 should comply with ISO/GLP with auto validation with ink jet printer
- 7.2 Should be FDA or CE or UL or BIS approved product
- 7.3 Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450
- 7.4 Manufacturer/Supplier should have ISO certification for quality standards

7. Vortex Mixer

- 2 Nos.

Test Tube Mixer - 1

Vibrating neoprene rubber cup accommodates a variety of sizes of test tube/flasks. Short, rapid, eccentric stroke, motor driven Neoprene cup. Vacuum Rubber pads are provided at bottom. The mixer consists of an enamel finished housing containing the motor with the motor with an eccentric drive. Intensity of agitation controlled by varying the position in which the test tube is held. The thyristorized speed controller enables step less adjustment of degree of oscillations. Machine supplied with complete with speed control, cord and ON/OFF switch and indicator to work on 220V, 1Ph, 50 Hz. AC supply. Instrument should be ISI complaint and marked (or other equivalent standardization in case of imported equipment).

Small flasks or bottles mixer – 1

Rugged construction, heavy base, for continuous use. Variable shaking speed. Degree of agitation, gentle to violent, is controlled by speed regulator. The Erlen Meyer flasks from 125 to 1000 mL capacity can be shaken at one time even without balancing. The full torque is always applied to oscillating mechanism irrespective of speed setting. Fitted with fraction H.P. motor. works on 220 Volts, 1 Ph, 50 Hz, AC supply. Capacity: 4 Flask, Timer 0-30 mins. Instrument should be ISI complaint and marked (or other equivalent standardization in case of imported equipment).

8. Urinometers

- 50 Nos.

Set requires a small amount of urine for testing, Reads specific gravity from 1.000 to 1,040.

9. Constant Temperature Water Bath (HIGH PRECISION) WITH STIRRER - 4 Nos.

Table top, double walled filled with high grade glass wool insulation between the two chambers. Outer chamber of is made of mildsteel with anti-rust and enamel coating which does not chip off easily and inner chamber is made of stainless steel and completely leakproof with ground welding to give smooth surfaces. Inner Chamber :- 430 (W) × 240 (H) × 265 (D) mm approx. Tightly controlled temperature with an accuracy of 0.1°C of digital temperature controller. Provided with a glass window for an easy inside view. Speed controlled stirrer is provided for continuous stirring of the medium to ensure uniform temperature throughout. Heating mechanism should have suitable heaters for fast and slow heating. Temperature is controlled from ambient to 100°C by electronic temperature controller with Indicator. Instrument should be ISI complaint and marked (or other equivalent standardization in case of imported equipment).

10. Ryles tube - 4 Nos.

Ryles tube for nasogastric , nasoduodenal and gastrostomy tubes

11. Incubator Electric with Thermostat - 4 Nos.

Double walled construction. Inner chamber is made of highly polished Stainless Steel. Outer chamber is made of Steel Sheet, pretreated for surface treatment & finished with durable Powder Coated Paint. 75 mm gap between the walls and filled with glass wool. Inner chamber is fabricated with ribs to adjust shelves to any convenient height. Two doors. The outer door is insulated and is fitted with heavy hinges. Inner door is made of glass panel mounted in a wooden frame to facilitate inspection of samples, without disturbing the chamber temperature. Supplied with 3 removable shelves, made of perforated polished stainless steel sheet. Nichrome wire heating elements properly insulated placed suitably for uniform temperature all over the space. Size of inner chamber: 605 (W) × 605 (H) × 605 (D) mm approx. Temp range: from 5°C above ambient to 60°C ± 0.5°C. Air circulating fan and Micro processor based PID temperature controller-cum-indicator, Ventilation: Air ventilator ports provided on both sides at top to ventilate, timer, Suitable to operate on 220 V single phase, 50 Hz, AC supply. Instrument should be ISI complaint and marked (or other equivalent standardization in case of imported equipment).

12. Hot Air Oven - 4 Nos.

1. Description of Function

1.1 Hot Air Oven is required for heating a sample under controlled conditions.

2. Operational Requirements

2.1 Microprocessor based system with PID-temperature controller with integrated auto diagnostic system with fault indicator.

2.2 Thermostatically controlled system.

3. Technical Specifications

- 3.1 External: Stainless Steel Casing: w x h x d: 850 x 600 x 700 mm (All dimensions will have a tolerance of 5 mm). Insulated stainless steel door with locking and rear zinc-plated steel.
- 3.2 Interior - w x h x d: 400mm x 450mm x 300 mm, 55 liters approx (all dimensions will have a tolerance of 5 mm) easy-to-clean interior, made of stainless steel, with supports on the three sides for three adjustable perforated stainless steel shelves.
- 3.3 Forced air circulation by quiet air turbine/Fan to ensure uniform temperature.
- 3.4 Fitted with load indicator and safety thermostat take over indicator lamp. LED indicator.
- 3.5 Temperature Variation +/- 1 deg C.
- 3.6 Temperature Range- ambient to 250 deg C.
- 3.7 Output available for data acquisition

4. System Configuration Accessories, spares and consumables

4.1 System as specified.

5. Environmental factors

- 5.1 The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%.
- 5.2 The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%

6. Power Supply

- 6.1 Power input to be 220-240VAC, 50Hz fitted with Indian plug.
- 6.2 Voltage corrector/stabilizer of appropriate ratings meeting ISI Specifications. (Input 160 – 260 V and output 220 – 240 V and 50 Hz).

7. Standards, Safety and Training

- 7.1 System should conform to IS:6365-1971 (Reaffirmed 1995) with latest amendments in ISI specifications for Laboratory Electric Ovens. Alternatively, system should be FDA Approved or CE Certified.
- 7.2 Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450.
- 7.3 Should be compliant to ISO 13485: Quality systems - Medical devices - Particular requirements for the application of ISO 9001 applicable to manufacturers and service providers that perform their own design activities.

13. Magnetic Stirrer

- 2 Nos.

- The stirrer with a hot plate is made of metal sheet with stainless steel top which serves as a hot plate.
- Its stirring and heating units are thermally insulated with asbestos sheet laminated with asbestos cement.
- It is fitted with an electronic regulator to control the speed of the stirrer.
- A energy regulator adjust the heating of the hot plate.
- The apparatus work on 220/230v AC.
- Laboratory magnetic stirrer is finished in oven baked paint.
- ISI certified

14. Pump Vacuum

- 2 Nos.

Pump vacuum should be non-corrosive, non-evaporative applications, utilize diaphragm vacuum technology for totally dry operation -eliminates the oil changes, reduces maintenances, reliable and improves productivity of having a high flow rate working vacuum

15. Colorimeter

- 6 Nos.

1. Photoelectric colorimeter with 8 filter digital (490, 520,540,570,600, 700 nm)
2. Digital colorimeter should be highly stable and accurate ideal clinical instruments for blood and chemical analysis.
3. Should have 5 / 8 filters with battery option.
4. Range: 400nm to 700nm filters 5 high standard filters, Accuracy: +/-0.010.Abs
5. Output Optional, Density 0 to 1.99, display 2.5 digit LED display, detector selenium photo cell light.
6. Source 6.2V 0.3 Amp. Tungsten filament Lamp,
7. Min volume 1 ml
8. Power 230V+I- 10 50Hz Ac.
9. Size (LxBxH) 225 x 230 x 150mm (Approx),
10. Weight: 4 kg. (Approx)
11. ISI certified
12. 2 year warranty

Accessories:

Test Tubes 5 Nos.
Light Source Bulb
Dust Cover
Instruction Manual

16. Refrigerator 300 ltr.

- 4 Nos.

For storing blood plasma and other blood products, vaccines, other medical or pharmaceutical supplies. Also to cool samples or specimens for preservation. For faster pull-down and recovery times, it should have bypass refrigeration and microprocessor-based controls

Technical Specifications

1. Laboratory refrigerator should have 330 ltr capacities.
2. Temperature range from 2 deg C to 10 deg C.
3. It should have galvanized sheet steel construction, white powder coated and adjustable feet.
4. No welded joint to be exposed for rusting.
5. Insulation of high-grade pressure – foam material.
6. Lockable door with plastic magnetic sealing surround.
7. Automatic defrosting and condensed melt water evaporation.
8. Re-circulating air-cooling system.
9. Control panel with thermometer, main switch and temperature selection.
10. Hermetically enclosed, low noise, vibration proof compressor.
11. Visual and a caustic signal alarm system.
12. Epoxy coated outside finish and S/S interior.
13. Low noise, automatic defrosting, Freon free.
14. Should be CFC free.
15. Temperature indicators to be provided.
16. Power input to be 220-240VAC, 50Hz.
17. Should be CE or FDA or BIS approved product

17. Flame Photometer**- 2 Nos.**

- Microprocessor Control with Filters, Na, K, Li, Ca,-Double display Filters-Narrow band-pass interference filters for sodium, Potassium, Calcium and Lithium available.
- Power supply – Regulated Power Supply to take care of mains variation of voltages between 200 to 250 V Amplifier- Highly stable, High Gain all IC amplifier.
- Display- large, Bright Seven Segment LED Panel meter to display 0-100 scale with negative and over range indication.
- Compressor- with built in regulator and Air Filter to deliver stable and moisture/oil free air supplier.
- Ignition System- Auto ignition.
- Atomiser- Non-corroding, easily accessible and can be cleaned without putting out the flame.
- Sample Take up rate- 5ml/min approximately.
- Nominal Input Voltage- 220V, 50HZ

18. Thermometers 0 – 250°C**- 4 Nos.**

Glass Thermometer with uniform stick less bore filled with mercury. Reading should be highly precision. Readability 0 to 250 deg C.

Temperature – Glass thermometer Range: 0°C to 250°C

Accuracy: $\pm 2^\circ\text{C}$

Usable altitude – upto 500 m

Case material – Brass

19. Thermometers 0 – 110°C**- 4 Nos.**

Glass Thermometer with uniform stick less bore filled with mercury. Reading should be highly precision. Readability 0 to 110 deg C

Temperature – Glass thermometer Range: 0°C to 110°C

Accuracy: $\pm 2^\circ\text{C}$

Usable altitude – upto 500 m

Case material – Brass

20. Cork Borer Set**- 1 No.**

Cork borer set consist of plated tubing with precision ground cutting edges, smooth plastic handles, handles and rubber stoppers.

21. Stop Watch - 4 Nos.

Stop watch of good quality reading at 1/5 second with LED/LCD display reading at 1/5 display

22. Sprit Lamp - 50+5 Nos.

Spirit lamp should be of top quality made up of premium raw material with a excellent functioning and durability

23. Chromatographic Chamber - 2 Nos.

Chromatography – cabinet Rescholar’s chromatography cabinets, which are made of teakwood with glass on four sides and on top. The internal surface is coated with wax in order toensure resistance to solvent and other chemicals.

24. Water Distillation Plant (Metallic) - 5 Nos.

Application: General laboratory purpose water distillation plant

Specification:

1. The complete outer and inner jacket, condenser tubes are made of Stainless steel.
2. The apparatus capable of producing pyrogen free distilled water as per IP/BP standards.
3. The instrument should have low water cut off device, water level indicator and control panel.
4. Capacity : 5-6 ltrs/hr.
5. Chamber -: Stainless Steel 304 quality.
6. Air Heater: should have ISI Mark.
7. Heat up Time: 20- 30 min. from Ambient.
8. Mounting: Clamp for wall mounting.
9. It should have BIS or CE or ISO certified.

25. All Glass Distillation Plant - 4 Nos.

Technical specifications:

1. The glassware should be made of high quality borosilicate glass to withstand high heat.
2. Apparatus capacity should be of 4 litres/Hr.
3. Should be double stage.

4. Should have metallic stand and other accessories.
5. Stand should be made of rust free material.
6. Standards heating elements of 2.5-3KW to be used.
7. An automatic cut off device should be attached.
8. Heater should be of quartz for immediate output of distilled water. Apparatus should consist of high quality Borosilicate Boiler with built in water leveler.
9. Output water should be pyrogen-free with conductivity less than 1 micro siemen, ph 6.9-7, distillate temp 65-75 deg C.
10. Automatic cut off device or safety control module.
11. Power input to be 220-240 VAC, 50 Hz.
12. Manufacturer should have ISO or CE certification for quality standards

26. Desiccators Large Size

- 30 Nos.

Desiccators large size used to protect chemicals which are hygroscopic or which react with water from humidity. It should be circular and made up of boro silicate glass. Both Vacuum & plan Desiccators are provided with a thick perforated Polypropylene disc with a big hole in the center for easy lifting. The tiny holes in the disc provide air troughs & support to the dishes. However porcelain discs are advisable in case of incandescent crucibles

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28. Centrifuge Clinical for 12 Tubes

- 6+2 Nos.

1 Description of Function

1.1 Centrifuges are required in the Laboratory to separate various components of Blood and any other liquid sample for analysis

2 Operational Requirements

2.1 Aerodynamic compact construction for vibration free performance

2.2 Table top version

3 Technical Specifications

3.1 Tube Capacity: No. 24 – 36; Size 5 – 15 ml

3.2 Should have a digital timer

3.3 Body should be made of strong fabricated & corrosion resistant steel

3.4 Control panel – for start/stop switch, dynamic brakes, step less speed regulator with zero start switch & speed indicator with timer and protective fuses.

3.5 Door interlock

3.6 Maintenance-free brushless drive motor with exact speed preselection and display. Speed range 100 to 6000 rpm and above, accuracy 1 rpm.

4 System Configuration Accessories, spares and consumables

4.1 Centrifuge complete with fixed angle rotors.

4.2 Tube Holders as appropriate

5 Environmental factors

5.1 The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%

5.2 The unit shall be capable of being stored continuously in ambient temperature of 0 -50deg C and relative humidity of 15-90%

6 Power Supply

6.1 Power input to be 220-240VAC, 50Hz as appropriate fitted with Indian plug

6.2 Voltage corrector/stabilizer of appropriate ratings meeting ISI Specifications.(Input 160- 260 V and output 220-240 V and 50 Hz)

7 Standards, Safety and Training

7.1 The supplier should be ISO certified for quality standards

7.2 Should be FDA or CE or UL or BIS approved product

2 year warranty with 5 year AMC/CMC

29. pH Meter

- 10 Nos.

1. Description of function: will be able to measure precisely the pH of any solution.

2. Operational requirement: combined electrode with digital display of pH.

3. Technical specification

* pH: (1) range: 1-14, (2) Resolution: 0.1, (3) accuracy: \pm , (4) calibration: at least 2 point.

* ORD: (1) RANGE: \pm 199 mv (2) Resolution: 0.1 mv / 1 mv.

* Temperature: (1) range: 0-100⁰ C, (2) Resolution: 1⁰ C (3) Accuracy: \pm 1⁰ C (4) calibration: offset range \pm 1⁰ C.

4. System Configuration Accessories, spares and consumables

4.1 Should be supplied with two level standard pH solution / pH tablets.

5. Environmental factors

5.1 Shall meet (BIS) General Requirements of Safety for Electromagnetic Compatibility. or comply with 89/366/EEC; EMC-directive.

5.2 The unit shall be capable of being stored continuously in ambient temperature of 0-5deg C and relative humidity of 15-90%

5.3 The unit shall be capable of operating in ambient temperature of 20-40 deg C and relative humidity less than 70%

6. Power Supply

6.1 Power input to be 220-240VAC, 50Hz fitted with Indian plug

7. Standards, Safety and Training

7.1 Should be FDA or CE or BIS approved product

7.2 Electrical safety conforms to standards for electrical safety IEC-60601 / IS-13450

7.3 Manufacturer / Supplier should have ISO certification for quality standards.

30. Homogenizer

- 3 Nos.

Homogeniser should be powerful, versatile, and durable homogenizer that can handle virtually any processing application. Its high power motor can handle even the toughest tissue samples, and emulsions and dispersions are quickly and easily completed. It should be compatible with stainless steel generator probes. It should have a processing range of <200 μ L to 10L. It can be hand-held or post mounted for lengthier processing. Includes 700 watt motor, tool kit and instruction manual.

31. Microscopes Bi/Monocular

- 6 Nos.

A. Specifications:

1. Eye piece: Straight binocular type wide field (10 x).
2. Optic carriers with five steps magnification.
3. Fine focusing- manual.
4. Objective 250mm f & 400 mm f.
5. Cold light co-axial illumination additional 10 spare bulbs.
6. Solid metallic body with sturdy stand riding on heavy castor wheels with locking breaks.
7. Halogen illuminations 150W with power supply.
8. Should have 3 spare lamps with each unit.

B. Power Supply

Power input to be 220-240VAC, 50Hz

Should be CE certified or FDA or BIS approved product.

32. Ultra Violet UV Lamp

- 1 No.

Features: high turbulence; non wetting surface; high reliability low maintenance

33. Tools for small Workshop for Glass blowing & Mending

- 1 Set

34. Bottles Dispenser

- 15+5 Nos.

Bottle dispenser It should be designed for performance handling of liquids from a large variety of bottles and flasks, the dispensers combine the latest in dosing technology, high tech materials and ergonomic design. As a result, users benefit from universal chemical compatibility, ease of operation, superior safety and low maintenance.

Volumes range 0.25 to 100 mL.

Superior chemical resistance.

Long lasting performance stability.

Comfortable and convenient in use.

Solid, yet simple construction.

Instant volume setting.

In-lab calibration.

Autoclavable at 121°C fully assembled.

Supplied with bottle adapters

Calibration certificate

35. Samplers (Auto Pipette) different Sizes

- 15+5 Nos.

SINGLE CHANNEL PIPETTE

- Spring loaded Tip Cone for connecting tips very tightly.
- Adjustment opening for adjusting pipette to a specific liquid & volume.
- Control button with very low operating force. Colour indication for pipette volume.
- Tip ejector with very low operating force. Positioned for perfect ergonomics.

- Volume Display: 4 Digits with magnifier.
- To provide Thermal, Mechanical & Chemical stability piston & should be manufactured with the combination of Fortron and PEEK material.
- Very easy removal of lower part for cleaning pipette.
- Fully Autoclaveable.
- No discoloration on UV Irradiation.

ACCURACY- + 1%

REPRODUCIBILITY - 1% - 0.5%

Volume range:

- a. Micropipettes 0.1 to 2.5ul Variability 0.1µl increment.
- b. Micropipettes 0.5 to 10ul Variability 0.1µl increment.
- c. Micropipettes 2 to 20ul Variability 1µl increment.
- d. Micropipettes 20 - 200ul Variability 1µl increment.
- e. Micropipettes 100-1000ul Variability 1µl increment.
- f. Micropipettes 0.1 to 10ml. Variability 1ml increment.
- g. 12 channel micropipettes 20ul.
- h. 12 channel Micropipettes 200ul

**36. Electrophoresis Apparatus with Power Supply for Paper/ PAGE/ AGAROSE.
- 6 Nos.**

Chambers – total 6

1. For Paper electrophoresis, horizontal – 2

Paper electrophoresis system, cellulose acetate system suited for standard and wet cellulose paper electrophoresis, support adjustable for different strip lengths, can adjust strip dimensions of upto 24X20 cm, Acrylic made, with lid, platinum electrodes, red and black connecting cords,

Suitable for standard and wet cellulose acetate electrophoresis of haemoglobin, serum proteins, isoenzymes, urine proteins, lipoproteins and glycoproteins, can adjust multiple gel sizes available commercially

2. For gel (agarose) electrophoresis – 2

a. Small system - One

Acrylic made, Inner tank 215 x 141 x 55 mm, with lid

Trays:

130 x 130 mm - 1 No.

130 x 65 mm - 2 Nos.

65 x 60 mm - 4 Nos

No. of combs:

13 Well Analytical Acrylic Comb 1.5 mm thick x 1 No.

8 Well Analytical Acrylic Comb 1.5 mm thick x 4 Nos.

3 Well Preparative Acrylic Comb 3 mm thick x 1 No

Universal gel casting tray, Platinum electrodes, Red and black connecting cables

b. Large system – One

Acrylic made, Inner tank 39.5 X 23 X 9 cm, with lid

Trays:

200 x 100 mm - 1 No.

200 x 200 mm - 1 Nos.

200 x 250 mm - 1Nos

Combs: 20 well (1 mm thick) X 2 Nos.

2 gel casting dams, Platinum electrodes, Red and black connecting cables

3. Vertical electrophoresis (PAGE)

a. Mini system - One

Vertical dual mini Gel, Acrylic made, with lid, Gel Size : 8 x 7 cms x 2,

Upper buffer tank dimension : 70 x 70 x 43 mm,

Lower buffer tank dimension : 150 x 130 x 115 mm,

Combs :

7 Well Teflon Comb 0.5 mm-2 Nos.

7 Well Teflon Comb 1 mm-2 Nos.

Teflon Spacers :

0.5 mm Teflon Spacers - 4 Nos.

1 mm Teflon Spacers - 2 Nos.

Glass plate : Notched and Rectangular 2 sets of glass plates, 2 sets of Clamp and screws, Water circulation, Gel casting unit , red and black connecting cables, Platinum electrodes.

b. Large system – One

Acrylic made, with lid, Dual gel system, Gel Size : 16 x 20 cms x 2 gels,
Upper Buffer Tank Dimension : 200 x 75 x 20 mm
Lower Buffer Tank Dimension : 270 x 100 x 115 mm
Combs : 20 Well Teflon Comb 1 mm-2 Nos.
Teflon Spacers : 1 mm Teflon Spacers 6 Nos.
Red and black connecting cables, Platinum Electrodes, Water Circulation,
Glass Plate : Notched and Rectangular 2 sets.
Clamp and Screws : 4 sets.
Gel Casting Unit

Power supplies – One

Output range upto 500 V, adjustable in 1 V steps, 0.01–2.5 A, adjustable in 0.001 A steps, Upto 500 W, fully adjustable in 1 W steps.

Modes- programmable, constant voltage, constant current, or constant power with facility for auto crossover

Terminals- 4 pair of recessed banana jacks in parallel

Timer control of 1-99 hr 59 min, fully adjustable

Pause/resume function,

Programmable- memory for methods storage and real time clock.

Automatic recovery after power failure

LCD Display

Proper safety and electrical compliance,

Safety: No-load detection, sudden load change detection, ground leak detection, overload/short circuit protection, overvoltage detection, input line protection, auto power-up after power failure.

Input power suited to Indian power supply of 110–240 V AC, 50/60 Hz

Operating conditions 0–40°C, 0–90% humidity

Appropriate CE/ ISI etc certification

37. Spectrophotometer

- 1 No.

1. Wavelength range: 190 to 1100 nm.
2. Spectral bandwidth: 0.5 to 4 nm.
3. Light Source(s) 20-W halogen/Xenon lamp and deuterium lamp built-in light source auto position adjustable.
4. Detector Type: Silicone photodiode.
5. Wavelength Accuracy: ± 0.5 nm for entire range.
6. Spectral Resolution: 0.1 nm increment.
7. Absorbance Precision: Absorbance: -4 to 4 Abs, Transmittance: 0% to 400%, accuracy: ± 0.01 Abs at 0.5 Abs, ± 0.008 Abs at 1.0 Abs.
8. Photometric System: Double beam optic.
9. Wavelength Scanning speed: 3600 nm / min.
10. Power requirement: 220 to 240 V, AC 50 Hz.
11. Environmental requirement: Temp 15 to 40°C. Humidity: 30-70%.
12. Output device: UV PC format.
13. PC Compatibility: provided with software. External control possible via USB.
14. Should provide Quartz cuvette: 1 ml and 3 ml Capacity.
15. Should provide glass cuvette 1 ml and 3 ml capacity.
16. Facility for small sample volumes (of 50 μ L, 25 μ L and 5 μ L micro-volume cells) measurement with required accessory should be included
17. Sample detection for RNA and Protein.
18. Maximum sample concentration: 750-1000 ng / microlitre of dsDNA.
19. Measurement Time < 5 seconds.
20. PC with software Windows XP / 2007 or inbuilt LCD Screen.

21. System should be US FDA or European CE or BIS approved

38. Binocular Research Microscope

- 2 Nos.

1. Microscope stand with Coaxial focusing control knobs, coarse motion torque adjustable, Upper stage drive stop incorporated.
2. Color Corrected Infinity Optical System, Anti fungus.
3. Choice of different powers of objectives (long barrel 4X, 10X, 40X spring, 100X oil, spring). Objectives should be flat apochromatic.
4. Eyepieces with pointer (paired and compensating) 10X (FOV 20 or more).
5. Mechanical stage of standard dimensions.
6. Swing out Type Plan Achromatic Condenser, N.A. 0.90.
7. Light Source: LED with at least 25,000 hrs life time.
8. Lamp should not produce undesirable heat.
9. Cover and Casing for storage of objectives, eyepieces, whole assembly.
10. Power Supply 220-240 V AC.
11. C Mount Adapter.
12. Microscope should have trinocular tube for attaching the camera.
13. High resolution Digital CCD Camera with resolution: 12.0 mega pixels.
14. USB to PC connection.
15. 16mm lens.
16. Macro viewing tube.
17. Calibration slide.
18. Imaging Software.
19. Instant Image Capturing, Real time full screen image.
20. Programmed Interval Captures, Video Capture by Time Settings.
21. Easy Measurement Calibration, Measurement in microns, inches, millimeters.
22. Length Measurements, Ellipse, Rectangle, Irregular Shape Measurements.
23. Perimeter, Radius, Circumference Measurements, Angle Measurements.
24. Automatic Image amalgamation.
25. Image Adjustment Effects.
26. Microscope, Digital imaging system and software should be of the same brand and same manufacturer to ensure complete compatibility and optimum performance.
27. System should supply with suitable PC and 21" Monitor.
28. Should be CE or FDA approved

39. Glassware as required by Standard Lab Kits, Chemical, Pipettes, Beakers and Conical Flasks etc.

- 1 Lot

List of Glassware items:

All glassware should be made of high quality borosilicate glass to withstand high heat meeting Medical Grade Laboratory Standards. The glasses should be see-through clear & transparent. All glass materials must have standard thickness as per Medical Grade Laboratory Standards.

Rates of 1 dozen of each of the following Glassware items & Unit cost of non Glassware items are to be quoted.

1. Burette
2. Burette stand
3. Beaker (2.5 lt.)
4. Beaker (1000 ml)
5. Beaker (500 ml)
6. Beaker (250 ml)
7. Beaker (100 ml)
8. Beaker (50 ml)
9. Beaker (25 ml)
10. Conical flask (500 ml)
11. Conical flask (100 ml)
12. Conical flask (50 ml)
13. Cuvette
14. Centrifuge tube
15. Cover slip
16. Funnel
17. Measuring cylinder (1000 ml)
18. Measuring cylinder (500 ml)
19. Measuring cylinder (250 ml)
20. Measuring cylinder (100 ml)
21. Measuring cylinder (50 ml)
22. Measuring cylinder (25 ml)
23. Measuring cylinder (10 ml)
24. Reagent bottle
25. Slides
26. Test tube
27. Thermometer
28. Urinometer
29. Volumetric cylinder (500 ml)
30. Volumetric cylinder (200 ml)
31. Volumetric cylinder (100 ml)
32. Volumetric cylinder (50 ml)

