

## 1. ANATOMY

S.No.	NAME OF THE ITEMS
<b>(A)</b>	<b>General</b>
1	Drill machine
2	Hand saw, preferably metal
3	Band saw for sectioning body and limbs
4	Brain knife
5	Mortuary cooler for storing cadavers
6	Storage tank to hold cadavers, static/movable, durable tank with input and output facility with lid
7	Plastic tanks for storing soft and dissected parts
8	Dissecting instruments for cadaveric dissection
9	Meat cutting machine for thin body sections (trans and vertical) for gross anatomy sectional study
10	Embalming Machine
<b>(B)</b>	<b>Histology Laboratory</b>
11	Microscopes, Monocular/Binocular
12	Dissection microscope
13	Microtomes, rotary
14	Microtomes, Sledge, large cutting
15	Paraffin embedding bath
16	Hot plates for flattening sections
<b>(C)</b>	<b>Museum</b>
17	Articulated Skeleton set
18	Bones (Dis-articulated) sets

## 2. PHYSIOLOGY

S.No.	NAME OF THE ITEMS
A	<b>Hematology Laboratory</b>
1.	Microscopes, oil immersion

2.	Demonstration eye piece
3.	Double demonstration eye piece
4.	Stage incubator
5.	Westergren's pipette for E.S.R. on stand(with space pipette)
6.	Wintrobe's pipette for ESR and PCV with stand
7.	Hemoglobin-meter Sahli's or Hellige (with spaces)
8.	Hemocytometer
B.	<b>Clinical Physiology</b>
9.	Tuning fork time marker 100/sec
10.	Electrodes
11.	Spirit lamps
12.	Marey's tambour
13.	Perimeter Pristely Smith S/LP.984 B & T
14.	Sphygmomanometer (digital) (Mercury based instruments to be replaced with suitable alternatives)
15.	Stethoscopes
16.	Stethoscopes, demonstration with multiple ear pieces
17.	Polygraphs
18.	Venous pressure apparatus
19.	Spirometer, ordinary
20.	Gas analysis apparatus, Halden's student type
21.	Van Slyke's apparatus manometric
22.	Sherrington Starling kymograph (electrically driven)
23.	Gas analyser automatic for CO <sub>2</sub> , O <sub>2</sub> , N <sub>2</sub>
24.	Low voltage unit for tapping 2 and 4 volts for stimulation
25.	Electromagnetic time marker
26.	Douglas bag, complete
27.	Basal metabolism apparatus
28.	Mosso'sErgograph
29.	Clinical thermometer
30.	Compass aesthesiometer
31.	Thermo-aesthesiometer
32.	Algometer
33.	Apparatus for passive movement
34.	Knee hammer
35.	Stethograph
36.	Bicycle Ergometer
37.	Olfactometer
38.	Ophthalmoscope

39.	Schematic eye
40.	Phakoscope
41.	Perimeter with charts (Lister's)
42.	Color perception lantern Edridge green
43.	Maddox rod
44.	Newtons color wheel
45.	Tuning fork to test hearing 32-10000 cps(sets-100, 256, 512 Hz)
46.	Dynamometer
47.	Otoscope
48.	Stop watch
49.	Multi-channel Physiograph, 3 channels, complete with accessories
50.	Student physiograph, (single channel) with accessories
51.	Centrifuge, high speed with technometer
52.	Colorimeter, photoelectric
53.	Myograph stand
54.	pH meter electric
55.	Electronic stimulator
56.	Thermometers, balances, microslides and glassware
57.	Digital Physiograph
58.	ECG Machine

### 3. BIOCHEMISTRY

S.No.	NAME OF THE ITEMS
1.	Analytical Balance :upto 200g/1gm increment
2.	Urinometers calibrated (Mercury based instruments to be replaced with other alternatives)
3.	Hot air oven (More than 200 litres)
4.	Digital Colorimeters
5.	Student Microscopes
6.	Glucometer with strips ( For POCT )
7.	Thermometer 0 – 250 degree Celsius
8.	Semi autoanalyser
9.	Boiling Water baths
10.	Constant temperature water bath Tank Capacity: (Temperature range 5 to 80 degree Celsius)
11.	Centrifuge clinical for $\geq 8$ tubes
12.	pH meters of wide range digital

13.	Fixed volume pipettes -- 1ml,0.5ml,0.2ml,0.1ml and 0.02ml
14.	Bottle dispensers
15.	Variable and fixed volume micro auto pipettes
16.	ELISA (Demonstration)
17.	Vacutainer Tube
18.	PCR Machine
19.	ABG Machine
20.	Autoanalyzer (either in the institution or elsewhere on a visit)
21.	Complete Chromatographic Unit for paper & TLC
22.	Complete Electrophoresis apparatus with power supply (Paper, PAGE, agarose)
23.	Densitometer with computer
24.	Vortex mixers
25.	Incubator 37°C
26.	Fume cupboard
27.	Digital Analytical Balance
28.	Balance Micro
29.	Spectrophotometer

#### 4. PATHOLOGY

S.No.	NAME OF THE ITEMS
(A)	<b>General</b>
<b>I</b>	<b>Histopathology / Cytopathology for Students</b>
1.	<b>For Students</b> – LED Binocular with Scanner, 10X, 40X, & Oil immersion lenses and inbuilt Battery backup power source
<b>II</b>	<b>Hematology for Students</b>
2.	Stop watch reading at 1/5 second.
3.	Haemo-cytometers with red and white pipettes
4.	Staining jars for slides.
<b>III</b>	<b>Clinical Pathology for Students</b>
1.	Urinometers(Mercury based instruments to be replaced with other alternatives)
2.	Centrifuge tubes graduated.
3.	Graduated cylinders for various capacities ranging from 100 cc to1000 cc. (For Students)
4.	Pipettes of various sizes with disposal tips. (For Students)
5.	Reagent bottles (For Students)
6.	Dropping bottles (For Students)
7.	Reagents (For Students)

<b>(B)</b>	<b>Morbid Histology and Morbid Anatomy</b>
1.	Manual Rotary Microtome
2.	Automated Rotary Microtome
3.	Cryostat
4.	Hot plate
5.	Paraffin embedding bath
6.	Heated Paraffin Embedding Module
7.	Cold Plate for Modular Tissue Embedding System
8.	Automated Tissue Processor –Histokinette
9.	Autoclave
10.	Ultrapure water solutions - Distilled water plant
11.	Water bath
12.	Centrifuge machine
13.	Digital SLR at least 20 megapixel with micro, macro, wide angle zoom lenses, Flash and other accessories
14.	Digital Automatic camera > 5 megapixel
15.	Fully Automated high throughput Multi-Stainer Workstation
16.	Fully Automated Embedding System (Heated embedding module & cold plate)
17.	Fully Automated Flexible Coverslipping Workstation
18.	Standalone paraffin dispensing module cold plate holding more than 100 cassettes
19.	Stand-alone cold plate
20.	Coplin jars
21.	Water bath (Tissue Flootation)
22.	Single Pan Digital Balance, Chemical
23.	Balance, chemical with weights
24.	<b>Microscopes</b>
25.	<b>For Diagnostic &amp; Research Work</b> - Trinocular head Microscope with Bright field, Dark field, Fluorescent & Polarizing Facility, high end Apochromatic lenses with Camera with HDMI Multi output camera Minimum 5MP with Projector & Ultra HD TV > 52 inches & Screen including Software Capable of Brightfield& Immunofluorescence Photographywith connectivity to projector & LED TV (At least 55 inches Ultra HD)
26.	<b>Penta Head Microscope with High end Optics</b> with HDMI Multi output Photographic Camera (> 5 MP) including Software
27.	Deca Head Microscope with High end Optics with HDMI Multi output Photographic camera (> 5 MP) including Software
28.	<b>Grossing Station</b> - Stainless steel, with Control panel, air filtration system, Track mounted adjustable computer

	arm with articulation, LED lights that are color and intensity, Dedicated USB ports for camera control and data transfer adjustable, Integrated pathology camera system, Instrument Set (High quality) Height Adjustable  Stainless Steel Chairs With Split AC of appropriate capacity.
29.	Fully Automated Immuno-histo-chemistry Setup with Continuous supply of Important Antibodies, Lymphoma Panel etc.
<b>(C)</b>	<b>Hematology Lab:</b>
30.	Five part Fully Automated Cell Counter
31.	Three Part Fully Automated Cell Counter
32.	Coagulometer (Fully automated)

## 5. PHARMACOLOGY

S.No.	NAME OF THE ITEMS
<b>(A)</b>	<b>Clinical Pharmacy</b>
1	Special Drug Delivery systems like Metered Dose Inhalers, Spacers, Rotahalers, Nasal sprays, Transdermal patches, Insulin infusion pumps (optional), Insulin pen etc.
2	Samples of dosage formulations of various types including rational and irrational FDC, Essential medicines
3	Manikins for demonstration of intravenous injection, enema, local, intramuscular injections, intracardiac injection and other routes of drug administration
<b>(B)</b>	<b>Computer Assisted Learning Laboratory</b>
4	Must have computers with standard configuration and connected to the internet, (Preferably broadband) along with an AV aids (Multimedia Projector and Screen). The PC should be installed with CAL programmes and other software for teaching experimental pharmacology. The students must have access to the National Essential Drug Lists, Standard Treatment Guidelines, Banned Drugs List of the CDSCO, PVPI, WHO, Price Controlled Drugs List, Antibiotic Guidelines, Hospital formulary, adverse drug reactions, and other resource material which the student can use for  learning the principles of rational prescribing.

## 6. MICROBIOLOGY

S.No.	NAME OF THE ITEMS
<b>(A)</b>	<b>For Students</b>
1.	Microscopes (Specified as in Pathology)

2.	Culture Plates/ Petri Dishes
3.	Glass wares including Pasteur Pipettes
4.	Facility for heating slides
<b>(B)</b>	<b>General</b>
1	Anaerobic apparatus
2	Autoclave
3	Balance Electronic Digital
4	Biosafety Cabinet Type - 2A
5	BOD Incubator
6	Centrifuge
7	CO2 Incubator/Candle Jar
8	Computer Unit
9	Deep Freeze -20° C & Deep Freezer
10	Distilled water Plant
11	Elisa Reader
12	Elisa Washer
13	Hot Air Oven
14	Incubator
15	Lab Refrigerator (minimum 400 litres)
16	Laminar flow
17	Micrometer eye pieces
18	Micrometer stage
20	Microscope Binocular
21	Microscope with universal condenser containing oil immersion, Bright field, Phase Contrast & Dark ground
23	pH determination apparatus
24	Serum inspissators
25	VDRL shaker
26	Vortex Mixer
27	Water bath with variable temperature
28	Oil-immersion lens for student microscope
29	Automated Blood Culture System
30	Colony Counter
<b>(C)</b>	<b>Consumables for Culture and Serological Diagnosis</b>
31	Antibiotic Discs for Antibiotic susceptibility testing
32	Antibiotic zone scale
33	Antisera-Salmonella
34	Antisera- <i>Shigelladysenteriae</i>
35	Antisera- <i>Shigella flexnari</i>

36	Antisera- <i>Shigellasonnie</i>
37	Antisera- <i>Vibrio cholerae</i>
38	ATCC strain - <i>Enterococcus faecalis</i> 29213
39	ATCC strain - E.coli 25922
40	ATCC strain - E.coli 35218
41	ATCC strain - <i>Pseudomonas aeruginosa</i> 27853
42	ATCC strain - <i>Staphylococcus aureus</i> 25923
43	ATCC strain - <i>Staphylococcus aureus</i> 29213
44	Bottles for blood culture
45	Micropipettes – Multi channel & Single channel
46	Digital Thermometers of different temperatures
<b>(D)</b>	<b>BSL 2 Lab</b>
47	-80°C deep freezer with UPS
48	Real-time PCR machine calibrated for the fluorophore dyes with UPS (2 nos., 2KVA each, with 2 hours back-up)
49	Microcentrifuge / Refrigerated Centrifuge
50	(a) Personal protective equipment (PPE) (b) Viral Transport Medium (VTM) (c) All other consumables and kits as required for Virology studies.

## 7. FORENSIC MEDICINE & TOXICOLOGY

S.No.	NAME OF THE ITEMS
1	Anthropometric Set including
	A) Folding Metal Rod Upto 7 Ft
	B) Osteometric Board
	C) Craniometer
	D) Mandibulometer
	E) Goniometer
	F) Vernier Calipers
	G) Equipment for Reporting Height
	H) Weighing Machine Dial Type Human
2	Digital pH Meter
3	Digital Spectrophotometer
4	Chemical Balance
5	Distillation Plant
6	Refrigerator



7	Centrifuge
8	Slide Warming Table
9	Hot Plate
10	Spectroscopic Lens With Adjustable Slit
11	Dissection Set Complete
12	Digital BP Instrument
13	Stethoscope
	<b>Medico legal work</b>
14	Cold Storage For Dead Bodies
15	Weighing Machine For Dead Bodies
16	Autopsy Tables
17	Stryker Type Autopsy Saw With Accessories
18	Weighing Machine For Organs
19	Weighing Machine For Fetus
20	Dissection Set Complete
21	Brain Knife
22	Hack Saw
23	Rib Shear Left & Right
24	Measuring Tape( Steel Tape Roll)
25	Magnifying Lens
26	X- Ray View Box (4 In 1)
27	Tooth Extractor Left & Right
28	Hand Set Heat Sealer
29	Instrument Trolley
30	Rectal Thermometer
31	Portable X-ray Machine (can be shared with Radiology Department)
	<b>Additional Equipment For Medico Legal Work For Each 500 Medico legal Post Mortems Beyond 500 Post Mortems Annually</b>
32	Cold Storage For Dead Bodies
33	Autopsy Tables
34	Stryker Type Autopsy Saw With Accessories
35	Weighing Machine For Organs
36	Weighing Machine For Fetus
37	Dissection Set Complete
38	Brain Knife
39	Hack Saw
40	Rib Shear Left & Right
41	Measuring Tape( Steel Roll)

42	Magnifying Lens
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## 8. COMMUNITY MEDICINE

S.No.	NAME OF THE ITEMS
1	Hydrometer, milk
2	Incubator, electric (can be procured from Microbiology)
3	Balance for weighing food stuff(Capacity 2 Kg).
4	Centrifuge clinical
5	Weighing machine adult
6	Baby weighing machine
7	Salters Baby weighing machine
8	Harpenden Calipers (for skinfold thickness)
9	Height measuring stand
10	Refrigerator 9 cu.ft.
11	Ice Lined Refrigerator (I.L.R.) (at Health Centre)
12	Smart TV
13	Vehicles for transport of students/interns/faculty/ paramedical staff to the RHTC and UHTC
14	Multimedia Projector with Screen
15	Public Address system (2 portable for field based activities and one each for RHTC & UHTC)
16	Chloroscope
17	Horrock's Apparatus
18	MUAC tapes
19	Haemoglobinometer
20	BP Apparatus (Digital)
21	Stethoscope
22	Sound level meter
23	Water sampling bottle from any depth
24	Needle Shredder
25	Vaccine carrier
26	Craft water testing kit
27	Treatment kits as per national health programs
28	Iodine testing kit
29	Glucometer
30	Mosquito catching kit
31	Clinical Thermometer
32	First Aid Kit
33	Otoscope

34	Ophthalmoscope	1
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## 9. SKILLS LABS

- (i) Trainer simulators / models / mannequins for:
- First aid, Bandaging, splinting
  - Basic Life Support (BLS), CPR (Cardio Pulmonary Resuscitation) mannequin
  - Various types of injections- Subcutaneous, Intra-muscular, Intra-venous
  - Urine Catheter insertion
  - Skin & Fascia suturing
  - Breast examination model /mannequin
  - Gynecological examination model/mannequin including IUCD (Intra Uterine Contraceptive Device) Training model
  - Obstetrics mannequins including Obstetric examination, conduct and management of vaginal delivery.
  - Neonatal & Pediatric resuscitation mannequins
  - Whole body mannequins
  - Trauma mannequin
- (ii) Each model (Low or High Fidelity) should have a module for training including objectives, methods and assessment. Modules can also have hybrid models where real patients or standardized/simulated patients/ computer simulations can be used.
- (iii) There shall also be space for CAL lab with adequate computers.

## 10. CLINICAL DEPARTMENTS

- i. All clinical departments must have all equipment as expected for provision of standard clinical care and treatment.
- ii. Each clinical Department must have available a separate set of instruments needed for demonstration for undergraduate students.

### 10.1 DEPARTMENT OF RADIO-DIAGNOSIS

S.No.	NAME OF THE ITEMS	No. Required
1	Static X-ray units (Direct digital/CR)	As per annexures I-IV
2	Fluroscopy facilities	Available
3	Mobile X-ray units $\geq$ 60mA	As per annexures I-IV
4	Ultrasonography equipment with color doppler	As per annexures I-IV
5	CT scan machine ( $\geq$ 16 slice)	1
6	MRI (desirable for annual intake of 150 or less; mandatory for annual intakes of 200 and above)	1

### 10.2 DEPARTMENT OF EMERGENCY MEDICINE

S. No.	Name of Items	No. Required
1.	ICU beds (should have facilities for propping up the patient along with railings and wheels)	06