

List of equipments for the department of Pathology

Sl. No.	Name of Equipments
1	Automated urine chemistry analyzer with sediment analyzer
2	Cytocentrifuge machine
3	Sliding microtome
4	Capillary electrophoresis (Fully automated)
5	Bone decalcifier
6	Fully automated histological & cytological slide stainer
7	Thin prep (LBC - Liquid base cytology)
8	Fully automated clinical gel electrophoresis system
9	Rotary microtome basic manual model
10	3 part differential hematological analyzer
11	Automated urine chemistry analyzer without sediment analyzer
12	Mobile lab system
13	Electrolyte analyzer

FULLY AUTO URINE SEDIMENT ANALYSER

1. RANDOM ACCESS TOTALLY PATIENT ORIENTED SYSTEM FOR URINE INVESTIGATION,
2. MINIMUM 14 MEASURING PARAMETERS WITH URINE 1. BILLIRUBIN, 2. KETONES, 3. BLOOD, 4. PH, 5. WBC, 6. UROBILINOGEN, 7. PROTEIN, 8. NITRITE, 9. GLUCOSE, 10. MICROALBUMIN 11. VITAMIN C, 12. SPECIFIC GRAVITY, 13. COLOR 14. TURBIDITY etc.
3. MUST HAVE A MINIMUM THROUGHPUT OF URINE CHEMISTRY AT LEAST 230 OR MORE SAMPLES PER HOUR.
4. SEDIMENT ANALYSER MUST HAVE A MINIMUM THROUGHPUT OF AT LEAST 60 SAMPLES/HOUR
5. MUST HAVE INBUILT MICROPROCESSOR BASED TOUCH SCREEN PC FOR OPERATION.
6. MUST BE 4 NOS WAVELENGTH FROM 520nm- 660nm.
7. SHOULD HAVE SAMPLE AUTOLOADER WITH SAMPLE RACK TYPE, WITH A MINIMUM SAMPLE LOADING CAPACITY OF 50 SAMPLES AT A TIME.
8. THE SEDIMENT ANALYSER MUST USE FLAT FLOW CELL TECHNOLOGY, HIGH SPEED IMAGING PROCESS. MINIMUM IMAGING CAPACITY SHOULD HAVE MORE THAN 800 FRAMES.
9. THE SYSTEM SHOULD HAVE FACILITY FOR EACH FORMED ELEMENT IMAGE DISPLAYED ON THE SCREEN WHICH IS SEPARATED INTO EACH FRAME.
10. URINE & SEDIMENT ANALYSER SHOULD BE CONNECTED WITH THE CONNECTOR FOR FAST PROCESSING.
11. INSTRUMENT SHOULD HAVE FACILITY FOR COMBINED RESULT PRINTING.
12. THE SYSTEM MUST HAVE BAR CODE IDENTIFICATION FOR SAMPLE & REAGENTS.
13. SYSTEM SHOULD HAVE DATA STORAGE CAPACITY OF 10000 OR MORE.
14. LASER PRINTER AND COMPUTER SHOULD BE SUPPLIED WITH THE INSTRUMENT.
15. THE URINE STRIP MUST BE U.S FDA APPROVED & A CERTIFICATE SHOULD BE ATTACHED.
16. POWER SUPPLY- MUST BE OPERATABLE WITHIN 220-240 V AND BACKED UP WITH INVERTOR (MINIMUM 60 MINUTES)

CYTO CENTRIFUGE

1. Compact, table top model.
2. Capacity to process minimum 12 samples simultaneously with option for more.
3. Speed from 200-2000 RPM – with programmable acceleration.
4. Running time 1-99 minutes.
5. Digital display for time and speed.
6. Programmable memory to store up to 23 routines for instant recall and protect from power loss.
7. Auto-locking, plastic outer lid.
8. Autoclavable sealed head.
9. Microprocessor controlled.
10. Safety alarms to protect users and specimens.
11. Able to run low volume samples up to 0.5ml as well as large volume samples up to 6-12 ml.
12. Should be operable at room

Standard Accessories with Cytocentrifuge

1. Cyto-funnels (single) - (0.5ml -1.0 ml)
2. Cyto-funnels (double)
3. Mega-funnels (more than 6 ml)
4. Cyto-clips , stainless steel
5. Cyto-slides , single circle
6. Cyto-slides , double circle
7. Filter cards


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SLIDING MICROTOME

1. With universal cassette clamp with knife holder SN for reusable knives or blade rails Stable instrument construction.
2. Totally enclosed micrometer feeding systems to prevent debris from entering the roller bearings.
3. Ergonomically positioned object head.
4. Smooth running sledge, lockable in 11 positions by using easily accessible sledge brake.
5. Section thickness selection between 0 and 60 μm .
6. Manual feed by either pushing or pulling the coarse feed lever.
7. Clockwise or counter clockwise operation of smooth running coarse feed wheel, depending on personal preference.
8. Automatic feeding up to 30 μm .
9. Adjustable cutting window
10. Quick release system for specimen clamps.
11. Universal cassette clamp with adapter with quick release system for specimen clamps.
12. Knife holder SN for reusable knives or disposable blade rails. Knife holder declination with indicator for reproducible setting up to 45°C.
13. Two clamping screws for fast and stable cutting tool clamping.

Technical specifications:

Section thickness adjustable between 0.5 and 60 μm

Section thickness selection:

- 0.5 to 5 μm in 0.5 μm steps
 - 5 to 10 μm in 1 μm steps
 - 10 to 20 μm in 2 μm steps
 - 20 to 60 μm in 5 μm steps
- Automatic advance between 0 and 30 μm Total specimen feed range: 50 mm / 1.96 inches Clearance angle adjustment: -3° to 10° Specimen orientation in cutting direction: +/- 8° Specimen orientation opposite of cutting direction: +/- 8° Declination: 0° to 45° in sectioning direction

Technical Data:

Width (incl. coarse feed wheel and Ergogrip): 390 mm

Width (base plate): 256 mm

Depth: 430 mm

Height (total/with blade holder): 343 mm

Working height (knife edge/measured from the table): 255 mm

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Specification for fully automated Capillary electrophoresis system:

1. The System should Fullyautomated to Perform Serum Protein, Hemoglobin, Immunotyping Electrophoresis with complete walk away technology including migration and quantitation.
2. The System should be able to have Cap Piercing capacity for improved workflow and Operator safety.
3. The system should be fully automated electrophoresis system based on Capillary electrophoresis with 8 simultaneous migrations.
4. The system should use silica capillaries and electrophoresis in liquid flow.
5. The system should use deuterium lamp with optical fibers for emission and reception.
6. The system should accept all types of samples (sample cups or primary tubes) with barcode reader.
7. The system should have the capacity to load more than 100 samples.
8. The through put of the system should be
 - Hemoglobin – 40samples /hour
 - Protein – 90 Samples/hour
 - HR – 40 samples/hour
 - Immuno typing – 10 samples/hour
 - CDT (carbo hydrate deficient transferrin) – 38 samples/hour.
 - HbA1c also available as per NGSP and IFCC guidelines.
9. The System should be able to Perform Hb Electrophoresis with Whole Blood from primary Tubes.
10. Red cell hemolysate preparation is automatically performed on the instrument for Hb electrophoresis.
11. The system should use disposable antisera segments for each sample for Immunotyping.
12. The system should not use any manual staining procedures and should not use any densitometre for Quantification.
13. Software should be provided for automatic curve analysis with long-term storage capacity for results.
14. The system should have LIS capability.
15. The system should provide with required computer, printer and required accessory.


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BONE DECALCIFER.

1. Capacity Up to 30 cassettes

2. Dimensions

W x D x H Bench System 30 x 21 x 11 cm

Solution Reservoir 16 x 12.5 x 6 cm

Weight 3 kg

3. Solution Volume Up to 750 mL

Bone Section can be processed in just 15 minutes.

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FULLY AUTOMATED HISTOLOGICAL & CYTOLOGICAL SLIDE STAINER

1. The Stainer should CE Marked and is validated for the imager stain protocol.
2. Ability to run 20 to 30 position slides racks for flexible, Lean processing.
3. Up to four stain racks should run simultaneously.
4. 4 racks of 30 slides = 120 slides in 85 minutes.
5. Efficient use of Consumables, each reagent bath holding 350 to 360 ml.
6. Flexible program model supports a wide range of application.
7. Instrument Dimension: Width 81 cm, Height 41 cm, Depth: 79 cm.
8. Operating Temperature : 15 – 35 C,
9. Electrical Voltage: 220/240 VAC, Operating Humidity: 20% - 80% RH non-condensing.
10. Power / Frequency: Maximum 180 watts at 50 -60 Hz.
11. 2 KVA UPS along with machine.


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LIQUID BASED CYTOLOGY
LBC (THIN PREP)

1. Automated system for processing of Gyn and non- gyn cytology samples based on liquid based cytology.
2. Ability to make single slides from a single cytology sample which is uniform and reproducible.
3. Approved for use with either broom type or end cervical brush/spatula collection device.
4. Simplifies borderline smear management with HPV testing.
5. Pap Test should approved for use with the digene hybrid capture 2 assay for HPV DNA Testing.
6. Technology should be demonstrated as significantly more effective than the conventional Pap Smear.
7. System should allow residual material to be used for ancillary testing such as HPV, CT/NG, Immunocytochemistry, Special Stains, etc..
8. FDA approved system.
9. Improved detection of endocervical and endometrial adenocarcinoma.,
10. Controlled Membrane transfer Technology, automated provides consistent sample to slide preparation.
11. Cells limited to 20mm diameter.
12. 1 KVA UPS along with machine.

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FULLY AUTOMATED CLINICAL GEL ELECTROPHORESIS SYSTEM

Specifications :

1. Sample station for loading upto 8 sample per run
2. 8 independent sample probe
3. Pre configured work station
4. Option for 11 on board reagents
5. Pre programmed assay protocol
6. Automated transfer of Gel
7. Automated Built in 8 chennu densitometer
8. Inbuilt power pack
9. Patient data storage facility
10. Print out of patients results

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MANUALY ROTARY MICROTOME (BASIC MODEL)

1. Should Be SIPCON Model
2. Should have Non disposable stainless steel knife (German quality)

Accessories

- a. Honing stone
- b. Leather strop
- c. Honing glass plate with course and fine powder & others
- d. Extra length non disposable stainless steel knife (German quality)

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Automated 3- Part Differential Hematology Analyzer

1. The instrument should be fully automated 3- part differential hematology analyzer offering automatic start-up, shutdown and sample-analysis.
2. The instrument should be equipped with a hand held barcode reader.
3. The system throughout should be 60 samples per hour in all analysis modes.
4. The instrument should report minimum 20 Parameters in both Whole Blood and Prediluted Mode including WBC, RBC, HGB, HCT, MCV, MCH, MCHC, PLT, LYM%, MXD%, NEUT%, LYM#, MXD#, NEUT#, RDW-SD, RDW-CV, PDW, MPV,PCT, P-LCR.
5. The system reproducibility should meet bellow requirements in Whole blood analysis mode.

Parameter	CV (variation coefficient)
WBC	3.5% or less
RBC	2.0% or less
HGB	1.5% or less
HCT	2.0% or less
PLT	6.05 or less
6. The instrument should have Cyanide free SLS-Hb/ colorimetric method for the haemoglobin measurement.
7. The instrument should be equipped with SRV (Sample Rotor Valve) mechanism for precise alequoting of samples and dilutions.
8. The sample volume for the complete differential blood count should not exceed 50µl in whole blood mode and 20µl in prediluted mode.
9. The system should have large color touch screen with intuitive graphics icons.
10. The system should have both internal printer as well inbuilt port to print report on an external Dot Matrix/ Color printer.
11. The instrument should have COMPREHENSIVE INFORMATION PROCESSING SYSTEM with:
 - a) Data storage of 30,000 sample results including histograms
 - b) Quality control 60 plots, for 6 files
 - c) Online QC function with LAN port connectivity
 - d) Facility to input Control information (lot number, expiry date, assay values) using a barcode reader.
12. The system should offer following inbuilt Interface options:
 - a) LAN (Ethernet for host computer/ Remote Service Access)
 - b) Bar code reader (handheld)
 - c) Serial port (for host computer/ RS-232C)
 - d) Graphic printer (option)
13. Preferable to ensure economy as well as an effective reagent inventory management, the number of reagent types required to be connected to operate the system should not exceed 2 (excluding calibrators, controls and acniliary reagents that are not required for each sample analysis).

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14. To ensure reliability of reported results, Controls and calibrators required for the system should be manufactured by same Manufacturer of the instrument and should be available locally in the state (product brochure/ date sheet of controls and calibrators along with details of local distributors in the State should be provided).
15. The company supplying the instrument should have installed at least 1000 automated 3- part differential analyzers of same model/ make in India (list of 1000 installations across India should be provided).
16. The company supplying the instrument should have a good track record in government/ defence institutions and excellent service and distributor network across the our State (list of government/ defence installations along with details of Local offices in State, local distributors and local engineering support staff in State should be provided).


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Specification for Automated Urine Analyzer (without sediment analyzer)

1. The unit should work on reflectance photometer to evaluate the color intensity of each test zone
2. The unit should have three wavelengths viz 470nm, 525nm, and 625nm
3. The unit should have through put of around 600 samples/hr
4. The unit should have strip position check system and automatic dry strip detection
5. The unit should have **concealed waste container** for used strips disposal
6. The unit should give results in SI, conventional and arbitrary units
7. Company should **provide two levels (positive and negative)** ready to use liquid stable urine controls
8. Company should provide tri-level grey control strips for instrument QC
9. Instrument should be **touch screen with color display**
10. The unit should have built in printing capability.
11. Instrument should have **bar code reader connected via USB port**
12. Unit should have **memory capacity for 2000 measurements** with details of results.
13. Unit should have **external ports RS 232 and also 2 USB port for LIS connection.**


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Mobile Lab.

SPECIFICATIONS OF Mobile Lab

PORTABLE BIOCHEMISTRY LABORATORY

(ISO-9001,ISO-13485:2003, CE Marked and FITT Certified)

Portable Automated Biochemistry Laboratory - Open System.


It is of True Random Access with Direct Reading System.

PORTABLE COMPACT MOBILE LAB WITH BATTERY and optional SOLAR POWER BACK UP:

LABORATORY IN SUITCASE ENCLOSING following items considered as 1 unit.

Specifications of ACCURATE-ALL – Blood Analyzer

- a) Parameters : Egfr, Glucose, Hb, Urea, Uric acid, SGOT
SGPT, Creatinine, Cholesterol, Total Bilirubin, Direct Bilirubin, Total Protein, Calcium, Chloride, Sodium, Potassium, LDL, HDL, ALP, Albumin, Triglyceride, Magnesium, Phosphorus .
- b) Wave Length Range : 410 - 650 nm,
- c) Calibration : Multi Point Calibration
- d) Measuring Modes : %Transmission, Absorbance
- e) Photometric Accuracy : Up to 3 decimal places.
- f) Optical System (Photo Detector) : Silicon Photodiode
- g) Display : Bright Green LCD display
- h) Keyboard : Soft push-membrane type
- i) Have measurement range from 0.001 to 2.300 Abs
- j) Light Source : Patented Solid State Chip based LED which has long life, no Lamps are used thus reduced running expenses and maintenance.
Very low power consumption.
requires less calibration
Light source is much more stable against
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the lamp because fluctuation in voltage will not effect performance of the equipment.
- k) Filters : No Filters are used.


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l) It is microprocessor based and above all based on virtual filter technology which makes it more reliable and maintenance free for future.

m) Sample System : 10mm path length Cuvette based

n) Sample Volume Required : 5 μ L – The minimum known sample volume required,

o) Printer Output Device : In built thermal printer available

p) Power Supply : 12V DC \pm 10%, 50Hz.

q) USB Port : Connectivity to Laptop

r) Weight : 600 gm

s) Dimensions (in mm) : 262 X 120 X 92

t) No pump system required for flow cell which reduces complexity and delicacy in sample reading and sample analysis.

u) ISO Certified, CE marked

1) CENTRIFUGATION UNIT

a) Fixed Angle Rotors : 6 x 1.5 ml

b) Adapter : Adapter for 0.2 ml & 0.5 ml tubes

c) Speed : 6000 RPM

d) Safety Provision : Lid interlocking

e) Slots to keep centrifuge tubes : 8 + adapter of 16

f) Operation : Quick acceleration to full speed.

g) Power Supply : 230V AC \pm 10%, 50Hz.

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h) Dimension (in mm) : Diameter- 131.5 ,Height -128

2) INCUBATION UNIT

a) Temperature Selection : Between 25°C (ambient temperature)
to
45°C.

b) Heating Material : Mica.

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- c) Heating Control : PID Controller
- d) Sensor Calibration : Simple at the user end.
- e) Power supply : 230V AC $\pm 10\%$, 50Hz.
- f) Dimensions : Diameter-155.5 , Height -80 mm
- g) Capacity : 25 samples incubation at one time

3) CUVETTES

Sample Capacity : 2.5ml
Quantity : 100

4) CUVETTE STAND

Carrying Capacity : 25 X 4 cuvettes
Stand Cap : 4, made of plastic
Quantity : 4

5) MICROPIPETTES

- a) Measuring Volume Range : 5-50ul
- b) Measuring Volume Range : 100-1000ul

6) MICRO TIPS

Microtips (sample capacity) : 5-50ul
Quantity : 1000
Macrotips (sample capacity) : 100-1000ul
Quantity : 1000

7) MICRO TIP BOX : 2

- a) Micro Box : 100 insertions
- b) Macro Box : 100 insertions
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8) REAGENTS CONTAINERS

Carrying capacity : 10 Units

9) BLOOD CENTRIFUGE TUBE

Sample capacity : 2ml
Quantity : 500

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10) OVERALL SPECIFICATIONS

- a) Power supply : 230V AC \pm 10%, 50Hz.
- b) Optional Solar Power : 40 watt
- c) Battery POWER BACK-UP : 5- Hours
- d) Dimensions (in mm) : 685 X 470 X 285.
- e) Power circuit is powered by AC supply-120 volt , DC /battery supply - 12 volt and Solar panel as well.

11) PATIENT MANAGEMENT SOFTWARE Version II

Direct data transfer from Analyzer to Laptop and Reports can be generated on organisation letter head and stored on laptop which can be used for future reference.

Operating system: Window XP,7,8

Platform:Java

Database: MS-Access 2007

Driver: PL-2303 USB-to-serial, Processor: Intel Core, DualCore, Core2Duo, Atom, i3, i5.

12) MINI LAPTOP :

ASUS or HP or DELL or Acer : window based

Intel Atom DC/2GB/320 GB/LAN/WI – FI/Bluetooth/Camera/10.1/WIN 7 starter

13)CONNECTIVITY CABLE : 2

USB PORT – Data Cable , Charging Cable.

14) Washing System : made of plastic with 25 nozzles with bottle turner .

To be used in washing 25 cuvettes at one time

15)CASE / MOBILE CARRYING PLATFORM

It is a suitcase comprising of :

1. Unbreakable Top plate : made of imported plastic where other componets of mobile lab(centrifuge, incubator, cuvette stand, reagent stads) are framed.

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2. Bottom plate : made of imported plastic where batteries and power circuit are framed

3. Bags placed in the upper lid of the suitcase to keep consumables.

16) RUCKSACK BAG

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It is a cover bag accommodating Mobile lab having 2 straps so as to carry it on shoulders.

Dimensions : 635 mm x 290 mm x 480mm

17) Open System

Reagents from different sources can be utilized.

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