



नेपाल सरकार

स्वास्थ्य तथा खाद्य स्वच्छता मन्त्रालय

# आयुर्वेद तथा वैकल्पिक चिकित्सा विभाग



पत्रसंख्या: ०८३/८४

चलानी नम्बर:-

मिति: २०८३/०५/०४

## ल्याब उपकरणहरूको दररेट पेश गर्ने सम्बन्धी सूचना।

यस विभागको चालु आ.व. को स्वीकृत वार्षिक कार्यक्रम अनुसार ल्याब उपकरण खरिद सम्बन्धी खरिद कार्य अगाडी बढाउने सन्दर्भमा लागत अनुमान तयार गर्ने प्रयोजनको लागि संलग्न स्पेसिफिकेशन अनुसारको उपकरणहरू के कति दररेटमा उपलब्ध गराउन सकिन्छ मिति २०८३/०५/०८ गते भित्र सो को बजार मूल्य सूचीको Hard copy वा Scan Copy यस विभागको इमेल- [doaa.gov.np@gmail.com](mailto:doaa.gov.np@gmail.com) मार्फत उपलब्ध गराइ दिनु हुन सम्बन्धित सरोकारवालाहरूको जानकारीको लागि यो सूचना प्रकाशित गरिएको छ ।

  
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(गजेन्द्र नाथ शर्मा)  
उपसचिव

“मेरो स्वास्थ्य- मेरो जिम्मेवारी”

फोन नं. : ०१-५३५२५२५, ५३६७४२५, ५३६९९१०, ११  
फ्याक्स: ०१-५३६९९१२

Email: [doaa.gov.np@gmail.com](mailto:doaa.gov.np@gmail.com)  
Website: [www.doaa.gov.np](http://www.doaa.gov.np)

**Ministry of Health And Food Safety**  
**Department of Ayurved and Alternative Medicines**  
**Teku, Kathmandu**

**LIST OF LAB EQUIPMENTS**

| S.N. | EQUIPMENTS NAME                                        | Price Per Unit/Set Nrs<br>(As Per Specifications) | Remarks |
|------|--------------------------------------------------------|---------------------------------------------------|---------|
| 1    | Binocular Microscope                                   |                                                   |         |
| 2    | Semi-automatic biochemistry Analyzer                   |                                                   |         |
| 3    | Electrolyte Analyzer                                   |                                                   |         |
| 4    | Automated Hematology Analyzer (3 Part Differentiation) |                                                   |         |
| 5    | Hot Air Oven                                           |                                                   |         |
| 6    | Incubator                                              |                                                   |         |
| 7    | Water Bath                                             |                                                   |         |
| 8    | Centrifuge (8 tube)                                    |                                                   |         |
| 9    | Autoclave (Laboratory)                                 |                                                   |         |
| 10   | Micropipette (Fixed and variable)                      |                                                   |         |
| 11   | Laboratory Refrigerator                                |                                                   |         |
| 12   | Colorimeter                                            |                                                   |         |
| 13   | Blood Roller (Mixer)                                   |                                                   |         |
| 14   | DC-Counter                                             |                                                   |         |
| 15   | Needle Destroyer                                       |                                                   |         |
| 16   | Fully Automated Bio-Chemistry Analyser                 |                                                   |         |
| 17   | Protein Analyzer                                       |                                                   |         |
| 18   | Hospital Bed (General)                                 |                                                   |         |



# TECHNICAL SPECIFICATIONS OF LAB EQUIPMENTS

## 1 Binocular Microscope

| S.N.     | Technical Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Remarks |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b> | <b>Description of Function</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |
| 1.1      | Compound microscopes consist of two or more than two magnifying lenses. One can view individual cells, even living ones. It has high magnification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |
| <b>2</b> | <b>Operational Requirements</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |
| 2.1      | Binocular compound microscope with illumination system is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |
| <b>3</b> | <b>System Configuration</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |
| 3.1      | Binocular Microscope Compound, complete system with complete accessories.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| <b>4</b> | <b>Technical Specifications</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |
| 4.1      | <b>Body:</b><br>Binocular, sturdy, stable base body with focus adjustment controls.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |
| 4.2      | <b>Eye Piece:</b><br>Paired, high quality, (the image of the object as seen through the binocular eyepiece must be well defined centrally in at least 2/3 field of view), achromatic, wide field, 10x without inbuilt pointer. The eyepiece must be aplanatic and have a minimum field number of 18. Dioptre adjustment must be present on one/ both eye pieces or on the eye piece tube.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |
| 4.3      | <b>Objective:</b> Three objectives 10x, 40x, 100x.<br>10x and 40x objectives must have numerical apertures of 0.25 and 0.65 respectively and must be of spring loaded type or otherwise.<br>100x must have numerical aperture of 1.25 and must be of oil immersion and spring loaded type. Suitable prominent marking must be provided on 100x for easy identification.<br>Unbreakable containers to be provided for storing the objectives. All objectives must be wide field, achromatic and par focal.<br>Marking for the Objectives: Each objective must be engraved with the following information: <ul style="list-style-type: none"> <li>Name of the manufacturer</li> <li>Magnification and numerical aperture, for example, 10x/0.25</li> <li>100x objective must be engraved with the word 'Oil'.</li> </ul> Changing from one objective to another or reintroducing the same objective by rotation of the nosepiece, the object at the centre of the field must not appear displaced by more than 0.02 mm in the object plane in any direction. |         |
| 4.4      | <b>Nose Piece:</b><br>Revolving nose piece to accommodate a minimum of three objectives with click stops. It must be provided with ribbed grip for easy rotation mounted on a precision ball bearing mechanism for smooth and accurate alignment. Extra ports if any must be fitted with dust proof metallic/ebonite caps.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |
| 4.5      | <b>Stage:</b><br>Uniformly horizontal, mechanical stage having dimensions of length 140 mm (+/- 20mm) with fine Vermeer graduations (minimum reading accuracy of 0.1 mm). The stage must be provided with spring loaded slide holder for exact positioning of specimen/slide. It must be designed with convenient sub-stage vertical coaxial adjustment for slide manipulation. The stage must have ball-bearing arrangement to allow smooth travel in transverse directions i.e. 80 mm (+/-5mm) and front to back direction, 50mm (+/-5mm).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |
| 4.6      | <b>Sub-stage Condenser:</b><br>Abbe-type condenser, numerical aperture (N.A.) 1.25 focusable with rack and pinion arrangement incorporating a spherical lens and an iris-diaphragm. The condenser must                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |



|          |                                                                                                                                                                                                                                                                                                                                                                                                                                         |   |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|          | have a filter holder and removable/ swing in/ out blue filter (suitable for bright field Microscopy).                                                                                                                                                                                                                                                                                                                                   |   |
| 4.7      | <b>Sub-stage illuminator:</b><br>The system must have a build-in variable light source (Illuminator). This light source must have a 20 W, 6 V Halogen lamp or equivalent LED. The circuitry for the light source must include a constant voltage supply. The system must be provided with an on-off switch and intensity control. The lamp must be provided with a lamp socket which has the facility for easy replacement of the bulb. |   |
| 4.8      | <b>Power Supply:</b><br>Voltage 220 V, 50 Hz AC. Must have one on-off power switch, 3 core power cord with a 3 point male plug. The system must have an inbuilt protective/ safety device to withstand fluctuations of voltage from 140 V to 280 V.                                                                                                                                                                                     |   |
| 4.9      | The fuse for the halogen lamp must be easily accessible to the operator.                                                                                                                                                                                                                                                                                                                                                                |   |
| 4.10     | A Plano-concave mirror in fork mounting must be supplied which would be attachable to the base for field use (where power is not available).                                                                                                                                                                                                                                                                                            |   |
| 4.11     | The Illuminator must have a build-in field diaphragm for Kohler illumination.                                                                                                                                                                                                                                                                                                                                                           |   |
| 4.12     | <b>Eye Piece Tubes:</b><br>Binocular eye piece tubes, inclined at 45 degrees, rotatable through an angle of 360 degrees, having inter-pupillary distance range of 54-74 mm or wider, covering the above mentioned range.                                                                                                                                                                                                                |   |
| 4.12     | <b>Focusing Knob:</b><br>Co-axial coarse and fine focusing knobs capable of smooth fine focusing movement over the full range of coarse travel. The fine focusing movement must have sensitivity of two microns or less (finer) over the entire coarse focusing stop safety arrangement must be provided.                                                                                                                               |   |
| <b>5</b> | <b>Accessories, spares and consumables</b>                                                                                                                                                                                                                                                                                                                                                                                              |   |
| 5.1      | <b>Accessories:</b> <ul style="list-style-type: none"> <li>• 100x oil immersion objective – 01 no.</li> <li>• Halogen bulb, (6volts, 20w) or equivalent LED – 6 nos.</li> <li>• Fuses – 6 nos.</li> <li>• 25 ml immersion oil bottle – 01 no.</li> <li>• Roll of lens tissue paper – 1 roll</li> <li>• Lens cleaning solution – 100 ml.</li> <li>• Anti-static cleaning brush – 01 no.</li> </ul>                                       | • |
| 5.2      | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).                                                                                                                                     |   |
| <b>6</b> | <b>Operating Environment</b>                                                                                                                                                                                                                                                                                                                                                                                                            |   |
| 6.1      | The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.                                                                                                                                                                                                                                   |   |
| 6.2      | Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.                                                                                                                                                                                                                                                                                                                     |   |
| 6.3      | Suitable voltage corrector/stabilizer shall be supplied.                                                                                                                                                                                                                                                                                                                                                                                |   |
| <b>7</b> | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                                                                                                                                                                |   |
| 7.1      | Must submit ISO13485:2003/AC:2007 for Medical Devices <b>AND</b>                                                                                                                                                                                                                                                                                                                                                                        |   |
| 7.2      | CE or USFDA approved product certificate.                                                                                                                                                                                                                                                                                                                                                                                               |   |
| <b>8</b> | <b>User Training</b>                                                                                                                                                                                                                                                                                                                                                                                                                    |   |
| 8.1      | Must provide user training (including how to use and maintain the equipment).                                                                                                                                                                                                                                                                                                                                                           |   |

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| <b>9</b>  | <b>Warranty</b>                                                                                                                                                                                               |  |
| 9.1       | Comprehensive warranty for 2 years after acceptance.                                                                                                                                                          |  |
| <b>10</b> | <b>Maintenance Service During Warranty Period</b>                                                                                                                                                             |  |
| 10.1      | During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.                                                                                                           |  |
| <b>11</b> | <b>Installation and Commissioning</b>                                                                                                                                                                         |  |
| 11.1      | The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail. |  |
| <b>12</b> | <b>Documentation</b>                                                                                                                                                                                          |  |
| 12.1      | User (Operating) manual in English.                                                                                                                                                                           |  |
| 12.2      | Service (Technical / Maintenance) manual in English.                                                                                                                                                          |  |

## 2 Semi-automatic biochemistry Analyzer

| S.N.       | Technical Specifications                                                                                                                                                                                           | Remarks |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b>   | <b>Description of Function</b>                                                                                                                                                                                     |         |
| 1.1        | The Semi-automated Bio-chemistry Analyzer measures biochemical indexes by analyzing blood and other body fluid, then combines with other clinical information, to help diagnose disease, evaluate organs function. |         |
| <b>2</b>   | <b>Operational Requirements</b>                                                                                                                                                                                    |         |
| 2.1        | Semi-automated Chemistry Analyser with built in software for the calculation and curve plotting. It must accept all types of curve fits like log-linear, Exponential, point to point.                              |         |
| <b>3</b>   | <b>System Configuration</b>                                                                                                                                                                                        |         |
| 3.1        | Semi-automated chemistry Analyser within built data processor & touch LCD/LED display, inbuilt thermal printer and RS 232 serial port for bidirectional communication or USB etc.                                  |         |
| <b>4</b>   | <b>Technical Specifications</b>                                                                                                                                                                                    |         |
| 4.1        | Light Source : Halogen Lamp or LED                                                                                                                                                                                 |         |
| 4.2        | Must have big touch screen of at least 7" for user friendly operation                                                                                                                                              |         |
| 4.3        | Wavelength Range: Automatic selection by at least 7 position filter wheel ranging 340 - 630 nm.                                                                                                                    |         |
| 4.4        | Photometric Range: 0 to 3.0 Absorbance.                                                                                                                                                                            |         |
| <b>4.5</b> | <b>Calculation Modes:</b>                                                                                                                                                                                          |         |
| <b>a</b>   | Absorbance/concentration                                                                                                                                                                                           |         |
| <b>b</b>   | End point with factor and standard.                                                                                                                                                                                |         |
| <b>c</b>   | Fixed time with factor and standard.                                                                                                                                                                               |         |
| <b>d</b>   | Kinetic mode with factor and standard.                                                                                                                                                                             |         |
| 4.6        | Aspiration system: Programmable sipping volume from 300-500 µl                                                                                                                                                     |         |
| 4.7        | High/Low flags must be available at the time of reporting                                                                                                                                                          |         |
| 4.8        | Flow Cell of 32µl quartz                                                                                                                                                                                           |         |
| 4.9        | Must be able to program at least 50 parameters                                                                                                                                                                     |         |
| 4.10       | Temperature control by Peltier element                                                                                                                                                                             |         |
| <b>5</b>   | <b>Accessories, spares and consumables</b>                                                                                                                                                                         |         |



|             |                                                                                                                                                                                                                                                                                                     |  |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|             | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above). |  |
| <b>6</b>    | <b>Operating Environment</b>                                                                                                                                                                                                                                                                        |  |
| <b>6.1</b>  | The system offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.                                                                                                |  |
| <b>6.2</b>  | Power supply: 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.                                                                                                                                                                                 |  |
| <b>7</b>    | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                            |  |
| <b>7.1</b>  | Must submit ISO9001 or ISO13485 for Medical Devices <b>AND</b>                                                                                                                                                                                                                                      |  |
| <b>7.2</b>  | Shall comply with CE (2017/746 IVDR) or USFDA approved product certificate.                                                                                                                                                                                                                         |  |
| <b>7.3</b>  | Shall comply with IEC 61010-1 Safety requirements for electrical equipment for measurement, control, and laboratory use Part 2-101: Particular requirements for in-vitro diagnostic (IVD) medical equipment                                                                                         |  |
| <b>8</b>    | <b>Installation and Commissioning &amp; User Training</b>                                                                                                                                                                                                                                           |  |
| <b>8.1</b>  | Supplier must accomplish proper installation and commissioning of the equipment onsite.                                                                                                                                                                                                             |  |
| <b>8.2</b>  | Must provide user training (including how to use and maintain the equipment)                                                                                                                                                                                                                        |  |
| <b>9</b>    | <b>Warranty &amp; Maintenance Service During Warranty Period</b>                                                                                                                                                                                                                                    |  |
| <b>9.1</b>  | Comprehensive warranty for 1 year after installation                                                                                                                                                                                                                                                |  |
| <b>9.2</b>  | During warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required                                                                                                                                                                           |  |
| <b>10</b>   | <b>Authorization</b>                                                                                                                                                                                                                                                                                |  |
| <b>10.1</b> | Manufacturer's Authorization is required                                                                                                                                                                                                                                                            |  |
| <b>11</b>   | <b>Documentation</b>                                                                                                                                                                                                                                                                                |  |
| <b>11.1</b> | User (Operating) manual in English                                                                                                                                                                                                                                                                  |  |
| <b>11.2</b> | Service (Technical / Maintenance) manual in English                                                                                                                                                                                                                                                 |  |
| <b>11.3</b> | List of important spare parts, consumables with its costing is required                                                                                                                                                                                                                             |  |
| <b>11.4</b> | Certificate of calibration and inspection from factory.                                                                                                                                                                                                                                             |  |

### 3 Electrolyte Analyzer

| S.N.       | Technical Specifications                                                                                | Remarks |
|------------|---------------------------------------------------------------------------------------------------------|---------|
| <b>1</b>   | <b>Description of Function</b>                                                                          |         |
| <b>1.1</b> | Electrolyte analyzer is used to measure various types of ion concentration in Human blood.              |         |
| <b>2</b>   | <b>Operational Requirements</b>                                                                         |         |
| <b>2.1</b> | Automatic Electrolyte analyzer that measures Na, K and Cl.                                              |         |
| <b>3</b>   | <b>System Configuration</b>                                                                             |         |
| <b>3.1</b> | Electrolyte analyzer, complete unit with all standard accessories.                                      |         |
| <b>4</b>   | <b>Technical Specifications</b>                                                                         |         |
| <b>4.1</b> | Measurement Principle: Electrolyte analyzer based on advanced ion selective electrode (ISE) technology. |         |
| <b>4.2</b> | Sample volume: maximum of 150 $\mu$ L.                                                                  |         |
| <b>4.3</b> | Throughput (approx.): Minimum of 60 samples per hour.                                                   |         |



|      |                                                                                                                                                                                                               |  |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 4.4  | Calibration: 1 or 2 point calibration                                                                                                                                                                         |  |
| 4.5  | Sampling type: Whole blood, serum, plasma and urine.                                                                                                                                                          |  |
| 4.6  | Should have user friendly software with LCD touch screen or Display with keypad. Only Yes/No button is not acceptable.                                                                                        |  |
| 4.7  | Should have incorporated printer and RS232 serial port.                                                                                                                                                       |  |
| 4.8  | It should use closed package reagent with waste bag.                                                                                                                                                          |  |
| 4.9  | Should have long life electrode and self-life of electrode is extended to maximum with activation.                                                                                                            |  |
| 5    | <b>Measuring range/ Resolution</b>                                                                                                                                                                            |  |
| 5.1  | K+: 1.5-10 mmol/L, Resolution 0.01mmol/L                                                                                                                                                                      |  |
| 5.2  | Na+: 60-200 mmol/L, Resolution 0.1 mmol/L                                                                                                                                                                     |  |
| 5.3  | Cl-: 60-200 mmol/L, Resolution 0.01mmol/L                                                                                                                                                                     |  |
| 6    | <b>Reproducibility (CV approx.):</b>                                                                                                                                                                          |  |
| 6.1  | K+: $\leq 2\%$                                                                                                                                                                                                |  |
| 6.2  | Na+: $\leq 1.5\%$                                                                                                                                                                                             |  |
| 6.3  | Cl-: $\leq 2\%$                                                                                                                                                                                               |  |
| 6.4  | On board memory for approx. 120 tests records.                                                                                                                                                                |  |
| 6.5  | Calibration mode: should have automatic and manual calibration provision.                                                                                                                                     |  |
| 7    | <b>Accessories, spares and consumables</b>                                                                                                                                                                    |  |
| 7.1  | All standard accessories, consumables and parts required to operate the equipment.                                                                                                                            |  |
| 8    | <b>Operating Environment</b>                                                                                                                                                                                  |  |
| 8.1  | The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.         |  |
| 8.2  | Power supply: 220 - 240 VAC, 50Hz                                                                                                                                                                             |  |
| 9    | <b>Standards and Safety Requirements</b>                                                                                                                                                                      |  |
| 9.1  | Must submit ISO13485:2003/AC:2007 for Medical Devices <b>AND</b>                                                                                                                                              |  |
| 9.2  | Must Submit European CE (93/42 EEC Directives)/ CE-IVDR AND USFDA approved certificate.                                                                                                                       |  |
| 10   | <b>User Training</b>                                                                                                                                                                                          |  |
| 10.1 | Must provide user training (including how to use and maintain the equipment).                                                                                                                                 |  |
| 11   | <b>Warranty</b>                                                                                                                                                                                               |  |
| 11.1 | Comprehensive warranty for 2 years.                                                                                                                                                                           |  |
| 12   | <b>Maintenance Service During Warranty Period</b>                                                                                                                                                             |  |
| 12.1 | During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.                                                                                                           |  |
| 13   | <b>Installation and Commissioning</b>                                                                                                                                                                         |  |
| 13.1 | The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail. |  |
| 14   | <b>Documentation</b>                                                                                                                                                                                          |  |
| 14.1 | User (Operating) manual in English.                                                                                                                                                                           |  |
| 14.2 | Service (Technical / Maintenance) manual in English.                                                                                                                                                          |  |
| 14.3 | Certificate of calibration and inspection from factory.                                                                                                                                                       |  |

#### 4 Automated Hematology Analyzer (3 Part Differentiation)

| S.N. | Technical Specifications                 | Remarks |
|------|------------------------------------------|---------|
|      | Hematology Analyser, 3 part differential |         |
|      | Manufacturer                             |         |

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|           |                                                                                                                                                                                                                                                                                                     |  |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|           | Brand                                                                                                                                                                                                                                                                                               |  |
|           | Type / Model                                                                                                                                                                                                                                                                                        |  |
|           | Country of Origin                                                                                                                                                                                                                                                                                   |  |
| <b>1</b>  | <b>Description of Function</b>                                                                                                                                                                                                                                                                      |  |
| 1.1.      | Automated hematology analyzer used for determination of a range of parameters in blood analysis.                                                                                                                                                                                                    |  |
| <b>2</b>  | <b>Operational Requirements</b>                                                                                                                                                                                                                                                                     |  |
| 2.1.      | Automatic blood cell counter that measures minimum 18 parameters including 3-part differential of WBC is required                                                                                                                                                                                   |  |
| <b>3</b>  | <b>System Configuration</b>                                                                                                                                                                                                                                                                         |  |
| 3.1       | Hematology Analyser, 18 parameter, complete unit with all standard reagents, consumables and accessories.                                                                                                                                                                                           |  |
| <b>4.</b> | <b>Technical Specifications</b>                                                                                                                                                                                                                                                                     |  |
| 4.1.      | Measurement principal: electrical impedance method for WBC, WBC Diff, RBC, MCV, PLT and Cyanide Free Colorimetric method for HGB                                                                                                                                                                    |  |
| 4.2.      | Sample size: Approx. 10ul.                                                                                                                                                                                                                                                                          |  |
| 4.3.      | Throughput: 60 samples per hour or more.                                                                                                                                                                                                                                                            |  |
| 4.4.      | Determination: WBC, RBC, HGB HCT, MCV, MCH, MCHC, RDW-CV, RDW-SD, PLT, MPV, PCT PDW -CY, PDW-SD, P-LCR, P-LCC, LYM#, LYM%, MID #, MID%, Gran# and Gran %<br>3 Histograms of WBC, RBC & PLT                                                                                                          |  |
| 4.5.      | Dual counting chamber: WBC~Chamber 100um and RBC/PLT~70um                                                                                                                                                                                                                                           |  |
| 4.6.      | Accuracy & Precision (CV) : WBC $\leq 2.0\%$ , RBC $\leq 1.5\%$ , HGB $\leq 1.5\%$ , MCV $< 0.5\%$ , PLT $\leq 4\%$                                                                                                                                                                                 |  |
| 4.7.      | Calibration: Manual and Automatic modes.                                                                                                                                                                                                                                                            |  |
| 4.8       | Linearity Range for Measured Parameter<br>WBC: 0 to 300 x 10 <sup>3</sup> /L<br>RBC: 0 to 8.0 x 10 <sup>6</sup> /L<br>HGB: 0 to 25g/dl<br>PLT: 0 to 3000 x 10 <sup>3</sup> /L<br>HCT: 0 to 65%                                                                                                      |  |
| 4.9       | Shall have self-test capability and Automatic Flushing System to remove blockage.                                                                                                                                                                                                                   |  |
| 4.10      | Display: LCD type of 8" or more screen with facility of assistance messages and error                                                                                                                                                                                                               |  |
| 4.11      | Shall have self-test facility of sample ID, date and time are reported with test results                                                                                                                                                                                                            |  |
| 4.12      | Shall have printing facility through inbuilt thermal printer, paper width of 55mm or more and Various printout formats                                                                                                                                                                              |  |
| 4.13      | Shall have built-in RS232, USB 2.0 or equivalent port for allowing data transfer.                                                                                                                                                                                                                   |  |
| <b>5.</b> | <b>Accessories, spares and consumables</b>                                                                                                                                                                                                                                                          |  |
| 5.1       | All standards accessories, consumables and parts required to operate the equipment, including all standard tools and clearing and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above) |  |
| <b>6.</b> | <b>Operating Environment</b>                                                                                                                                                                                                                                                                        |  |
| 6.1.      | The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.                                                                                               |  |
| 6.2       | Power supply: 220-240V AC, 50Hz fitted with appropriate plug type D (3 pins). The power cable must be minimum 3 meters long.                                                                                                                                                                        |  |
| <b>7.</b> | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                            |  |
| 7.1.      | Must submit ISO13485:2003/AC: 2007 for Medical Devices AND                                                                                                                                                                                                                                          |  |
| 7.2       | CE (93/42 EEC Directives) and USFDA approved product certificate.                                                                                                                                                                                                                                   |  |
| 7.3.      | Shall meet IEC 61010-2-081 safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-081: Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes.                                                   |  |
| <b>8.</b> | <b>User Training</b>                                                                                                                                                                                                                                                                                |  |
| 8.1.      | Must provide user training (including how to use and maintain the equipment).                                                                                                                                                                                                                       |  |
| <b>9.</b> | <b>Warranty</b>                                                                                                                                                                                                                                                                                     |  |



|            |                                                                                                                                                                                                               |  |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 9.1.       | Comprehensive warranty for 2 years from date of installation.                                                                                                                                                 |  |
| 9.2.       | After warranty period, supplier should supply spare parts for minimum 5 years. (10 be declared with a letter of commitment in the name of purchaser)                                                          |  |
| <b>10.</b> | <b>Maintenance Service During Warranty Period</b>                                                                                                                                                             |  |
| 10.1       | During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.                                                                                |  |
| <b>11.</b> | <b>Installation and Commissioning</b>                                                                                                                                                                         |  |
| 11.1       | The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail. |  |
| <b>12.</b> | <b>Documentation</b>                                                                                                                                                                                          |  |
| 12.1       | User (Operating) manual in English.                                                                                                                                                                           |  |
| 12.2       | Service (Technical / Maintenance) manual in English.                                                                                                                                                          |  |
| 12.3       | Certificate of calibration and inspection, from factory.                                                                                                                                                      |  |

## 5 Hot Air Oven

| S.N.     | Technical Specifications                                                                                                                                                                                                         | Remarks |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b> | <b>Description of Function</b>                                                                                                                                                                                                   |         |
| 1.1      | Hot Air Oven is required for heating a sample under controlled conditions.                                                                                                                                                       |         |
| <b>2</b> | <b>Operational Requirements</b>                                                                                                                                                                                                  |         |
| 2.1      | Hot air oven for heating sample under controlled condition                                                                                                                                                                       |         |
| <b>3</b> | <b>System Configuration</b>                                                                                                                                                                                                      |         |
| 3.1      | Hot Air Oven (Small) with complete accessories                                                                                                                                                                                   |         |
| <b>4</b> | <b>Technical Specifications</b>                                                                                                                                                                                                  |         |
| 4.1      | Must be made of double walled chamber, Stainless Steel SS 304 grade. The bidder must demonstrate the quality of the construction materials, and if any deviations are found, rather than being asked for, they will be rejected. |         |
| 4.2      | Must have Digital PID temperature controller with timer and alarms.                                                                                                                                                              |         |
| 4.3      | 4.3 Door gaskets shall be made of Silicon.                                                                                                                                                                                       |         |
| 4.4      | 4.4 Glass window in-built into the door for easy viewing of samples                                                                                                                                                              |         |
| 4.5      | 4.5 Shall have variable microprocessor based digital temperature controller with digital display.                                                                                                                                |         |
| 4.6      | Capacity: greater or equal 30 Ltr                                                                                                                                                                                                |         |
| 4.7      | Shall have provision of air ventilations.                                                                                                                                                                                        |         |
| 4.8      | Temperature variation +/- 1 °C                                                                                                                                                                                                   |         |
| 4.9      | Temperature Range: Ambient to 150 °C or better                                                                                                                                                                                   |         |
| <b>5</b> | <b>Accessories, spares and consumables</b>                                                                                                                                                                                       |         |
| 5.1      | <b>Accessories:</b>                                                                                                                                                                                                              |         |
| 5.2      | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.                                             |         |
| <b>6</b> | <b>Operating Environment</b>                                                                                                                                                                                                     |         |
| 6.1      | The system offered must be designed to store and be operated normally under the condition of the purchaser's Country. The conditions include Power supply, Climate, temperature and relative humidity.                           |         |
| 6.2      | Power supply: 220-240V/ 50 Hz AC Single phase fitted with appropriate plugs. The power cable must be at least 3 metres long.                                                                                                     |         |
| <b>7</b> | <b>Standards and Safety Requirements</b>                                                                                                                                                                                         |         |
| 7.1      | Must submit ISO9001 or ISO13485 certificates                                                                                                                                                                                     |         |



|           |                                                                                                          |  |
|-----------|----------------------------------------------------------------------------------------------------------|--|
| 7.2       | Shall comply with EC Directives or Low Voltage Directive EN 61010 or USFDA approved product certificate. |  |
| 7.1       | Must submit ISO9001 or ISO13485 certificates                                                             |  |
| 8.1       | Comprehensive warranty for 1 year after acceptance.                                                      |  |
| <b>9</b>  | <b>Authorization</b>                                                                                     |  |
| 9.1       | Manufacturer's authorization is required                                                                 |  |
| <b>10</b> | <b>Installation and Commissioning &amp; User Training</b>                                                |  |
| 10.1      | Supplier must accomplish proper commissioning of equipment onsite.                                       |  |
| <b>11</b> | <b>Documentation</b>                                                                                     |  |
| 11.1      | User (Operating) manual in English.                                                                      |  |
| 11.2      | Certificate of calibration and inspection from factory.                                                  |  |

## 6 Incubator

| S.N.     | Technical Specifications                                                                                                                                                                               | Remarks |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b> | <b>Description of Function</b>                                                                                                                                                                         |         |
| 1.1      | Incubator is required for maintaining a controlled temperature conditions for different samples                                                                                                        |         |
| <b>2</b> | <b>Operational Requirements</b>                                                                                                                                                                        |         |
| 2.1      | Incubator for controlled temperature storage                                                                                                                                                           |         |
| <b>3</b> | <b>System Configuration</b>                                                                                                                                                                            |         |
| 3.1      | Incubator (Small) with complete accessories                                                                                                                                                            |         |
| <b>4</b> | <b>Technical Specifications</b>                                                                                                                                                                        |         |
| 4.1      | Must be made of double walled chamber.                                                                                                                                                                 |         |
| 4.2      | Must provide with three heating elements on three sides of the equipment for uniform temperature on all shelves.                                                                                       |         |
| 4.3      | Door gaskets shall be made of Silicon.                                                                                                                                                                 |         |
| 4.4      | Must have a minimum chamber size of 300mm (L) x 300mm (B) x 300mm (H) with 2 stainless steel perforated trays.                                                                                         |         |
| 4.5      | Shall have provision of air ventilations.                                                                                                                                                              |         |
| 4.6      | Temperature variation +/- 1 °C                                                                                                                                                                         |         |
| 4.8      | Temperature Range: Ambient to 37°C.                                                                                                                                                                    |         |
| <b>5</b> | <b>Accessories, spares and consumables</b>                                                                                                                                                             |         |
| 5.1      | <b>Accessories:</b>                                                                                                                                                                                    |         |
| 5.2      | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.                   |         |
| <b>6</b> | <b>Operating Environment</b>                                                                                                                                                                           |         |
| 6.1      | The system offered must be designed to store and be operated normally under the condition of the purchaser's Country. The conditions include Power supply, Climate, temperature and relative humidity. |         |
| 6.2      | Power supply: 220-240V/ 50 Hz AC Single phase fitted with appropriate plugs. The power cable must be at least 3 metres long.                                                                           |         |
| <b>7</b> | <b>Standards and Safety Requirements</b>                                                                                                                                                               |         |
| 7.1      | Must submit ISO9001 or ISO13485 certificates                                                                                                                                                           |         |
| 7.2      | Shall comply with EC Directives or Low Voltage Directive EN 61010 or USFDA approved product certificate.                                                                                               |         |
| <b>8</b> | <b>Warranty &amp; Maintenance Service During Warranty Period</b>                                                                                                                                       |         |



|           |                                                                    |  |
|-----------|--------------------------------------------------------------------|--|
| 8.1       | Comprehensive warranty for 1 year after acceptance.                |  |
| <b>9</b>  | <b>Authorization</b>                                               |  |
| 9.1       | Manufacturer's authorization is required                           |  |
| <b>10</b> | <b>Installation and Commissioning &amp; User Training</b>          |  |
| 10.1      | Supplier must accomplish proper commissioning of equipment onsite. |  |
| <b>11</b> | <b>Documentation</b>                                               |  |
| 11.1      | User (Operating) manual in English.                                |  |
| 11.2      | Certificate of calibration and inspection from factory.            |  |

## 7 Water Bath

| S.N.      | Technical Specifications                                                                                                                                                                                                                                                                            | Remarks |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b>  | <b>Description of Function</b>                                                                                                                                                                                                                                                                      |         |
| 1.1       | Water bath maintains a constant pre-set temperature for treating samples.                                                                                                                                                                                                                           |         |
| <b>2</b>  | <b>Operational Requirements</b>                                                                                                                                                                                                                                                                     |         |
| 2.1       | General purpose water bath is required.                                                                                                                                                                                                                                                             |         |
| <b>3</b>  | <b>System Configuration</b>                                                                                                                                                                                                                                                                         |         |
| 3.1       | Water Bath, complete unit with all standard accessories.                                                                                                                                                                                                                                            |         |
| <b>4</b>  | <b>Technical Specifications</b>                                                                                                                                                                                                                                                                     |         |
| 4.1       | Material: Inner and outer jacket made up stainless steel of approximately 1mm thickness.                                                                                                                                                                                                            |         |
| 4.2       | Capacity: 20 L or more                                                                                                                                                                                                                                                                              |         |
| 4.3       | Microprocessor controlled programmable, digital display for temperature etc.                                                                                                                                                                                                                        |         |
| 4.4       | Temp. Range: 30°C to 70°C accuracy +/- 1 °C.                                                                                                                                                                                                                                                        |         |
| 4.5       | Tube Holders: Must provide sample tube holder of 5 to 10ml size.                                                                                                                                                                                                                                    |         |
| <b>5</b>  | <b>Accessories, spares and consumables</b>                                                                                                                                                                                                                                                          |         |
| 5.1       | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above). |         |
| <b>6</b>  | <b>Operating Environment</b>                                                                                                                                                                                                                                                                        |         |
| 6.1       | The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.                                                                                               |         |
| 6.2       | Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.                                                                                                                                                                                 |         |
| <b>7</b>  | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                            |         |
| 7.1       | Must submit ISO13485:2003/AC:2007 for Medical Devices <b>AND</b>                                                                                                                                                                                                                                    |         |
| 7.2       | CE (EEC Directives) or USFDA approved product certificate.                                                                                                                                                                                                                                          |         |
| 7.3       | Shall meet IEC 61010-1 safety requirements for electrical equipment for measurement, control, and laboratory use.                                                                                                                                                                                   |         |
| <b>8</b>  | <b>User Training</b>                                                                                                                                                                                                                                                                                |         |
| 8.1       | Must provide user training (including how to use and maintain the equipment).                                                                                                                                                                                                                       |         |
| <b>9</b>  | <b>Warranty</b>                                                                                                                                                                                                                                                                                     |         |
| 9.1       | Comprehensive warranty for 2 years after acceptance.                                                                                                                                                                                                                                                |         |
| <b>10</b> | <b>Maintenance Service During Warranty Period</b>                                                                                                                                                                                                                                                   |         |
| 10.1      | During the warranty period supplier must ensure corrective/breakdown maintenance whenever required.                                                                                                                                                                                                 |         |
| <b>11</b> | <b>Installation and Commissioning</b>                                                                                                                                                                                                                                                               |         |
| 11.1      | Supplier must accomplish proper commissioning of equipment onsite.                                                                                                                                                                                                                                  |         |
| <b>12</b> | <b>Documentation</b>                                                                                                                                                                                                                                                                                |         |
| 12.1      | User (Operating) manual in English.                                                                                                                                                                                                                                                                 |         |
| 12.2      | Service (Technical / Maintenance) manual in English.                                                                                                                                                                                                                                                |         |
| 12.3      | List of important spare parts and accessories with their part numbers and costing.                                                                                                                                                                                                                  |         |
| 12.4      | Certificate of calibration and inspection from factory.                                                                                                                                                                                                                                             |         |

*[Handwritten signature]*



## 8 Centrifuge (8 tube)

| S.N.      | Technical Specifications                                                                                                                                                                                                                                                                            | Remarks |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b>  | <b>Description of Function</b>                                                                                                                                                                                                                                                                      |         |
| 1.1       | Centrifuges are required in the Laboratory to separate various components of Blood and any other liquid sample for analysis                                                                                                                                                                         |         |
| <b>2</b>  | <b>Operational Requirements</b>                                                                                                                                                                                                                                                                     |         |
| 2.1       | Clinical electrical centrifuge to be used at blood transfusion centres for routine centrifuging tests. The units must be fitted with resiliently mounted motor for vibration free performance.                                                                                                      |         |
| <b>3</b>  | <b>System Configuration</b>                                                                                                                                                                                                                                                                         |         |
| 3.1       | Centrifuge – Desktop 8 tubes 10-15 ml                                                                                                                                                                                                                                                               |         |
| <b>4</b>  | <b>Technical Specifications</b>                                                                                                                                                                                                                                                                     |         |
| 4.1       | Facilities, adaptors and accessories for 8 tubes of 10-15 ml                                                                                                                                                                                                                                        |         |
| 4.2       | Speed 1000-3500 RPM; Max. RCF 1600 g                                                                                                                                                                                                                                                                |         |
| 4.3       | Quiet operation and low vibration                                                                                                                                                                                                                                                                   |         |
| 4.4       | Speed regulator plus lid lock                                                                                                                                                                                                                                                                       |         |
| 4.5       | Power switch ON/OFF, and speed regulator                                                                                                                                                                                                                                                            |         |
| 4.6       | Suitable to work on 220-240 Volts, single phase 50-60 Hz AC supply; minimum of 3 meters mains cable with earth provision (three pin plug fitted)                                                                                                                                                    |         |
| <b>5</b>  | <b>Accessories, spares and consumables</b>                                                                                                                                                                                                                                                          |         |
| 5.1       | <b>Accessories:</b>                                                                                                                                                                                                                                                                                 |         |
| 5.2       | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above). |         |
| <b>6</b>  | <b>Operating Environment</b>                                                                                                                                                                                                                                                                        |         |
| 6.1       | The system offered shall be designed to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.                                                                                                                 |         |
| 6.2       | Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.                                                                                                                                                                                 |         |
| <b>7</b>  | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                            |         |
| 7.1       | Must submit ISO9001 or ISO13485 certificates                                                                                                                                                                                                                                                        |         |
| 7.2       | Shall comply with CE Directives or Low Voltage Directive EN 61010 or USFDA approved product certificate.                                                                                                                                                                                            |         |
| <b>8</b>  | <b>Warranty &amp; Maintenance Service During Warranty Period</b>                                                                                                                                                                                                                                    |         |
| 8.1       | Comprehensive warranty for 1 year after acceptance.                                                                                                                                                                                                                                                 |         |
| <b>9</b>  | <b>Authorization</b>                                                                                                                                                                                                                                                                                |         |
| 9.1       | Manufacturer's authorization is required                                                                                                                                                                                                                                                            |         |
| <b>10</b> | <b>Installation and Commissioning &amp; User Training</b>                                                                                                                                                                                                                                           |         |
| 10.1      | Supplier must accomplish proper commissioning of equipment onsite.                                                                                                                                                                                                                                  |         |
| <b>11</b> | <b>Documentation</b>                                                                                                                                                                                                                                                                                |         |
| 11.1      | User (Operating) manual in English.                                                                                                                                                                                                                                                                 |         |
| 11.2      | Certificate of calibration and inspection from factory.                                                                                                                                                                                                                                             |         |



## 9 Autoclave (Laboratory)

| S.N.      | Technical Specifications                                                                                                                                                                                                                                                                             | Remarks |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b>  | <b>Technical Specification</b>                                                                                                                                                                                                                                                                       |         |
| 1.1       | Autoclave used to sterilize laboratory equipment & accessories in the laboratory.                                                                                                                                                                                                                    |         |
| 1.2       | It should be heated electrically.                                                                                                                                                                                                                                                                    |         |
| 1.3       | Pressure range up to 30psi                                                                                                                                                                                                                                                                           |         |
| 1.4       | Sterilization temperature need to be between 121°C to 134°C                                                                                                                                                                                                                                          |         |
| 1.5       | Made of stainless steel                                                                                                                                                                                                                                                                              |         |
| 1.6       | Capacity: Approx. 20 Ltr.                                                                                                                                                                                                                                                                            |         |
| 1.7       | It should have safety valve, steam release valve and vacuum release valve.                                                                                                                                                                                                                           |         |
| <b>2</b>  | <b>Accessories</b>                                                                                                                                                                                                                                                                                   |         |
| 2.1       | All standard accessories, consumables, and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above). |         |
| <b>3</b>  | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                             |         |
| 3.1       | Must submit ISO9001 or ISO13485 certificates                                                                                                                                                                                                                                                         |         |
| 3.2       | Shall comply with CE Directives or Low Voltage Directive EN 61010 or USFDA approved product certificate.                                                                                                                                                                                             |         |
| <b>4</b>  | <b>Warranty &amp; Maintenance Service During Warranty Period</b>                                                                                                                                                                                                                                     |         |
| 4.1       | Comprehensive warranty for 1 year after acceptance.                                                                                                                                                                                                                                                  |         |
| 4.2       | <b>Authorization</b>                                                                                                                                                                                                                                                                                 |         |
| 5         | Manufacturer's authorization is required                                                                                                                                                                                                                                                             |         |
| 5.1       | <b>Installation and Commissioning &amp; User Training</b>                                                                                                                                                                                                                                            |         |
| 6         | Supplier must accomplish proper commissioning of equipment onsite.                                                                                                                                                                                                                                   |         |
| 6.1       | <b>Documentation</b>                                                                                                                                                                                                                                                                                 |         |
| 7         | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                             |         |
| 7.1       | Must submit ISO9001 or ISO13485 certificates                                                                                                                                                                                                                                                         |         |
| 7.2       | Shall comply with CE Directives or Low Voltage Directive EN 61010 or USFDA approved product certificate.                                                                                                                                                                                             |         |
| <b>8</b>  | <b>Warranty &amp; Maintenance Service During Warranty Period</b>                                                                                                                                                                                                                                     |         |
| 8.1       | Comprehensive warranty for 1 year after acceptance.                                                                                                                                                                                                                                                  |         |
| <b>9</b>  | <b>Authorization</b>                                                                                                                                                                                                                                                                                 |         |
| 9.1       | Manufacturer's authorization is required                                                                                                                                                                                                                                                             |         |
| <b>10</b> | <b>Installation and Commissioning &amp; User Training</b>                                                                                                                                                                                                                                            |         |
| 10.1      | Supplier must accomplish proper commissioning of equipment onsite.                                                                                                                                                                                                                                   |         |
| <b>11</b> | <b>Documentation</b>                                                                                                                                                                                                                                                                                 |         |
| 11.1      | User (Operating) manual in English.                                                                                                                                                                                                                                                                  |         |
| 11.2      | Certificate of calibration and inspection from factory.                                                                                                                                                                                                                                              |         |

## 10 Micropipette (Fixed and variable)

| S.N.     | Technical Specifications                                                                                                                  | Remarks |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b> | <b>Description of Function</b>                                                                                                            |         |
| 1.1      | Micropipettes are micro tools constructed from glass or anti corrosive material tubing for microinjection and micromanipulation purposes. |         |



|           |                                                                                                                                                                                        |  |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>2</b>  | <b>Operational Requirements</b>                                                                                                                                                        |  |
| 2.1       | Required in various sizes and compatible with all brands of tips.                                                                                                                      |  |
| <b>3</b>  | <b>System Configuration</b>                                                                                                                                                            |  |
| 3.1       | Fixed and variable type micropipette combined as a set with all standard accessories.                                                                                                  |  |
| <b>4</b>  | <b>Technical Specifications</b>                                                                                                                                                        |  |
| 4.1       | Micropipettes required in following sizes: Fixed type : 10 µl, 20 µl, and 1000µl<br>Variable Type : (10 – 100 µl) and (100 – 1000 µl)                                                  |  |
| 4.2       | Suitable for all brands of tips.                                                                                                                                                       |  |
| 4.3       | Offer high accuracy and precision.                                                                                                                                                     |  |
| 4.4       | With tip ejector mechanism.                                                                                                                                                            |  |
| 4.5       | Made of corrosion proof material.                                                                                                                                                      |  |
| 4.6       | Fully autoclaveable at 121 °C.                                                                                                                                                         |  |
| <b>5</b>  | <b>Accessories, spares and consumables</b>                                                                                                                                             |  |
| 5.1       | - Pipette stand (any type)                                                                                                                                                             |  |
| 5.2       | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer.   |  |
| <b>6</b>  | <b>Operating Environment</b>                                                                                                                                                           |  |
| 6.1       | The system offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Climate, Temperature, Humidity, etc. |  |
| <b>7</b>  | <b>Standards and Safety Requirements</b>                                                                                                                                               |  |
| 7.1       | Must submit ISO9001 or ISO13485 certificates                                                                                                                                           |  |
| 7.2       | Shall comply with CE Directives or Low Voltage Directive EN 61010 or USFDA approved product certificate.                                                                               |  |
| <b>8</b>  | <b>Warranty &amp; Maintenance Service During Warranty Period</b>                                                                                                                       |  |
| 8.1       | Comprehensive warranty for 1 year after acceptance.                                                                                                                                    |  |
| <b>9</b>  | <b>Authorization</b>                                                                                                                                                                   |  |
| 9.1       | Manufacturer's authorization is required                                                                                                                                               |  |
| <b>10</b> | <b>Installation and Commissioning &amp; User Training</b>                                                                                                                              |  |
| 10.1      | Supplier must accomplish proper commissioning of equipment onsite.                                                                                                                     |  |
| <b>11</b> | <b>Documentation</b>                                                                                                                                                                   |  |
| 11.1      | User (Operating) manual in English.                                                                                                                                                    |  |
| 11.2      | Certificate of calibration and inspection from factory.                                                                                                                                |  |

## 11 Laboratory Refrigerator

| S.N.     | Technical Specifications                                                                                                        | Remarks |
|----------|---------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b> | <b>Description of Function</b>                                                                                                  |         |
| 1.1      | Laboratory Refrigerator is used to store samples, medicines, blood bags, reagents etc. under controlled temperature conditions. |         |
| <b>2</b> | <b>Operational Requirements</b>                                                                                                 |         |
| 2.1      | Showcase type refrigerator which maintains the temperature of 2 – 8 °C continuously while in operation                          |         |
| <b>3</b> | <b>System Configuration</b>                                                                                                     |         |
| 3.1      | Showcase type laboratory refrigerator                                                                                           |         |
| <b>4</b> | <b>Technical Specifications</b>                                                                                                 |         |



|           |                                                                                                                                                                                                                                                                                                     |  |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 4.1       | Microprocessor based temperature control.                                                                                                                                                                                                                                                           |  |
| 4.2       | Capacity of storage: min. 300 litres                                                                                                                                                                                                                                                                |  |
| 4.3       | Should have LCD display for displaying the live temperature inside the refrigerator                                                                                                                                                                                                                 |  |
| 4.4       | Should have inner surface of medical grade compression molded plastic and outer body high grade polishedgalvanized steel                                                                                                                                                                            |  |
| 4.5       | Auto defrosting. Adjustable shelves.                                                                                                                                                                                                                                                                |  |
| 4.6       | Should have uniform cooling by forced air circulation.                                                                                                                                                                                                                                              |  |
| 4.7       | Should have adjustable coated wire mesh shelves.                                                                                                                                                                                                                                                    |  |
| 4.8       | Interior light to operate when door is opened.                                                                                                                                                                                                                                                      |  |
| 4.9       | Should have clear product visibility with dual glass door                                                                                                                                                                                                                                           |  |
| 4.10      | Low energy consumption.                                                                                                                                                                                                                                                                             |  |
| 4.11      | Low noise level.                                                                                                                                                                                                                                                                                    |  |
| 4.12      | Temperature Range: 2°C ~ 8°C                                                                                                                                                                                                                                                                        |  |
| <b>5</b>  | <b>Accessories, spares and consumables</b>                                                                                                                                                                                                                                                          |  |
| 5.1       | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above). |  |
| <b>6</b>  | <b>Operating Environment</b>                                                                                                                                                                                                                                                                        |  |
| 6.1       | The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.                                                                                               |  |
| 6.2       | Power input to be 220-240VAC, 50Hz fitted with appropriate plug. The power cable must be minimum 3 metres long.                                                                                                                                                                                     |  |
| <b>7</b>  | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                            |  |
| 7.1       | Must submit ISO9001 or ISO13485 certificates                                                                                                                                                                                                                                                        |  |
| 7.2       | Shall comply with CE Directives or Low Voltage Directive EN 61010 or USFDA approved product certificate.                                                                                                                                                                                            |  |
| <b>8</b>  | <b>Warranty &amp; Maintenance Service During Warranty Period</b>                                                                                                                                                                                                                                    |  |
| 8.1       | Comprehensive warranty for 1 year after acceptance.                                                                                                                                                                                                                                                 |  |
| <b>9</b>  | <b>Authorization</b>                                                                                                                                                                                                                                                                                |  |
| 9.1       | Manufacturer's authorization is required                                                                                                                                                                                                                                                            |  |
| <b>10</b> | <b>Installation and Commissioning &amp; User Training</b>                                                                                                                                                                                                                                           |  |
| 10.1      | Supplier must accomplish proper commissioning of equipment onsite.                                                                                                                                                                                                                                  |  |
| <b>11</b> | <b>Documentation</b>                                                                                                                                                                                                                                                                                |  |
| 11.1      | User (Operating) manual in English.                                                                                                                                                                                                                                                                 |  |
| 11.2      | Certificate of calibration and inspection from factory.                                                                                                                                                                                                                                             |  |

## 12 Colorimeter

| S.N.     | Technical Specifications                                                                                                                                                           | Remarks |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b> | <b>Description of Function</b>                                                                                                                                                     |         |
| 1.1      | A colorimeter is a device used to test the concentration of a blood serum after being reacted to different chemicals by measuring its absorbance of a specific wavelength of light |         |
| <b>2</b> | <b>Operational Requirements</b>                                                                                                                                                    |         |
| 2.1      | It shall operate on AC power supply as well as built-in battery.                                                                                                                   |         |
| <b>3</b> | <b>System Configuration</b>                                                                                                                                                        |         |



|            |                                                                                                                                                                                                                                                                                                         |  |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>3.1</b> | Colorimeter with standard accessories                                                                                                                                                                                                                                                                   |  |
| <b>4</b>   | Technical Specification                                                                                                                                                                                                                                                                                 |  |
| <b>4.1</b> | To be operated in two modes : absorbance mode and concentration mode                                                                                                                                                                                                                                    |  |
| <b>4.2</b> | Must have 8 number of inbuilt filters having following types of filter in the range from 400nm to 700nm                                                                                                                                                                                                 |  |
|            | 400-415nm                                                                                                                                                                                                                                                                                               |  |
|            | 430-460nm                                                                                                                                                                                                                                                                                               |  |
|            | 490-515nm                                                                                                                                                                                                                                                                                               |  |
|            | 515-525nm                                                                                                                                                                                                                                                                                               |  |
|            | 530-550nm                                                                                                                                                                                                                                                                                               |  |
|            | 570-585nm                                                                                                                                                                                                                                                                                               |  |
|            | 600-630nm                                                                                                                                                                                                                                                                                               |  |
|            | 635-700nm                                                                                                                                                                                                                                                                                               |  |
| <b>4.3</b> | Lamp source: Broad spectrum LED, covering full visible range.                                                                                                                                                                                                                                           |  |
| <b>4.4</b> | Inbuilt Battery backup facility for continuous operation                                                                                                                                                                                                                                                |  |
| <b>5</b>   | Accessories, spare parts and consumables                                                                                                                                                                                                                                                                |  |
| <b>5.1</b> | Accessories                                                                                                                                                                                                                                                                                             |  |
|            | a) Cuvettes : at least 10nos                                                                                                                                                                                                                                                                            |  |
|            | b) Test tube stand : 1 no suitable for at least 10 test tubes                                                                                                                                                                                                                                           |  |
|            | c) All standard accessories, consumables, and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above). |  |
| <b>6</b>   | <b>Operating Environment</b>                                                                                                                                                                                                                                                                            |  |
| <b>6.1</b> | The system offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.                                                                                                    |  |
| <b>6.2</b> | Power supply: 220 - 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.                                                                                                                                                                                     |  |
| <b>7</b>   | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                                |  |
| <b>7.1</b> | Must submit ISO9001 or ISO13485 certificates                                                                                                                                                                                                                                                            |  |
| <b>7.2</b> | Shall comply with CE Directives or Low Voltage Directive EN 61010 or USFDA approved product certificate.                                                                                                                                                                                                |  |

|             |                                                                    |  |
|-------------|--------------------------------------------------------------------|--|
| <b>8</b>    | <b>Warranty &amp; Maintenance Service During Warranty Period</b>   |  |
| <b>8.1</b>  | Comprehensive warranty for 1 year after acceptance.                |  |
| <b>9</b>    | <b>Authorization</b>                                               |  |
| <b>9.1</b>  | Manufacturer's authorization is required                           |  |
| <b>10</b>   | <b>Installation and Commissioning &amp; User Training</b>          |  |
| <b>10.1</b> | Supplier must accomplish proper commissioning of equipment onsite. |  |
| <b>11</b>   | <b>Documentation</b>                                               |  |
| <b>11.1</b> | User (Operating) manual in English.                                |  |
| <b>11.2</b> | Certificate of calibration and inspection from factory.            |  |



### 13 Blood Roller (Mixer)

| S.N.      | Technical Specifications                                                                                                                                                                                                                                                                            | Remarks |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b>  | <b>Description of Function</b>                                                                                                                                                                                                                                                                      |         |
| 1.1       | The Tube Roller Mixers mix samples through the simultaneously rolling action of the tubes and the carried vessels (bottles, test tubes etc.,                                                                                                                                                        |         |
| <b>2</b>  | <b>System Configuration</b>                                                                                                                                                                                                                                                                         |         |
| 2.1       | Ready to use set.                                                                                                                                                                                                                                                                                   |         |
| <b>3</b>  | <b>Technical Specification</b>                                                                                                                                                                                                                                                                      |         |
| 3.1       | Must have at least 4 rollers to mix blood tubes                                                                                                                                                                                                                                                     |         |
| 3.2       | Action Mode: Rocking / Rolling                                                                                                                                                                                                                                                                      |         |
| 3.3       | Speed (Rpm) : 10 to 60 Rpm,                                                                                                                                                                                                                                                                         |         |
| 3.4       | Must have option to set timer for the rolling motion                                                                                                                                                                                                                                                |         |
| 3.5       | Shall have a digital display                                                                                                                                                                                                                                                                        |         |
| <b>4</b>  | <b>Accessories, spares and consumables</b>                                                                                                                                                                                                                                                          |         |
| 4.1       | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above). |         |
| <b>5</b>  | <b>Operating Environment</b>                                                                                                                                                                                                                                                                        |         |
| 5.1       | The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.                                                                                               |         |
| 5.2       | Power supply: 220-240V/ 50 Hz AC Single phase fitted with appropriate plug to meet purchaser's country requirements.                                                                                                                                                                                |         |
| <b>6.</b> | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                            |         |
| 6.1       | Must submit ISO9001 or ISO13485 certificates                                                                                                                                                                                                                                                        |         |
| 6.2       | Shall comply with CE Directives or Low Voltage Directive EN 61010 or USFDA approved product certificate.                                                                                                                                                                                            |         |
| <b>7.</b> | <b>Warranty &amp; Maintenance Service During Warranty Period</b>                                                                                                                                                                                                                                    |         |
| 7.1       | Comprehensive warranty for 1 year after acceptance.                                                                                                                                                                                                                                                 |         |
| <b>8.</b> | <b>Authorization</b>                                                                                                                                                                                                                                                                                |         |
| 8.1       | Manufacturer's authorization is required                                                                                                                                                                                                                                                            |         |
| <b>9.</b> | <b>Installation and Commissioning &amp; User Training</b>                                                                                                                                                                                                                                           |         |
| 9.1       | Supplier must accomplish proper commissioning of equipment onsite.                                                                                                                                                                                                                                  |         |
| <b>10</b> | <b>Documentation</b>                                                                                                                                                                                                                                                                                |         |
| 10.1      | User (Operating) manual in English.                                                                                                                                                                                                                                                                 |         |
| <b>11</b> | Certificate of calibration and inspection from factory.                                                                                                                                                                                                                                             |         |

### 14 DC-Counter

| S.N.     | Technical Specifications                                                                                                      | Remarks |
|----------|-------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b> | <b>Description of Function</b>                                                                                                |         |
| 1.1      | A differential cell counter in which the percentages of blood cell types are calculated as well as the total number of cells. |         |



|           |                                                                                                                                                                                                                                                                                                     |  |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>2</b>  | <b>Operational Requirements</b>                                                                                                                                                                                                                                                                     |  |
| 2.1       | Manual type DLC-Counter.                                                                                                                                                                                                                                                                            |  |
| <b>3</b>  | <b>System Configuration</b>                                                                                                                                                                                                                                                                         |  |
| 3.1       | DLC-Counter, Manual, complete unit.                                                                                                                                                                                                                                                                 |  |
| <b>4</b>  | <b>Technical Specifications</b>                                                                                                                                                                                                                                                                     |  |
| 4.1       | It must be a differential cell counter.                                                                                                                                                                                                                                                             |  |
| 4.2       | Must provide blood cell counting and simple calculations including percentage.                                                                                                                                                                                                                      |  |
| 4.3       | Each unit counts up to 999 and last unit totalize the different cells.                                                                                                                                                                                                                              |  |
| 4.4       | The bell automatically sounds at very 100.                                                                                                                                                                                                                                                          |  |
| 4.5       | It must be 6unit-8keys and totalizer.                                                                                                                                                                                                                                                               |  |
| 4.6       | It has a dual knob on both ends to facilitate easy resetting.                                                                                                                                                                                                                                       |  |
| <b>5</b>  | <b>Accessories, spares and consumables</b>                                                                                                                                                                                                                                                          |  |
| 5.1       | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above). |  |
| <b>6</b>  | <b>Operating Environment</b>                                                                                                                                                                                                                                                                        |  |
| 6.1       | The system offered shall be designed to operate normally under the conditions of the purchaser's country. The conditions include Climate, Temperature, Humidity, etc.                                                                                                                               |  |
| <b>7</b>  | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                            |  |
| 7.1       | Must submit ISO9001 or ISO13485 or CE compliance certificate                                                                                                                                                                                                                                        |  |
| <b>8</b>  | <b>Warranty &amp; Maintenance Service During Warranty Period</b>                                                                                                                                                                                                                                    |  |
| 8.1       | Comprehensive warranty for 1 year after acceptance.                                                                                                                                                                                                                                                 |  |
| <b>9</b>  | <b>Authorization</b>                                                                                                                                                                                                                                                                                |  |
| 9.1       | Manufacturer's authorization is required                                                                                                                                                                                                                                                            |  |
| <b>10</b> | <b>Installation and Commissioning &amp; User Training</b>                                                                                                                                                                                                                                           |  |
| 10.1      | Supplier must accomplish proper commissioning of equipment onsite.                                                                                                                                                                                                                                  |  |
| <b>11</b> | <b>Documentation</b>                                                                                                                                                                                                                                                                                |  |
| 11.1      | User (Operating) manual in English.                                                                                                                                                                                                                                                                 |  |
| 11.2      | Certificate of calibration and inspection from factory.                                                                                                                                                                                                                                             |  |

## 15 Needle Destroyer

| S.N.     | Technical Specifications                                                                                                                   | Remarks |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b> | <b>Description of Function</b>                                                                                                             |         |
| 1.1      | Needle & syringe destroyers are used to destroy the needles & syringes instantly to prevent reuse and manage waste management effectively. |         |
| <b>2</b> | <b>Operational Requirements</b>                                                                                                            |         |
| 2.1      | Needle & Syringe destroyer electrically operated.                                                                                          |         |
| <b>3</b> | <b>System Configuration</b>                                                                                                                |         |
| 3.1      | Electric Needle & Syringe Destroyer (Electro melting type)                                                                                 |         |
| <b>4</b> | <b>Technical Specifications</b>                                                                                                            |         |
| 4.1      | Housing Enclosure – Moulded type                                                                                                           |         |
| 4.2      | Shock proof & made of ABS plastic with dust tray.                                                                                          |         |
| 4.3      | Needle burning capacity – to destroy Inj. Needles of length 12.5mm to 80 mm.                                                               |         |
| 4.4      | A needle of 1.6mm diameter & 80 mm length should be destroyed in 1 minute.                                                                 |         |
| <b>5</b> | <b>Accessories, spares and consumables</b>                                                                                                 |         |

*[Handwritten signature]*



|           |                                                                                                                                                                                                                                                                                                     |  |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 5.1       | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above). |  |
| <b>6</b>  | <b>Operating Environment</b>                                                                                                                                                                                                                                                                        |  |
| 6.1       | The system offered shall be designed to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.                                                                                                                 |  |
| 6.2       | Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.<br>Power consumption – for the thickness needle of 1.6 mm dia meter consumption should not exceed 5 Amp.                                                                        |  |
| <b>7</b>  | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                            |  |
| 7.1       | Must submit ISO9001 or ISO13485 for Medical Devices <b>AND</b>                                                                                                                                                                                                                                      |  |
| 7.2       | Must submit CE (93/42 EEC Directives) or CE (2017/745 MDR) or USFDA approved product certificate.                                                                                                                                                                                                   |  |
| <b>8</b>  | <b>Warranty &amp; Maintenance Service During Warranty Period</b>                                                                                                                                                                                                                                    |  |
| 8.1       | Comprehensive warranty for 1 year after acceptance.                                                                                                                                                                                                                                                 |  |
| 8.2       | During warranty period supplier must ensure corrective/breakdown maintenance whenever required.                                                                                                                                                                                                     |  |
| <b>9</b>  | <b>Authorization</b>                                                                                                                                                                                                                                                                                |  |
| 9.1       | Manufacturer's authorization is required                                                                                                                                                                                                                                                            |  |
| <b>10</b> | <b>Installation and Commissioning &amp; User Training</b>                                                                                                                                                                                                                                           |  |
| 10.1      | Supplier must accomplish proper commissioning of equipment onsite.                                                                                                                                                                                                                                  |  |
| <b>11</b> | <b>Documentation</b>                                                                                                                                                                                                                                                                                |  |
| 11.1      | User (Operating) manual in English.                                                                                                                                                                                                                                                                 |  |
| 11.2      | Certificate of calibration and inspection from factory.                                                                                                                                                                                                                                             |  |

## 16 Fully Automated Bio-Chemistry Analyser

| S.N. | Technical Specifications                                                                                                                                                                                                                                                                  | Remarks |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1    | Description of Function                                                                                                                                                                                                                                                                   |         |
| 1.1  | For analysis of serum, plasma, urine, cerebrospinal fluid (CSF), hemolysate and whole blood.                                                                                                                                                                                              |         |
| 2    | Operational Requirements                                                                                                                                                                                                                                                                  |         |
| 2.1  | Must be open system and fully computerized with random access, selective multi-batch type, providing maximum flexibility in programming                                                                                                                                                   |         |
| 2.2  | Must be capable of undertaking 200 tests/hr involving fixed time, end point and kinetic chemistry                                                                                                                                                                                         |         |
| 3    | System Configuration                                                                                                                                                                                                                                                                      |         |
| 3.1  | Fully Automated Bio-Chemistry Analyser with integrated printer and computer and with complete accessories                                                                                                                                                                                 |         |
| 4    | Technical Specifications                                                                                                                                                                                                                                                                  |         |
| 4.1  | Optical Requirement: <ul style="list-style-type: none"> <li>Wavelength Range: 340 to 700nm</li> <li>Absorbance: 0.000 to 3.000A</li> <li>Resolution: 0.0001A or better</li> <li>Measurement: Monochromatic &amp; Bio chromatic options.</li> <li>Source of light: Halogen lamp</li> </ul> |         |



|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 4.2  | <b>Reagent Handling System:</b> <ul style="list-style-type: none"> <li>• Pre and Post dilution: Automatic</li> <li>• Must provide two separate probes for reagents and sample</li> <li>• Two separate tray for reagents and sample</li> <li>• Reagent Aspiration volume: 10-300 µl</li> <li>• Wash Cycles: Programmable for aspiration and sampling probes</li> <li>• Must have minimum 60 reagent positions maintaining cooling</li> <li>• Separate tray position for R.T reagents will be preferred</li> </ul>                                                                                                                                                                                                                                                                             |  |
| 4.3  | <b>Analytical Requirements:</b> <ul style="list-style-type: none"> <li>• Sample Tray: minimum 60 positions for samples/ standards/controls</li> <li>• Two separate probes for sample and reagents will be preferred</li> <li>• Two separate tray for sample and reagents</li> <li>• Sample mode: Sample cups/Tubes</li> <li>• Must facilitate sample barcode</li> <li>• Sample Aspiration Volume: 2-100 µl</li> <li>• Reaction types: End point, fixed time and kinetic</li> <li>• Reaction volume: 150-500 µl</li> <li>• Test Parameters: Minimum 60 parameters programmable</li> <li>• Cuvettes: Minimum 60 reusable/washable cuvettes</li> <li>• Incubation Temp: 37°C</li> <li>• Cuvette Temp: 37°C +0.1°C</li> <li>• Quality control: 3 levels of control for QC, S.D., C.V.</li> </ul> |  |
| 4.4  | Software: Patient oriented, user friendly and test oriented.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 5    | Accessories, spares and consumables                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| 5    | Accessories:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 5.1  | All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| 6    | Operating Environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| 6.1  | The system offered shall be designed to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| 6.2  | Power supply: 220 – 240 VAC, 50Hz fitted with appropriate plug. The power cable must be at least 3 metre in length.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| 7    | Standards and Safety Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| 7.1  | Must submit ISO13485 for Medical Devices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| 7.2  | CE approved product                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| 8    | User Training                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 8.1  | Must provide user training (including how to use and maintain the equipment).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 9    | Warranty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| 9.1  | Comprehensive warranty for 1 years from acceptance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| 10   | Maintenance Service During Warranty Period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| 10.1 | During the warranty period supplier must ensure planned preventive maintenance (PPM) and corrective/breakdown maintenance whenever required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 11   | Installation and Commissioning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |



|      |                                                                                          |  |
|------|------------------------------------------------------------------------------------------|--|
| 11.1 | Supplier must accomplish proper installation and commissioning of the equipment on site. |  |
| 12   | Documentation                                                                            |  |
| 12.1 | User (Operating) manual in English                                                       |  |
| 12.2 | Service (Technical / Maintenance) manual in English                                      |  |

## 17 Protein Analyzer

| S.N.      | Technical Specifications                                                                                                                                                                                                                                                                                                                                | Remarks |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1.</b> | <b>Description of Function</b>                                                                                                                                                                                                                                                                                                                          |         |
| 1.1       | Quantitative determination of specific proteins in blood & serum samples.                                                                                                                                                                                                                                                                               |         |
| <b>2.</b> | <b>Operational Requirements</b>                                                                                                                                                                                                                                                                                                                         |         |
| 2.1       | Protein Analyzer complete with inbuilt printer.                                                                                                                                                                                                                                                                                                         |         |
| <b>3.</b> | <b>System Configurations</b>                                                                                                                                                                                                                                                                                                                            |         |
| 3.1       | Must be based on Turbidimetry principle with Laser LED and detectors at 180 degree.                                                                                                                                                                                                                                                                     |         |
| <b>4.</b> | <b>Technical Specifications</b>                                                                                                                                                                                                                                                                                                                         |         |
| 4.1       | Must have lot specific RFID cards for calibrations of reactions for individual test.                                                                                                                                                                                                                                                                    |         |
| 4.2       | Must have minimum 4 inch touch screen display with facility to show online reaction curve.                                                                                                                                                                                                                                                              |         |
| 4.3       | All parameters must be provided with individual disposable cuvettes within reagent pack for avoiding carry over effect as well as to minimize the cost of testing.                                                                                                                                                                                      |         |
| 4.4       | Test Parameters: HbA1c, CRP, ASO, RF, MA, D-Dimer, C3 & C4, IgE and Ferritin should be available. Measuring range :<br>HbA1c $\leq$ 15% CRP $\leq$ 300 mg/L RF $\leq$ 120 IU/ML ASO $\leq$ 600 IU/ML<br>D Dimer $\leq$ 9999 ng/ml C3 $\leq$ 180 mg/dl<br>C4 $\leq$ 40 mg/dl IgE $\leq$ 2000 IU/ml MA $\leq$ 300 mg/L<br>Ferritin $\leq$ 600 microgram/L |         |
| 4.5       | Must facilitate auto mixing of the samples within the instrument.                                                                                                                                                                                                                                                                                       |         |
| 4.6       | Sample type: Whole blood, serum, plasma and urine.                                                                                                                                                                                                                                                                                                      |         |
| 4.7       | Must have individual disposable cuvettes so that there is no possibility of contamination.                                                                                                                                                                                                                                                              |         |
| 4.8       | Auto identification of test by RFID card on reagent.                                                                                                                                                                                                                                                                                                    |         |
| 4.9       | Should provide disposable tips for individual tests.                                                                                                                                                                                                                                                                                                    |         |
| 4.10      | Must provide electronic pipette and manual pipettes along with dry incubator of same company.                                                                                                                                                                                                                                                           |         |
| 4.11      | Must have minimum three level QC with LJ plot.                                                                                                                                                                                                                                                                                                          |         |
| 4.12      | Storage of minimum 500 sample results.                                                                                                                                                                                                                                                                                                                  |         |
| 4.13      | Must provide data transfer facility by USB.                                                                                                                                                                                                                                                                                                             |         |



|            |                                                                                                                                                                                                                                                                     |  |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>5.</b>  | <b>Accessories, spare and consumables</b>                                                                                                                                                                                                                           |  |
| 5.1        | All standard accessories, consumables and spare parts required for the proper operation of the above item shall be included in the offer.                                                                                                                           |  |
| <b>6.</b>  | <b>Power supply</b>                                                                                                                                                                                                                                                 |  |
| 6.1        | Power supply: 220-240 VAC, 50Hz with appropriate plug.                                                                                                                                                                                                              |  |
| 6.2        | The power cable along with its external adapter must be provided.                                                                                                                                                                                                   |  |
| <b>7.</b>  | <b>Standards &amp; Safety Requirements</b>                                                                                                                                                                                                                          |  |
| 7.1        | Must submit ISO13485 certificate for quality management of medical devices.                                                                                                                                                                                         |  |
| 7.2        | Must be CE compliant or USFDA approved                                                                                                                                                                                                                              |  |
| <b>8.</b>  | <b>Warranty</b>                                                                                                                                                                                                                                                     |  |
| 8.1        | <b>Two years</b> complete comprehensive warranty on the system and the bidder must ensure the service.                                                                                                                                                              |  |
| <b>9.</b>  | <b>User Training</b>                                                                                                                                                                                                                                                |  |
| 9.1        | The supplier shall conduct onsite user training for this equipment to enable operators to use the equipment properly. The training shall include the use of all operational functions of the equipment, as well as routine checks and maintenance expected by user. |  |
| <b>10.</b> | <b>Installation and Commissioning</b>                                                                                                                                                                                                                               |  |

|            |                                                                                                                                                                                                              |  |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 10.1       | The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance in detail. |  |
| <b>11.</b> | <b>Documentation</b>                                                                                                                                                                                         |  |
| 11.1       | User (Operating) manual in English.                                                                                                                                                                          |  |
| 11.2       | Service (Technical / Maintenance) manual in English.                                                                                                                                                         |  |
| 11.3       | List of important spare parts and accessories with their part number and costing.                                                                                                                            |  |
| 11.4       | Certificate of calibration and inspection from factory.                                                                                                                                                      |  |
| 11.5       | Authorization letter from manufacturing company should be provided.                                                                                                                                          |  |

## 18 Hospital Bed (General)

| S.N.     | Technical Specifications                                                                                                                                                                                                     | Remarks |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>1</b> | <b>Description of Function</b>                                                                                                                                                                                               |         |
| 1.1      | A hospital bed is a bed specially designed for hospitalized patients in need of patient ease. These beds have special features both for the comfort and well-being of the patient and for the convenience of hospital staff. |         |
| <b>2</b> | <b>Operational Requirements</b>                                                                                                                                                                                              |         |
| 2.1      | The patient bed shall be made of solid steel construction with anti-corrosive and antirust treated baked hard epoxy powder coating                                                                                           |         |
| <b>3</b> | <b>System Configuration</b>                                                                                                                                                                                                  |         |
| 3.1      | Hospital Bed epoxy powder coated                                                                                                                                                                                             |         |
| <b>4</b> | <b>Technical Specifications</b>                                                                                                                                                                                              |         |



| S.N. | Technical Specifications                                                                                                                                                                                                                                                                                               | Remarks |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 4.1  | Bed base shall be anti-corrosive and antirust treated epoxy powder coated welded steel bar or epoxy powder coated 18G perforated sheet top to improve ventilation.                                                                                                                                                     |         |
| 4.2  | The patient bed shall be fixed height with 2 sections where the backrest section could be elevated by mechanical hand crank located at the foot-end of the bed.                                                                                                                                                        |         |
| 4.3  | Shall have 4 IV rod receptacles and mosquito net pole receptacles at the 4 corners                                                                                                                                                                                                                                     |         |
| 4.4  | It shall come with one dual hook anti-corrosive and antirust treated epoxy powder coated or 304 grade stainless steel IV rod.                                                                                                                                                                                          |         |
| 4.5  | Shall have provisions to fix urinary bag on both sides.                                                                                                                                                                                                                                                                |         |
| 4.6  | All 4 legs of the hospital bed shall be capped with heavy duty rubber footings.                                                                                                                                                                                                                                        |         |
| 4.7  | Bedhead and foot-end panel (head and foot bows) shall be made of either between anti-corrosive and antirust treated epoxy powder coated vertical tubular tube                                                                                                                                                          |         |
| 4.8  | Both bedhead and foot-end panel shall be detachable.                                                                                                                                                                                                                                                                   |         |
| 4.9  | The height of the bedhead panel: not less than 1060mm from floor.                                                                                                                                                                                                                                                      |         |
| 4.10 | The height of the foot-end panel: not less than 820mm from floor.                                                                                                                                                                                                                                                      |         |
| 4.11 | Overall approximate dimension: not less than 1980mm length, 910mm width, 600mm height                                                                                                                                                                                                                                  |         |
| 5    | <b>System Configuration Accessories, spares and consumables</b>                                                                                                                                                                                                                                                        |         |
| 5.1  | <ul style="list-style-type: none"> <li>Mattress, appropriate as per bed-1 pc</li> <li>Pillow-1 pc</li> <li>Bedside Locker-1</li> </ul>                                                                                                                                                                                 | •       |
| 5.2  | All standard accessories/consumables/parts required for the proper operation of the above item shall be included in the offer. Bidders shall specify, in a separate Excel worksheet, the quantity and details of any items included in this offer which have not been specified in this Technical Specifications Form. |         |
| 6    | <b>Operating Environment</b>                                                                                                                                                                                                                                                                                           |         |
| 6.1  | The system offered shall be designed to store and to operate normally under the conditions of the purchaser's country. The conditions include Climate, Temperature, Humidity, etc.                                                                                                                                     |         |
| 7    | <b>Standards and Safety Requirements</b>                                                                                                                                                                                                                                                                               |         |
| 7.1  | Must submit ISO 9001 or ISO 13485:2016/AC:2007 AND                                                                                                                                                                                                                                                                     |         |
| 7.2  | CE or USFDA approved product certificate.                                                                                                                                                                                                                                                                              |         |
| 8    | <b>User Training</b>                                                                                                                                                                                                                                                                                                   |         |
| 8.1  | Not applicable.                                                                                                                                                                                                                                                                                                        |         |
| 9    | <b>Warranty</b>                                                                                                                                                                                                                                                                                                        |         |
| 9.1  | Warranty for 2 years after acceptance                                                                                                                                                                                                                                                                                  |         |
| 10   | <b>Maintenance Service During Warranty Period</b>                                                                                                                                                                                                                                                                      |         |
| 10.1 | Standard warranty conditions are applicable.                                                                                                                                                                                                                                                                           |         |
| 11   | <b>Installation and Commissioning</b>                                                                                                                                                                                                                                                                                  |         |
| 11.1 | Must supply preassembled unit, ready to use.                                                                                                                                                                                                                                                                           |         |
| 12   | <b>Documentation</b>                                                                                                                                                                                                                                                                                                   |         |
| 12.1 | Users/Instructions manual shall be provided in English.                                                                                                                                                                                                                                                                |         |

