Annex 1

Technical Specification for Equipment

Hermatology Analyzer (5-Part Part Diff/Minimum)

Operational Specification

1. It should be fully automated 5-part differential hematology analyzer based on Flowcytometry and Light scattering technology. Instrument should offer automatic startup, shut down and sample analysis.
2. Should have discrete analysis modes-CBC, CBC+DIFF, CBC+Retic, CBC+Retic +Diff.
3. Should give parameters i.e. WBC, RBC, Hemoglobin, MCV, MCH,MCHC, HCT, RDWSD/CV, Platelet count, PDW,MPV, PCT, P-LCR(optional), IPF(optional), Retic%, Retic parameters, Absolute and % values for Neutrophil, Lymphocytes, Monocytes, Eosinophils, Basophils, Morphology results(user definable) like WBC : Left shift, Atypical Lymph, Immature Granulocyte, RBC: NRBC, Aniso, Micro, Macro, RBC ghost(optional) along with histograms of RBC, WBC and Platelets.
4. Should have an Auto sampler with capacity of 50 and above sample tubes with continuous sample loading. A single sample rack should be able to cater different tube sizes.
5. The instrument should have a Bar code reader.
6. Should have a high throughput of 100 samples per hour or more in CBC and CBC/Diff mode and 45 or more samples per hour in Retic mode.
7. Should have multichannel analysis for better resolution and reproducibility like Dual differential count for WBC
    - Platelets- should have dual angle light scatter/Impedance/Fluorescent dye-based measurement
    - RBC- should have light scatter/Impedance based measurement
    - Hb-Should have photometric/direct cellular measurement
    - Retic-should have on board light scatter (Fluorescent dye/Retic stain based) for Reticulocytes.
8. Should have clot detection facility.
9. Should have onboard reagent facility and automatic reagent inventory management.
10. Should have extensive linearity as
    - WBC-0.0-400X103/µL
    - RBC-0.0-8.0X106/µL III. PLT-0.0-3000X103/µL
    - Hb-0.0-25.0g/dL V. RETIC- 0.0 – 24.5%
11. Should have capability of running CSF and body fluids.
12. Sample volume required in all modes not to exceed 300 µL. Should be able to give all parameters with finger prick blood sample (i.e., with 20 µL)
13. Should have extensive features like L J plot available, Delta checks available for cumulative review, Option for Online QC also available, Patient moving average, QC file management.
14. Should have comprehensive data management such as User-friendly Windows based software Network integration possible with Lab information system.
15. Data base storage capacity of 10000 records or more including graphs.
16. Suitable printer to be provided.
17. Should have extended analysis time for cytopenic sample.
18. Should be able to integrate with optional slide maker and Stainer.
19. List of full range of consumables and spare parts for closed/open system to be given.

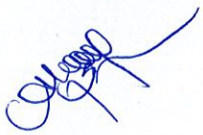
20. Online UPS compatible with instrument with one hour back-up to be provided with each cell counter.
21. Start-up reagent for initial 10,000 tests to be provided for each cell counter.
22. Demonstration of quoted equipment is essential.
23. Rate of consumables, accessory items and spare parts to be frozen for 3 years.
24. Five years comprehensive warranty and five years Comprehensive Maintenance Contract thereafter for Cell counter, Printer and UPS.
25. Cost per test to be quoted taking approximately 300 samples to be run per cell counter per day for a period of three years.
26. Calibration to be done once in 6 months and as and when necessary (Repair, abnormal QC result etc.) by the company personnel.
27. Downtime should be less than 5% of the total running time of the machine which can be calculated at the rate of working time of 8 hrs. per day in the routine lab and 24 hrs. per day in the emergency lab.
28. Penalty clause for the breakdown time to be discussed in pre bid meeting.
29. The company should provide onsite service engineer and similar backup machine in case of breakdown.

- **Power Supply**
  a. Power input to be 220-240VAC, 50Hz fitted 13Amp plug.

- **Standards, Safety and Training**
  1. Should be FDA approved/CE marked
  2. Application training must be provided to the users.
  3. Manufacturer standard biomedical technical must be given to Department of Biomedical Sciences, Faculty of Health Sciences, MNU for a period of one year of installation.

- **Documentation**
  1. User/Technical/Maintenance manuals to be supplied in English.
  2. List of important spare parts and accessories with their part number and costing.

- **Warranty:**
  Should be supplied with 12 Months of warranty from the date of installation.



Equipment: Biochemistry Analyzer (Semi-Automatic)

Automated compact multi-purpose clinical chemistry analyzer with potentiometric (direct ISE) and photometric assays for small or medium sized laboratory.

Operational Specification

1. It should be a compact bench top configuration, fully automated, auto-calibrating, auto-sampling, auto-diluting.
2. Analytical methods: Photometry and Potentiometry
3. STAT mode should be available.
4. Sample type: Serum, Plasma, Urine
5. Flow cell with or without cuvette.
6. System capacity should not be less than 40 sample positions.
7. Direct sampling and sample tray accepting cups or tubes in a wide range of sizes.
8. Throughput not less than 128- 250 test/hour (With ISE)
9. Spectrum analysis range not smaller than 340-700nm
10. Should heave flexible and user-friendly analyzer software in English language
11. It should sense liquid levels
12. Flag abnormal values
13. Auto quality control
14. Minimal distilled water consumption
15. **Data management**
    - Built-in or external display
    - Workstation or control panel
    - Results storage
    - Computer interface
    - Integrated External printers
    - Bar code reader
    - Data base storage capacity of 10000 records
16. Any accessory or dedicated device necessary to the proper functioning and visualization of the equipment included.
17. The equipment shall preferably be functioning by use of reagents of most common brands, without exclusive need of dedicated reagents produces by a single supplier.
18. Penalty clause for the breakdown time to be discussed in pre bid meeting.
19. The company should provide onsite service engineer and similar backup machine in case of breakdown.
20. Rate of consumables, accessory items and spare parts to be frozen for 3 years.
21. Five years comprehensive warranty and five years Comprehensive Maintenance Contract thereafter for analyzer, Printer and UPS.
22. Online UPS compatible with instrument with one hour back-up to be provided with each analyzer.
23. Calibration to be done once in 6 months and as and when necessary (Repair, abnormal QC result etc.) by the company personnel.

24. Downtime should be less than 5% of the total running time of the machine which can be calculated at the rate of working time of 8 hrs. per day in the routine lab and 24 hrs. per day in the emergency lab.

25. The company should provide onsite service engineer and similar backup machine in case of breakdown.

26. **Test Menu**- Minimum parameters set
    - Clinical Chemistry- Photometry

27. **Substrates:**
    - Albumin
    - Bilirubin (Direct and Total)
    - Creatinine
    - Glucose
    - Total Protein
    - Urea/Uric Acid
    - Calcium
    - Magnesium
    - Phosphorus

28. **Lipids:**
    - Cholesterol
    - HDL Direct
    - LDL Direct
    - Triglycerides

29. **Enzymes:**
    - Alkaline phosphatase
    - Amylase
    - CK/CK-MB
    - GGT
    - AST
    - ALT
    - ISE-Potentiometry
    - Sodium
    - Potassium
    - Chloride

30. Additional consumables and accessories to be included

All necessary accessories for the start functioning of the equipment must be supplied for minimum of 3 months with an expiry of 6 months from time of supply.

- **Power Supply**
  1. Power input to be 220-240VAC, 50Hz fitted 13Amp plug.

- **Standards, Safety and Training**
  4. Should be FDA approved/CE marked
  5. Application training must be provided to the users.
  6. Manufacturer standard biomedical technical must be given to Department of Biomedical Sciences, Faculty of Health Sciences, MNU for a period of one year of installation.

- **Documentation**
  1. User/Technical/Maintenance manuals to be supplied in English.
  2. List of important spare parts and accessories with their part number and costing.

- **Warranty:**

Should be supplied with 12 Months of warranty from the date of installation.