

KENYA BUREAU OF STANDARDS



TENDER DOCUMENT

FOR

**SUPPLY, DELIVERY, INSTALLATION AND USER
TRAINING OF TESTING LABORATORY EQUIPMENT**

KEBS/T025/2018/2019

**KENYA BUREAU OF STANDARDS
P.O. BOX 54974-00200
NAIROBI.**

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INVITATION TO TENDER

TENDER NO. KEBS/T025/2018/2019: SUPPLY, DELIVERY, INSTALLATION, AND USER TRAINING OF LABORATORY EQUIPMENT

Kenya Bureau of Standards (KEBS) invites sealed tenders from eligible candidates for Supply, Delivery, Installation and User Training of Laboratory Equipment.

Interested eligible candidates may obtain further information from and inspect the tender documents from **Procurement Office at KEBS Centre, Popo Road, Off Mombasa Road, Behind Bellevue Cinema Nairobi**. A complete tender document may be obtained by interested candidates on normal working days between **8.30 a.m and 4.00 p.m** or **Download from the KEBS website www.kebs.org**, upon payment of a non refundable fee of **Kenya Shillings One Thousand (Kshs.1,000)** payable in cash or bankers' cheque to Kenya Bureau of Standards

Completed tender documents in plain sealed envelopes clearly marked "**KEBS/T025/2018/2019: SUPPLY, DELIVERY, INSTALLATION AND USER TRAINING OF LABORATORY EQUIPMENT**" should be addressed and delivered to:

**THE MANAGING DIRECTOR,
KENYA BUREAU OF STANDARDS,
POPO ROAD OFF MOMBASA ROAD
P.O. BOX 54974 - 00200
NAIROBI.**

Or be deposited in the Tender Box at **KEBS Centre Main Reception** marked "**TENDER BOX**" so as to be received on or before **10.00 am on Tuesday 7th May, 2019**.

Tender opening will be carried out immediately thereafter at the **KEBS Centre Conference Room**.

Tenderers or their representatives are free to attend the tender opening.

Tenders must be accompanied by Bid Bond of 2% of the Tender sum in the format specified in the tender document.

Tenders will be opened immediately thereafter in the presence of the tenderers representatives who choose to attend the opening at **KEBS Centre Conference Room**.

Managing Director

Section B. General Information

Introduction

1. Eligible Tenderers

- 1.1 This Invitation for Tenders is open to all tenderers eligible as described in the tender documents. Successful tenderers shall complete the supply of Laboratory equipment by the intended completion date specified in the tender documents.
- 1.2 Tenderers shall provide the qualification information statement that the tenderer (including all members of a joint venture and subcontractors) is not associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Procuring entity to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods under this Invitation for tenders.
- 1.3 Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices.

2. Eligible Goods

- 2.1 All Laboratory equipment to be supplied under the contract shall have their origin in eligible source countries.
- 2.2 For purposes of this clause, “origin” means the place where the goods are mined, grown, or produced. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 2.3 The origin of goods is distinct from the nationality of the tenderer.

3. Cost of Tendering

- 3.1 The Tenderer shall bear all costs associated with the preparation and submission of its tender, and the procuring entity, will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

The Tender Document

4. Contents

- 4.1 The tender document comprises the documents listed below and addenda issued in accordance with clause 6 of these instructions to tenders.
- (i) Invitation for Tenders
 - (ii) General information
 - (iii) General Conditions of Contract
 - (iv) Special Conditions of Contract
 - (v) Schedule of Requirements
 - (vi) Technical Specifications
 - (vii) Tender Form and Price Schedules
 - (viii) Confidential Questionnaire
 - (ix) Tender Security Form
 - (x) Contract Form
 - (xi) Performance Security Form
 - (xii) Manufacturer's Authorization Form

- 4.2 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the tender documents. Failure to furnish all information required by the tender documents or to submit a tender not substantially responsive to the tender documents in every respect will be at the tenderers risk and may result in the rejection of its tender.

5. Clarification of Documents

- 5.1 A prospective tenderer requiring any clarification of the tender document may notify the Procuring entity in writing or by cable (hereinafter, the term *cable* is deemed to include telex and facsimile) at the entity's address indicated in the Invitation for tenders. The Procuring entity will respond in writing to any request for clarification of the tender documents, which it receives no later than seven (7) days prior to the deadline for the submission of tenders, prescribed by the procuring entity. Written copies of the Procuring entities response (including an explanation of the query but without identifying the source of inquiry) will be sent to all prospective tenderer that have received the tender document.

6. Amendment of Documents

- 6.1 At any time prior to the deadline for submission of tenders, the Procuring entity, for any reason, whether at its own initiative or in response to a clarification requested by a prospective tenderer, may modify the tender documents by amendment.
- 6.2 All prospective candidates that have received the tender documents will be notified of the amendment in writing or by cable, and will be binding on them.
- 6.3 In order to allow prospective tenderers reasonable time in which to take the amendment into account in preparing their tenders, the Procuring entity, at its discretion, may extend the deadline for the submission of tenders.

Preparation of Tenders

7. Language of Tender

7.1 The tender prepared by the tenderer, as well as all correspondence and documents relating to the tender exchanged by the tenderer and the Procuring entity, shall be written in English language, provided that any printed literature furnished by the tenderer may be written in another language provided they are accompanied by an accurate English translation of the relevant passages in which case, for purposes of interpretation of the tender, the English translation shall govern.

8. Documents Comprising the Tender

8.1 The tender prepared by the tenderer shall comprise the following components:

- (a) A Tender Form and a Price Schedule completed in accordance with paragraph 9, 10 and 11 below.
- (b) Documentary evidence established in accordance with paragraph 12 that the tenderer is eligible to tender and is qualified to perform the contract if its tender is accepted;
- (c) Documentary evidence established in accordance with paragraph 13 that the goods and ancillary services to be supplied by the tenderer are eligible goods and services and conform to the tender documents; and
- (d) Tender security furnished in accordance with paragraph 14

9. Tender Form

9.1 The tenderer shall complete the Tender Form and the appropriate Price Schedule furnished in the tender documents, indicating the equipment to be supplied, a brief description of the Equipment, their country of origin, quantity, and prices.

10. Tender Prices

10.1 The tenderer shall indicate on the appropriate Price Schedule the unit prices and total tender price of the equipment it proposes to supply under the contract.

10.2 Prices indicated on the Price Schedule shall be entered separately in the following manner:

- (i) The price of the equipment quoted EXW (ex works, ex factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all customs duties and sales and other taxes already paid or payable.
- (ii) Charges for inland transportation, insurance, and other local costs incidental to delivery of the equipment to their final destination.

10.3 Prices quoted by the tenderer shall be fixed during the Tender's performance of the contract and not subject to variation on any account. A tender submitted with an adjustable price quotation

will be treated as non-responsive and will be rejected, pursuant to paragraph 22.

11. Tender Currencies

11.1 Prices shall be quoted in the following currencies:

- (a) For goods that the tenderer will supply from within Kenya, the prices shall be quoted in Kenya shillings; and
- (b) For equipment that the tenderer will supply from outside Kenya, the prices shall be quoted in US dollars or in another freely convertible currency.

12. Tenderers Eligibility and Qualifications.

12.1 Pursuant to paragraph 1 of section III, the tenderer shall furnish, as part of its tender, documents establishing the tenderers eligibility to tender and its qualifications to perform the contract if it's tender is accepted.

12.2 The documentary evidence of the tenderers eligibility to tender shall establish to the Procuring entity's satisfaction that the tenderer, at the time of submission of its tender, is from an eligible source country as defined under paragraph I of section III.

12.3 The documentary evidence of the tenderers qualifications to perform the contract if its tender is accepted shall establish to the Procuring entity's satisfaction:

- (a) That, in the case of a tenderer offering to supply equipment under the contract which the tenderer did not manufacture or otherwise produce, the tenderer has been duly authorized by the goods' Manufacturer or producer to supply the equipment;
- (b) That the tenderer has the financial, technical, and production capability necessary to perform the contract;
- (b) That, in the case of a tenderer not doing business within Kenya, the tenderer is or will be (if awarded the contract) represented by an Agent in Kenya equipped, and able to carry out the Tenderer's maintenance, repair, and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications.

13. Goods' Eligibility and Conformity to Tender Document.

13.1 Pursuant paragraph 2 of this section, the tenderer shall furnish, as part of its tender, documents establishing the eligibility and conformity to the tender documents of all equipment, which the tenderer proposes to supply under the contract.

13.2 The documentary evidence of the eligibility of the equipment shall consist of a statement in the Price Schedule of the country of origin of the equipment and services offered which a certificate of origin issued at the time of shipment shall confirm.

13.3 The documentary evidence of conformity of the goods to the tender documents may be in the form of literature, drawings, and data, and shall consist of:

- (a) A detailed description of the essential technical and performance characteristics of the goods;

- (b) A list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period of two (2) years, following commencement of the use of the goods by the Procuring entity; and
 - (c) A clause-by-clause commentary on the Procuring entity's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.
- 13.4 For purposes of the commentary to be furnished pursuant to paragraph 13.3(c) above, the tenderer shall note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by the Procurement entity in its Technical Specifications, are intended to be descriptive only and not restrictive. The tenderer may substitute alternative standards, brand names, and/or catalogue numbers in its tender, provided that it demonstrates to the Procurement entity's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

14. Tender Security

- 14.1 The tenderer shall furnish, as part of its tender, a tender security for the amount specified in the Invitation to tender.
- 14.2 The tender security is required to protect the Procuring entity against the risk of Tenderer's conduct which would warrant the security's forfeiture, pursuant to paragraph 14.7
- 14.3 The tender security shall be denominated in Kenya Shillings or in another freely convertible currency and shall be in the form of Cash, bank guarantee issued by a reputable bank, or insurance guarantee approved by the Authority and valid for 30 days beyond validity of the tender
- 14.4 Any tender not secured in accordance with paragraph 14.1 and 14.3 will be rejected by the Procuring entity as nonresponsive, pursuant to paragraph 22.
- 14.5 Unsuccessful Tenderer's tender security will be discharged or returned as promptly as possible as but not later than thirty (30) days after the expiration of the period of tender validity prescribed by the Procuring entity.
- 14.6 The successful Tenderer's tender security will be discharged upon the tenderer signing the contract, pursuant to paragraph 30, and furnishing the performance security, pursuant to paragraph 31.
- 4.7 The tender security may be forfeited:
 - (a) if a tenderer withdraws its tender during the period of tender validity specified by the procuring entity on the Tender Form; or
 - (b) In the case of a successful tenderer, if the tenderer fails:
 - (i) To sign the contract in accordance with paragraph 30

Or

- (ii) To furnish performance security in accordance with paragraph 31.

15. Validity of Tenders

- 15.1 Tenders shall remain valid for **120 days** or as specified in the tender documents after date of tender opening prescribed by the Procuring entity, pursuant to paragraph 18. A tender valid for a shorter period shall be rejected by the Procuring entity as nonresponsive.
- 15.2 In exceptional circumstances, the Procuring entity may solicit the Tenderer's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. The tender security provided under paragraph 14 shall also be suitably extended. A tenderer may refuse the request without forfeiting its tender security. A tenderer granting the request will not be required nor permitted to modify its tender.

16. Format and Signing of Tender

- 16.1 The Tenderer shall prepare two copies of the tender, clearly marking each "**ORIGINAL TENDER**" and "**COPY OF TENDER**," as appropriate. In the event of any discrepancy between them, the original shall govern.
- 16.2 The original and all copies of the tender shall be typed or written in indelible ink and shall be signed by the tenderer or a person or persons duly authorized to bind the tenderer to the contract. Written power-of-attorney accompanying the tender shall indicate the latter authorization. The person or persons signing the tender shall initial all pages of the tender, except for unamended printed literature.
- 16.3 The tender shall have no interlineations, erasures, or overwriting except as necessary to correct errors made by the tenderer, in which case such corrections shall be initialled by the person or persons signing the tender.

Submission of Tenders

17. Sealing and Marking of Tenders

- 17.1 The tenderer shall seal the original and each copy of the tender in separate envelopes, duly marking the envelopes as “**ORIGINAL**” and “**COPY.**” The envelopes shall then be sealed in an outer envelope.
- 17.2 The inner and outer envelopes shall:
 - a) Be addressed to the Procuring entity at the following address:

**THE MANAGING DIRECTOR
KENYA BUREAU OF STANDARDS
P.O.BOX 54974 – 00200
POPO ROAD
OFF MOMBASA ROAD
BEHIND BELLEVUE CINEMA
NAIROBI**

Bear the tender no. **KEBS/T025/2018/2019: SUPPLY, DELIVERY, INSTALLATION AND USER TRAINING OF TESTING LABORATORY EQUIPMENT** and the words: “**DO NOT OPEN BEFORE” 10.00 am on Tuesday 7th May, 2019.**

- 17.3 The inner envelopes shall also indicate the name and address of the tenderer to enable the tender to be returned unopened in case it is declared “late”.
- 17.4 If the outer envelope is not sealed and marked as required by paragraph 17.2, the Procuring entity will assume no responsibility for the tender’s misplacement or premature opening.

18. Deadline for Submission of Tenders

- 18.1 Tenders must be received by the Procuring entity at the address specified under paragraph 17.2 no later than **10.00 am on Tuesday 7th May, 2019.**
- 18.2 The Procuring entity may, at its discretion, extend this deadline for the submission of tenders by amending the tender documents in accordance with paragraph 6, in which case all rights and obligations of the Procuring entity and candidates previously subject to the deadline will thereafter be subject to the deadline as extended.

9. Modification and Withdrawal of Tenders

- 19.1 The tenderer may modify or withdraw its tender after the tender’s submission, provided that written notice of the modification, including substitution or withdrawal of the tenders, is received by the Procuring prior to the deadline prescribed for submission of tenders.
- 19.2 The Tenderer’s modification or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of paragraph 17. A withdrawal notice may also be sent by cable, but followed by a signed confirmation copy, postmarked not later than the deadline for submission of tenders.
- 19.3 No tender may be modified after the deadline for submission of tenders.

- 19.4 No tender may be withdrawn in the interval between the deadline for submission of tenders and the expiration of the period of tender validity specified by the tenderer on the Tender Form. Withdrawal of a tender during this interval may result in the Tenderer's forfeiture of its tender security, pursuant to paragraph 14.7.

Opening and Evaluation of Tenders

20. Opening of Tenders

- 20.1 The Procuring entity will open all tenders in the presence of tenderers' representatives who choose to attend, at **10.00 am on Tuesday 7th May, 2019** and in the following location:

**KENYA BUREAU OF STANDARDS
OFF MOMBASA ROAD
POPO ROAD
BEHIND BELLEVUE CINEMA
CONFERENCE ROOM
NQI COMPLEX**

The tenderers' representatives who are present shall sign a register evidencing their attendance.

- 20.2 The tenderers' names, tender modifications or withdrawals, tender prices, discounts, and the presence or absence of requisite tender security and such other details as the Procuring entity, at its discretion, may consider appropriate, will be announced at the opening.
20.3 The Procuring entity will prepare minutes of the tender opening.

21. Clarification of Tenders

- 21.1 To assist in the examination, evaluation and comparison of tenders the Procuring entity may, at its discretion, ask the tenderer for a clarification of its tender. The request for clarification and the response shall be in writing, and no change in the prices or substance of the tender shall be sought, offered, or permitted.
- 21.2 Any effort by the tenderer to influence the Procuring entity in the Procuring entity's tender evaluation, tender comparison or contract award decisions may result in the rejection of the tenderers' tender.

22. Preliminary Examination

- 22.1 The Procuring entity will examine the tenders to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, stamped and whether the tenders are generally in order.

- 22.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected. If the candidate does not accept the correction of the errors, its tender will be rejected, and its tender security may be forfeited. If there is a discrepancy between words and figures, the amount in words will prevail.
- 22.3 The Procuring entity may waive any minor informality or non-conformity or irregularity in a tender which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any tenderer.
- 22.4 Prior to the detailed evaluation, pursuant to paragraph 23, the Procuring entity will determine the substantial responsiveness of each tender to the tender documents. For purposes of these paragraphs, a substantially responsive tender is one, which conforms to all the terms and conditions of the tender documents without material deviations. The Procuring entity's determination of a tender's responsiveness is to be based on the contents of the tender itself without recourse to extrinsic evidence.
- 22.5 If a tender is not substantially responsive, it will be rejected by the Procuring entity and may not subsequently be made responsive by the tenderer by correction of the nonconformity.

23. Evaluation and Comparison of Tenders

- 23.1 The Procuring entity will evaluate and compare the tenders, which have been determined to be substantially responsive, pursuant to paragraph 22.
- 23.2 The Procuring entity's evaluation of a tender will exclude and not take into account:
- (a) in the case of equipment manufactured in Kenya or of foreign origin already located in Kenya, sales and other similar taxes, which will be payable on the equipment if a contract is awarded to the tenderer; and
 - (c) Any allowance for price adjustment during the period of execution of the contract, if provided in the tender.
- 23.3 The comparison shall be of the ex-factory/ex-warehouse/off-the-shelf price of the equipment offered from within Kenya, such price to include all costs, as well as duties and taxes paid or payable on components and raw material incorporated or to be incorporated in the Equipment.
- 23.4 The Procuring entity's evaluation of a tender will take into account, in addition to the tender price and the price of incidental services, the following factors, in the manner and to the extent indicated in paragraph 23.5 and in the technical specifications:
- (a) Delivery schedule offered in the tender;
 - (b) Deviations in payment schedule from that specified in the Special Conditions of Contract;

- (c) The cost of components, mandatory spare parts, and service;
- (d) The availability in Kenya of spare parts and after-sales services for the equipment offered in the tender.

23.5 Pursuant to paragraph 23.4 the following evaluation methods will be applied:

- (a) *Delivery schedule.*

The Procuring entity requires that the equipment under the Invitation for Tenders shall be delivered at the time specified in the Schedule of Requirements. Tenders offering deliveries longer than the procuring entity's required delivery time will be treated as non-responsive and rejected.

- (b) *Deviation in payment schedule.*

Tenderers shall state their tender price for the payment of schedule outlined in the special conditions of contract. Tenders will be evaluated on the basis of this base price. Tenderers are, however, permitted to state an alternative payment schedule and indicate the reduction in tender price they wish to offer for such alternative payment schedule. The Procuring entity may consider the alternative payment schedule offered by the selected tenderer.

- (c) *Spare parts and after sales service facilities.*

Tenderers must offer items with service and spares parts back-up. Documentary evidence and locations of such back-up must be given. Where a tenderer offers items without such back-up in the country, he must give documentary evidence and assurance that he will establish adequate back-up for items supplied.

24. Contacting the Procuring entity

- 24.1 Subject to paragraph 21, no tenderer shall contact the Procuring entity on any matter relating to its tender, from the time of the tender opening to the time the contract is awarded.
- 24.2 Any effort by a tenderer to influence the Procuring entity in its decisions on tender evaluation, tender comparison, or contract award may result in the rejection of the Tenderer's tender.

Award of Contract

25. Post-qualification

- 25.1 In the absence of pre-qualification, the Procuring entity will determine to its satisfaction whether the tenderer that is selected as having submitted the lowest evaluated responsive tender is qualified to perform the contract satisfactorily.
- 25.2 The determination will take into account the tenderer financial, technical, and production capabilities. It will be based upon an examination of the documentary evidence of the tenderers qualifications submitted by the tenderer, pursuant to paragraph 12.3, as well as such other information as the Procuring entity deems necessary and appropriate.

25.3 An affirmative determination will be a prerequisite for award of the contract to the tenderer. A negative determination will result in rejection of the Tenderer's tender, in which event the Procuring entity will proceed to the next lowest evaluated tender to make a similar determination of that Tenderer's capabilities to perform satisfactorily.

26. Award Criteria

26.1 Subject to paragraph 10, 23 and 28 the Procuring entity will award the contract to the successful tenderer(s) whose tender has been determined to be substantially responsive and has been determined to be the lowest evaluated tender, provided further that the tenderer is determined to be qualified to perform the contract satisfactorily.

27. Procuring entity's Right to Vary quantities

27.1 The Procuring entity reserves the right at the time of contract award to increase or decrease the quantity of equipment originally specified in the Schedule of requirements without any change in unit price or other terms and conditions.

28. Procuring entity's Right to Accept or Reject Any or All Tenders

28.1 The Procuring entity reserves the right to accept or reject any tender, and to annul the tendering process and reject all tenders at any time prior to contract award, without thereby incurring any liability to the affected tenderer or tenderers or any obligation to inform the affected tenderer or tenderers of the grounds for the Procuring entity's action.

29. Notification of Award

29.1 Prior to the expiration of the period of tender validity, the Procuring entity will notify the successful tenderer in writing that its tender has been accepted.

29.2 The notification of award will constitute the formation of the Contract.

29.3 Upon the successful Tenderer's furnishing of the performance security pursuant to paragraph 31, the Procuring entity will promptly notify each unsuccessful Tenderer and will discharge its tender security, pursuant to paragraph 14.

30. Signing of Contract

30.1 At the same time as the Procuring entity notifies the successful tenderer that its tender has been accepted, the Procuring entity will send the tenderer the Contract Form provided in the tender documents, incorporating all agreements between the parties.

30.2 Within thirty (30) days of receipt of the Contract Form, the successful tenderer shall sign and date the contract and return it to the Procuring entity.

31. Performance Security

31.1 Within thirty (30) days of the receipt of notification of award from the Procuring entity, the successful tenderer shall furnish the performance security in accordance with the Conditions of

Contract, in the Performance Security Form provided in the tender documents, or in another form acceptable to the Procuring entity.

31.2 Failure of the successful tenderer to comply with the requirement of paragraph 30 or paragraph 31 shall constitute sufficient grounds for the annulment of the award and forfeiture of the tender security, in which event the Procuring entity may make the award to the next lowest evaluated Candidate or call for new tenders.

32. Corrupt Fraudulent Practices

32.1 The Procuring entity requires that tenderers observe the highest standard of ethics during the procurement process and execution of contracts. In pursuance of this policy, the Procuring entity: -

- (a) Defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and
 - (ii) "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Procuring entity, and includes collusive practice among tenderer (prior to or after tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the Procuring entity of the benefits of free and open competition;
- (b) Will reject a proposal for award if it determines that the tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
- (c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded any contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

32.2 Furthermore, tenderers shall be aware of the provision stated in the General Conditions of Contract.

Section C - General Conditions of Contract

1. Definitions

- 1.1 In this Contract, the following terms shall be interpreted as indicated:
- (a) "The Contract" means the agreement entered into between the Procuring entity and the tenderer, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
 - (b) "The Contract Price" means the price payable to the tenderer under the Contract for the full and proper performance of its contractual obligations.
 - (c) "The Goods" means all of the equipment which the tenderer is required to supply to the Procuring entity under the Contract.
 - (d) "The Procuring entity" means the organization purchasing the Goods under this Contract.
 - (e) "The tenderer" means the individual or firm supplying the Goods under this Contract.

2. Application

- 2.1 These General Conditions shall apply in all Contracts made by the Procuring entity for the procurement of goods.

3. Country of Origin

- 3.1 For purposes of this Clause, "origin" means the place where the Goods were mined, grown, or produced.
- 3.2 The origin of Goods and Services is distinct from the nationality of the tenderer.

4. Standards

- 4.1 The Equipment supplied under this Contract shall conform to the standards mentioned in the Technical Specifications.

5. Use of Contract Documents and Information

- 5.1 The Candidate shall not, without the Procuring entity's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Procuring entity in connection therewith, to any person other than a person employed by the tenderer in the performance of the Contract.
- 5.2 The tenderer shall not, without the Procuring entity's prior written consent, make use of any document or information enumerated in paragraph 5.1 above.

5.3 Any document, other than the Contract itself, enumerated in paragraph 5.1 shall remain the property of the Procuring entity and shall be returned (all copies) to the Procuring entity on completion of the Tenderer's performance under the Contract if so required by the Procuring entity.

6. Patent Rights

6.1 The tenderer shall indemnify the Procuring entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the equipment or any part thereof in the Procuring entity's country.

7. Performance Security

7.1 Within thirty (30) days of receipt of the notification of Contract award, the successful tenderer shall furnish to the Procuring entity the performance security in the amount specified in Special Conditions of Contract.

7.2 The proceeds of the performance security shall be payable to the Procuring entity as compensation for any loss resulting from the Tenderer's failure to complete its obligations under the Contract.

7.3 The performance security shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Procuring entity and shall be in the form of a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in Kenya or abroad, acceptable to the Procuring entity, in the form provided in the tender documents.

7.4 The performance security will be discharged by the Procuring entity and returned to the Candidate not later than thirty (30) days following the date of completion of the Tenderer's performance obligations under the Contract, including any warranty obligations, under the Contract.

8. Inspection and Tests

8.1 The Procuring entities or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications. The Procuring entity shall notify the tenderer in writing, in a timely manner, of the identity of any representatives retained for these purposes.

8.2 The inspections and tests may be conducted on the premises of the tenderer or its subcontractor(s), at point of delivery, and/or at the Goods' final destination. If conducted on the premises of the tenderer or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Procuring entity.

8.3 Should any inspected or tested equipment fail to conform to the Specifications, the Procuring entity may reject the equipment, and the tenderer shall either replace the rejected equipment or make alterations necessary to meet specification requirements free of cost to the Procuring entity.

8.4 The Procuring entity's right to inspect test and, where necessary, reject the equipment after arrival shall in no way be limited or waived by reason of the equipment having previously been inspected, tested, and passed by the Procuring entity or its representative prior to the delivery.

8.5 Nothing in paragraph 8 shall in any way release the tenderer from any warranty or other obligations under this Contract.

9. Packing

9.1 The tenderer shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract.

9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract.

10. Delivery and Documents

10.1 Delivery of the equipment shall be made by the tenderer in accordance with the terms specified by Procuring entity in its Schedule of Requirements and the Special Conditions of Contract

11. Insurance

11.1 The Equipment supplied under the Contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery in the manner specified in the Special conditions of contract

12. Payment

12.1 The method and conditions of payment to be made to the tenderer under this Contract shall be specified in Special Conditions of Contract.

12.2 Payments shall be made promptly by the Procuring entity as specified in the contract.

13. Prices

13.1 Prices charged by the tenderer for equipment delivered and Services performed under the Contract shall not, with the exception of any price adjustments authorized in Special Conditions of Contract, vary from the prices by the tenderer in its tender.

14. Assignment

14.1 The tenderer shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Procuring entity's prior written consent.

15. Subcontracts

15.1 The tenderer shall notify the Procuring entity in writing of all subcontracts awarded under this Contract if not already specified in the tender. Such notification, in the original tender or later, shall not relieve the tenderer from any liability or obligation under the Contract.

16. Termination for Default

16.1 The Procuring entity may, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the tenderer, terminate this Contract in whole or in part:

- (a) If the tenderer fails to deliver any or all of the Goods within the period(s) specified in the Contract, or within any extension thereof granted by the Procuring entity.
 - (b) If the tenderer fails to perform any other obligation(s) under the Contract.
 - (c) If the tenderer, in the judgment of the Procuring entity has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- 16.2 In the event the Procuring entity terminates the Contract in whole or in part, it may procure, upon such terms and in such manner, as it deems appropriate, Goods similar to those undelivered, and the tenderer shall be liable to the Procuring entity for any excess costs for such similar Goods.

17. Liquidated Damages

- 17.1 If the tenderer fails to deliver any or all of the equipment within the period(s) specified in the contract, the procuring entity shall, without prejudice to its other remedies under the contract, deduct from the contract prices liquidated damages sum equivalent to 0.5% of the delivered price of the delayed equipment up to a maximum deduction of 10% of the delayed goods. After this the tenderer may consider termination of the contract.

18. Resolution of Disputes

- 18.1 The procuring entity and the tenderer shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 18.2 If, after thirty (30) days from the commencement of such informal negotiations both parties have been unable to resolve amicably a contract dispute, either party may require adjudication in an agreed national or international forum, and/or international arbitration.

19. Language and Law

- 19.1 The language of the contract and the law governing the contract shall be English language and the Laws of Kenya respectively unless otherwise stated.

20. Force Majeure

- 20.1 The tenderer shall not be liable for forfeiture of its performance security, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

Section D. Special Conditions of Contract

1. Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract.

2. Bid Security. The tenderer shall furnish, as part of its tender a tender security comprising **of 2%** of the total quoted tender price. The tender security shall be a **bank guarantee** from a Reputable bank, cash or such insurance guarantee approved by the authority valid for 30 days beyond the validity of the tender.

3. General conditions of the contract clause 7.1 performance security.

The performance security shall be in the amount of 10% of the contract price and shall remain valid for 30 days beyond the last date of installation and commissioning of the system.

4. Warranty: The manufacturer warrants that goods supplied under the contract are new, unused, of the most recent or current specifications and incorporate all recent improvement in design and materials unless provided otherwise in the contract. The manufacturer further warrants that the goods supplied under this contract shall have no defect arising from manufacture, materials or workmanship or from any act or omission of the manufacturer that may develop under normal use of goods.

- This warranty will remain valid for a minimum of **12 months** after the equipment have been delivered and installed to Respective Regional Laboratories
- The procuring entity shall promptly notify the Manufacturer in writing of any claim arising under this warranty.
- Upon receipt of this claim the manufacturer shall, with reasonable speed, replace the defective equipment without cost to the Procuring Entity.
- If the manufacturer having been notified fails to remedy the defect(s) within a reasonable period, the procuring entity may proceed to take such remedial action as may be necessary, at the Manufacturer's and expense and without prejudice to any other rights, which the Procuring Entity may have against the Manufacturer under the contract.

5. Where the tender price is in foreign currency, the Exchange Rate will be as per Central Bank of Kenya exchange rate of Tender closing/opening date.

6. Tenderers must attach Manufacturers Authorization, addressed to the Managing Director (Manufacturers Authorization Form) Kenya Bureau of Standards in the format provided for in the tender document.

N/B PLEASE NOTE THAT SUPPLIERS WHO WERE ISSUED WITH LPO'S FOR TENDER NO. KEBS/T008/2018/219 FOR SUPPLY, DELIVERY, INSTALLATION AND USER TRAINING OF LABORATORY EQUIPMENT AND HAVE NOT FULLY SERVICED THE ORDER FOR THE LAST THREE MONTHS ARE NOT ELIGIBLE TO PARTICIPATE IN THIS TENDER.

Section E. Schedule of Requirements

Number	Description	Quantity	Delivery schedule
1	SUPPLY,DELIVERY,INSTALLATION AND USER TRAINING OF METROLOGY LABORATORY EQUIPMENT		

(Shipment) In weeks/months from _____

Indicate your Delivery schedule for the goods/services after receipt of a confirmed Purchase Order from the Kenya Bureau of Standards.

Section F. Technical Specifications

EVALUATION CRITERIA

a) Stage One: Mandatory Evaluation Criteria

No.	Requirements
1.	PIN/VAT Certificate
2.	Single business permit/Trade license
3.	Certificate of Registration and /or Incorporation.
4.	Valid Bid Bond.
5.	Valid Tax Compliance Certificate.
6.	Confidential Business Questionnaire
7.	Declaration stating that you have NOT been debarred by Public Procurement Regulatory Authority.
8.	Financial Audited Accounts/statements for the last 3 years: 2016, 2017 and 2018.
9.	Manufacturer authorization/ Partnership letter
10.	Bidder Must Provide brochures/catalogues for the items

TECHNICAL SPECIFICATIONS



COAST REGION EQUIPMENT

TECHNICAL SPECIFICATION FOR TESTING LABORATORY EQUIPMENT

S/N	Equipment	Qty	Specification	Weighting (%)	Score	Laboratory	Region
1	Automatic colony Counter	2	Application/Scope: Weighing samples				
			General Specification.	5			
			Ergonomic housing constructed in high density foam Integral CCD camera and lens Should come with a mounted all-in-one PC	2			
			2 sliding doors to prevent excessive ambient light	1			
			Integrated, sensitive 1.4 megapixels with f1.2 lens	1			
			For standard 150mm Petri dish, smallest detectable colony is 43 microns				
			3 channel capture for colour images	1			
				80			
			Unique 3 channel (red, green, blue) LED lighting Multi-array LED lighting (computer controlled) Lower lighting with upper reflective lighting for all applications	15			
			VESA mounted, small form factor (Mini-ITX) PC with i3 (Skylake) 2.7GHz processor 4GB Ram 500GB hard drive Lan, WiFi and Windows 10 17" touchscreen monitor featuring 10 touch points and PCAP technology. Due to its glass overlay, it guarantees high durability, scratch-resistance and perfect picture performance	15			
			Separation of touching colonies, exclusion areas, colour mode, shape mode, size mode	10			
			Win7/10 compatible	10			
			SQL database stores all data and image locations	15			
			450mm (h) x 500mm (d) x 400mm (w)	10			
			20kg weight	5			
			TOTAL SCORE	80			
			Other requirements	15			
		i.	Installation and Commissioning -to be indicated	3			

			ii. Operation and Service Manuals - All Manuals in English iii. Warranty and Nearest service centre –to be indicated iv. Brochures for the equipment to be provided during quotation v. Training - onsite training during installation	3			
			GRAND TOTAL	100%			
			MINIMUM SCORE	97%			
2	DIGITAL DENSITY METER	1					
			Application/Scope Density measurement in various food and alcoholic beverage samples				
			1. Main Features				
			a) Digital measurement of density and other related values (I.e. % alcohol, Brix ^o)	1			
			b) High precision and short measuring time	1			
			c) Complete transparency and traceability af the sample filling and measuring process	1			
			d) Sample size of 1 ml	1			
			e)	1			
			Performance Specifications				
			i. Measuring range; Density 0-3 g/ml, Temperature 0-95 °C, and Pressure 0-10 Bar	10			
			ii. Measurement accuracy; Density 0.00005 g/ml, temperature 0.01 °C	10			
			iii. Repeatability standard deviation; Density 0.00001 g/ml, temperature 0.001 °C	9			
			iv. Built in Peltier thermostat for temperature control (no water bath)	8			
			v. Measuring time of 30 seconds per sample	8			
			vi. Wetted parts to be made of borosilicate glass or PTFE	8			
			vii. Power supply: 240 V, A.C, Frequency 50/60 Hz	8			
			viii. Graphical 6.5 inches TFT screen (640 x 480 px) with customizable display layout	8			
			ix. USB, RS 232 interface and cable for data transfer to a PC	8			
			x. Automatic viscosity correction	8			
			Other requirements				
			i. Installation and Commissioning -to be indicated on quotation	2			
			ii. Operation and Service Manuals - All Manuals in English(to be indicated on quotation)	2			
			iii. Warranty and Nearest service centre -to be indicated to be indicated on quotation)	2			
			iv. Brochures (in English) for the equipment to be attached with the quotations	2			
			v. Training - onsite training during installation (to be indicated on quotation)	2			
			GRAND TOTAL SCORE FOR THE EQUIPMENT	100			
			MINIMUM SCORE REQUIRED	95			

3	Hybrid Karl fisher moisture titrator	Qty-2	Application/Scope Quantifying water content in a variety of samples with low water content e.g. edible oils and motor oils			Chemistry Eldoret	Coast North Rift
			1. Main Features				
			a) Easy Operation and maintenance and versatile for all Karl fisher moisture determinations with high speed and accuracy	1			
			b) Automatic monitoring, alert and check functions to ensure trouble free system	1			
			c) Extensive function for data evaluation and statistics	1			
			d) Large color touch screen Clearly defined control panel and unit toggle of up to 5 units	1			
			e) Language-driven user interface	1			
			Performance Specifications				
			a) Coulometric titration <ul style="list-style-type: none">• Measurement method: Karl fisher coulometric titration• Measuring range: water content 10µg –300mg water• Precision, RSD ≤ 0.3% (n=10)• Display 10 µg	5			
			b) Coulometric titration <ul style="list-style-type: none">• Measurement method: Karl fisher coulometric titration• Measuring range: water content 100µg –500mg water• Concentration 1 ppm –100% water• Burette: Volume 10ml; Discharge precision ±0.015ml; Repeatability ±0.0005ml	5			
			c) Hybrid titration <ul style="list-style-type: none">• Measurement method: Karl fisher coulometric titration & Karl fisher Volumetric Titration• Measuring range: water content 10µg –500mg water• Precision, RSD ≤ 0.3% (n=10)• Display 10 µg	10			
			d) Factor measurement of reagent by electrolysis <ul style="list-style-type: none">• Measurement Method: Factor measurement of reagent by electrolysis• Measurement range:KF reagent reagent factor from 1 to 5• Precision, less than 1.0% (n=3) (dose volume 0.5 mL, reagent factor 3 mg/mL)	5			
			e) Data storage: On board Memory 300 measurements, External memory: USB memory stick	5			
			f) External I/O (measuring unit):Rs 232C,1ch for sample changer /evaporator),SS BUS :1Ch for automatic piston burette	5			
			g) External I/O main control unit: COM/COM2(for dot matrix printer, PC ,electronic balance) Card 1ch compact flashUSB, 1ch memory usb stick; 2ch Measuring units	5			
			h) GLP conformance	5			
			Ambient Conditions: Temperature 0-35oC	5			
			Humidity <85% RH(no condensation)	5			
			Power Supply: Measuring Unit: DC 24 V 5 A; AC 100—240V ±10% 50/60HZ with AC adapter	3			
			Main control: DC 12 V 3 AC 100—240V ±10% 50/60HZ with AC adapter	3			
			Dimensions Measuring Unit: WXDXH (141x296X383) mm approx. Main control unit: WXDXH (230x285X255) mm approx. Stirrer/Cell: WXDXH (110x230X350) mm approx. Dispenser: WXDXH (140x170X110) mm approx.	2			
			Conforming to EN 61326,EN 1010-1.	5			

			Software: dedicated software for capture and processing of results via excel worksheet	5			
			System PC (as attached)	20			
			Other requirements				
			i. Installation and Commissioning -to be indicated	2			
			ii. Operation and Service Manuals- All Manuals in English -to be indicated	2			
			iii. Warranty and Nearest service centre -to be indicated	2			
			iv. Brochures (in English)for the equipment to be attached with the quotations	2			
			v. Training - onsite training during installation to be indicated.	2			
			TOTAL SCORE	100			
			MINIMUM SCORE REQUIRED	95%			
4	QPCR SYSTEM (Quantitative PCR system)	1	Application/Scope Molecular analysis of pathogenic parameters and genetically modified organisms Main Features The system should be automated for both real-time PCR and post-PCR (end point) analysis using in-built Peltier based PCR machine. System should support applications including absolute quantification, simultaneous analysis data for relative quantitation of Unlimited plates of 96 wells each, (4-6 color multiplexing), allelic discrimination (SNP), dissociation curve analysis as well as pathogen detection and plus/minus assay using internal positive control. Instrument should have 96-well sample block of 0.1ml capacity, able to run fast and standard run on the same block. It can also have 6 separate Peltier-controlled blocks with a fixed gradient with a 25-degree range. System should complete Fast 40 cycle protocol in less than 40 minutes and standard protocol in under 2 hours.	Weighting (%)	Score	Microbiology	COAST
				3			
				3			
				2			
				2			
			Performance Specifications				
			• The vendor should offer a complete solution for Fast real-time PCR (Quantitative PCR):	4			
			• Fast instruments, Fast reagents, Fast protocols and Fast assays.	4			
			• Sample Ramp Rate: fast Mode: $\pm 3.5^{\circ}\text{C/sec}$	4			
			• Standard Mode: $\pm 1.6^{\circ}\text{C/sec}$	4			

		<ul style="list-style-type: none"> • 9600 Emulation Mode: +0.8 and -1.6°C/sec °C/sec • Pear Block Ramp Rate: 5.5°C/sec • Temperature range: 4°C- 100°C • Temperature Accuracy: ±0.25°C (35°C- 95°C) of set point/ display temperature measured at 3 minutes after clock start • Temperature Uniformity: ±0.50°C, 30 seconds after clock start 	2		
		<ul style="list-style-type: none"> • Excitation source should be single blue LED light source or Tungsten Halogen or high intensity Xenon lamp and emission detection by photodiodes or cooled CCD camera. There should be enough excitation and emission filters to cover majority of dyes. • System should be flexible to support 96 well plates, individual tubes and 8 strip tubes. • System software should provide simultaneous analysis data for relative quantitation of Unlimited plates of 96 wells each. 	4		
		<ul style="list-style-type: none"> (i) Normalization of reaction due to non-PCR related fluctuations such as pipetting variations, should be possible by using ROX™ or any other calibrated dye. (ii) System should support reaction volume 5-30 µL. (iii) All assays should run using Universal Thermal Cycling conditions to eliminate optimization of PCR conditions. (iv) The instrument software must be capable of detecting and analyzing a different gene, SNP or pathogen target in every well of the 96-well plate. The instrument software should not restrict the number of assays or targets that can be run on a single 96-well plate. (v) The system should have easy door design for loading and unloading 96-well plates or individual 0.2 ml PCR tubes. (vi) System should collect data for all filters for all wells regardless of plate setup. The software should allow reanalysis of data so that data is never lost. (vii) The instrument should be pre-calibrated for at least seven dyes including the following during installation at the customer site: FAM™, SYBR® Green I, VIC®, JOE™, NED™, TAMRA™ Cy3, Cy5 and ROX™. The user should be able to use any of these dyes in an experiment without needing to recalibrate the instrument. Addition of new dyes should be 	2 2 2 2 2 2 3		

		possible without hardware change.			
		<ul style="list-style-type: none"> • A dedicated licensed full version software for primer and probe design with comprehensive assay design and development guidelines for quantitative and qualitative real-time assays, should be provided to enable designing of custom oligo assays. • System should be standardized for at least two homogeneous reaction chemistries including SYBR Green I and dual color TaqMan or four color hybridization probes (FRET). • The vendor should be able to offer pre-validated and functionally tested Gene Expression Assays as well as SNP Genotyping Assays and the flexibility to design specific assays for new templates of interest. • The instrument software should utilize a multi-componenting algorithm designed to provide precise deconvolution of multiple dye signals to enable the simultaneous detection of multiple fluorophores. • The instrument may have display with an LCD touchscreen that is a 6.5inch, full VGA (640 x 480). 	3 3 3 3 3		
		<ul style="list-style-type: none"> • Analysis work station should be of latest branded Pentium IV with licensed windows XP, operating system and colored laser printer. • The vendor should clearly indicate compliance or deviation vis -avis the tender specifications and should be highlighted in the literature or manuals. • The instrument should be UL approved and manufactured according to ISO 9001 standards. • The vendor supplying the instrument should have own application support laboratory in Kenya, preferable in Mombasa/Nairobi for local and efficient after sales service support. 	3 3 2 2		
		<ul style="list-style-type: none"> • Reagents for 500- 1000 reaction should be provided with the instrument. • Suitable on - line UPS (about 2 KVA) is required to support the instrument. • All accessories should be provided with the instrument 	3 3 4		
		Other requirements			
		(i) During Quotation opening the selected suppliers to be available to give a summary the equipment to be supplied.	5		
		(ii) Installation and Commissioning -to be done	2		
		(iii) Operation and Service Manuals- All Manuals in English	1		

			(iv) Warranty and Nearest service center -Three years warranty with one year spare replacement, if required.	1			
			(v) Brochures for the equipment to be provided during quotation	1			
			(vi) Training - onsite training during installation/ commissioning and at least 10 test runs. The trainer should have all the is required for training to ensure full training.	5			
			Grand total score for the equipment	100			
			Minimum score	97			
5	Salmonella Rapid Test		Main Features <i>The Oxoid Salmonella Rapid Test is for the presumptive detection of motile salmonella in all food materials, finished food products and factory environmental samples.</i>	Weighting (%)	Score	Microbiolog y	Coast
			a. Ability to do salmonella test in food	2			
			b. With all the components	2			
			c. With 50 culture vessels	1			
			Performance Specifications				
			Components of the Kit:	15			
			FT0201 – 50 culture vessels	15			
			Each culture vessel contains 2 tubes :	10			
			Tube A (blue cap) contains Modified Rappaport- Vassiliadis medium as a selective medium, and Modified Lysine Iron Cystine Neutral Red Medium as the indicator medium.	10			
			Tube B (red cap) contains Modified Lysine Deoxycholate Medium as the selective medium and Modified Brilliant Green Medium as the indicator medium.	10			
			50 Novobiocin Discs (FT0207) each containing 1.8mg of novobiocin.	1			
			2 syringes and needles	1			
			1 spanner (FT0202)	1			
			50 labels	1			
			1 instruction leaflet	1			
			Pre-enrichment Medium	1			
			Sterile Distilled Water	1			
			Salmonella Rapid Test Elective Medium (SRTEM) Code CM0857	1			
			Preparation Tray (FT0300)	1			
			Pipettes				
			Salmonella Latex Test (FT0203)				
			Other requirements				
			vi. Installation and Commissioning -to be indicated	3			

			vii. Operation and Service Manuals - All Manuals in English	3			
			viii. Warranty and Nearest service centre -to be indicated	3			
			ix. Brochures for the equipment to be provided during quotation	3			
			x. Training - onsite training during installation	3			
TOTAL SCORE				100			
MINIMUM SCORE				97			
6	Vacuum /leak Tester-Leak and Seal Strength Tester	1	Main Features				
			Leak tester conforms to the multiple national and international standards:				
			• ASTM D3078 - Standard Test Method for Determination of Leaks in Flexible Packaging by Bubble Emission	2			
			• ASTM F1140 - Standard Test Methods for Internal Pressurization Failure Resistance of Unrestrained Packages	1			
			• ASTM F2054 - Standard Test Method for Burst Testing of Flexible Package Seals Using Internal Air Pressurization Within Restraining Plates (High Pressure Test, Creep Test & Creep to Failure Test)	1			
			• ISO 11607-1 - Packaging for terminally sterilized medical devices -- Part 1: Requirements for materials, sterile barrier systems and packaging systems	1			
			Performance Specifications				
			This tester is used to measure leak and seal strength of packages. It can be used to conduct burst, creep and creep to failure test.	80			
			Other requirements				
			(i) Installation and Commissioning -to be indicated	3			
			(ii) Operation and Service Manuals - All Manuals in English	3			
			(iii) Warranty and Nearest service centre -to be indicated	3			
			(iv) Brochures for the equipment to be provided during quotation	3			
			(v) Training - onsite training during installation	3			
TOTAL SCORE				100			
MINIMUM SCORE				97			
7	BOD incubator and its accessories	1	Application/Scope For BOD testing	Weighting (%)	Score	CHEMISTRY	COAST
			Main Features				
			3. Main Features	5 Max			
			I. digital display of set temperature.	1			
			II. external mild steel powder coated.	1			
			III. Microprocessor based Controller.	1			
			IV. Capable of accommodation two sets of 12 slot stirring platforms, transparent door	2			

			TOTAL SCORE	5		
			Technical specifications: The equipment if for respirometric measurements with oxitop systems in a specified temperature range with a deviation of 0.5K in relation to the set temperature and adjusted in incremental 1 oC, Radial blower heating for constant temperature and sockets for stirring platforms.	85		
			BOD CABINET			
		I.	Control range 10 to 40°C	5		
		II.	Power 220VAC/50Hz	5		
		III.	Adjustment interval 1 °c	5		
		IV.	Air circulation 120m/h by means of tangential blower.	10		
		V.	Consistent sample temperature ±0.5 oc	10		
		Accessories	Oxitop meters: Automatic Error free conversion into the corresponding BOD value			
		I.	Display LCD graphic back lit menu controlled	50		
		II.	BOD measuring range 0to 4000			
		III.	Pressure range hap 500 to 1250			
		IV.	Selectable duration days 1 to 7			
		V.	Selectable sample volume 22.7; 43.5; 97.0 ; 164 ; 250 ; 365 ; 432			
		VI.	LED indicator RGB			
		VII.	Batter 1x CR 2450.			
		VIII.	12 OxiTop®-i measuring heads (6 x blue and 6 x grey), menu-operated, with backlit graphic LCD, control LED, operating buttons, for direct BOD readings, volume pre-selection, measurement duration between 1 and 7 days selectable, display of measuring curve, display of current readings			
		IX.	Equipment for testing the tightness and functionality of the pressure sensor of OxiTop® measuring heads			
		X.	Stirring platform :two (sets of 12 measuring places ,Inductive stirring platforms with program controlled operation ,sleves,stiring bars ,			

			overflow measuring flasks for inlet and outlet measurement ,Including CO2 absorbent and nitrification inhibitor),adapter cable.			
		XI.				
			TOTAL SCORE	85		
			Other requirements-General	10		
		vi.	Installation and Commissioning -to be indicated on quotation	2		
		vii.	Operation and Service Manuals - All Manuals in English(to be indicated on quotation)	2		
		viii.	Warranty and Nearest service center -to be indicated to be indicated on quotation)	2		
		ix.	Brochures (in English)for the equipment to be attached with the quotations	2		
		x.	Training - onsite training during installation (to be indicated on quotation)	2		
			TOTAL SCORE	10		
				GRAND	100 %	
			TOTAL SCORE FOR THE EQUIPMENT		95 %	
			MINIMUM SCORE REQUIRED			
8	Centrifuge		Application/Scope Centrifugation in molecular laboratory For QPCR Materials	Weighting (%)	Score	Microbiology Coast
			Main Features			
			Micro centrifuge with multipurpose capabilities Unique cross	2		
			Unique cross-over Centrifuge 5430 combine the best features of a micro centrifuge (small footprint) and multipurpose centrifuge (versatility) in one instrument. These centrifuges spin rotors for Eppendorf tubes and PCR strips as you would expect from any micro centrifuge. But that's not all. In a compact size, Centrifuge 5430 also accommodates rotors for microplates and 15/50 mL conical tubes. Now, the rotor program has been expanded with additional Eppendorf Quick Lock® rotors. This includes 48-place rotors (1.5/2.0 mL), a 16-place rotor for Eppendorf Tubes® 5.0 mL and a swing-bucket rotor (24 × 1.5/2.0 mL). With their unmatched versatility, Centrifuge 5430 and Centrifuge 5430 R are the flagship products among the Eppendorf micro centrifuge portfolio.	1		
				1		
				1		
			Performance Specifications			
			• Temperature range: -11 °C to +40 °C	15		
			• The patented compressor technology reduces vibrations and protects your samples	15		
			• Continuous cooling maintains a constant temperature after the run has been completed – your samples stay cool	15		
			• Max. rotor capacity: 48 × 1.5/2.0 mL, 6 × 50 mL, 2 × MTP	10		

			<ul style="list-style-type: none"> • Max. speed: 30,130 x g (17,500 rpm) • Remarkable versatility with 12 different rotors <p>Other requirements</p> <ul style="list-style-type: none"> (i) Installation and Commissioning -to be indicated (ii) Operation and Service Manuals- All Manuals in English (iii) Warranty and Nearest service center -to be indicated (iv) Brochures for the equipment to be provided during quotation (v) Training - onsite training during installation and at least 10 test runs <p>TOTAL SCORE</p> <p>MINIMUM SCORE</p>	10			
				15			
				3			
				3			
				3			
				3			
				3			
				100			
				97			
9	Standard laboratory incubator	1	<p>Application/Scope</p> <p>Determination of product performance/stability under stipulated set of temperature e.g. in Milk and cosmetic products</p> <p>Main Features</p> <p>a) Controller with LCD display, single door</p> <p>b) Temperature range: ambient temperature plus 5 °C to 100 °C, Natural air convection</p> <p>c) Electromechanical control of the exhaust air flap</p> <p>d) Inner door made of tempered safety glass, 2 chrome-plated racks</p> <p>e) integrated independent temperature safety device (DIN 12880) with visual alarm, USB port for recording data</p> <p>Performance Specifications</p> <p>(i) Heating-up time to 37 °C [min] 55</p> <p>(ii) Recovery time after 30 seconds door open at 37 °C [min]:15</p> <p>(iii) Temperature fluctuation at 37 °C [\pm K] 0.1</p> <p>(iv) Temperature range 5 °C above ambient temperature to [°C]100</p> <p>(v) Temperature variation at 37 °C [\pm K] 0.3</p> <p>(vi) Power supply: 240 V, A.C, Frequency 50/60 Hz</p> <p>(vii) Internal Dimensions WXDXH (510X420X530)mm</p> <p>(viii) External Dimensions WXDXH (710X605X735)mm</p> <p>(ix) Interior volume [L] 112</p> <p>(x) Number of shelves 2/5</p> <p>(xi) Wall clearance back/side way 160/100</p> <p>Other requirements</p> <p>(i) Installation and Commissioning -to be indicated on quotation</p> <p>(ii) Operation and Service Manuals- All Manuals in English(to be indicated on quotation)</p> <p>(iii) Warranty and Nearest service centre -to be indicated to be indicated on quotation)</p> <p>(iv) Brochures (in English)for the equipment to be attached with the quotations</p> <p>(v) Training - onsite training during installation (to be indicated on quotation)</p> <p>TOTAL SCORE</p>	1		Chemistry	Coast

			MINIMUM SCORE	95			
10	ELECTRIC AIR OVEN (256L)	1	<p>Application/Scope Moisture content and total solids determinations in food, feeds and liquid- based chemical samples</p> <p>1. Main Features</p> <p>a) Forced air circulation oven with an adaptive multifunctional digital PID-microprocessor controller with 2 high-definition TFT- colour displays</p> <p>b) Platinum temperature sensors in 4-wire-circuit, mutually monitoring and taking over the performance at the same temperature value</p> <p>c) Stainless steel interior, reinforced by deep drawn ribbing with integrated and protected large-area heating on four sides</p> <p>d) Fully insulated stainless steel door with 2-point locking (compression door lock)</p> <p>e) Textured stainless steel casing</p> <p>Performance Specifications</p> <p>i. Internal capacity of 256 litres</p> <p>ii. Internal dimensions (mm): w_(A) x h_(B) x d_(C): 640 x 800 x 500</p> <p>iii. Temperature range (°C) min.10 °C above ambient up to +300 °C</p> <p>iv. Mechanical temperature limiter to switch off the heating approximately 20°C above nominal temperature, and an over temperature monitor, or adjustable temperature limiter selectable on display</p> <p>v. An integrated over- and under temperature monitor automatically following the set point value at a preset tolerance range, alarm in case of over- or under temperature, heating is switched off in case of over temperature</p> <p>vi. Equipment calibration certificate at a temperature value between 100 - 180 °C</p> <p>vii. Power requirements: Capable of operating at 240V and 50/60Hz mains supply, with a three-pin plug electric cable</p> <p>viii. Ventilation: forced air circulation by quiet air turbine, adjustable in 10 % steps for each segment individually, adjustment of pre-heated fresh air admixture by air flap control in 10 % steps for each segment individually, and a vent connection with a restrictor flap</p> <p>ix. Stainless steel interior, reinforced by deep drawn ribbing with integrated and protected large-area heating on four sides; and Textured stainless steel casing</p> <p>x. Support ribs for shelves: 9 (Nine); supplied with 4 (Four) shelves</p> <p>Other requirements</p> <p>i. Installation and Commissioning -to be done by the supplier (to be indicated on quotations)</p> <p>ii. Operation and Service Manuals- All Manuals in English, be supplied by the supplier(to be indicated on quotations)</p> <p>iii. Warranty and Nearest service centre -Warranty of not less than One year to be offered(to be indicated on quotations)</p> <p>iv. Brochures (in English) for the equipment to be attached with the quotations</p> <p>v. Training - onsite training to be offered by the supplier during installation(to be indicated on quotations)</p>	5	Chemistry lab	Coast	

			TOTAL SCORE	100			
			MINIMUM SCORE	95			
11	Electric Air Oven (749l)	1	Application/Scope Moisture content and total solids determinations in food, feeds and liquid- based chemical samples	Weighting (%)	Score	Chemistry	Coast
			Main Features				
			a) Natural convention oven with an adaptive multifunctional digital PID-microprocessor controller with 2 high-definition TFT- colour displays	1			
			b) Platinum temperature sensors in 4-wire-circuit, mutually monitoring and taking over the performance at the same temperature value	1			
			c) Stainless steel interior, reinforced by deep drawn ribbing with integrated and protected large-area heating on four sides	1			
			d) Fully insulated stainless steel door with 2-point locking (compression door lock)	1			
			e) Textured stainless steel casing	1			
			Performance Specifications				
			i. Internal capacity of 749 litres	15			
			ii. Internal dimensions (mm): w _(A) x h _(B) x d _(C) : 1040 x 1200 x 600	12			
			iii. Temperature range (°C) min.5 °C above ambient up to +300 °C	10			
			iv. mechanical temperature limiter to switch off the heating approximately 20°C above nominal temperature, and an over temperature monitor, or adjustable temperature limiter selectable on display	7			
			v. An integrated over- and under temperature monitor automatically following the set point value at a preset tolerance range, alarm in case of over- or under temperature, heating is switched off in case of over temperature	7			
			vi. Equipment calibration certificate at a temperature value between 100 - 180 °C	15			
			vii. Power requirements: Capable of operating at 400V, 3 phase,7000W and 50/60Hz mains supply, with a three-pin plug electric cable	4			
			viii. Ventilation: natural convention, adjustment of pre-heated fresh air admixture by air flap control in 10 % steps for each segment individually, and a vent connection with a restrictor flap	5			
			ix. Stainless steel interior, reinforced by deep drawn ribbing with integrated and protected large-area heating on four sides; and Textured stainless steel casing	5			
			x. Support ribs for shelves: 14; supplied with 5 (Five) shelves	5			
			Other requirements				
			i. Installation and Commissioning -to be done by the supplier (to be indicated on quotations)	2			
			ii. Operation and Service Manuals - All Manuals in English, be supplied by the supplier(to be indicated on quotations)	2			

			iii. Warranty and Nearest service centre -Warranty of not less than One year to be offered(to be indicated on quotations)	2																			
			iv. Brochures (in English) for the equipment to be attached with the quotations	2																			
			v. Training - onsite training to be offered by the supplier during installation(to be indicated on quotations)	2																			
TOTAL SCORE			100																				
MINIMUM SCORE			95																				
12	Flow Cytometer	1	<p>Application/Scope For cells and microorganisms counting in food, feed, Meat and fish products, and water.</p> <p>Main Features</p> <p>(i) The flow cytometer should be easy to use, simple to maintain, and affordable. 2 (ii) Should be small enough to easily fit on a benchtop. 2 (iii) The system should be equipped with appropriate lasers, appropriate scatter detectors, appropriate fluorescence detectors. 2 (iv) Should be compact optical design, fixed alignment, and pre-optimized detector settings to make the system easier to use. 2 (v) Should have a unique pumping system that drives the fluidics. 2 (vi) The accessory should be able to streamline sample processing with reliable and easy-to-use automation. 2 (vii) The software should be appropriately designed to provide quick access to the collection, analysis, and statistics functions. The Analysis should be performed easily with the internal system and should also be able to be processed to appropriate third party programs. 3</p> <p>Performance Specifications</p> <p>Optics • Laser power (as shown in table below)</p> <table> <thead> <tr> <th>Laser Wavelength (nm)</th> <th>Beam-shaping optics (BSO) (mW)</th> <th>Diode power (mW)</th> </tr> </thead> <tbody> <tr> <td>Violet 405</td> <td>50</td> <td>100</td> </tr> <tr> <td>Blue 488</td> <td>50</td> <td>100</td> </tr> <tr> <td>Green 532</td> <td>100</td> <td>140</td> </tr> <tr> <td>Yellow 561</td> <td>50</td> <td>100</td> </tr> <tr> <td>Red 637</td> <td>100</td> <td>140</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Laser excitation: Optimized excitation for minimized stray laser-line noise and losses to reflection • Laser profile: 10 x 50 µm flat-top laser providing robust alignment • Emission filters: <p>Up to 14 color channels with wavelength-tuned photomultiplier tubes (PMTs);</p>	Laser Wavelength (nm)	Beam-shaping optics (BSO) (mW)	Diode power (mW)	Violet 405	50	100	Blue 488	50	100	Green 532	100	140	Yellow 561	50	100	Red 637	100	140	Microbiology	NBI
Laser Wavelength (nm)	Beam-shaping optics (BSO) (mW)	Diode power (mW)																					
Violet 405	50	100																					
Blue 488	50	100																					
Green 532	100	140																					
Yellow 561	50	100																					
Red 637	100	140																					

		<p>userchangeable, keyed filters</p> <ul style="list-style-type: none"> • Laser separation: 150 µm • Optical alignment: Fixed alignment with prealigned welded fiber; no user maintenance required • Onboard thermoelectric cooler: No warm-up delay; fiber isn't affected by on/off • Simmer mode: Instant on/off reduces usage and/or aging by 10x; only keep it "on" when acquiring samples; reports hours of usage • Flat top specified at the flow cell: Coefficient of variation (CV) <3% over width of flat top • Upgradable according to field changes 	1.5 1.5 1.5 1.5 1.5 1.5		
		Fluidics			
		Flow cell: Quartz cuvette gel coupled to 1.2 numerical aperture (NA) collection lens, 200 x 200 µm	2		
		Sample analysis volume: 20 µL to 4 mL	2		
		Custom sample flow rates: 12.5–1,000 µL/min	2		
		Sample delivery: Positive-displacement syringe pump for volumetric analysis.	2		
		Sample tubes: Accommodates tubes from 17 x 100 mm to 8.5 x 45 mm. Should be able to handle a food, meat, fish sample for analysis.	1 1		
		Fluid-level sensing: Should be Active.			
		Standard fluid reservoirs: Should have 1.8 L focusing fluid tank, 1.8 L waste tank, 175 mL shutdown solution tank, and 175 mL wash solution tank	2 1		
		Fluid storage: All fluids should be stored within instrument	1		
		Extended fluidics option: Configuration for 10 L fluid	1		
		Nominal fluid consumption: Should be 1.8 L/day	1		
		Automated maintenance cycles: ≤15 min startup and shutdown—deep clean, sanitize, and debubble modes	1		
		Performance			
		Fluorescence sensitivity: ≤80 molecules of equivalent soluble fluorochrome (MESF) for FITC, ≤30 MESF for PE, ≤70 MESF for APC	2		
		Fluorescence resolution: CV <3% for the singlet peak of propidium iodide–stained chicken erythrocyte nuclei (CEN)	2		
		Data acquisition rate: Up to 35,000 events/sec, 34 parameters, based on a 10% coincidence rate per Poisson statistics	2		
		Maximum electronic speed: 65,000 events/sec with all parameters	1		
		Carryover: Single-tube format: <1%	1		
		Forward and side scatter sensitivity: Able to discriminate platelets from noise	1		
		Forward and side scatter resolution:	1		

		<p>Optimized to resolve bacteria and fungi in Food and feed products, meat/fish and meat products, and water matrices</p> <p>Forward scatter: Photodiode detector with 488/10 nm bandpass filter</p> <p>Side scatter: PMT with default 488/10 nm bandpass filter; optional 405/10 nm bandpass filter</p> <p>Fluorescence detectors: 14 individual detectors</p> <p>Electronic pulse: Measured area, height and width pulse for all detectors</p> <p>Violet side scatter resolution: Can be configured for violet side scatter to better resolve particles from noise.</p> <p>Minimum particle size: 0.2 µm on side scatter using Recommended calibration kit</p>	1		
		<p>Automation</p> <ul style="list-style-type: none"> Fully automated cleaning cycles Fully automated start-up and shutdown Autosampler option for labs where throughput and automation are a priority Email alerts notify operator of status changes Volumetric sample system gives absolute count for every sample 	10		
		<p>Flexibility</p> <ul style="list-style-type: none"> Fully upgradeable to a 4 laser system with 12 optical detectors plus Autosampler Suitable for a wide range of applications (maximum particle size 100µm) It should be universal for food analysis 	5		
		<p>Sorting</p> <p>The cytometer should be equipped with a sorting feature for capturing and collecting cells of interest.</p> <p>All the accessories associated to the flow cytometer</p> <p>All reagents and materials to be used in and by the Flow cytometer</p> <p>All spares accompanying the flow cytometer</p> <p>Should have all Installation Requirements covered as appropriate.</p>	10		
		<p>Data Management Requirements</p> <ul style="list-style-type: none"> 32-bit Windows® XP or later Minimum screen resolution 1280x1024 2 GB RAM 5 GB of free hard disk space 	2		
		<p>Workstation Minimum Specifications</p> <ul style="list-style-type: none"> Small form chassis 6 USB 2.0 Ports 1 External SATA RMSD Bay Intel® HD Graphics 2000 180-W Energy Star efficient internal power supply 	2		
		<p>Memory and Processor</p> <ul style="list-style-type: none"> 4 GB RAM (Non-ECC, 1,333 MHz DDR3 RAM, 2x2 GB) 	2		

			Core™ i3 2100 3.1-GHz processor			
			Hard Drive and Data Storage Options 250-GB or greater hard drive, 8-MB databurst cache 8x DVD reader			
		Monitor	LCD flat panel 19" 4 USB 2.0 ports (for peripheral devices) Peripheral Devices USB Entry Keyboard USB Optical Mouse	2		
		Networking	Ethernet LAN 10/100/1000 Operating System should be appropriate and compatible	2		
		Other requirements				
		(i) During Quotation opening the selected suppliers to be available to give a summary the equipment to be supplied.		5		
		(ii) Installation and Commissioning -to be done		2		
		(iii) Operation and Service Manuals- All Manuals in English		1		
		(iv) Warranty and Nearest service center -Three years warranty with one year spare replacement, if required.		1		
		(v) Brochures for the equipment to be provided during quotation		1		
		(vi) Training - onsite training during installation/ commissioning and at least 10 test runs. The trainer should have all the is required for training to ensure full training.		5		
		TOTAL SCORE	100			
		MINIMUM SCORE	97			
13	MAX FREEZE DRYER	1	Application/Scope Production of Culture Ampoules			
		S.	PRODUCT CODE	DESCRIPTION	QUANTITY	Weighting (%)
		(i)	LYO0585	MAX Freze dryier base unit Condenser volume 44.5 litres Ice-removal capacity in 24hrs.;10.8KG MAX.ice capacity; 18KGs Condenser temperature; -85 degrees celcius +/- 5°c @20 °c ambient	1	15
		(ii)	VP003	Vacuum pump(capacity; 300 LPM)	1	10
		(iii)	EMF10	Oil Mist Filter	1	10
		(iv)	FM0024	24 Port SS Column Manifold with individual	1	10

				adapters for (0.7cm tubes)					
			(v)	ADSP096 Spin Freezer	1	10			
			(vi)	ADST101 Sealing Torch	1	10			
			(vii)	ASDSM02 Secondary Drying Manifold for 24 Ampoules 4	1	10			
			(viii)	8 ADAT102 Adapter for 12 Ampoules	1	10			
			Other requirements						
			xii.	Installation and Commissioning -to be indicated	3				
			xiii.	Operation and Service Manuals- All Manuals in English	3				
			xiv.	Warranty and Nearest service center -to be indicated	3				
			xv.	Brochures for the equipment to be provided during quotation	3				
				TOTAL SCORE	100				
				MINIMUM SCORE	97				
14	HOMOGENIZER	2	Application/Scope Homogenizing						
			Main Features						
				Stomacher 400 circulator	3				
				Digital control panel	2				
			Performance Specifications						
				Compatible with stomacher bag sizes 177 x 305mm	10				
				No risk of cross contamination	10				
				Adjustable paddle speeds and timer (digitally controlled)	15				
				Made from food grade material	10				
				Pack of 500 stomacher bags circulator 400 for sample size 80-400ml included	15				
				220-240V	10				
				Removable door for easy cleaning of paddle chamber	10				
			Other requirements						
			xvi.	Installation and Commissioning -to be indicated	3				
			xvii.	Operation and Service Manuals- All Manuals in English	3				
			xviii.	Warranty and Nearest service centre -to be indicated	3				
			xix.	Brochures for the equipment to be provided during quotation	3				
			xx.	Training - onsite training during installation	3				
				TOTAL SCORE	100				
				MINIMUM SCORE	95				
15	ANAEROBIC POLYCARBONATE JAR	2	Application/Scope Analysis of anaerobes						
			Main Features						
				Holds up to 15 plates	2				
				For connection to a vacuum pump and gas cylinder, Schrader valve chucks and clips are also required.	2				
				Automatic safety valve	1				

			Performance Specifications 3.5L capacity polycarbonate jar, 15 O-ring, self-centering cast lid and clamp 15 input and output Schrader valves 10 automatic safety valve 15 pressure gauge, Oxoid Low Temperature Catalyst and Plate Carrier 15 ; Holds up to 15 plates 10 Other requirements xxii. Installation and Commissioning -to be indicated 3 xxiii. Operation and Service Manuals - All Manuals in English 3 xxiv. Warranty and Nearest service centre –to be indicated 3 xxv. Brochures for the equipment to be provided during quotation 3 xxvi. Training - onsite training during installation 3 TOTAL SCORE 100 MINIMUM SCORE 95		
16	MERCAPTAN ANALYZER	1	Application/Scope Analysis of Mercaptan Sulphur as Ethyl Mercaptan in LPG Performance Specification. Power output: 24VDC +/- 5% at < 15 watts. Optional 110/220VAC power supply in separate enclosure. Heater requires 110/220VAC at 200 watts max 10 Display Backlit: high resolution color LCD with 30-minute trend 10 Sensors: Highly sensitive electrochemical sensors for Mercaptans, THT and gas odorant mixtures. 15 Output: Standard 3-wire 4-20mA current source. Max loop R is 750 ohms with nominal 24VDC power supply. RJ-45 Ethernet interface with built-in web page 10 Optional output: Four SPDT relays 5A @ 30VDC / 240VAC plus RS-485 2-wire MODBUS® slave interface. 10 Purge pump: Long life 1.6 diaphragm pump with brushless 24VDC motor. Pull from vacuum up to 6" Hg (3 psig) 10 Sample conditioning: For ambient pressure applications with clean & dry sample. Inlet pressure range +/- 3" water column. No inlet filter included. Sample pump configured to draw both sample and purge air 10 Operating temperature: 0°C (32°F) to +50°C (+122°F) Sample temperature: +5°C (+41°F) to +50°C (+122°F) 10 General Specifications. Construction: XP enclosure: Cast aluminium. GASMAX CX: Aluminium housing with epoxy paint standard; Exterior stainless steel 2	Microbiology	Coast

			tubing and fittings. Backplate epoxy painted steel				
			Dimension: 21" x 21" x 8" Stainless Steel Enclosure	1			
		i.	Inlet/outlet: 1/4" compression, stainless steel	1			
		ii.	Net weight, approx. kg 11.3 Kg	1			
		Other requirements					
		(i)	Installation and Commissioning -to be indicated	2			
		(ii)	Operation and Service Manuals - All Manuals in English	2			
		(iii)	Warranty and Nearest service Center –to be indicated	2			
		(iv)	Brochures for the equipment to be provided during quotation	2			
		(v)	Training - onsite training during installation	2			
		TOTAL SCORE		100			
		MINIMUM SCORE		95			
17	Water bath-Cooling and Heating and boiling water bath.	1	Application/Scope :General sample preparation, determination of physical tests in cosmetics				
		1. Main Features					
		a)	Stainless steel flat cover with 8 openings and concentric rings, gable cover	1			
		b)	Digital stainless steel display LED of set and actual temperature and of remaining programme timer/status	1			
		c)	Easy to clean interior, Water level control,drain tap	1			
		d)	Stainless steel flat cover with 8 openings and concentric rings, gable cover	1			
		e)	Corrosion proof large –area heating on three sides	1			
		Performance Specifications					
		i.	Microprocessor PID –temperature controller with integrated auto diagnostic system with fault indicator	10			
		ii.	Temperature range +5 to+95°C with additional boiling mode(+100°C) option for cooling down to +10°C	15			
		iii.	Easy to clean interior, made of stainless steel, reinforced by deep drawn ribbing corrosion resistant material	5			
		iv.	Temperature control mechanical temperature limiter ,protection class 1 switching of approx. 30oC above the heating temperature of the water bath	10			
		v.	One pt 100 sensor class A in 4-wire-circuit	5			
		vi.	Integrated digital timer for ON continuous operation WAIT and HOLD	2			
		vii.	Digital display (LED) of set and actual temperature and of programme time	2			
		viii.	Easy to clean interior made of stainless steel	2			
		ix.	Mechanical temperature limiter protection class	2			
		x.	Electrical requirement 230V, 50-60Hz	5			
		xi.	Peltier cooling unit, clip for 8, 250-300ml flasks.	20			
		xii.	Resolution of display and setting accuracy 0.1°C up to +99,9°C / 1°C from 100°C	5			
		xiii.	Interior dimensions wxhxd approx. 440x300x150	2			
		Other requirements					
		(i)	Installation and Commissioning -to be indicated	2			
		(ii)	Operation and Service Manuals - All Manuals in English -to be indicated	2			

			(iii) Warranty and Nearest service centre -to be indicated	2			
			(iv) Brochures (in English) for the equipment to be attached with the quotations	2			
			(v) Training - onsite training during installation to be indicated.	2			
			TOTAL SCORE		100		
			MINIMUM SCORE			95	
18	WATER DEIONISER (TYPE 1)	1	Application/Scope WATER PURIFICATION 1. Main Features a) The system to comprise of a single water purification unit containing RO, DI, UV b) Water quality: Type 1 Ultra pure . c) The to incorporate an Auto Volume dispensing function capable of automatically dispensing of ultra pure water from 0.05L up to 7.0L. and also a Dispense Handset with fully comprehensive, graphic color LCD display to provide information 1) on system status and performance parameters, 2) on routine maintenance needs, and 3) on alarms for troubleshooting in the event of system malfunction d) The internal primary consumable water purification cartridges to have a built-in Data Tag, to avoid maintenance errors and to improve traceability e) The system to have automatic warnings to ensure on-time reordering of the consumables f) Able to reticulate water to maintain high water quality in periods of non use. Performance Specifications Delivery flow rate – maximum: Up to 2L/min Daily volume <10 Litres Reverse osmosis make up flow rate: Up to 10L/hour In organics (resistivity @25°C):18.2 MΩ-cm Organics (TOC) – typical:< 5ppb ¹ Direct from internal reservoir: type III or RO water ² Bacteria – typical (when fitted with POU Filter):<1CFU/10ml Bacteria – typical (when fitted with Biofilter):1 CFU/10MI End toxin (when fitted with Biofilter):<0.001 EU/ml Operational weight:23 kg Dimensions (W x D x H):236 x470 x 900 to 1020 mm Electrical requirements 100-240v/50/60Hz Installation: Bench/ Wall Feed water requirements: <ul style="list-style-type: none">• Water source: pre-purified or Tap Water• pressure:30-90 psi• Conductivity:<2000 µS/Cm• Hardness:<350ppm as carbonate.• Free Chlorine:<0.5ppm Cl₂• Iron / Manganese:<0.05ppm	Weighting (%)	Score	Chemistry	Coast

			<ul style="list-style-type: none"> Organics (TOC): <2ppm Flow rate (requirement at 15°C): up to 75l/hr <p>System control voltage (not including pumps and UV): 24V DC</p> <p>Temperature: 10-25 °C</p> <p>Accessories : Additional purification pack, booster pump (to maintain pressure at 60psi)</p> <p>Other requirements</p> <p>(i) Installation and Commissioning - to be done by supplier(to be indicated on quotations) 2</p> <p>(ii) Operation and Service Manuals- All Manuals in English(to be indicated on quotations) 2</p> <p>(iii) Warranty and Nearest service centre -(to be indicated on quotations) 2</p> <p>(iv) Brochures (in English)for the equipment to be attached with the quotations 2</p> <p>(v) Training - onsite training during installation(to be indicated on quotations) 2</p>			
			TOTAL SCORE	100		
			MINIMUM SCORE	95		
19	Diode array NIR	QTY-3	<p>Application/Scope SUGAR,CEREAL AND CEREAL PRODUCTS,BAKED PRODUCTS,DAIRY,MEAT ,FEEDS AND EDIBLE OIL/FAT</p> <p>Main Features</p> <p>a. Automated FT-Near Infra-Red analyser capable of doing direct measurements of cereal and cereal based products in the form of grains or ground powder or paste. Parameters to be checked to include; fat, protein, moisture, ash, starch, crude fibre, NDF and ADF. Versatile to do direct measurements in organic and liquid sample(such as edible oils) through module upgrade.</p> <p>b. Rugged: Should withstand humidity, dust and temperature fluctuations, permanently aligned, shock insensitive, high stability mirrors.</p> <p>c. Stand alone with 12" display size</p> <p>d. Data System, "Intel" i7processor, >3GHz, >4GB RAM,1000 GB HDU or better , 21.5" TFT display.</p> <p>e. Ports: USB 2.0 (10x), PS/2 (2), RS232, VGA,</p> <p>f. User interface: Dedicated user interfaces to allow single routine measurements with predefined measurement parameters, qualitative and quantitative evaluations and storage</p> <p>g. Inbuilt diagnostic mechanism monitoring operation within factory settings and online technical support.</p> <p>Performance Specifications</p> <p>a. Wavelength range: 950-1650 nm, and ability for wavelength scale linearization, monitoring and absorbance scale linearization</p> <p>b. Technology: diode array</p> <p>c. Measuring speed: less than 1 minute</p> <p>d. Sample surface analysed (cm²) ~ 100</p>	1		

			e. Ingress protection IP65 f. Measurement Mode: Reflection and Trans reflectance. g. Detector: InGa-AS h. Number of detectors 256 i. Selectivity ($\text{cm}^{\sqrt{}} \text{Hz}/\text{w}$) 5×10^{12} j. Operation temperature: 5°C to 40°C k. Ability to analyze grains inground l. Power requirements: optical bench: 100 - 240 V, 50/60 Hz, 100 W m. NIR Networking capability with SIMPLUS for calibrations n. Software: Dedicated software for quantification of substances and self-optimization calibration models (Unscrambler).			
Other requirements						
			Service contracts: preventive maintenance and service contracts and validation services to be indicated.	1		
			Installation and Commissioning -to be done by supplier	1		
			Operation and Service Manuals- All Manuals in English	1		
			Warranty of not less than 2 years and nearest service centre -to be indicated	2		
			Brochures and List of parameters and matrices to analysed by the equipment to be attached with the quotations ((in English)	1		
			Training - onsite training during installation not less than 5 days	1		
			Availability of local agent for service and evidence of similar equipment in the Country	3		
			TOTAL SCORE	100		
			MINIMUM SCORE REQUIRED	95 %		
			QUANTITY	WEIGHTING (%)	ACTUAL SCORE	
20	COMPLETE HIGH PERFORMANCE LIQUID CHROMATOGRAPHY		SPECIFICATION			
			Application			
			Determination of vitamins and mycotoxins in food and feed	WEIGHTING (%)	ACTUAL SCORE	

	RAPHY (HPLC) SYSTEM Consisting of: a) Quaternary low pressure gradient pump with degasser b) Cooled Autoinjector c) PDA & Fluorescence detectors d) Software for data processing and control, e) Computer system f) Online UPS and g) Starter kit	TOTAL SCORE	90			
	Performance Specifications					
	PUMP (SOLVENT DELIVERY UNIT) Quaternary low pressure gradient unit with degasser and automatic pump rinsing mechanism i. Pumping method: Parallel type double plunger ii. Maximum pressure: 44Mpa. or 440bar iii. Flow rate setting range: 0.0001 to 10 ml/min iv. Flow rate Precision < 0.06 %RSD or < 0.02 minSD, below whichever is greater v. Configuration: Four - solvent low-pressure gradient with mixer with auto rinsing kit for the pump Include a degasser for 5 lines	15				
	AUTOINJECTOR i. Injection method: Total -volume sample injection ii. Injection volume precision : RSD< 0.20%(5-2000ul) <0.25% (2-4.9ul) iii. Injection setting range: 0.1 to 500 ul.(include with options) iv. Sample number : >200(1 mL), and >140 1.5ml v. Cross Contamination : 0.0025% vi. Sample cooler upto 4 °C or better	15				
	COLUMN OVEN i. Temperature control range: (Room temperature- 10) to 85°C in 1°C steps ii. Temperature control precision: ± 1°C iii. Columns accomodated : > 4	15				
	DETECTORS 1. PDA i. Wavelength range: 190 to 800 nm or better ii. Spectral resolution: 1.4 nm iii. Slit width: 1.2 nm, 8 nm iv. Number of photo diode array elements: 1024 v. Wavelength accuracy: ± 1 nm vi. Noise level: S ± 3x10-6 AU (250nm, reference: 350 nm, Specified) vii. Linearity: Up to 2 AU (5). viii. Light source: Deuterium (D2) lamp 2. FLUORESCENCE i. Lamp Source: Xenon lamp ii. Wavelength Range: 0, 200 nm to 750 nm iii. Spectral Bandwidth: 20 nm or better iv. Wavelength accuracy: ± 2 nm v. Wavelength reproducibility: S ± 0.2 nm vi. S/N: Water Raman peak S/N >2000 min vii. Simultaneous monitoring of more than two wavelengths viii. Cell temperature input range : 4 to 40 °C, 1 °C step	15				

	SOFTWARE INTERFACE		10	
	i. Function as a communication bus module with data buffering capability for the whole system. ii. Up to 24 hours for one analysis, at 500ms sampling rate. iii. Controllable from a web-based interface via a network iv. System be controlled, monitored and maintained via Internet Explorer Web browser v. Allow for adequate storage of up to 20 analysis files with a total upto 400 steps of time programs			
	DATA MANAGEMENT SYSTEM	10		
	a) Hardware i. Intel Core 2 Duo processor or higher ii. 2GB RAM on board or higher iii. 250 GB hard disk or higher iv. DVD-RW drive v. 19 " LCD colour monitor vi. key board and mouse vii. Pre-installed Windows b) Software i. Operation of the system should be easy and intuitive via a state-of-the-art 32 bit Windows 7 software with Graphical User Interface ii. Security features of software must comply fully with FDA 21 CFR Part 11 iii. It should cover full digital instrument control, qualitative and quantitative processing, report creation, self-diagnosis and auto-tuning iv. The self-diagnosis feature of the software should enable diagnosis of all detectors and all connected LC units v. The software must have 'column management' system for recording the column details and column usage			
	POWER BACKUP	5		
	i. Supplied with a < 2.2 KVA online UPS			
	STARTER KIT	5		
	i. C18 HPLC Column (Qty/1) ii. Security Guard Cartridge Kit (Qty/1) iii. Guard Cartridges for C18 Column (Qty/10 pcs) iv. Nylon Syringe Filters, 13mm x 0.22um (Pkt/100) v. Nylon Membrane Filters, 0.45 x 47mm (Pkt/200) vi. Solvent Bottles, 1 Litre (Qty/5 pcs) vii. Ultrasonic bath 6-10 litres viii. Glass filtration assembly for solvents ix. Chemical resistant pump			
	Other requirements			

			i. Installation and commissioning - Equipment shall be installed and commissioned at the user's facility by the Service Engineer followed on-site training for all the users. The stated scope of application for the equipment must be demonstrated during commissioning using installation standards and a real sample.	2			
			ii. Operation and Service Manuals – Hardware and operator's manual complete with methods shall be supplied and written in English	2			
			iii. Warranty and nearest Service Centre – Two year warranty	2			
			iv. Brochure (in English) - The equipment brochure to be attached with the quotations	2			
			v. Training – Training shall be done for all users during installation and commissioning at the supplier's cost	2			
			TOTAL	10			
			SCORE				
			GRAND TOTAL SCORE FOR THE EQUIPMENT	100			
			Minimum Score	85			
21	Portable multi-parameter photometer	1	Application Determination of turbidity, pH/ORP & photometric measurements (absorbance, transmittance & concentration) Main Features <ul style="list-style-type: none"> a) Portable LED filter photometer with integrated IR turbidity and pH measurement in a field case with table insert to hold instrument, stand and cuvettes; pH electrode SenTix® 41 b) Energy-efficient LED optics with 6 wavelengths and a smart adapter for a variety of applications c) 16 and 28 mm cuvettes allows the measurement of the smallest concentration with more than 150 programs for standard parameters, special methods and coloration d) An infrared light source (IR) for the nephelometric turbidity measurement (90°) according to ISO 7027 6 Performance Specifications <ul style="list-style-type: none"> i. LED light source, 436, 517, 557, 594, 610, 690 nm for photometric measurements Photometric accuracy: ±2nm Reproducibility: 0.005 Resolution: 0.001 Measuring time: approximately 2 secs Measured parameters: concentration, absorbance & transmission Measuring range absorbance: -0.200 to +2.000 ii. IR LED source for turbidity measurement Measurement range: 0.01 to 1100 NTU Resolution: 0.01 up to 9.99 NTU; 0.1 up to 99.99NTU, 1 up to 1000NTU Accuracy: ±2% of the measured value Measuring time: approximately 4 secs Calibration points: at least 3 			Chemistry	Lake

			iii. pH /ORP voltage pH measuring range 0 to 16, accuracy 0.01, resolution 0.01, temperature -5 to 100°C, Automatic temperature compensation	10			
			iv. Operating Conditions: temperature 0 to 50°C Humidity: 0 to 90% @ 30°C	5			
			v. Power supply: 4x1.5V AA alkaline batteries	5			
			vi. Interface : RS232 + cable AK 540 B	5			
			vii. Accessories Cuvettes: 6 pieces each of sizes 16 and 28mm Calibration kit for turbidity Cleaning tissues Stand Buffer solutions pH 4.01 + 7.00 PC-software LS data Flex/430, PC cable AK 540 B, Instructions manual	20			
			Other requirements				
			i. Installation and commissioning - Equipment shall be installed and commissioned at the user's facility by the Service Engineer followed on-site training for all the users. The stated scope of application for the equipment must be demonstrated during commissioning using installation standards and a real sample.	2			
			ii. Operation and Service Manuals – Hardware and operator's manual complete with methods shall be supplied and written in English	1			
			iii. Warranty and nearest Service Centre – One year warranty	1			
			iv. Brochure (in English) - The equipment brochure to be attached with the quotations	1			
			v. Training – Training shall be done for all users during installation and commissioning at the supplier's cost	1			
			vi. Accessories – see accessories above in vii.	1			
			vii. Start-up battery - shall be supplied with the equipment	2			
			viii. Software - Instrument shall be software-driven	1			
			TOTAL SCORE	100			
			Minimum score	85			
22	DENSITY METER	1	Application/Scope Alcohol beverages,solvents,surfactants ,sugar and petrochemicals			KSM	Lake
			Main Features				
			a. User Interface:7-inch Colour TFT Touch Screen	1			
			b. Sample Loading: Automatic by push piston	1			
			c. Sample Changer	1			
			d. Sample Keep Warm				
			e. Tables(alcohol, acid, alkali, sugar, customizable)				
			f. Calibration: Multi-Temperature	1			
			g. Bubbles Detection: Automatic (by pressure)				
			h. Cleaning and Drying Automatic (by two solvents)	1			

			i. Viscosity Correction			
			j. Temperature Compensation (API conversion acc. to ASTM-D1250)			
			Performance Specifications			
			a. Analytical principle: oscillating U tube	10		
			b. Measurement range: 0 to 3g/cm ³	5		
			c. Temperature range: 0oc to 100oc (32 to 212oF)	5		
			d. Pressure range 0 to 10 bar (0 to 145psig)	5		
			e. Temperature accuracy 0.01 °c	5		
			f. Density accuracy 0.00005g/cm ³	5		
			g. Density repeatability s.d. 0.00001g/cm ³	5		
			h. Results instant reporting ml, kg/m ³ ,relative density, °API	5		
			i. Statistics: Auto calculation of max/min. values, mean and standard deviation.	5		
			j. Built-in Local Memory: 2GB non removable SD card. Up to 40 products with associated specification. Up to 200 complete test results.	5		
			k. Special functions: Pass/Fail Indication; QC chart; Event Log; 2x Measurement	5		
			l. IRIS Software features: Run Control; Result Management; Reporting; Quality Control	5		
			m. Communication Interface: 2 x USB, Ethernet, 1 x RS-232	3		
			n. PC Software: Windows based PC software is available for data acquisition, database management, results comparison, run control, flexible LIMS protocols and other functions	5		
			o. Ambient Conditions: Operation: 10 to 35°C (50 to 95°F) - Humidity: 20 to 85% (not condensing)	5		
			p. Power Requirement: AC 100 to 240V; 50/60Hz; 400W	3		
			q. Dimensions (W x L x H): 331 x 540 x 375 mm (13 x 21 x 15 in)	2		
			r. Weight: 20 kg (44 pounds)	2		
			Other requirements			
			i. Installation and Commissioning -to be done by supplier	2		
			ii. Operation and Service Manuals- All Manuals in English	2		
			iii. Warranty and Nearest service centre -to be indicated	2		
			iv. Brochures (in English)for the equipment to be attached with the quotations	2		
			v. Training - onsite training during installation	2		
			TOTAL SCORE	100		
			Pass mark	90%		
23	6-plate heating plate and reflux set	1	Application/Scope Extraction, Refluxing And Liquid Heating			
			Features			
			a) Material: Stainless steel polypropylene coated housing or suitable heat stable coating	10		
			b) Capacity :500ml Flasks (The flasks and condensers supplied) see sec. 2	10		
			c) Size : (L x W x H)1.5m x 0.25m x 0.1m	10		
			d) Rating : 1200W	10		
			e) Number of Positions :6 independent controlled heating plates	10		
			2. Other requirements			

			<p>a) Horizontal Support rail attached to 2 removable vertical support rails for entire length of the block. Vertical 30cm, Horizontal 1.5m</p> <p>b) 6 insulated clamps attached to the horizontal rails for holding condensers</p> <p>c) 6 reflux condensers 40cm Effective length with ground joint of 29/32</p> <p>d) Six quick fit 500ml Borosilicate boiling Flasks joint 29/32</p> <p>e) Safety Circuit- Over Current protection</p> <p>f) Power Supply : Single Phase 220-240V, 50/60HZ</p> <p>3. Other Requirements</p> <ul style="list-style-type: none"> Two years warranty minimum Delivery onsite Local Technical Service agent indicated Supplied with user and service manuals in English <p>GRAND TOTAL SCORE FOR THE EQUIPMENT 100 %</p> <p>MINIMUM SCORE REQUIRED % 90</p>		
24	Fat Extractor-automatic	1	<p>A. Application/Scope Fat determination in Cereal & cereal products Animal feeds, Milk & Dairy products, Meat & meat products, Chocolate & cocoa products, Oil and oil seeds, Fruits and Lipids in eggs & eggs products</p> <p>B. Features</p> <ul style="list-style-type: none"> Operation controlled using software or using external controller. Ability to analyse six samples simultaneously Solvent recovery to reduce costs Use of different sizes of thimbles, at least four i.e. 33 x 80mm, 33 x 94mm 25 x 75mm, 40 x 85mm Single button operation for easy use Use of illuminated glass beakers to allow easy visual inspection of extraction progress Fully programmable with automatic start up and shut down for unattended samples. Various solvents to be used Range of products for analysis to include <p>C. Safety</p> <ul style="list-style-type: none"> Cooling water and air monitoring , shuts down the system in case of service failure Safety front window to protect the operator from hot surfaces. Optical sensor on solvent recovery tank to prevent overfilling Acoustic and visual warnings to inform operator of system problems <p>D. Technical Specifications</p> <ul style="list-style-type: none"> Extraction places – 6 Nominal voltage - 240±10, frequency 50/60HZ, wattage 1200 Weight – max 45kg Cooling water consumption approx 3 l per min Cooling water pressure appox 0.3 bar Extraction beaker glass 	CHEM	Eldoret

			vii) Holder for extraction thimbles viii) Pair of tongs for extraction beaker ix) Insert rack for 6 extraction beakers			
			D. Accessories, Consumables and Spares	40		
		i)	6 Pieces each of extraction beaker glass 54 x 130mm, 46 x 130mm			
		ii)	12 pieces each of extraction thimbles; 33 x 80mm, 33 x 94mm 25 x 75mm, 40 x 85mm and holders for the same			
		iii)	Fixed and Set of Spare O-rings which can be used with petroleum spirit or hexane.			
		iv)	Box of boiling stones 1 kg			
		i)	Standard spares and service kit as per the manufacturers brochure			
		E. Other requirements	15			
		a) Installation, Training and Commissioning Installation, testing and commissioning of the equipment and calibration measuring devices. (Delivery period to be not more than 4 weeks) Operation and Service manual to be supplied in English				
		b) Training On-site training of staff by competent and technical experts approved by the manufacturer of the equipment				
		c) Warranty Shall provide a warranty of not less than 1 year				
		d) Evidence of the nearest service centre locally				
		e) Brochure. A brochure showing the equipment to be supplied attached to quotation showing all accompanying accessories				
		TOTAL SCORE FOR THE EQUIPMENT	100 %			
		MINIMUM SCORE REQUIRED %	90			
25	AUTOMATIC SACCHARIMETER	1	APPLICATION/SCOPE POLARIZATION For all raw, white, and special sugars			BIOCHEM Eldoret
		KEY FEATURES	15			
		<ul style="list-style-type: none"> • Fast and reliable measurement • Encapsulated optical elements • Long life LED light source • Temperature compensation according to international sugar scale(ISS) • No external water bath required • Full international compliance (ICUMSA, OILML.) • Full QM compliance (password protection, audit trail, MP/GLP compatibility, forgery proof data export) 				
		Technical Specifications				
		Measuring scales: °Z at 589 nm				
		Measuring range: ± 259 °Z (± 89.9 °OR)	40			

			<p>Resolution: 0.001 °OR Accuracy : < 0.002 °OR < 0.006 °Z Repeatability: < 0.001 °OR < 0.003 °Z" Response time: 12 -15 sec Wavelength: 589 nm and 880 nm Light source: LED light source with more than 100 000 hours lifetime Sensitivity: Optical Density (OD) of 4.0, equivalent to OD 7.0 at 880 nm</p> <p>Temperature control and measurement:</p> <ul style="list-style-type: none"> PT100 sensor for sample temperature measurement inside the cell or quartz control plate; wireless transfer to the instrument Resolution 0.1 °C Accuracy ±0.1 °C Temperature control range 20 °C + 25 °C <p>Accessories;</p> <ul style="list-style-type: none"> Sample cells- Wireless automatic identification of sample cells via RFID, sample cell path length from 2.5 mm to 200 mm. Quartz control plates - Automatic identification of the quartz control plate and automated wireless transfer or reference parameters into the instrument. <p>Other requirements</p> <ul style="list-style-type: none"> Installation and commissioning-to be indicated Operation and service manuals-all manuals in English Warranty and nearest service Centre-to be indicated Brochures -to be provided during quotation Training-onsite during installation 	15	15	15	
			TOTAL SCORE FOR THE EQUIPMENT	100 %			
			Minimum score	90 %			
26	Benchtop Ion Concentration meter	1	<p>Application/Scope Ion Concentration measurements and Temperature Measurements</p> <p>1. Main Features</p> <ul style="list-style-type: none"> a) With Fluoride ion selective electrode and temperature probe b) Ion Concentration Range: 0.001 to ≥10000ppm, mg/L or mol/L c) Temperature Range: 0 to ≥105°C <p>2. Technical Specifications</p> <ul style="list-style-type: none"> Can accept at least 10 other different ion selective electrodes for 10 different ions Temperature Compensation 0 to 100°C Automatic or Manual Hold Function Manual and automatic type 	5	5	5	Biochem Eldoret

			<ul style="list-style-type: none"> • Stability Conditions: Low or High, Selectable • Reset Function • Memory 500 data sets with Date/Time stamping • Power Requirements DC 5V-12V, AC adapters 220VAC/50Hz • Output USB Communication Interface • Calibration: 2 to 5 steps <p>3. Other Details</p> <ul style="list-style-type: none"> • 100ml each of 0.001, 0.01, 0.1, 1, 10, 100, 1000, 10000ppm F ion solutions accompanied with COA • 500ml and TISAB solution accompanied with COA • Automatic and Manual Power off <p>5 Other requirements</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>I. Assembling at delivery site , training and commissioning</td><td style="text-align: center;">2.5</td></tr> <tr> <td>II. Note for other screws used on the equipment other than star, the screw driver set MUST accompany the equipment</td><td style="text-align: center;">2.5</td></tr> <tr> <td>III. Warranty of not less than 1 year and Nearest service center -to be indicated</td><td style="text-align: center;">2.5</td></tr> <tr> <td>i. User and Service Manual In English</td><td style="text-align: center;">2.5</td></tr> <tr> <td style="text-align: right;">TOTAL SCORE FOR THE EQUIPMENT</td><td style="text-align: center;">100 %</td></tr> <tr> <td style="text-align: right;">MINIMUM SCORE REQUIRED %</td><td style="text-align: center;">90</td></tr> </table>	I. Assembling at delivery site , training and commissioning	2.5	II. Note for other screws used on the equipment other than star, the screw driver set MUST accompany the equipment	2.5	III. Warranty of not less than 1 year and Nearest service center -to be indicated	2.5	i. User and Service Manual In English	2.5	TOTAL SCORE FOR THE EQUIPMENT	100 %	MINIMUM SCORE REQUIRED %	90		
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27	CO ₂ TESTER	1	<p>Application/Scope CO₂ water and Beverages</p> <p>Main Features</p> <p>TECHNICAL DATA</p> <p>Measuring range: CO₂: ≤2.50 - ≥ 9.99 g/l Temperature : ≤-10 - ≥+60 °C Pressure: ≤1 - ≥+6 bar</p> <p>Accuracy: CO₂: ±0.10 g/l Temperature: ±0.2°C Pressure: ±0.01 bar</p> <p>Voltage: 200-250 VAC, 50/60 Hz and 12VDC Battery</p> <p>Dimensions: (H x W x D) ≥(550 x 190 x 190 mm)</p> <p>Weight : ≤2 kg</p> <p>Bottle Height: min. ≤50 mm, max. ≥360 mm</p> <p>Bottle Diamerter: ≥110 mm</p>	90	Biochem	Eldoret											

			<p>4. Other requirements</p> <p>(i) Assembling at delivery site , training and commissioning</p> <p>(ii) All accessories accompanying as displayed on manufacturer's website</p> <p>(iii) Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment</p> <p>(iv) Warranty of not less than 1 year and Nearest service center -to be indicated</p> <p>(v) User and Service Manual In English</p> <p>TOTAL SCORE FOR THE EQUIPMENT</p> <p>MINIMUM SCORE REQUIRED %</p>				
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				100 %			
				90			
28	COOLED INCUBATOR	1	<p>Application/Scope</p> <p>BOD determination, Refrigeration and thermal stability</p> <p>Main Features</p> <ul style="list-style-type: none"> a. Energy Saving, A+ class cooling system b. External display of internal temperature c. Auto-tuning and Thermoregulation d. At least 5 Internal Sockets for BOD magnetic stirrers e. Data management and unit control through software <p>Performance Specifications</p> <ul style="list-style-type: none"> o Operating Range $\leq 3 - \geq 50$ °C o Capable of stabilizing at set temperature $\leq \pm 1$ °C o 5 trays of at least 35 cm height apart o Depth of ≥ 35 cms o Width ≥ 80 cms o Stabilization Time ≤ 2 minutes <p>Other Features</p> <ul style="list-style-type: none"> a. Power Source: AC/DC adapter 100 – 240 VAC input b. Forced air circulation programmable c. Internal Chamber Internal Volume ($\geq 640 \times \geq 600 \times \geq 1350$ mm) d. Connectivity Standard: RS 232, USB, Bluetooth, Wi-Fi, Ethernet e. Shelf Capacity ≥ 34kgs <p>5. Other requirements</p> <p>(i) Assembling at delivery site , training and commissioning</p> <p>(ii) All accessories accompanying as displayed on manufacturer's website</p> <p>(iii) Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment</p> <p>(iv) Warranty of not less than 2 year and Nearest service center -to be indicated</p> <p>(v) User and Service Manual In English</p> <p>TOTAL SCORE FOR THE EQUIPMENT</p> <p>MINIMUM SCORE REQUIRED %</p>	WEIGHTING (%)	ACTUAL SCORE	Biochem	Eldoret
29	DIGITAL MUFFLE		<p>Application/Scope</p> <p>DRY ASHING OF COMBUSTIBLE MATERIALS</p>			Chem	Eldoret

	FURNACE		<table border="1"> <thead> <tr> <th colspan="2">Features</th></tr> </thead> <tbody> <tr> <td>(i)</td><td>Material: Ceramic Fiber with Powder coated steel-external ceramic fiber insulation.</td><td>10</td><td></td></tr> <tr> <td>(ii)</td><td>Programmable timer and temperature with a hold time function</td><td>10</td><td></td></tr> <tr> <td>(iii)</td><td>Temperature range 300-1200 Degrees Centigrade</td><td>10</td><td></td></tr> <tr> <td>(iv)</td><td>4 side Heating with Middle shelf of ceramic Fiber Plate</td><td>10</td><td></td></tr> <tr> <td>(v)</td><td>≥ 14 Liter Capacity</td><td>10</td><td></td></tr> <tr> <td></td><td></td><td></td><td></td></tr> <tr> <th colspan="2">Technical requirements</th><td>40</td><td></td></tr> <tr> <td>(i)</td><td>Heater type: Kanthal A1, Exposed Wire Heating Elements</td><td>5</td><td></td></tr> <tr> <td>(ii)</td><td>Thermocouple k-type Thermocouple.</td><td>5</td><td></td></tr> <tr> <td>(iii)</td><td>External Thermocouple supplied of 2 meters length</td><td>5</td><td></td></tr> <tr> <td>(iv)</td><td>Heating Power 3.6-4.0KW</td><td>5</td><td></td></tr> <tr> <td>(v)</td><td>Heating time to 800°C $\leq 20\text{min}$</td><td>5</td><td></td></tr> <tr> <td>(vi)</td><td>Controller type. Digital PID with jog-dial switch</td><td>5</td><td></td></tr> <tr> <td>(vii)</td><td>Safety Circuit- Over temperature/Current protection, safety door switch, Sensor error detection</td><td>5</td><td></td></tr> <tr> <td>(viii)</td><td>Power Supply : Single Phase 220-240V, 50/60HZ</td><td>5</td><td></td></tr> <tr> <th colspan="2">Other Requirements</th><td></td><td></td></tr> <tr> <td>•</td><td>Two years warranty minimum</td><td>2</td><td></td></tr> <tr> <td>•</td><td>Delivery onsite, training and commissioning</td><td>2</td><td></td></tr> <tr> <td>•</td><td>Supplied with user and service manual</td><td>2</td><td></td></tr> <tr> <td>•</td><td>Local Technical Service agent indicated</td><td>2</td><td></td></tr> <tr> <td>•</td><td>Supplied with user and service manuals in English</td><td>2</td><td></td></tr> <tr> <td></td><td></td><td></td><td></td></tr> <tr> <th colspan="2">TOTAL SCORE FOR THE EQUIPMENT</th><td>100 %</td><td></td></tr> <tr> <th colspan="2">MINIMUM SCORE REQUIRED %</th><td>90</td><td></td></tr> </tbody> </table>	Features		(i)	Material: Ceramic Fiber with Powder coated steel-external ceramic fiber insulation.	10		(ii)	Programmable timer and temperature with a hold time function	10		(iii)	Temperature range 300-1200 Degrees Centigrade	10		(iv)	4 side Heating with Middle shelf of ceramic Fiber Plate	10		(v)	≥ 14 Liter Capacity	10						Technical requirements		40		(i)	Heater type: Kanthal A1, Exposed Wire Heating Elements	5		(ii)	Thermocouple k-type Thermocouple.	5		(iii)	External Thermocouple supplied of 2 meters length	5		(iv)	Heating Power 3.6-4.0KW	5		(v)	Heating time to 800°C $\leq 20\text{min}$	5		(vi)	Controller type. Digital PID with jog-dial switch	5		(vii)	Safety Circuit- Over temperature/Current protection, safety door switch, Sensor error detection	5		(viii)	Power Supply : Single Phase 220-240V, 50/60HZ	5		Other Requirements				•	Two years warranty minimum	2		•	Delivery onsite, training and commissioning	2		•	Supplied with user and service manual	2		•	Local Technical Service agent indicated	2		•	Supplied with user and service manuals in English	2						TOTAL SCORE FOR THE EQUIPMENT		100 %		MINIMUM SCORE REQUIRED %		90			
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		shadowline detection with CCD array			
b)	Brix				
(i)	Range 0 to 100%	2.5			
(ii)	Resolution 0.001%	2.5			
(iii)	Accuracy \pm 0.015%	2.5			
(iv)	Measuring Principal : Critical Angle of the total Reflection measurement by shadowline detection with CCD array	2.5			
c)	Sample Prism Temperature control with built in solid state thermostat	2.5			
•	Temperature Range: 4°C to 85°C	2.5			
•	Temperature Probe Accuracy: \pm 0.03 °C	2.5			
•	Temperature Probe Stability: \pm 0.002 °C	2.5			
d)	Materials In Contact With Samples				
•	Prism: Synthetic Saphhire (Yttrium-Aluminium-Garnet)	2.5			
•	Sample Well: Stainless Steel	2.5			
•	Seal : Perfluoroelastomer	2.5			
e)	Components				
•	Light Source: LED average lifetime >100,000 hrs	2.5			
•	Wavelength: Fixed 589nm -adjusted by interference filter	2.5			
•	Power Requirements: 100-240VAC \pm 10%, 50/60Hz min, 100W Max	2.5			
f)	Dimensions				
•	WxHxD Provided for both control unit and Measuring unit	1.25			
•	Weight: Total For both units < 7 Kgs	1.25			
g)	Data interfaces				
•	RS232 port	1.25			
•	CAN Bus Connection	1.25			
•	Aleast 3 USB ports	1.25			
•	Ethernet Connector	1.25			
•	VGA Connector	1.25			
h)	Compliance				
•	AOAC,ASTM,CID,DIN,FDA,ICUMSA,ISI,,JIS,OIML,SSDT Methods	1.25			
i)	Quality and Security				
Advance User Level Management		1.25			
Password rules, Audit trail, Electronic signature		1.25			
User defined checks		1.25			
Checks for stability of measured data		1.25			
User defined sample name fields		1.25			
Quality control mode for limits checks		1.25			
Automatic temperature correction		1.25			
Measuring modes: Standard, multiple measurement, temperature scan check		1.25			
Other requirements		10			

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31	DOUBLE BEAM UV-VIS SPECTRO PHOTOMETER	Qty - 2	<table border="1"> <tr><td>Application/Scope</td><td>Colour in sugar, Nitrates, heavy metals in food and other products</td></tr> <tr><td>Main Features</td><td></td></tr> <tr><td>1. Double beam with 6 movable sample cell holders for multiple analysis</td><td>2</td></tr> <tr><td>2. Can be operated with PC with option of equipment keypad operation and display</td><td>2</td></tr> <tr><td>3. Ability to scan for wavelength of Maximum absorbance</td><td>1</td></tr> <tr><td>Performance Specifications</td><td></td></tr> <tr><td>Wavelength range and spectral bandwidth 190 to 1100nm</td><td>5</td></tr> <tr><td>Wavelength display and setting 0.1nm increments</td><td>3</td></tr> <tr><td>Wavelength accuracy $\pm 0.1\text{nm}$ at 656.1nm D2</td><td>5</td></tr> <tr><td>Wavelength accuracy $\pm 0.3\text{nm}$ (190 to 1100nm)</td><td>5</td></tr> <tr><td>Wavelength repeatability $\pm 0.1\text{nm}$</td><td>5</td></tr> <tr><td>Stray light less than 0.02% NaI at 220nm, NaNO₂ at 340nm</td><td>5</td></tr> <tr><td>Photometric system Double beam</td><td>10</td></tr> <tr><td>Photometric range Absorbance: -4 to 4 Abs</td><td>5</td></tr> <tr><td>Transmittance: 0% to 400%</td><td></td></tr> <tr><td>Baseline Stability :less than 0.0003 Abs/H at 700nm (one hour after light source turned ON)</td><td>2</td></tr> <tr><td>Baseline Flatness within $\pm 0.0006 \text{Abs}$ (190 to 1100nm,one hour after light source turned ON)</td><td>5</td></tr> <tr><td>Noise level Within 0.00005 Abs RMS value (at 700nm)</td><td>5</td></tr> <tr><td>Printer compatible with the UV and its software with available memory</td><td>5</td></tr> <tr><td>Complete PC having Windows 10, 15' LED screen , 500GB Hardisk, 4GB RAM, Mouse etc.</td><td>10</td></tr> <tr><td>Weight, Not more than 15Kgs</td><td>5</td></tr> <tr><td>PC operation mode and equipment operation mode.</td><td>5</td></tr> </table>	Application/Scope	Colour in sugar, Nitrates, heavy metals in food and other products	Main Features		1. Double beam with 6 movable sample cell holders for multiple analysis	2	2. Can be operated with PC with option of equipment keypad operation and display	2	3. Ability to scan for wavelength of Maximum absorbance	1	Performance Specifications		Wavelength range and spectral bandwidth 190 to 1100nm	5	Wavelength display and setting 0.1nm increments	3	Wavelength accuracy $\pm 0.1\text{nm}$ at 656.1nm D2	5	Wavelength accuracy $\pm 0.3\text{nm}$ (190 to 1100nm)	5	Wavelength repeatability $\pm 0.1\text{nm}$	5	Stray light less than 0.02% NaI at 220nm, NaNO ₂ at 340nm	5	Photometric system Double beam	10	Photometric range Absorbance: -4 to 4 Abs	5	Transmittance: 0% to 400%		Baseline Stability :less than 0.0003 Abs/H at 700nm (one hour after light source turned ON)	2	Baseline Flatness within $\pm 0.0006 \text{Abs}$ (190 to 1100nm,one hour after light source turned ON)	5	Noise level Within 0.00005 Abs RMS value (at 700nm)	5	Printer compatible with the UV and its software with available memory	5	Complete PC having Windows 10, 15' LED screen , 500GB Hardisk, 4GB RAM, Mouse etc.	10	Weight, Not more than 15Kgs	5	PC operation mode and equipment operation mode.	5	Chemical mombasa	Eldoret coast
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			PC-UV operation software	5			
			Other requirements	15			
			(i) Installation and Commissioning -to be indicated	3			
			(ii) Operation and Service Manuals- All Manuals in English	3			
			(iii) Warranty and Nearest service centre -to be indicated	3			
			(iv) Brochures for the equipment to be provided during quotation	3			
			(v) Training - onsite training during installation	3			
			GRAND TOTAL SCORE FOR THE EQUIPMENT	100 %			
			MINIMUM SCORE REQUIRED %	90			
32	ELECTRONIC ANALYTICAL BALANCE	1	Application/Scope Weight in g, Weight in %, Total net, add up, Density determination.	WEIGHTING (%)	ACTUAL SCORE	Chem lab	Eldoret
			Main Features	5 Max			
			a. Automatic Internal Calibration with built in weight and Manual Calibration	5			
			b. A built in under hook for below weighing system	5			
			c. Easy to read LCD Display with back light	5			
			d. Density Measurement for solid and liquid	5			
			e. Full Tare Range up to Max. Capacity of the Balance	5			
			Performance Specifications				
			o. Maximum weighing Capacity \geq 400g	5			
			o. Readability upto 0.1mg	5			
			o. Repeatability 0.1mg	5			
			o. Linearity Indicated	5			
			o. Pan Size \geq 80mm	5			
			o. Stabilization Time \leq 3 seconds	5			
			o. Working Temperature \leq 10 to \geq 80 degrees	5			
			• Infrared Automatic Draft Shield	5			
			Other Features				
			e. Power Source: AC/DC adapter 100 – 240 VAC input, output 12 VDC	5			
			f. Construction : Die cast aluminum	5			
			g. Weighing Chamber Internal Volume \geq 170 x \geq 170 x \geq 230 mm	2.5			
			h. Connectivity Standard: RS 232, USB, Bluetooth, Wi-Fi, Ethernet	5.0			
			e. Net Weight < 7.0Kg	2.5			
			f. Weighing Units g, mg, lb, ozt,	2.5			
			g. Security/safety Lock manual and software	2.5			
			Other requirements				
			(i) Assembling at delivery site , training and commissioning	2.5			
			(ii) All accessories accompanying as displayed on manufacturer's website	2.5			
			(iii) Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment				
			(iv) Warranty of not less than 1 year and Nearest service center -to be indicated	2.5			
			(v) User and Service Manual In English	2.5			

			TOTAL SCORE FOR THE EQUIPMENT	100 %			
			MINIMUM SCORE REQUIRED %	90			
33	GRAIN DIVIDER	2	Application/Scope Homogeneously split large sample into two equal portions for submission to labs	WEIGHTING (%)	ACTUAL SCORE	Chem lab	Eldoret
			Features				
			f) Material: carbon steel and epoxy coated	20			
			g) Housing: Has 36 internal channel for effective mixing	15			
			h) Capacity: Upto 10kgs grain at once	15			
			i) Outlet Channels: 2	20			
			4. Other requirements				
			g) Corrosion Resistant	5			
			h) Shinny smooth Finish for easy wiping	5			
			i) Height: Approx. 41 inches, Body measurers approx. 23 inches	5			
			j) Clearance to spouts: Approx 14.5inches	5			
			5. Other Requirements				
			• Warranty Indicated	5			
			• Delivery onsite	5			
			TOTAL SCORE	100			
			MINIMUM SCORE REQUIRED %	90			



34	<u>Heating Plate</u>	2	<u>Application/Scope</u> Heating			Chem lab	Eldoret
			Number of stirring positions	2	85		
			Stirring quantity per stirring position (H ₂ O)	Upto 15 l			
			Motor rating output	Upto 1.5 W			
			Speed control	scale 0 - 6			
			Speed range	100 - 1500 rpm			
			Stirring bar length max.	80 mm			
			Heat output	1500 W			
			Heating temperature range	50 - 500 °C			
			Heat control	stepwise			
			Heating rate heating plate	5 K/min			
			Connection for ext. temperature sensor	Available PT1000			
			Fixed safety circuit	550 °C			
			Set-up plate material	Ceramic			

			Set-up plate dimensions Dimensions (W x H x D) Weight Permissible ambient temperature Permissible relative humidity Protection class according to DIN EN 60529 Voltage Frequency Power input	600 x 300 mm 600 x 105 x 400 mm 12 kg 5 - 40 °C 80 % IP 21 230 / 240 V 50/60 Hz 1520 W			
			Other Requirements	15 Max			
			<ul style="list-style-type: none"> • Two years warranty minimum • Delivery onsite and commissioning on Site (To Be tested to prove specs) • Local Technical Service agent indicated • Supplied with user and service manuals in English 	5 5 2.5 2.5			
			GRAND TOTAL SCORE FOR THE EQUIPMENT	100 %			
			MINIMUM SCORE REQUIRED %	90			

35	Ion Selective Electrodes	11 (one each henc e total s to 11)	Application/Scope POTENTIOMETRIC ANALYSIS OF SELECT IONS	WEIGHTING (%)	ACTUAL SCORE	Chem	Eldoret
			Main Features				
			A. Rugged Solid State Sensors	10			
			B. No Filling Solutions	10			
			C. No Membrane Replacement	10			
			D. Built in Dry Reference Electrode	10			
			E. Submersible water Proof	10			
			F. Suitable For Laboratory and Field Work	10			
			G. Compatible with all ion concentration meters with BNC ports	10			
			H. All Electrodes Must be quoted alongside the highest calibration standard solutions (500ml) and necessary ISAB (500ml) as and where necessary for use in analysis.	20			
			Combination Electrodes				
			1. Silver Combination Electrode				

	2. Lead Combination Electrode		
	3. Mercury Combination Electrode		
	4. Copper Combination Electrode		
	5. Carbonate Combination Electrode		
	6. Cadmium Combination Electrode		
	7. Calcium Combination Electrode		
	8. Ammonium Combination Electrode		
	9. Nitrate Combination Electrode		
	10. Sodium Combination Electrode		
	11. Chloride Combination Electrode		
	Other requirements		
xxvi.	Installation and Commissioning -to be indicated	3	
xxvii.	Operation and Service Manuals- All Manuals in English	3	
xviii.	Warranty and Nearest service centre -to be indicated	3	
xxix.	Brochures for the equipment to be provided during quotation	3	
xxx.	Training - onsite training during installation	3	
GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %	
MINIMUM SCORE REQUIRED %		90	

36	Low temperature liquid comparison bath	1	Application/Scope Comparison bath for calibration of low temperature equipment	WEIGHTING (%)	ACTUAL SCORE	Nyeri	Met- MKR RCL
			Features				
			Excellent temperature uniformity	5			
			First heat up and recovery times	5			
			Technical specification				
			Temperature range: -50°C to 50 °C	5			
			Display: L.C.D; alpha numerical, with adjustable backlight and contrast	5			
			Temperature controller: microprocessor type	5			
			Temperature sensor: 4-wire Pt100 class A	5			
			Temperature Uniformity: ±0.01 K or better	5			
			Temperature Stability: ±0.01 K or better	5			
			Setting accuracy: ±0.01 °C or 0.01 F	5			
			Bath opening: 260mm x 240mm	5			
			Bath depth: 350mm	5			
			Bath glass windows: 270mm x 285mm	5			

			External dimensions: Width: 589 mm Height: 585 mm Length: 360 mm	5			
			Heaters : 200, 1000 and 1500 Watts	5			
			Power consumption : 2800 watt	5			
			Power supply: 220/240 V ac 50/60Hz	5			
			Communication port: RS 232 C (9-pins connector)	5			
			Fused wall socket for connection of background illuminator	5			
			Accessories included: cooling coil, length approx. 2 metres	5			
			Lids with 7 opennings 50mm diameter, with covers	5			
			Levelling feet				
			GRAND TOTAL SCORE FOR THE EQUIPMENT	100			
			MINIMUM SCORE REQUIRED	85			
37	Medium temperature liquid comparison bath	1	Application/Scope Comparison bath for calibration of medium to slightly high temperatures equipment's				Nyeri
			Features				Met-MKR
			Excellent temperature uniformity	5			
			First heat up and recovery times	5			
			Technical specification				
			Temperature range: 5 0°C to 300 °C	5			
			Display: L.C.D; alpha numerical, with adjustable backlight and contrast	5			
			Temperature controller: microprocessor type	5			
			Temperature sensor: 4-wire Pt100 class A	5			
			Temperature Uniformity: ±0.01 K or better	5			
			Temperature Stability: ±0.01 K or better	5			
			Setting accuracy: ±0.01 °C or 0.01 F	5			
			Bath opening: 260 mm x 240 mm	5			
			Bath depth: 350mm	5			
			Bath glass windows: 270mm x 285mm	5			
			External dimensions: Width: 589mm Height: 585mm Length: 360mm	5			
			Heaters : 200, 1000 and 1500 Watts	5			
			Power consumption : 2800 watt	5			
			Power supply: 220/240 V ac 50/60Hz	5			
			Communication port: RS 232 C (9-pins connector)	5			
			Fused wall socket for connection of background illuminator	5			
			Accessories included: cooling coil, length approx. 2 metres	5			
			Lids with 7 opennings 50mm diameter, with covers	5			
			Levelling feet				

			TOTAL	100			
			MINIMUN SCORE REQUIRED	85			
38	semi-standard thermocouple type k and	2 rolls each	QTY -2				
			Application /Scope Calibration of temperature equipment, e.g multifunction calibrators, conditioned chambers and general purpose	WEIGHTING (%)	ACTUAL SCORE		
			Hot sheath temperature range: -50 °C to 1250 °C	20			
			Response time: 2 minutes	15			
			Cold junction wire: 250mm long x 45mm diameter	10			
			Copper extension wires: 200mm	10			
			Immersion depth: 100mm (minimum)	15			
			Hot sheath sensor length: 600mm	10			
			Hot sheath sensor diameter: 7mm				
			Cable between Hot and Cold sensor or junction: 1150mm	10			
			Gross weight: 900g	10			
			TOTAL	100			
			MINIMUM SCORE REQUIRED	85			
39	temperature data logger for autoclaves	QTY 2	Application/Scope Calibration of autoclaves				
			Technical Specifications	10			
			Ambient operating temperature conditions: (- 40 °C to 145 °C				
			Battery life: Avg one year (at 1 minutes sample rate, ambient temperature				
			Cable details: USB- Male series A plug to 5 pin, male series B mini plug Cable length: 6ft				
			Channels: CH1: temperature	10			
			Data capacity: 32,512 Delayed start: yes Download time: approx 1 min Download type: USB	20			
			Dimension (Diameter) : 5.35 x 0.69 inch	5			

		Enclosure: 316 food-grade stainless steel IP Rating: 68 Included accessories: Tadiran battery and quick start guide	5			
		Software is not included But minimum software version required: 17.23	5			
		PC requirements: Microsoft windows 98 or higher, 1 free USB root hub and CD drive	10			
		Power source: 2/3 AA Batteries	5			
		Response time : 15 min to move 63% of full scale	5			
		Sample interval: user selectable (1 second to 24 hours, 1 second increments)	5			
		Software options: A016, A026	5			
		Temperature accuracy: -40 °C to 125 °C (± 1 °C)	10			
		Temperature sensor type: thermistor	5			

NORTH RIFT REGION BIOCHEM LABORATORIES

		NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET	LOCATION: BIOCHEM LABORATORIES -ELDORET		
S/No	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)	SCORE
40	Laboratory Analytical Standard Weights	Application/Scope Verification of Analytical Balances Features a) Material: Weights made of stainless steel j) F1 Grade k) From 1 mg to 500g (Minimum denominations) 2 x 2mg, 2 x 20mg, 2 x 200mg , 1 x 1mg, 1 x 10mg, 1 x 100mg 1 x 5mg, 1 x 50mg, 1 x 500mg 2X 200g, 2x20g 2 x 2g 1 x 500g, 1 x 100 g1 x 50g, 1 x 10 1 x 5g 1 x 1g, l) At least 24 pieces m) Weight Holding tongs and suitable gloves	1 (ONE)		
				70	
				10	
				10	
				20	
				10	
				10	
			TOTAL	60	
		6. Other requirements		20	
		k) Corrosion Resistant		5	
		l) Shiny smooth Finish for easy wiping		5	
		m) Each weight in own holding compartment		5	
		n) Mg level weights enclosed in suitable container inserted in the main container		5	
		o) All weights enclosed in suitable cushioned box		5	
			TOTAL	20	
		7. Other Requirements		20	
		• Accompanied with calibration Certificate traceable to international reference standard		18	
		• Delivery onsite		2	
			TOTAL SCORE	20	
		GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %	
		MINIMUM SCORE REQUIRED %		90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET			
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)
41	LABORATORY ICE MAKER	Application/Scope	ICE GENERATION FOR COOLING	1 (ONE)	
		<u>Specification</u>			
		Ampereage	9.5A		
		Certifications/Compliance	C.UL.US, NSF, ISO		
		Depth (English)	At least 28.4 inches.		
		Height (English)	34 to 39 inches.		
		Power Consumption	Approximately 4.6 KWH/100 lb ice		
		Water Consumption	12.0 gallons/100 lb ice		
		Width	24 in.		
		Capacity	Makes up to 440 lb/day		
		Cooling Type	R-134A refrigerant		
		Hertz	60 Hz		
		Voltage	240 V		
		Yield	Stores 80 lb		
		6. Other requirements		10	
		v. Assembling at delivery site , training and commissioning		2.5	
		vi. All accessories accompanying as displayed on manufacturer's website Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment		2.5	
		vii. Warranty of not less than 1 year and Nearest service center -to be indicated		2.5	
		viii. User and Service Manual In English		2.5	
		TOTAL SCORE		10	
		GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %	
		MINIMUM SCORE REQUIRED %		90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET			
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)
42	LACTODENSIMETER	Application/Scope	For Measuring Density in Milk	1 (ONE)	
		Features		90	
		a) Scale: 15-40 Quevenne		20	
		b) Division 1/1		20	
		c) Measurement at 20°C.		20	
		d) With Thermometer		20	
		e) Length 280mm -290mm		5	
		f) Diameter 21mm - 23mm		5	
		7. Other requirements		10	
		a. Thermometer to be accompanied with calibration Certificate traceable to accredited calibration authority		4	
		b. Density Scale also accompanied with Calibration certificate traceable to an accredited calibration authority		4	
		c. Temperature conversion table for density		2	
		GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %	
		MINIMUM SCORE REQUIRED %		90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET			
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)
43	MAGNETIC FILTER FUNNEL	Application/Scope	Magnetic Filter Funnel,	1 (ONE)	,
		Main Features		90 Max	
		a) Materials of Construction,		20	
		i. Funnel Body, Stem, Lid:Polyphenylsulfone			
		ii. Vent Plug: Polypropylene,			
		iii. Support Screen: Polyphenylsulfone			
		b) Funnel Capacity : 500ml		20	
		c) Effective Filtration Area: 9.6 cm ² , 35 mm effective diameter		10	
		d) Filter Size :Accepts 47 mm filter		10	
		e) Maximum Operating Temperature, Limited by filter or 121 °C		10	
		f) Graduated at 50 mL increments for accurate sample measurements.		10	
		g) Easy filter retrieval with forceps access point. Supplied with forceps (1 Number)		10	

	TOTAL SCORE	90	
	Other requirements	10	
	ix. Assembling at delivery site , training and commissioning	2.5	
	x. All accessories accompanying as displayed on manufacturer's website Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment	2.5	
	xi. Warranty of not less than 1 year and Nearest service center -to be indicated	2.5	
	xii. User and Service Manual In English	2.5	
	GRAND TOTAL SCORE FOR THE EQUIPMENT	100 %	
	MINIMUM SCORE REQUIRED %	90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET				
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)	SCORE
44	<u>MICROWAVE OVEN</u>	Application/Scope	RAPID REMOVAL OF MOISTURE	1 (ONE)	90	
		Function:	Convection			
		Capacity (Litre):	28			
		Cavity Type:	Stainless Steel			
		Control Type:	Feather Touch Membrane			
		Microwave Power Levels:	5			
		Turntable Diameter(mm):	320			
		Features:	Auto work, Child Lock, Completion Alarm, Fan at Back, Multi functional, Power Convection			
		Voltage (Watts):	900			
		Color:	Black			
		Dimensions:	510x495x305		5	

	Power Supply :	Single Phase 220-240V, 50/60HZ		
		TOTAL	90	
	8. Other Requirements		10	
	• Two years warranty minimum		2	
	• Delivery onsite		2	
	• Supplied with user and service manual		2	
	• Local Technical Service agent indicated		2	
	• Supplied with user and service manuals in English		2	
	GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %	
	MINIMUM SCORE REQUIRED %		90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET		
S/No	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)
45	Motomco moisture meter	Application/Scope Grain moisture reading, Grain temperature reading, Damaged kernel, Foreign material Test Weight	1 (ONE)	
Main Features				40 Max
f. Material: Aluminum				5
g. Outputs: Integrated thermal printer, USB ports				5
h. Integrated precision scale				5
i. Average of 3 readings for high moisture samples				5
j. 3.5" LCD touch screen display				5
k. No Grain sample grinding required				10
l. Automatic Grain Weighing for accurate reading				5
Performance Specifications				25
o. Grain moisture reading				5
o. Grain temperature reading				5
o. Damaged kernel				5
o. Foreign material				5
o. Test Weight				5
TOTAL SCORE				20
Other Features				25
i. Power Source: AC/DC adapter 85 – 240 VAC input				5
j. Accuracy ±0.2%				10
k. Resolution 0.1				10
TOTAL SCORE				25
Other requirements				10
(i) Assembling at delivery site , training and commissioning				2.5

		(ii) All accessories accompanying as displayed on manufacturer's website	2.5	
		(iii) Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment		
		(iv) Warranty of not less than 2 year and Nearest service center -to be indicated	2.5	
		(v) User and Service Manual In English	2.5	
		TOTAL SCORE FOR THE EQUIPMENT	100 %	
		MINIMUM SCORE REQUIRED %	90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET																																		
S/No	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)																																
46	MULTIPARAMETER pH, ORP, ISE, DO METER	Application/Scope Trace elements analysis in food, geochemistry, environmental, forensic nuclear and clinical science	1 (ONE)																																	
		<table border="1"> <tr> <td>pH Range</td> <td>0.00 to 14.00 pH</td> </tr> <tr> <td>pH Resolution</td> <td>0.01 pH</td> </tr> <tr> <td>pH Accuracy (@25°C/77°F)</td> <td>±0.02 pH</td> </tr> <tr> <td>pH Calibration</td> <td>automatic one, two, or three points with automatic recognition of five standard buffers (pH 4.01, 6.86, 7.01, 9.18, 10.01) or one custom buffer</td> </tr> <tr> <td>mV Range</td> <td>±600.0 mV</td> </tr> <tr> <td>mV Resolution</td> <td>0.1 mV</td> </tr> <tr> <td>mV Accuracy</td> <td>±0.5 mV</td> </tr> <tr> <td>ORP Range</td> <td>±2000 mV</td> </tr> <tr> <td>ORP Resolution</td> <td>0.1 mV</td> </tr> <tr> <td>ORP Accuracy</td> <td>±1.0 mV</td> </tr> <tr> <td>ORP Calibration</td> <td>automatic at one custom point (relative mV)</td> </tr> <tr> <td>EC Range</td> <td>0 to 200 mS/cm (absolute EC up to 400 mS/cm)</td> </tr> <tr> <td>EC Resolution</td> <td>Manual: 1 µS/cm; 0.001 mS/cm; 0.01 mS/cm; 0.1 mS/cm; 1 mS/cm, Automatic: 1 µS/cm from 0 to 9999 µS/cm; 0.01 mS/cm from 10.00 to 99.99 mS/cm; 0.1 mS/cm from 100.0 to 400.0 mS/cm, Automatic (mS/cm): 0.001 mS/cm from 0.000 to 9.999 mS/cm; 0.01 mS/cm from 10.00 to 99.99 mS/cm; 0.1 mS/cm from 100.0 to 400.0 mS/cm</td> </tr> <tr> <td>EC Accuracy</td> <td>±1% of reading or ±1 µS/cm whichever is greater</td> </tr> <tr> <td>EC Calibration</td> <td>automatic single point, with six standard solutions (84 µS/cm, 1413 µS/cm, 5.00 mS/cm, 12.88 mS/cm, 80.0 mS/cm, 111.8 mS/cm) or custom point</td> </tr> <tr> <td>TDS Range</td> <td>0 to 400000 ppm (mg/L); (the maximum value depends on the TDS factor)</td> </tr> </table>	pH Range	0.00 to 14.00 pH	pH Resolution	0.01 pH	pH Accuracy (@25°C/77°F)	±0.02 pH	pH Calibration	automatic one, two, or three points with automatic recognition of five standard buffers (pH 4.01, 6.86, 7.01, 9.18, 10.01) or one custom buffer	mV Range	±600.0 mV	mV Resolution	0.1 mV	mV Accuracy	±0.5 mV	ORP Range	±2000 mV	ORP Resolution	0.1 mV	ORP Accuracy	±1.0 mV	ORP Calibration	automatic at one custom point (relative mV)	EC Range	0 to 200 mS/cm (absolute EC up to 400 mS/cm)	EC Resolution	Manual: 1 µS/cm; 0.001 mS/cm; 0.01 mS/cm; 0.1 mS/cm; 1 mS/cm, Automatic: 1 µS/cm from 0 to 9999 µS/cm; 0.01 mS/cm from 10.00 to 99.99 mS/cm; 0.1 mS/cm from 100.0 to 400.0 mS/cm, Automatic (mS/cm): 0.001 mS/cm from 0.000 to 9.999 mS/cm; 0.01 mS/cm from 10.00 to 99.99 mS/cm; 0.1 mS/cm from 100.0 to 400.0 mS/cm	EC Accuracy	±1% of reading or ±1 µS/cm whichever is greater	EC Calibration	automatic single point, with six standard solutions (84 µS/cm, 1413 µS/cm, 5.00 mS/cm, 12.88 mS/cm, 80.0 mS/cm, 111.8 mS/cm) or custom point	TDS Range	0 to 400000 ppm (mg/L); (the maximum value depends on the TDS factor)	90Max	
pH Range	0.00 to 14.00 pH																																			
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TDS Range	0 to 400000 ppm (mg/L); (the maximum value depends on the TDS factor)																																			

		TDS Resolution	Manual: 1 ppm (mg/L); 0.001 ppt (g/L); 0.01 ppt (g/L); 0.1 ppt (g/L); 1 ppt (g/L), Automatic: 1 ppm (mg/L) from 0 to 9999 ppm (mg/L); 0.01 ppt (g/L) from 10.00 to 99.99 ppt (g/L); 0.1 ppt (g/L) from 100.0 to 400.0 ppt (g/L), Automatic ppt (g/L): 0.001 ppt (g/L) from 0.000 to 9.999 ppt (g/L); 0.01 ppt (g/L) from 10.00 to 99.99 ppt (g/L); 0.1 ppt (g/L) from 100.0 to 400.0 ppt (g/L)	
		TDS Accuracy	±1% of reading or ±1 ppm (mg/L), whichever is greater	
		TDS Calibration	based on conductivity or salinity calibration	
		Resistivity Range	0 to 999999 Ω•cm; 0 to 1000.0 kΩ•cm; 0 to 1.0000 MΩ•cm	
		Resistivity Resolution	dependent on resistivity reading	
		Resistivity Calibration	based on conductivity calibration	
		Salinity Range	0.00 to 70.00 PSU	
		Salinity Resolution	0.01 PSU	
		Salinity Accuracy	±2% of reading or ±0.01 PSU whichever is greater	
		Salinity Calibration	based on conductivity calibration	
		Seawater σ Range	0.0 to 50.0 σt, σ0, σ15	
		Seawater σ Resolution	0.1 σt, σ0, σ15	
		Seawater σ Accuracy	±1 σt, σ0, σ15	
		Seawater σ Calibration	based on conductivity or salinity calibration	
		Ammonium-Nitrogen Range	0.02 to 200.0 ppm Am (as NH4 +N)	
		Ammonium-Nitrogen Resolution	0.01 ppm to 1 ppm 0.1 ppm to 200.0 ppm	
		Ammonium-Nitrogen Accuracy	±5 % reading or 2 ppm	
		Ammonium-Nitrogen Calibration	1 or 2 point, 10 ppm and 100 ppm	
		Chloride Range	0.6 to 200.0 ppm Cl (as Cl-)	
		Chloride Resolution	0.01 ppm to 1 ppm 0.1 ppm to 200.0 ppm	
		Chloride Accuracy	±5 % of reading or 2 ppm	
		Chloride Calibration	1 or 2 point, 10 ppm and 100 ppm	
		Nitrate-Nitrogen Range	0.62 to 200.0 ppm Ni (as NO3 - -N)	
		Nitrate-Nitrogen Resolution	0.01 ppm to 1 ppm 0.1 ppm to 200 ppm	
		Nitrate-Nitrogen Accuracy	±5 % of reading or 2 ppm	

	Nitrate-Nitrogen Calibration	1 or 2 point, 10 ppm and 100 ppm	
	Turbidity Range	0.0 to 99.9 FNU; 100 to 1000 FNU	
	Turbidity Resolution	0.1 FNU from 0.0 to 99.9 FNU 1 FNU from 100 to 1000 FNU	
	Turbidity Accuracy	± 0.3 FNU or $\pm 2\%$ of reading, whichever is greater	
	Turbidity Calibration	Automatic 1, 2, or, 3 points at 0, 20 and 200 FNU, or custom	
	DO Range	0.0 to 500.0%; 0.00 to 50.00 ppm (mg/L)	
	DO Resolution	0.1%; 0.01 ppm (mg/L)	
	DO Accuracy (@25°C/77°F)	0.0 to 300.0% saturation: $\pm 1.5\%$ of reading or $\pm 1.0\%$ saturation whichever is greater, 0.00 to 30.00 ppm (mg/L): $\pm 1.5\%$ of reading or ± 0.10 ppm (mg/L), whichever is greater, 30.00 ppm (mg/L) to 50.00 ppm (mg/L): $\pm 3\%$ of reading, 300.0 to 500.0% saturation: $\pm 3\%$ of reading	
	DO Calibration	automatic one or two points at 0 and 100% or one custom point	
	Atmospheric Pressure Range	450 to 850 mm Hg; 17.72 to 33.46 in Hg; 600.0 to 1133.2 mbar; 8.702 to 16.436 psi; 0.5921 to 1.1184 atm; 60.00 to 113.32 kPa	
	Atmospheric Pressure Resolution	0.1 mm Hg; 0.01 in Hg; 0.1 mbar; 0.001 psi; 0.0001 atm; 0.01 kPa	
	Atmospheric Pressure Accuracy	± 3 mm Hg within $\pm 15^\circ\text{C}$ from the temperature during calibration	
	Atmospheric Pressure Calibration	Automatic at one custom point	
	Temperature Range	-5.00 to 55.00 °C	
	Temperature Resolution	0.01 °C	
	Temperature Accuracy	± 0.15 °C;	
	Temperature Calibration	Automatic at one custom point	
	Temperature Compensation	Automatic from -5 to 55 °C	
	Logging Memory	Atleast 44,000 records (continuous logging or log-on-demand of all parameters)	
	Logging Interval	one second to three hours	
	PC Connectivity	USB	
	Battery Type/Life	1.2V (4) NiMH, rechargeable batteries, size C type; up to 140 hours	
	Waterproof Protection	As per international Requirements	
	Environment	0 to 50°C (32 to 122°F); RH max 100%	

	GPS	12 Channel receiver and antenna, that tracks location using satellites recording latitude and longitudes naming the GPS coordinates	
a)	Two years warranty minimum from date of commissioning with published Specifications attached and stamped.	2	
b)	Delivery installation/assembly and commissioning on site where all specs and supplies will be proved	2	
c)	Local Technical Service agent indicated	2	
d)	Intensive training not later than 24 hrs after commissioning for atleast 4 hrs	4	
e)	Supplied with user and service manuals written in English	2	
TOTAL SCORE			10
GRAND TOTAL SCORE FOR THE EQUIPMENT			100 %
MINIMUM SCORE REQUIR			90

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET			
S/No	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)	score
47	Multi-parameter Photometer With Cod Complete Kit.	Application/Scope For measuring key water and wastewater quality parameters 8. Main Features <ul style="list-style-type: none"> g) Can Measure COD low , mid to high range (Necessary Reagents supplied) h) Can Measure Nitrogen Low, Mid To high range (Necessary Reagent Supplied) i) Supplied with complete set of apparatus and reagents for the listed tests not less than 2 years to expiry j) Dual Power Supply with at least 2 optical hours of battery on operation k) Has capacity for at least 40 key water and waste water Parameters l) Accompanied with digester for COD determination 9. Performance Specifications <ul style="list-style-type: none"> o Absorbance range 0.000 to 4.000 o Abs Resolution ≤ 0.001 o Abs Accuracy ± 0.003 Abs o Bandwidth filter accuracy $\pm 1.0\text{nm}$ o pH Range -2.00 to 16.00 pH ($\pm 1000 \text{mV}$) o pH resolution 0.01 pH (0.1 mV) o pH Temperature compensation (-5.0 to 100.0°C) o Temperature Probe Range (-2.00 to 120 °C) Resolution 0.1 °C 	1 (ONE)		

	10. Other Features	20	
	i. Battery Life: >500 Photometric measurements	5	
	m. Weight < 1.2Kgs	2.5	
	n. Supplied with all accessories as displayed on manufactures website	10	
	o. Connectivity Standard: RS 232, USB, Bluetooth, Wi-Fi, Ethernet	2.5	
	e. Environment 0 to 50°C (32 to 122°F); 0 to 95% RH, non-condensing	5	
	Other requirements	10	
	i. Assembling at delivery site , training and commissioning	2.5	
	ii. All accessories accompanying as displayed on manufacturer's website	2.5	
	iii. Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment		
	iv. Warranty of not less than 2 year and Nearest service center -to be indicated	2.5	
	v. User and Service Manual In English	2.5	
	GRAND TOTAL SCORE FOR THE EQUIPMENT	100 %	
	MINIMUM SCORE REQUIRED %	90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET			
S/No	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)	Score
48	Nitrogen, Digestion, Distillation and Autotitrating unit	Application/Scope Nitrogen determination in foods, feeds and environmental samples Sulphur Dioxide in Food Sorbic acid in wine TVBN in Fish and Fish Products Non-Protein in Milk and Dairy Products Alcohol in Beverages and Intermediates	1 (ONE)		
		11. Features			
		a. Automatic addition H ₃ BO ₃		2	
		b. Automatic addition HO		2	
		c. Automatic addition NaOH		2	
		d. Programmable reaction time		2	
		e. Programmable distillation time		2	
		f. Variable steam power 30 - 100 %		2	
		g. Automatic suction of sample waste		2	
		h. Automatic suction of the receiver		2	
		i. Selection of language (English set as default)		2	

	j. Optical and acoustical error messages	2	
	k. Protection door with safety switch	2	
	l. Automatic check of chemical reservoir	2	
	m. Automatic titration	2	
	n. Micro dosing pump for titration	2	
	o. Cooling water consumption [l/min]	2	
	p. Autosampler	2	
	q. Set of storage tanks	2	
	r. Distillation time [min] - 2	2	
	s. Recovery rate [%] > 99,5	2	
	t. Reproducibility [%] +/- 1	2	
	u. Detection limit N [mg] 0,1	2	
	Other Specifications		
	o. Rated voltage [VAC] 20 Frequency [Hz] 50 Rated power input [W]1800-1850	2	
	o. RS 285 interface	2	
	o. USB-interface	2	
	o. Result print out	2	
	MUST BE INCLUDED:		
	o. Distillation system	30	
	o. pH-electrode		
	o. Buffer solution pH7		
	o. Application Software		
	o. PC connection set		
	o. Buffer solution pH2		
	o. KCL-solution		
	o. KJELDAHL digestion tube 0X		
	o. Tubing set All Tunings to be supplied with twice the length as replacement spares		
	o. Laptop Provided: Windows 10 or above 62 Bit, an Intel Core i7-6700 and above, 3GB Ram, Solid state Harddisk 500gb, 15" touch screen, DVD Drive, USB and HDMI ports		
	Other requirements		
	i. Assembling at delivery site , training for at least 2 Days and commissioning (Must Be indicated)	5	
	ii. All accessories accompanying as displayed on manufacturer's website	5	
	iii. Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment		
	iv. Warranty of not less than year and Nearest service center -to be indicated	5	

	v. User and Service Manual In English	5	
	GRAND TOTAL SCORE FOR THE EQUIPMENT	100 %	
	MINIMU SCORE REQUIRED %	90	

NAME OF LABORATORY: CHEMICAL		LOCATION: NRR			
SN	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)	SCORE
49	ORBITAL SHAKER	Application/Scope	Sample Shaking	1	
		Main Features			
		Ability to Hold at least 12 X 250ml Beakers with fastening brackets		2	
		Built-in digital timer		2	
		Orbital shaking action		1	
		Performance Specifications			
		Shaking action : Orbital		10	
		Speed range :30 to 300rpm		10	
		Orbit / amplitude :approximately 16mm		10	
		load : \geq 10kg		10	
		Operational temperature range :+4 to +40°C		10	
		Maximum permissible humidity :80%		10	
		Net weight : \leq 11kg		1	
		Electrical supply :230V, 50Hz, 50W		5	
		Cradle system, to comfortably hold flasks.		2	
		The cradle type platform should have four rubber cushioned horizontal securing bars with quick release handles.		2	
		Easily adjusted both vertically and horizontally to hold most sizes and types of vessel, including flasks, bottles and beakers. Capable of accommodating the following Erlenmeyer flasks or bottles: 12 x 250ml or 9 x 500ml or 6 x 1000ml or 2 x 2000ml.		2	
		Shaking times can be set to run for 1 to 999 minutes on a built-in digital timer, or the unit can be set for continuous operation		2	
		User and service manual		4	
		Installation, Training and commissioning before acceptance		2	
		12 month warranty			
		Other requirements		15	
		i. Installation and Commissioning -to be indicated		3	
		ii. Operation and Service Manuals- All Manuals in English		3	
		iii. Warranty and Nearest service centre -to be indicated		3	
		iv. Brochures for the equipment to be provided during quotation		3	
		v. Training - onsite training during installation		3	
		TOTAL SCORE FOR THE EQUIPMENT		100 %	
		Min score		95	

TECHNICAL SPECIFICATION FOR PORTABLE GRAIN BOERNER DIVIDER

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET				
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)	SCORE
50	PORTABLE GRAIN BOERNER DIVIDER	Application/Scope	Homogeneously split a sample into two equal portions for grain grading	1 (ONE)		
		Features				
		n) Material:	carbon steel and epoxy coated	20		
		o) Housing:	Has 36 internal channel for effective mixing	10		
		p) Capacity:	Upto 400g of grain at once	10		
		q) Outlet Channels:	2	20		
		r) Two brass pans with handles	for easy transport of divided samples	10		
		9. Other requirements				
		p) Corrosion Resistant		5		
		q) Shinny smooth Finish for easy wiping		5		
		r) Height: Approx 18 inches, Diameter of center approx. 9 inches Weight: ≤2kgs		10		
		10. Other Requirements				
		• Warranty Indicated		5		
		• Delivery onsite		5		
		GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %		
		MINIMUM SCORE REQUIRED %		90		





NAME OF LABORATORY: MICROBIOLOGY AND CHEMISTRY- ELDORET		LOCATION: BIOCHEM LABORATORIES -NORTH RIFT			
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)
51	POTENTIOMETRIC TITRATION EQUIPMENT	Application/Scope	Ability perform Titrations to pH, mV and μ A end point in foods, feeds, drinks etc.	(SIXTY)	
		<p>Main Features</p> <p>Dynamic Titrant Dosing The dynamic dosing feature allows for timely and accurate titration results by relating the titrant volume dosed to the mV response from the titration reaction. This provides for larger doses near the beginning of a titration and smaller, more precise doses near the titration endpoint.</p> <p>Signal Stability Timing The signal stability feature monitors when the mV response of the titration reaction stabilizes before providing the next titrant dose. This ensures reliable measurement values throughout the length of a titration.</p> <p>Equivalence Endpoint Detection Equivalence endpoint detection is critical in applications where fixed endpoints are not specified in standard methods. This endpoint indicates where the mV response from the titration is greatest with respect to the volume of titrant dosed.</p> <p>Multiple Equivalence Point Detection Ability to detect multiple equivalence points during one titration as specified and required in certain standard methods and applications.</p> <p>Method Sequencing Allows for two analyses to be run on the same sample including direct measurements, single endpoint titrations, multiple equivalence point titrations, and back titrations.</p> <p>Multiple Titration Types Paired with the right electrode from selected, the potentiometric titrator shall be able to perform acid/base, redox (ORP), complexometric, precipitation, non-aqueous, argentometric, and ion selective titrations, as well as back titrations and titre determinations.</p> <p>Direct Measurement Functionality High accuracy pH, ORP, and ion selective able to link, log, and report direct measurements. Users to easily track and manage data without the hassle of manual record keeping.</p> <p>Burettes & Dosing System Has exchangeable Burette System Multiple Burette equipped with a 5 mL, 10 mL, 25ml and 50 mL burette Sizes allowing precision dosing using a Pump of 40,000 step piston driven capable of dosing extremely small and highly accurate volumes of titrant or reagent The tubing is Chemically Resistant constructed of durable, chemically resistant PTFE and feature a light-blocking polyurethane outer sleeve to protect light sensitive reagents.</p>	5 Max		

	<p>The reagents are automatically added using a second burette programmable to volumetrically dispense reagent prior to titration or direct measurement to achieve consistent and accurate results and prevents operator errors such as incorrect volumes or forgetting reagent addition.</p> <p>pH Specifications</p> <table> <tbody> <tr> <td>pH Range</td><td>-2.0 to 20.0 pH; -2.00 to 20.00 pH; -2.000 to 20.000 pH</td></tr> <tr> <td>pH Resolution</td><td>0.1; 0.01; 0.001 pH</td></tr> <tr> <td>pH Accuracy (@25°C/77°F)</td><td>±0.001 pH</td></tr> <tr> <td>pH Calibration</td><td>up to five-point calibration, eight standard buffers and five custom buffers</td></tr> </tbody> </table> <p>mV Specifications</p> <table> <tbody> <tr> <td>mV Range</td><td>-2000.0 to 2000.0 mV</td></tr> <tr> <td>mV Resolution</td><td>0.1 mV</td></tr> <tr> <td>mV Accuracy (@25°C/77°F)</td><td>±0.1 mV</td></tr> <tr> <td>mV Calibration</td><td>single-point offset</td></tr> </tbody> </table> <p>ISE Specifications</p> <table> <tbody> <tr> <td>ISE Range</td><td>1•10⁻⁶ to 9.99•10¹⁰</td></tr> <tr> <td>ISE Resolution</td><td>1; 0.1; 0.01</td></tr> <tr> <td>ISE Accuracy</td><td>±0.5% monovalent; ±1% divalent</td></tr> <tr> <td>ISE Calibration</td><td>up to five-point calibration, seven standard solutions and five user-defined standards</td></tr> </tbody> </table> <p>Temperature Specifications</p> <table> <tbody> <tr> <td>Temperature Range</td><td>-5.0 to 105.0°C; 23.0 to 221.0°F; 268.2 to 378.2K</td></tr> <tr> <td>Temperature Resolution</td><td>0.1°C; 0.1°F; 0.1K</td></tr> <tr> <td>Temperature Accuracy (@25°C/77°F)</td><td>±0.1°C; ±0.2°F; ±0.1K, excluding probe error</td></tr> <tr> <td>Temperature Compensation</td><td>manual (MTC) or automatic (ATC)</td></tr> </tbody> </table> <p>Additional Specifications</p> <table border="1"> <tbody> <tr> <td>Programmable Stirrer</td><td>propeller type, 100 to 2500 rpm, resolution 100 rpm</td></tr> <tr> <td>Display</td><td>5.7" (320 x 240 pixel) backlit color LCD</td></tr> <tr> <td>Burette Sizes</td><td>5, 10, 25, and 50 mL</td></tr> <tr> <td>Burette Resolution</td><td>1/40000</td></tr> <tr> <td>Display Resolution</td><td>0.001 mL</td></tr> <tr> <td>Dosing Accuracy</td><td>±0.1% of full burette volume</td></tr> <tr> <td>Methods</td><td>up to 100 methods (standard and user-defined)</td></tr> <tr> <td>Burette Auto-Detection</td><td>burette size is automatically recognized when inserted into the unit</td></tr> </tbody> </table>	pH Range	-2.0 to 20.0 pH; -2.00 to 20.00 pH; -2.000 to 20.000 pH	pH Resolution	0.1; 0.01; 0.001 pH	pH Accuracy (@25°C/77°F)	±0.001 pH	pH Calibration	up to five-point calibration, eight standard buffers and five custom buffers	mV Range	-2000.0 to 2000.0 mV	mV Resolution	0.1 mV	mV Accuracy (@25°C/77°F)	±0.1 mV	mV Calibration	single-point offset	ISE Range	1•10 ⁻⁶ to 9.99•10 ¹⁰	ISE Resolution	1; 0.1; 0.01	ISE Accuracy	±0.5% monovalent; ±1% divalent	ISE Calibration	up to five-point calibration, seven standard solutions and five user-defined standards	Temperature Range	-5.0 to 105.0°C; 23.0 to 221.0°F; 268.2 to 378.2K	Temperature Resolution	0.1°C; 0.1°F; 0.1K	Temperature Accuracy (@25°C/77°F)	±0.1°C; ±0.2°F; ±0.1K, excluding probe error	Temperature Compensation	manual (MTC) or automatic (ATC)	Programmable Stirrer	propeller type, 100 to 2500 rpm, resolution 100 rpm	Display	5.7" (320 x 240 pixel) backlit color LCD	Burette Sizes	5, 10, 25, and 50 mL	Burette Resolution	1/40000	Display Resolution	0.001 mL	Dosing Accuracy	±0.1% of full burette volume	Methods	up to 100 methods (standard and user-defined)	Burette Auto-Detection	burette size is automatically recognized when inserted into the unit		
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	Flow Rate	user-selectable from 0.1 mL/min to 2 x burette volume/min		
	Endpoint Determination	equivalence point (1st or 2nd derivative) or fixed pH/mV value		
	Potentiometric Titrations	acid/base (pH or mV-mode), redox, precipitation, complexometric, non-aqueous, ion-selective, argentometric		
	Measurement Units	user-specified expression of concentration units to suit specific calculation requirements		
	Real-Time & Stored hs	mV-volume or pH-volume titration curve, 1st derivative curve or 2nd derivative curve; pH mode, mV mode or ISE mode: pH/mV/concentration versus time		
	USB Host (Side)	flash drive compatibility for transfer of methods and reports		
	Peripherals (Rear)	connections for VGA display, PC-keyboard, parallel printer, USB device input, RS232, interface for autosampler		
	GLP Conformity	instrumentation data storage and printing capabilities		
	Languages	English, Portuguese, Spanish		
	Operating Environment	10 to 40°C (50 to 104°F), up to 95% RH		
	Storage Environment	-20 to 70°C (-4 to 158°F), up to 95% RH		
	Power Supply	100-240 VAC; "-01" models, UK plug (type C)		
	Weight	Not greater than 9 kg (20 lbs.) (with one pump, stirrer and sensors)		
	Other requirements			
	Assembling of the chairs at delivery site -to be indicated		5	
	Certification of CE		2.5	
	Warranty and Nearest service centre -to be indicated		2.5	
	GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %	
	MINIMUM SCORE REQUIRED %		90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET			
S/No	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)	SCORE
52	Refrigerator	Application/Scope Freezing and refrigeration of samples and Storage of reagents	1 (ONE)		
		GENERAL Energy Rating 4 Star Capacity 308 Litre Refrigerator Type Double Door Refrigerator Number of Doors 2 Door(s) In-Built Stabilizer Yes Technology Used Smart Inverter Compressor Technology, Ice Beam Door Cooling Technology Defrosting Type Frost Free	40		
		PERFORMANCE FEATURES Moisture Control Yes Temperature Control I-Micom (User adjustable Temp) Air Flow Type Multi Air Flow	25		
		FREEZER COMPARTMENT FEATURES Freezer Door Bins 2 Ice Tray Double Twist Refrigerator Shelves 4	25		

	Number of Crispers	1		
	Refrigerator Door Bins	5		
	Refrigerator Bottle Racks	2		
	Shelf Material	Toughened Glass		
Other Requirements				
	• Warranty minimum: 1 Year on Product & 10 Year Smart Inverter Compressor	2.5		
	• Delivery onsite	2.5		
	• Local Technical Service agent indicated	2.5		
	• Supplied with user and service manuals in English	2.5		
	TOTAL SCORE	15		
	GRAND TOTAL SCORE FOR THE EQUIPMENT			
	MINIMUM SCORE REQUIRED %			

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET		
S/No	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)
53	<u>Sample Mill</u>	Application/Scope	Fine Grinding of agriculture, Biology, chemistry, geology, engineering and construction materials	1 (ONE)
		1. Features		90Max
		a) Size Reduction Principle: Impact, Shearing		6
		b) Final Fineness: <40µm		6
		c) Speed at 50/60Hz 6,000 -18,000 rpm, Free selectable		6
		d) Feed size: ≥ 9mm		6
		e) Feed material, Soft, Medium - Hard, Brittle, Fibrous		6
		f) Rotor: Peripheral Speed 31-93 m/s		6
		g) Rotor diameter: 90mm minimum		6
		h) Types of Rotors: 6-Tooth/12-tooth/24-tooth/8-tooth mini-rotor (All Supplied)		6
		i) Material of Grinding tools: Stainless steel, titanium, with wear resistant coating		6
		j) Sieves Sizes : Trapezoid holes 0.08/0.12/0.20/0.50/0.75/1.00/1.50/2.0mm : Round Holes 3.00/4.00/5.00/6.00/10.00mm (All supplied)		6
		k) Drive: 3-Phase asynchronous motor with frequency converter		6
		l) Power Connection: Single Phase100-240V, 50/60HZ with Over Current protection		6
		m) Power Consumption: 1300W		6

n) Weight Not Greater than 40Kgs	6	
o) Electrically locked door during motion with error message displayed on malfunction	6	
TOTAL	90	
2. Other Requirements		10 Max
• Two years warranty minimum from date of commissioning with published Specifications attached and stamped.	2	
• Delivery installation/assembly and commissioning on site where all specs and supplies will be proved	2	
• Local Technical Service agent indicated	2	
• Intensive training not later than 24 hrs after commissioning for at least 4hrs on site	4	
• Supplied with user and service manuals written in English	2	
TOTAL SCORE	10	
GRAND TOTAL SCORE FOR THE EQUIPMENT	100 %	
MINIMUM SCORE REQUIRED %	90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET			
S/No	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)	SCORE
54	Stainless Steel Laboratory Cart	Application/Scope	Reagents , Samples, Desiccator, Glassware movement As Defined Below	7 (SEVEN)	
		a) Main Features			
		i. Construction: Stainless steel		10	
		ii. Strong castor Wheels on 4 sides rotating 360°		10	
		iii. Resistant to UV, frost, heat and chemicals		10	
		iv. Rear handles for ease of movement.		10	
		v. Weight Capacity 80 Kgs		10	
		vi. Has 3 shelves shielded at all sides with 4 inches steel bar to avoid sliding off load		10	
		vii. Middle tray in the middle between upper and lower shelf		10	
		viii. Dimensions 50 (w) X 80 (L)x 100 (H)		10	
		Other requirements		10	
		Delivery Onsite		5	
		Warranty on Claims and defects: Min 2 Years		5	
		GRAND TOTAL SCORE FOR THE EQUIPMENT	100 %		
		MINIMUM SCORE REQUIRED %	90		



L X150 CM; WX80 CM; H X100CM; CLEARANCE 15CM

TECHNICAL SPECIFICATION FOR TESTER WEIGHT

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET		
S/No	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)
55	<u>TESTER WEIGHT</u>	Application/Scope	Density measurement in grains	1 (ONE)
		Features		70 Max
		s) Material: Hopper and Cups Made of Brass		10
		t) Material: Triangular pan Made of Plastic		10
		u) The filling hopper is heavy gauge brass spinning with a slide gate valve for instant release of grain	20	
		v) The opening is a standard 1¼" diameter		
		w) Cup Size 500cm3	10	
		x) Adjustment of the hopper can be made to the proper height above any cup.	10	
		Two Pieces of Strike-Off-Stick At Least 30cm Length	10 Max	
		11. Other requirements	10	
		s) Corrosion Resistant	5	
		t) Shinny smooth Finish for easy wiping	5	
		12. Other Requirements		
		• Accompanied with calibration Certificate traceable to international reference standard for the sample cup and QA certificate for the strike off stick	18	
		• Delivery onsite	2	
		GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %
		MINIMUM SCORE REQUIRED %		90

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET			
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)
56	TOP PAN ELECTRONIC BALANCE	Application/Scope	Weight in g, Weight in %, Total net,	1 (ONE)	
Main Features <ul style="list-style-type: none"> a) Automatic Internal Calibration with built in weight and Manual Calibration b) A built in under hook for below weighing system c) Easy to read LCD Display with back light d) Density Measurement for solid and liquid e) Full Tare Range up to Max. Capacity of the Balance Performance Specifications <ul style="list-style-type: none"> o Maximum weighing Capacity \geq4000g o Readability upto 10mg o Repeatability 10mg o Linearity Indicated o Pan Size \geq180mm o Stabilization Time \leq3 seconds o Working Temperature \leq10 to \geq 80 degrees • Infrared Automatic Draft Shield Other Features <ul style="list-style-type: none"> p. Power Source: AC/DC adapter 100 – 240 VAC input, output 12 VDC q. Construction : Die cast aluminum r. Weighing Chamber Internal Volume \geq170 x \geq170 x \geq 230 mm s. Connectivity Standard: RS 232, USB, Bluetooth, Wi-Fi, Ethernet e. Net Weight < 7.0Kg f. Weighing Units g, mg, lb, ozt, h. Security/safety Lock manual and software 					
TOTAL SCORE					
Other requirements <ul style="list-style-type: none"> i. Assembling at delivery site , training and commissioning ii. All accessories accompanying as displayed on manufacturer's website iii. Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment iv. Warranty of not less than 1 year and Nearest service center -to be indicated v. User and Service Manual In English 					
GRAND TOTAL SCORE FOR THE EQUIPMENT					
MINIMUM SCORE REQUIRED %					

NAME OF LABORATORY: CHEMICAL		LOCATION: NRR			
SN	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)
57	TURBIDITY METER	Application/Scope	Turbidity in liquids	1	
		Main Features			
1. Ability to analyse, beverage , Drinking Water, wastewater and industrial water		2			
2. Portable and able to be used in the field		2			
3. Supplied with At least 4 sample holders		1			
		Performance Specifications			
Circuit Custom one-chip of microprocessor LSI circuit.		3.5			
Display: LCD		3.5			
Range 0.00 to 50.00 NTU, 50 to 1,000 NTU		3.5			
Auto range		3.5			
Resolution:< 0.01 NTU/ 1 NTU		3.5			
Accuracy within $\leq \pm 0.5$ NTU		3.5			
Light source LED, 850 nm.		3.5			
Detector :Photo diode		3.5			
Standard Meet ISO 7027.		3.5			
Response time: Less than 10 seconds.		3.5			
Sample volume needed: 10 ml or less		3.5			
Data Hold Freeze the display reading.		3.5			
Memory Recall Maximum & Minimum value.		3.5			
Display Sampling Time Approx. 1 second.		3.5			
Power off Auto shut off saves battery life or manual off by push button.		3.5			
Calibration points 0 NTU, 100 NTU.		3.5			
Operating Temperature 0 to 50 °C.		3.5			
Power Supply 12VDC		3.5			
Weight: Less than 400 g		3.5			
Accessories Testing bottle with 0 NTU standard solution.....1 PC		2			
Included Testing bottle with 100 NTU standard solution..... 1 PC		3			
Clean solution (Distilled water).....1L bottle		1			
Hard carrying case,1 PC		2			
Empty testing bottle		2			

		Other requirements		
i.	Installation and Commissioning	- to be indicated	3	
ii.	Operation and Service Manuals	- All Manuals in English	3	
iii.	Warranty and Nearest service centre	- 12 Month Warranty Minimum	3	
iv.	Brochures	for the equipment to be provided during quotation	3	
v.	Training	- onsite training during installation	3	
GRAND TOTAL SCORE FOR THE EQUIPMENT			100 %	
MIN SCORE			90 %	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET			
S/No	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)	SCORE
58	VACUUM OVEN AND VACUUM PUMP	Application/Scope	Moisture Content and Dry matter Analysis	1 (ONE)	
		Vacuum Oven Specifications Capacity, Litre At least 31 Temperature Range 30 to 200°C at ambient temperatures less than 25°C Power Rating, Maximum, W 1000 nominally @240V Shelf, (W x D), mm ≥(366 x 290) Number of Shelves Supplied 2 Number of Shelf Positions 3 Interval Between Positions, mm 75 Weight, Kg Approximately 46±3 Tubing Connections 10-12mm Bore Leakage Rate (at 0.01 mbar) Max 10 mbar/24 hr i.e. 4x10 ⁻⁶ mbar/l/s	60		
		Vacuum Pump PI IMP SPECIFICATION Delivery (l/min) Min 34 Ultimate Vacuum (mbar abs.) 100		25	

	Operating Pressure (bar g)	1		
	Connectors for tube (mm)	ID 10		
	Ambient Temperature	+5 to 40 °C		
	Voltage and Frequency	220-240VAC 50Hz		
	Motor Protection	IP44		
	Gas leakage	Gastight, leakage rate approx. 6×10^{-3} mbar x l/s		
	Transfer	<ul style="list-style-type: none"> • 100% oil-free transfer • Pure transfer, evacuation and compression 		
	Gas/Chemical Interactions	<ul style="list-style-type: none"> • Compatible with vapours and condensation • Chemically-resistant 		
	Other Requirements			
	<ul style="list-style-type: none"> • Two years warranty minimum • Delivery onsite and commissioning on Site (To Be tested to prove specs) • Local Technical Service agent indicated • Supplied with user and service manuals in English 	5		
		5		
		2.5		
		2.5		
	TOTAL SCORE FOR THE EQUIPMENT			100 %
	MINIMUM SCORE REQUIRED %			90

NAME OF LABORATORY: MICROBIOLOGY LABORATORY- ELDORET			LOCATION: BIOCHEM LABORATORIES -ELDORET		
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)
59	Vacuum Pump	Application/Scope	Vacuum Filtration of Solvents	12 (Twelve)	
		Specifications Delivery 22 (l/min) Absolute Vacuum 100 (mbar) Noise level [100 mbar] 57.5 – 59.0 dBA Operating Pressure (max) 1 (bar) Materials (contact with filtrate possible)Aluminum, CR (Neoprene), NBR (Perbunan) Connectors for Tube ID 9 (mm) Ambient Temperature 5 ... 40°C Power Requirements 220-2300 V 50 Hz, 130 W, 0.9 A 3 pin Plug Class G Motor Protection IP 44 Weight Not greater than 7.5 kg		70	
		Supplied with <ul style="list-style-type: none">• 100ml Suction flask Capable of withstanding Max suction of pump• PTFE-Filter		20	
		Other requirements			
		Delivery on site.		2.5	
		All accessories accompanying as displayed on manufacturer's website Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment		2.5	
		Warranty of not less than 2 year and Nearest service center -to be indicated		2.5	
		User and Service Manual In English		2.5	
		GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %	
		MINIMUM SCORE REQUIRED %		90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET			
S>No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)
60	<u>Vibratory Sieve</u>	Application/Scope	separation, fractioning, particle size determination, grading	1 (ONE)	
		Features			
		Digital display of performance and time		5	
		Suitable for dry and wet sieving (Sieves made of stainless steel)		5	
		Free adjustment of all process parameters (time, performance)		5	
		Feed Powders, Bulk Materials, Suspensions		5	
		Other requirements		60	
		Measuring Range 20 µm to 25mm to include;		20	
		<ul style="list-style-type: none"> • 75µm mesh (for toothpaste) • 150µm mesh (for toothpaste) • 300 µm mesh • 4.50mm diameter rounded (Maize grading) • 1.6 mm wide and 9.5 mm long (Wheat grading) • 0.84mm (for Ground materials for Aflatoxin testing and for instant coffee) • 1.0mm for salt testing • 0.212mm for salt testing • Base pan without holes for collecting sieved material 			
		Sieving motion: Throwing motion with angular momentum		10	
		Feed Capacity : Upto 3Kg		5	
		Amplitude: Digital, 1-100% (0-3mm)		5	
		Time Display: Digital, 1 – 99 min		5	
		Sieve Diameter : 8 inches		5	
		Sieve Stack Height : Upto 510mm		5	
		Clamping devices for both dry and wet sieving		5	
		Other Requirements			
		<ul style="list-style-type: none"> • Electrical Supply data: Single Phase, 2220-240V, 50/60Hz • Number of stacks/sieves mounted: At least 9 		2.5	
		Other Requirements		15 Max	
		Two years warranty minimum from date of commissioning with published Specifications attached and stamped.		5	
		Delivery installation/assembly and commissioning on site where all specs and supplies will be proved		5	
		Local Technical Service agent indicated		2.5	
		Supplied with user and service manuals written in English		2.5	
		GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %	
		MINIMUM SCORE REQUIRED %		90	

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET			LOCATION: BIOCHEM LABORATORIES -ELDORET			
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)	SCORE
61	Waste Bins	Application/Scope	Waste Material Storage and handling	7 (SEVEN) As Defined Below		
		Main Features				
		Construction: high density polyethylene (HDPE) and compliant to EN840, RAL and DIN 30760.		10		
		Highly robust rubber 200mm diameter wheels with sturdy axle mountings made from tempered steel		10		
		Resistant to UV, frost, heat and chemicals		10		
		Rear handles for ease of movement.		10		
		Volume 120L , 60Kg Minimum x 4Yellow colour, x 1 white colour (Yellow for Broken Glass, Winchester Bottles) (White for General Paper Category wastes)		10		
		Volume 60 L, 30Kg Minimum X 1 Purple colour (Hazardous waste)		10		
		Volume 360L x 2 green colour: Has four wheels (Located outside For Secondary Containment)		10		
		Two of each labels to be Provided separately with appropriate hazard signs				
		Other requirements				
		Delivery Onsite		5		
		Warranty on Claims and defects: Min 2 Years		5		
		GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %		
		MINIMUM SCORE REQUIRED %		90		

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET				
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTIN G (%)	SCORE
62	WATER BATH SET WITH SHAKER FLASK HOLDER AND FLAST COVER	Application/Scope	Steam heating, Immersion heating, and shaking	1 (ONE)		
		Main Features				
		a) Must have a Flat Cover with eccentric removable expansions		5		
		b) Temperature Range: min. 5°C above ambient up to +95°C with additional boiling mode (+100°C)		5		
		c) Shaking Device Perfectly fitting the bath. Shaking freq. 35-160 back/forth strokes		5		
		d) Sample Basket Perfectly Fitting the Shaker with Clip for 6, 300ml flasks		5		
		e) Stailess steel Cover with concentric ring sets for Peltier cooling: 6 openings / 87 mm diameter		5		
		f) Corrosion Proof 3 side heating		5		
		g) Digital LED display controller		5		
		h) Stainless steel interior and Exterior including basket, flat cover and shaker		5		
		Performance Specifications				
		o) Overvoltage protection		10		
		o) Temperature Range 5 to 100 °C		10		
		o) Tep. Sensor PI100 sensor Class A in 4-wire circuit		10		
		o) Volume 22L with depth of atleast 177mm		5		
		o) Voltage 220-240VAC Power supply		5		
		o) Timer: Intergrated digital Time from 1 min to 99 hours and above, With HOLD and Wait functions				
		Other Features		10		
		Safety on Temperature excesses defined and user definable with autodiagnostic feature using microprocessor PID-temperature controller to indicate fault		10		
		Other requirements		10		
		i. Assembling at delivery site , training and commissioning		2.5		
		ii. All accessories accompanying as displayed on manufacturer's website		2.5		
		iii. Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment				
		iv. Warranty of not less than 1 year and Nearest service center -to be indicated		2.5		
		v. User and Service Manual In English		2.5		
		GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %		
		MINIMUM SCORE REQUIRED %		90		

NAME OF LABORATORY: CHEMISTRY LABORATORY- ELDORET		LOCATION: BIOCHEM LABORATORIES -ELDORET				
S/No	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)	SCORE
63	WATER DISTILLATION UNIT	Application/Scope	Water Distillation,	1 (ONE)		
		Main Features				
		a) Twin Boiling and distillation units				5
		b) Electronic level control during the whole distilling process				5
		c) Electronic impurity detector effecting rinsing and cleaning of the evaporator				5
		d) Water level control in the boiler to automatically switch off the power in case of water shortage				5
		e) Evaporator, condenser and overflow made of borosilicate glass				5
		f) Outer housing made of electrolytically galvanised sheet steel, electrostatically powder coated with epoxy resin				5
		g) Easily disassembly of distillation parts for easy cleaning				5
		Performance Specifications				
		o Output: 4 Liters of Distillate per hour or more				10
		o Conductivity single distillate: approx. 2 $\mu\text{s}/\text{cm}$ at 25 °C				10
		o Water supply through solenoid inlet valve				5
		o 220-240VAC Power supply				5
		Other Accessories				25
		t. Dichlorate Filter connectable to the inlet hose				5
		u. Phosphate Cartridge connectable to the inlet hose				5
		Other requirements				
		i. Assembling at delivery site , training and commissioning				2.5
		ii. All accessories accompanying as displayed on manufacturer's website				2.5
		iii. Note: For other screws used on the equipment other than star type, the screw driver set MUST accompany the equipment				
		iv. Warranty of not less than 1 year and Nearest service center -to be indicated				2.5
		v. User and Service Manual In English				2.5
GRAND TOTAL SCORE FOR THE EQUIPMENT					100 %	
MINIMUM SCORE REQUIRED %					90	

NORTH RIFT -METROLOGY

APPENDIX I: KEBS NORTH RIFT SPECIFICATION METROLOGY CALIBRATION KIT WITH COMPATIBLE ACCESSORIES - TEMPERATURE LAB					
Item no.	Item	Quantity	Specifications	WEIGHT	ACTUAL SCORE
64	Temperature Dry Blocks	1NO	1) Dry Block Calibrator (-40 to 200°C)		
			Temp Range:-40 to 200°C	3	
			Heating Time; 8 min: 23°C to 155°C,5 min: -40°C to 23°C,13 min: -40°C to 155°C	3	
			Cooling Time,Max to Min:28 min: 155°C to -40°C	3	
			Accuracy: ±0.18°C at Full Range	3	
			Resolution: 0.01°C/F	3	
			Stability(30min): ±0.01°C at Full Range	3	
			Axial Uniformity at 60 mm (2.4 in); ±0.05°C at 33°C , ±0.1°C at 200°C ,±0.3°C at 420°C , ±0.2°C at 350°C ±0.5°C at 660°C	3	
			Radial Uniformity: ±0.02°C at 33°C , ±0.015°C at 200°C ±0.05°C at 420°C , ±0.02°C at 350°C , ±0.1°C at 660°C	3	
			Typical time to Stability:10min	3	
			Immersion depth:150 mm (5.9 in.)	3	
			Insert outer diameter: 25.8 mm (1.02 in)	3	
			Switch input (dry contact): Max 5 VDC test voltage / Max 2.5 mA test current	2	
			Supplied pre-drilled multi hole Insert: Hole sizes: 3, 4, 5, 6 & 9mm.	3	
			Interfaces: RS-232, USB A, USB B, RJ45, WiFi, Bluetooth	2	
			Environmental: Operating temperature: 0 to 40°C (32 to 104°F) ,Storage temperature: -20 to 60°C (-4 to 122°F), Humidity: 0 to 90% RH	3	
			Mains Supply: 115 VAC/60Hz – 230 VAC/60Hz	2	
			Dimensions: L320 x W170 x H330 mm (12.6 x 6.7 x 13.0 in)	2	
			Weight: 9.9 kg (21.8 lbs)	2	
			Supplied Accessories/Extras: 1 x multi hole insert, 1 x undrilled insert, dry block carriage case & NMI traceable calibration certificate	3	
			Additional inserts, cleaning brushes, insulation plugs	2	
			Warranty: 1yr, IP rating:IP20	2	
		1NO	2) Dry Block Calibrator (33 to 660°C)		
			Temp Range:33 to 660°C	3	
			Heating Time; 8 min: 23°C to 155°C,5 min: -40°C to 23°C,13 min: -40°C to 155°C	3	
			Cooling Time,Max to Min:28 min: 660°C to 33°C	3	

		Accuracy: 0.3°C at 33°C, ±0.3°C at 420°C, ±0.5°C at 660°C	3		
		Resolution: 0.01°C/F	2		
		Stability(30min): ±0.02°C at 33°C , ±0.03°C at 50°C , ±0.04°C at 420°C ,±0.04°C at 660°C	3		
		Axial Uniformity at 60 mm (2.4 in); ±0.05°C at 33°C , ±0.1°C at 200°C ,±0.3°C at 420°C , ±0.2°C at 350°C ±0.5°C at 660°C	3		
		Radial Uniformity: ±0.02°C at 33°C , ±0.015°C at 200°C ±0.05°C at 420°C , ±0.02°C at 350°C , ±0.1°C at 660°C	3		
		Typical time to Stability:10min	2		
		Immersion depth:150 mm (5.9 in.)	2		
		Insert outer diameter: 25.8 mm (1.02 in)	2		
		Switch input (dry contact): Max 5 VDC test voltage / Max 2.5 mA test current	2		
		Supplied pre-drilled multi hole Insert: Hole sizes: 3, 4, 5, 6 & 9mm.	2		
		Interfaces: RS-232, USB A, USB B, RJ45, WiFi, Bluetooth	2		
		Environmental: Operating temperature: 0 to 40°C (32 to 104°F) ,Storage temperature: -20 to 60°C (-4 to 122°F), Humidity: 0 to 90% RH	1		
		Mains Supply: 115 VAC/60Hz – 230 VAC/60Hz	2		
		Dimensions: L320 x W170 x H330 mm (12.6 x 6.7 x 13.0 in)	1		
		Weight: 9.9 kg (21.8 lbs)	2		
		Supplied Accessories/Extras: 1 x multi hole insert, 1 x undrilled insert, dry block carriage case & NMI traceable calibration certificate	2		
		Additional inserts, cleaning brushes, insulation plugs, Warranty: 1yr, IP rating:IP20	1		
		Total Marks	100		
		MINIMUM SCORE REQUIRED	100		
65	Multifunction Temperature process Calibrator + RS	1NO.	General Specifications:Environmental Specifications: a)Operating Temperature;-10°C to 50°C , b)Storage Temperature;-20°C to 60°C, c)Humidity;<90%, non-condensing, NMI traceability certificate fulfilling CIPM MRA Safety specifications:European Compliance;CE Mark	10	

232 cable	<p>Mechanical Specifications: a)Display;3.5 inch TFT color screen, b)Electrical Connection;φ4mm sockets and flat mini-jack thermocouple socket, c)RS232 Interface;standard RS232-DB9 socket, d)Size;3.9" x 7.6" x 2.0" (100mm x 192mm x52mm), e)Weight;1.6 lb (0.7 kg), f)Power Supply;Polymer Li-ion rechargeable battery, or 10V AC adaptor, g)Battery;Rechargeable Li-ion battery (included), h)Battery Life;15 hours uninterrupted use,Battery life will be reduced when 24V is applied, i)Battery Charge;110V/220V external power adapter (included)</p> <p>Electrical Specification:</p> <p>Voltage DC:Range:-75.0000 to 75.0000 mV, Resolution:0.1μV, Accuracy:0.01%RD+0.005%FS: Range:-30.0000 to 30.0000 V, Resolution:0.1mV,Accuracy:0.01%RD+0.005%FS</p> <p>Current DC:Range:-30.0000 to 30.0000 mA, Resolution:0.1μA,Accuracy:0.01%RD+0.005%FS</p>	10
	<p>Resistance:a)Two-wire; Range:-0 to 400.000 ohm, Resolution:1 mΩ,Accuracy:0.02%RD+0.005%FS, b)Three-wire Range:-0 to 400.000 ohm, Resolution:1 mΩ,Accuracy:0.02%RD+0.005%FS, c)Four-wire Range:-0 to 400.000 ohm, Resolution:1 mΩ,Accuracy:0.01%RD+0.005%FS, d)Two-wire Range:-0 to 4000.000 ohm, Resolution:10 mΩ,Accuracy:0.02%RD+0.005%FS, e)Three-wire Range:-0 to 4000.000 ohm, Resolution:10 mΩ,Accuracy:0.02%RD+0.005%FS, f)Four-wire Range:-0 to 4000.000 ohm, Resolution:10 mΩ,Accuracy:0.01%RD+0.005%FS,</p> <p>Frequency: Range:1 to 50000.0 Hz, Resolution:0.1Hz,Accuracy:0.005%RD+0.002%FS</p> <p>Pulse: Range: 0 to 999999, Resolution:1, Accuracy:N/A</p> <p>Limit Switch: to +24V</p> <p>Source Accuracy:</p> <p>Voltage DC:Range:-10.000 to 75.000 mV, Resolution:1μV, Accuracy:0.02%RD+0.005%FS: Range:0 to 12.0000 V, Resolution:0.1mV,Accuracy:0.02%RD+0.005%FS</p> <p>Current DC:Range:0 to 22.000 mA, Resolution:1μA,Accuracy:0.02%RD+0.005%FS</p> <p>Resistance:a)Range:1 to 400.00 ohm, Resolution:10 mΩ,Accuracy:0.02%RD+0.005%FS, b)Range:1 to 4000.0 ohm, Resolution:100 mΩ,Accuracy:0.03%RD+0.01%FS</p> <p>Frequency: Range:1 to 50000.0 Hz, Resolution:0.1Hz,Accuracy:0.005%RD+0.002%FS</p> <p>Pulse: Range: 0 to 999999, Resolution:1, Accuracy:N/A</p> <p>DC24V:Range:N/A, Resolution:N/A, Accuracy:0.5v</p> <p>Temperature Specification:Thermocouple Measurement and Source accuracy</p>	4

	Measure & Simulate:S, Standard:IEC 584, Temperature Range (°C)(-50 to 1768);-50 to 400,Accuracy (°C):measure;1,source;1.1;400 to 1000,Accuracy (°C):measure;0.6,source;0.6;1000 to 1768,Accuracy (°C):measure;0.7,source;0.8;	2	
	Measure & Simulate:R, Standard:IEC 584, Temperature Range (°C)(-50 to 1768);-50 to 200,Accuracy (°C):measure;1.4,source;1.4;200 to 500,Accuracy (°C):measure;0.6,source;0.6;500 to 1768,Accuracy (°C):measure;0.6,source;0.8;	2	
	Measure & Simulate:B, Standard:IEC 584, Temperature Range (°C)(0 to 1820);0 to 450,Accuracy (°C):measure; 3.8,source;3.8;450 to 800,Accuracy (°C):measure;0.9,source;0.9;800 to 1820,Accuracy (°C):measure;0.7,source;0.7;	2	
	Measure & Simulate:K, Standard:IEC 584, Temperature Range (°C)(-270 to 1372);-250 to -200,Accuracy (°C):measure;1.0,source;1.1;-200 to -100,Accuracy (°C):measure;0.4,source;0.5;-100 to 600,Accuracy (°C):measure;0.3,source;0.3;600 to 1372,Accuracy (°C):measure;0.2,source;0.4;	2	
	Measure & Simulate:N, Standard:IEC 584, Temperature Range (°C)(-270 to 1300);-250 to -200,Accuracy (°C):measure;1.5,source;1.6;-200 to -100,Accuracy (°C):measure;0.5,source;0.6;-100 to 1300,Accuracy (°C):measure;0.4,source;0.5;	2	
	Measure & Simulate:E, Standard:IEC 584, Temperature Range (°C)(-270 to 1000);-250 to -200,Accuracy (°C):measure;0.6,source;0.7;-200 to -100,Accuracy (°C):measure;0.3,source;0.3;-100 to 0,Accuracy (°C):measure;0.2,source;0.2;0 to 700,Accuracy (°C):measure;0.2,source;0.3;700 to 1000,Accuracy (°C):measure;0.7,source;0.8;	2	
	Measure & Simulate:J, Standard:IEC 584, Temperature Range (°C)(-270 to 1200);-210 to -100,Accuracy (°C):measure;0.3,source;0.3;-100 to 1200,Accuracy (°C):measure;0.3,source;0.4;	2	
	Measure & Simulate:T, Standard:IEC 584, Temperature Range (°C)(-270 to 400);-200 to 0,Accuracy (°C):measure;0.4,source;0.4;0 to 400,Accuracy (°C):measure;0.2,source;0.2;	2	
	Measure & Simulate:C, Standard:ASTM E988, Temperature Range (°C)(0 to 2315);0 to 1000,Accuracy (°C):measure;0.5,source;0.5;1000 to 1800,Accuracy (°C):measure;0.7,source;0.9;1800 to 2315,Accuracy (°C):measure;1.0,source;1.4;	2	
	Measure & Simulate:D, Standard:ASTM E988, Temperature Range (°C)(0 to 2320);100 to 1100,Accuracy (°C):measure;0.4,source;0.5;1100 to 2000,Accuracy (°C):measure;0.6,source;0.9;2000 to 2320,Accuracy (°C):measure;0.9,source;1.3;	1	
	Measure & Simulate:G, Standard:ASTM E1751, Temperature Range (°C)(0 to 2315);0 to 200,Accuracy (°C):measure;2.4,source;2.4;200 to 400,Accuracy (°C):measure;0.5,source;0.5;400 to 1400,Accuracy (°C):measure;0.4,source;0.5;1400 to 2315,Accuracy (°C):measure;0.7,source;1;	1	
	Measure & Simulate:L, Standard:DIN43710, Temperature Range (°C)(-200 to 900);-200 to -100,Accuracy (°C):measure;0.2,source;0.3;-100 to 400,Accuracy (°C):measure;0.2,source;0.2;400 to 900,Accuracy (°C):measure;0.2,source;0.3;	1	
	Measure & Simulate:U, Standard:DIN43710, Temperature Range (°C)(-200 to 600);-200 to 0,Accuracy (°C):measure;0.4,source;0.4;0 to 600,Accuracy (°C):measure;0.2,source;0.3;	1	
	RTD Measurement and Source accuracy:		
	Measure & Simulate:Pt10(385), Standard:IEC 751, Temperature Range (°C);(-200 to 850);-100 to 200:Accuracy (°C):Measure (2W/3W);0.65,Measure (4W);0.6;Source;0.65;200 to 600:Accuracy (°C):Measure (2W/3W);0.82,Measure (4W);0.72;Source;0.82;600 to 850:Accuracy (°C):Measure	2	

		(2W/3W);0.96,Measure (4W);0.82;Source;0.96		
		Measure & Simulate:Pt100(-385), Standard:IEC 751, Temperature Range (°C);(-200 to 850);-100 to 200:Accuracy (°C):Measure (2W/3W);0.15,Measure (4W);0.1;Source;0.15;200 to 600:Accuracy (°C):Measure (2W/3W);0.26,Measure (4W);0.16;Source;0.26;600 to 850:Accuracy (°C):Measure (2W/3W);0.33,Measure (4W);0.2;Source;0.33	2	
		Measure & Simulate:Pt100(3916), Standard:IEC 751, Temperature Range (°C);(-200 to 850);-100 to 200:Accuracy (°C):Measure (2W/3W);0.15,Measure (4W);0.1;Source;0.15;200 to 600:Accuracy (°C):Measure (2W/3W);0.26,Measure (4W);0.16;Source;0.26;600 to 850:Accuracy (°C):Measure (2W/3W);0.33,Measure (4W);0.2;Source;0.33	2	
		Measure & Simulate:Pt200(385), Standard:IEC 751, Temperature Range (°C);(-200 to 850);-100 to 200:Accuracy (°C):Measure (2W/3W);0.37,Measure (4W);0.32;Source;0.69;200 to 600:Accuracy (°C):Measure (2W/3W);0.51,Measure (4W);0.41;Source;0.93;600 to 850:Accuracy (°C):Measure (2W/3W);0.61,Measure (4W);0.48;Source;1.08	2	
		Measure & Simulate:Pt500(385), Standard:IEC 751, Temperature Range (°C);(-200 to 850);-100 to 200:Accuracy (°C):Measure (2W/3W);0.20,Measure (4W);0.16;Source;0.36;200 to 600:Accuracy (°C):Measure (2W/3W);0.32,Measure (4W);0.22;Source;0.54;600 to 850:Accuracy (°C):Measure (2W/3W);0.4,Measure (4W);0.27;Source;0.67	2	
		Measure & Simulate:Pt1000(385), Standard:IEC 751, Temperature Range (°C);(-200 to 850);-100 to 200:Accuracy (°C):Measure (2W/3W);0.10,Measure (4W);0.05;Source;0.25;200 to 600:Accuracy (°C):Measure (2W/3W);0.20,Measure (4W);0.10;Source;0.42;600 to 850:Accuracy (°C):Measure (2W/3W);0.27,Measure (4W);0.14;Source;0.54	2	
		Measure & Simulate:Cu10(427), Standard:IEC 751, Temperature Range (°C);(-100 to 260);-100 to 260:Accuracy (°C):Measure (2W/3W);0.61,Measure (4W);0.56;Source;0.61;	2	
		Measure & Simulate:Cu50(385), Standard:IEC 751, Temperature Range (°C);(-50 to 150);-50 to 150:Accuracy (°C):Measure (2W/3W);0.17,Measure (4W);0.13;Source;0.17;	1	
		Measure & Simulate:Cu100(385), Standard:IEC 751, Temperature Range (°C);(-50 to 150);-50 to 150:Accuracy (°C):Measure (2W/3W);0.12,Measure (4W);0.09;Source;0.12;	1	
		Measure & Simulate:Ni120(672), Standard:DIN 43760, Temperature Range (°C);(-100 to 260);-100 to 260:Accuracy (°C):Measure (2W/3W);0.07,Measure (4W);0.05;Source;0.07;	1	
		Measure & Simulate:Ni100(618), Standard:DIN 43760, Temperature Range (°C);(-100 to 260);-100 to 260:Accuracy (°C):Measure (2W/3W);0.08,Measure (4W);0.06;Source;0.08;	1	
		Total Marks	100	
		MINIMUM SCORE REQUIRED	100	

66	Extension Leads with Standard Plug & Socket	Thermocouple extension leads with standard IEC connectors. The following lengths of cable are required: 2 metres, 5 metres and 10 metres. Must be all offered in thermocouple types K, T, J & N.			10	
	TC extension cable. 5meters	2NO.	Cable Construction: Single pair 7/0.2	7		
	TC extension cable. 1meter	2NO.	PVC insulated cable / wire	6		
	K-type thermocouple	4NO.	Laid flat, side by side & PVC sheathed	6		
	Immersion PT100 probes	2NO.	Tolerance class 2	6		
	4mm Red connector cables	4NO.	Insulation rating -10 to 105°C	10		
	4mm Black connector cables	4NO.	IEC colour coded	6		
	BNC to 4mm cable	4NO.	Standard Connectors	6		
	Black insulated terminal, 4mm socket	4NO.	Standard connector with solid, round plug pins	6		
			Standard socket with thermocouple contacts	6		
			Suitable for industrial applications	8		
			Contacts are polarised to prevent incorrect connection	8		
			Max temperature 220°C	10		
			IEC colour coded	5		
			Total Marks	100		
			MINIMUM SCORE REQUIRED	100		
67	Autoclave data logger + Software,USB cable, Software Preloaded on supplied computer	2NO.	Temperature Accuracy: +/-1.8F from -40 to 257F (+/-0.5C from -40 to 150C)	7		
			Temperature Range: -40 to 257F (-40 to 150C)	7		
			Temperature Sensor Type: Thermistor	5		
			Cable Details: a)USB - Male Series A plug to 5 pin Male Series B mini plug, b)Cable Length: 6ft	5		

		Calibration Options: N100, N300, N400, N520	4	
		Channels: CH1: Temperature	4	
		Data Capacity: 32,512	3	
		Dimensions: 5.36in	3	
		Download Time: Approximately 1 Minute	3	
		Download Type: USB	4	
		Enclosure: 316 Food-Grade Stainless Steel	5	
		IP Rating: 68	4	
		Included Accessories: Tadiran Battery and Quick Start Guide. *Software is not included.	5	
		Minimum Software Version Required: 15.5	3	
		PC Requirements: Microsoft Windows_ 98 or higher; 1 free USB root hub and CD drive	4	
		Power Source: High Energy Lithium Tadiran Battery (User Replaceable)	5	
		Probe Diameter: 0.75in	5	
		Response Time: 15 Minutes to move 63% of Full Scale	4	
		Sample Interval: User Selectable (from 1 second to 24 hour intervals, in 1 second increments).	5	
		Software Options: A016, A026	2	
		Ambient Operating Temperature Conditions: -40 to 257F (-40 to 125C)	2	
		Approvals: CE	2	
		Battery Life (Avg): 1 Year (at 1 Minute Sample Rate, Ambient Temperature)	2	
		Unit Weight: 1 lb	2	
		Units/Pkg: 1	2	
		Warranty: 12-Month Limited	3	
		Total Marks	100	
68	Reference Platinum Resistance thermometers	2NO.	-50 to 250°C temp range	8
			6mm, diameter	7
			350mm, probe length	7
			25mm , sensing length	7
			19x30mm handle	7
			2m PTFE 4-wire cable	7
			$R_0; 100\Omega \pm 0.05 \Omega$	8
			$\text{Alpha}; 0.003850 \pm 0.000005$	8

			Standard; IEC 60751	6	
			Stability; 0.010 Ω/year	8	
			Current; 1mA	8	
			Self Heating at 1mA; 0.004°C	8	
			Connection; Four Wire	5	
			Calibration certificate; NMI certificate fulfilling CIPM MRA	6	
			Total Marks	100	
			MINIMUM SCORE REQUIRED		
69	Accessories	1NO.	1) Bar Code Reader		
			• For connection to PC (or 5051/7051) with USB interface	5	
			• Supplied as standard with 7051+ module	5	
			• Light source: Visible red LED	5	
			• Max resolution: 0.10 mm/ 4 mils	5	
			• Scan Rate: 256 scans/sec	5	
			• Print contrast Ratio: 25% min	5	
			• Reading Field: 63 mm (2.5") / Reading Distance: 0 to 50 mm	5	
			• Reading Indicators: LED and adjustable tone "beeper"	5	
			• Size: 164 x 77.5 x 63 mm, Weight: 160g	5	
		1NO.	2) Cal and ID Label Printer		
			Supplied as standard with 5051+ and 7051+ models	5	
			• Durable 24mm laminated labels	5	
			• USB interface (cable included)	5	
			• Automatic tape cutter	5	
			• Size: W66 x D188 x H112 mm, Weight: 590g	5	
		1NO.	3) Job and Address Label Printer		
			• Printer for job labels and tags	5	
			• Direct thermal printing technology	5	
			• Supplied with set of strung tags	5	
			• USB interface	5	
			• Size: W114 x D172 x H148.0 mm	5	
			• Weight: 490g	5	
			Total Marks	100	

HEADQUARTER

NAME OF LABORATORY: PETROLEUM		LOCATION: HQ			
SN	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)
70	BOMB CALORIMETER	Application/Scope	Analysis of Caloric value in solid and liquid fuel	1	
		TECHNICAL DATA.			
		Measuring range max: 40,000j/ 9560 Cal		10	
		Temperature measurement resolution: 0.0001 k		15	
		Measuring mode: IsoperibolDynamicAdiabatic		15	
		Reproducibility: 0,05 to 0,15		15	
		Measuring per hour: Isoperibol 4Dynamic 6Adiabatic 5		15	
		Start temperature: 22°C, 25 °C, 30 °		15	
		Decomposition vessel identification: Automatic		5	
		Decomposition vessel C 6010		5	
		Interfaces Possible: PC & Printer		5	
		Automatic water filling and draining Yes		1	
		Automatic Ignition		1	
		Automatic oxygen filling, venting, flush			
		Cooling with 2 basic chiller		2	
		Cooling medium temperature min.12 °C		2	
		Cooling medium temperature max.27 °C		5	
		Cooling medium permissible operating pressure1,5 ba		5	
		GENERAL DATA			
		Weight 29 Kgs		2	
		Dimensions(l*w*h) 500 × 450 × 450 m		2	
		Permissible ambient temperature 20-30		2	
		Permissible relative humidity 80%		2	
		Voltage 220 – 240		2	
		Pressure gauge, oxygen C 29		2	
		Power input 1700W		2	
		Other requirements			
		i. Installation and Commissioning -to be indicated		2	
		ii. Operation and Service Manuals- All Manuals in English		2	

		iii. Warranty and Nearest service Center –to be indicated	2	
		iv. Brochures for the equipment to be provided during quotation	2	
		v. Training - onsite training during installation	2	
	GRAND TOTAL SCORE FOR THE EQUIPMENT			100 %
	MINIMUM SCORE			95%

NAME OF LABORATORY: Food & Agriculture		LOCATION: NAIROBI			
SN	EQUIPMENT	SPECIFICATION	QUANTITY	WEIGHTING (%)	SCORE
71	DUMAS NITROGEN ANALYSER	Application/Scope Food, Feed, Beverages, Organic Matter,Fertilizers Tests: N,C,O,H,S	1		
Main Features			70		
Method of analysis: Dumas method / Combustion			3		
Detector: Innovative auto-calibrating TCD (no reference gas required)			5		
Sample weight: up to 1g			1		
Analysis time: 2-5 minutes			1		
Autosampler capacity: up to 4 discs, 39 positions each			5		
Reproducibility (RSD): < 0.5% for EDTA standards approx. 100 mg (9.57% N)			3.5		
Recovery : > 99.5%			3.5		
Detection range: 0.01 - 200 mg N			5		
Detection limit: 0.003 mgN absolute			2.5		
Combustion temperature: 1030 °C / 1886 °F			3.5		
Reduction furnace: 400-1100 °C			1		
Desorption furnace: 50-350 °C			1		
Helium (He): purity 99.999% (grade 5.0)			3.5		
Oxygen (O2): purity 99.999% (grade 5.0)			3.5		
Compressed air or Nitrogen (N2): purity 99.6 % (without dust, oil and water vapour, dew point below -40C)			3.5		
Helium (He) pressure: 2 bar			3		
Oxygen (O2) pressure: 2.5 bar			3		
Compressed air or Nitrogen (N2) pressure: 3 bar			3		
Storage temperature: 5-40°C			1		
Protection glass: IP20			2.5		
Pollution degree: 2(According to ICE 664-1			3		
Fuse rating: T 6A 250v			2		
Digital balance: precision 0.1mg (calibration starts 5mg abs nitrogen), 0.01mg or better (calibration starts 1mg abs nitrogen)			2		

	Interfaces: USB, RS232	2	
	Weight: 54 kg / 119 lb	1	
	Dimensions (WxHxD): 655x510x410 mm (655x690x410 mm including autosampler) 25.8x20.1x16.1 in (25.8x27.0x16.1 in including autosampler)	2	
	Requirements for PC		
	CPU	Intel Core i5 or higher	7
	RAM	Minimum 4 GB	
	Free Hard disc space	Minimum 20 GB	
	Operating system	Latest windows - 32/64 bit	
	Additional software	Microsoft excel	
	Ports	Minimum two USB 2.0	
	Screen	Minimum 19 inch monitor	
	Printer	A4 printer	
	Performance Specifications		
	i. Ups for power backup	5	
	ii. Electrical power 240v/50hz	5	
	iii. Traceable calibration Certificate	5	
	Other requirements		
	a) Installation and Commissioning -to be indicated	3	
	b) Operation and Service Manuals- All Manuals in English	3	
	c) Warranty and Nearest service centre -to be indicated	3	
	d) Brochures for the equipment to be provided during quotation	3	
	e) Training - onsite training during installation	3	
	GRAND TOTAL SCORE FOR THE EQUIPMENT	100 %	
	MINIMUM SCORE REQUIRED	90%	

SN	EQUIPMENT	SPECIFICATION		Quantity	Location	Weighting (%)	Score (%)
72	Distillation Unit	Application/Scope Distillation for liquid fuel which cover Group 0-4		1	Organic		
		Performance Specifications					
		Temperature range: Vapour Temperature: 0°C to 450°C Condenser Temperature: 0°C to 80°C Chamber Temperature: 0°C to 60°C			10		
		Dimensions (W×D×H): 406 mm × 525mm × 645mm			5		
		Detection Mobile 5-in-1 multi-plug with integrated vapor temperature sensor Installation of a 125 mL or 200 mL flask with just one hand within seconds. Detection of flask size and hole diameter of flask support board Detection whether sensor is inserted into the flask without any cable Provides an insulated touching point to carry the hot flask. Detection of the shield. Measurement will not start when the shield is not closed Optical solid-state detection system with contact image sensor (CIS) technology			5		
		Measuring system: Pt100 Integrated vapor temperature sensor. The integrated memory space holds up to 20 calibration points of the temperature sensor which are automatically applied when the multi-plug is mounted.			5		
		Language: English ASTM D86 (Group 0, 1, 2, 3, 4), ASTM D1078, ASTM D850, IP 195, IP 123, DIN 51751, EN ISO 3405 (Group 0, 1, 2, 3, 4), GOST 2177, ASTM D524, ASTM D4530			5		
		User interface 10" TFT color touchscreen, solvent-proof Liquid-free cooling with Peltier technology			5		
		Safety: Fire extinguisher - Built-in fire extinguisher with IR sensor for fire detection – Detection if inert gas is connected Condition monitoring system - Detection of flask size, flask support board, vapor temperature sensor, heater shield, condenser cleaning, receiving chamber door, receiving cylinder, drip plate Intelligent condition monitoring system to avoid incorrect setups User management system: Create different user roles with specified access and authorization rights. Reduced volatile organic compound (VOC) emission			5		
		Power supply: 90 V to 240 V, 50/60 Hz 900 W			5		
		Pressure Sensor: Automatic correction by barometric pressure			5		
		Ambient pressure Built-in pressure sensor, range: 30 kPa to 110 kPa, resolution: 0.1 kPa			5		
		Ambient humidity Built-in humidity sensor, range: 0 % to 95 % (rel. humidity)			5		
		Ambient temperature Built-in temperature sensor, temperature range: -20 °C to +80 °C, resolution: 0.1 °C			5		
		Installation and use training, hard copy manual			5		
		CRM reference material, dry point sensor, Distillation flask			5		

	Other requirements		
	Installation and Commissioning -to be indicated	2	
	Operation and Service Manuals - All Manuals in English	2	
	Warranty and Nearest service Center –to be indicated	2	
	Brochures for the equipment to be provided during quotation	2	
	Training - onsite training during installation	2	
	TOTAL SCORE	100	
	MINIMUM SCORE REQUIRED	95	

SN	EQUIPMENT	SPECIFICATION	Quantity	Location	Weighting (%)	Score (%)
73	Flashpoint Tester	Application/Scope Flashpoint	1	Organic		
	Performance Specifications					
	Application range: Up to 405°C				10	
	Safety Overheat protection , automatic shut-off, fire-extinguishing system, password				5	
	Dimensions (WxDxH): 230mm x 410mm x 460mm				5	
	Ignition type: Interchangeable between gas & electric				5	
	Flash detection: thermocouple				5	
	Barometric pressure correction : flashpoint automatically corrected to barometric pressure				5	
	Net weight : 14 kg				5	
	Test programs :				10	
	ASTM D93 A+B+C ISO 2719 A+B+C JIS 2265-3 A+B IP 34 A+B GOST R EN ISO 2719 I5 individually designable test programs					
	Data memory : 1000 tests, 20 operator names & 100samples				5	
	Cooling : built in fan				5	
	Sample temperature : Pt100				5	
	Sample temperature calibration Dynamic calibration against certified ASTM thermometer and offset capability with correction table (21 calibration points)					
	Human interface device : 5.7" color graphics display shows real-time measurement				5	
	Gas supply :				5	
	Test flame: 50mbar of propane or butane					
	Fire extinguisher: 6 bar to 12bar of Nitrogen or Carbon dioxide					
	Installation and user training				5	
	CRM Standard ASTM D93 A, Hard copy manual				5	

Power supply: 115/230V, 50/60Hz, 1000W	5	
Other requirements		
Installation and Commissioning -to be indicated	2	
Operation and Service Manuals- All Manuals in English	2	
Warranty and Nearest service Center –to be indicated	2	
Brochures for the equipment to be provided during quotation	2	
Training - onsite training during installation	2	
TOTAL SCORE	100	
MINIMUM SCORE REQUIRED	95	

NAME OF LABORATORY: Food & Agriculture		LOCATION: NAIROBI			
SN	EQUIPMENT	SPECIFICATION		QUANTITY	WEIGHTING (%)
74	Lovibond Tintometer PFXi-995/1	Application/Scope D		1	
		Main Features			
		Measuring principle; 16 interference filters		10	
		Spectral response; 420 – 710 nm		5	
		Bandwidth; atleast 10nm		5	
		Repeatability On measurements of de-ionised water		5	
		Chromaticity +/- 0.0004 +/- 0.0002			
		Delta E 0.04 0.02			
		Measurement time Less than 20 seconds		1	
		Baseline calibration Single key press; fully automated		1	
		Light source 5 Volt, 10 Watt Tungsten Halogen		5	
		Illuminants CIE Illuminants A, B, C, D65		5	
		Observer 2°, 10°		1	
		Path length; 0.1 – 153 mm (.004" – 6")		5	
		Interfaces ; USB, LAN, RS232		1	
		Data storage 100,000+ Measurements		5	

	Display	240 x 128, LED backlit graphic display (white on blue)	5	
	Keypad	23 key tactile membrane keypad, washable polyester with optional audible feedback	1	
	Heater unit ; Ambient to 95°C		5	
	Instrument housing	Fabricated steel with tough, textured paint finish		
	Dimensions ; Width 515 mm xDepth 195 mm xHeight 170mm			
	Weight ; 7.7 kg			
	Performance Specifications		15	
	(i) Ups for power backup		5	
	(ii) Electrical power 240v/50hz		5	
	(iii) Traceable calibration Certificate		5	
	TOTAL SCORE		15	
	Other requirements		15	
	(i) Installation and Commissioning -to be indicated		3	
	(ii) Operation and Service Manuals- All Manuals in English		3	
	(iii) Warranty and Nearest service centre -to be indicated		3	
	(iv) Brochures for the equipment to be provided during quotation		3	
	(v) Training - onsite training during installation		3	
	GRAND TOTAL SCORE FOR THE EQUIPMENT		100 %	
	MINIMUM SCORE REQUIRED		90%	

NAME OF LABORATORY: PETROLEUM		LOCATION: BIOCHEM				
SN	EQUIPMENT	SPECIFICATION		QTY	WEIGHT (%)	SCORE
75	SAMPLE VAPORIZER FOR SAFELY INJECTING LPG IN THE GC ANALYZER	Application/Scope SAMPLE VAPORIZER FOR SAFELY INJECTING LPG TO GC		2		
		Main Features			5	
		a. Ability to convert LPG from liquid state to Gaseous state			5	
		Performance Specifications				
		a. Manual selection valve between sample and calibration gas			15	
		b. Electrically heated pressure			15	
		c. Needle valve (NV) for adjusting the sample flow			15	
		d. Needle valve (NV) for adjusting the flush flow			15	
		e. with bracket to place canister			10	
		F. One ¼" NPT Male Swagelok coupling for the connection of canister			10	
		TOTAL SCORE		80		
		Other requirements			15	
		i. Installation and Commissioning -to be indicated			3	
		ii. Operation and Service Manuals- All Manuals in English			3	
		iii. Warranty and Nearest service centre -to be indicated			3	
		iv. Brochures for the equipment to be provided during quotation			3	
		v. Training - onsite training during installation			3	
	LABORATORY EQUIPMENT FOR METROLOGY				TOTAL SCORE	15
SN	EQUIPMENT	GRAND TOTAL SCORE FOR THE EQUIPMENT	SPECIFICATION		Weight (%)	Score
		Quantity			(%)	(%)
76	Three phase power calibrator for	1	Input power			
			Voltage	115V,230 V ±10%		
			Frequency	47 Hz to 63 Hz	4.5	
						Nairobi

power , power quality and energy	Maximum consumption		1875 VA max								
	General electrical										
	Voltage/Current amplitude setting resolution		5.5 digits					5.5			
	Range of fundamental frequencies		15 Hz to 1 kHz								
	Line frequency locking		45 Hz to 65.9 Hz at user discretion								
	Frequency accuracy		±50 ppm								
	Frequency setting resolution		0.001 Hz for 15 Hz to <500 Hz, 0.01 Hz 500 Hz to 1 kHz								
	Warm up time to full accuracy		The shorter of 1 hour or twice the time since last warmed up								
	Settling time following change to the output		3 seconds maximum								
	Nominal angle between voltage phases		120 °								
Temperature Coefficient	Nominal angle between voltage and current of a phase		0 °								
	Phase angle setting		0 ° to 359.99 °								
	Phase angle setting resolution		0.01 °								
	Voltage										
	Voltage Channel Maximum Capacitive Loading for Output Stability			The voltage output remains stable up to a 100 nF load but may not be able to drive that capacitance at all voltage/frequency/harmonic combinations due to burden current limitations.					0.5		
	Voltage Range Limits and Burden										
	Range	1.0000 V to 10 V	10.0001 V to 30 V	30.001 V to 70 V	70.001 V to 140 V	140.001 V to 280 V	280.00 V to 600 V	2.5			
	Maximum Burden Current (peak) 40 Hz - 70 Hz [2] [4]	141 mA	283 mA	424 mA	424 mA	283 mA	141 mA				
	Maximum Burden Current (RMS) 40 Hz - 70 Hz	100 mA	200 mA	300 mA	300 mA	200 mA	60 mA				
	Maximum Burden Current (RMS) dc, 15 Hz to 40 Hz, 70 Hz to 1000 Hz	100 mA	200 mA	300 mA	200 mA	150 mA	50 mA				
	<p>[1] 600 V range is ac only, and limited to the fundamental frequency, i.e. no additional harmonics can be generated</p> <p>[2] Sum of all currents from three phases is limited to 400 mA RMS</p> <p>[3] 600 V range cannot output dc.</p> <p>[4] Maximum burden current is reduced in Power Harmonic, Power Interharmonics and Dip/Swell modes by a factor of 0.707 times the values shown. For example, the maximum burden current for a 10 V, 50 Hz harmonic output is 70.7 mA.</p>										
Voltage sine amplitude	Range		Frequency	1-Year specification, Tcal ±2°C ± (% of output)							

					+V)			
					15 Hz to 40 Hz	0.016	1 mV	
					40 Hz to 70 Hz	0.012	1 mV	
					70 Hz to 1 k Hz	0.016	1 mV	
					15 Hz to 40 Hz	0.016	3 mV	
					40 Hz to 70 Hz	0.012	3 mV	
					70 Hz to 1 k Hz	0.016	3 mV	
					15 Hz to 40 Hz	0.016	7 mV	
					40 Hz to 70 Hz	0.012	7 mV	
					70 Hz to 1 k Hz	0.016	7 mV	
					15 Hz to 40 Hz	0.016	14 mV	
					40 Hz to 70 Hz	0.012	14 mV	
					70 Hz to 1 k Hz	0.016	14 mV	
					15 Hz to 40 Hz	0.016	28 mV	
					40 Hz to 70 Hz	0.012	28 mV	
					70 Hz to 1 k Hz	0.016	28 mV	
					20 Hz to 40 Hz	0.024	60 mV	
					40 Hz to 70 Hz	0.016	60 mV	
					70 Hz to 1 k Hz	0.024	60 mV	
			Voltage DC					
			Range		1-Year specification, Tcal $\pm 2^\circ\text{C}$ \pm (% of output +V)			
			1.0000 V to 10.0000 V		0.015	1mV		
			10.001 V to 30.0000 V		0.015	3mV		
			30.001 V to 70.0000 V		0.015	7 mV		
			70.001 V to 140.0000 V		0.015	14 mV		
			140.001 V to 280.0000 V		0.015	28 mV		
			280.001 V to 600.0000 V		20 Hz to 40 Hz	0.024	60 mV	
					40 Hz to 70 Hz	0.016	60 mV	
					70 Hz to 1 k Hz	0.024	60 mV	
			Voltage distortion		Less than 0.05% 15 Hz to 200 kHz bandwidth			
			Current					
			Current Range limits and compliance					
			Range	8.0 mA to 300.0 mA	0.300001 A to 1.00000A	1.00001 A to 2.00000A	2.0000 1 A to 5.0000	5.00001 A to 10.0000A
							10.00001 A to 30.0000A	90 mA to 90.0000A
								3

				0A								
				Max compliance voltage (dc/Peak)	8	8	8	5	5	5	5	
				Voltage (RMS) 15 Hz to 400 Hz	5.5	5.5	5.5	3.5	3.5	3.5	3.5	
				Max compliance voltage (RMS) 400 kHz to 1 kHz	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
				Max inductive load	1 mH	1 mH	1 mH	1 mH	1 mH	1 mH	1 mH	
				<p>[1] 600 V range is ac only, and limited to the fundamental frequency, i.e. no additional harmonics can be generated [2] Sum of all currents from three phases is limited to 400 mA RMS [3] 600 V range cannot output dc. [4] Maximum burden current is reduced in Power Harmonic, Power Interharmonics and Dip/Swell modes by a factor of 0.707 times the values shown. For example, the maximum burden current for a 10 V, 50 Hz harmonic output is 70.7 mA.</p>								
				Range	Frequency	1-Year specification, $T_{cal} \pm 2^\circ\text{C} \pm (\% \text{ of output} + V)$						
			8.0 mA to 300.0 mA	15 Hz to 40 Hz		0.021	60 μA					
				40 Hz to 70 Hz		0.0175	30 μA					
				70 Hz to 1 kHz		0.021	60 μA					
			0.300001 A to 1.00000A	15 Hz to 40 Hz		0.021	200 μA					
				40 Hz to 70 Hz		0.0175	100 μA					
				70 Hz to 1 kHz		0.021	200 μA					
			1.00001 A to 2.00000A	15 Hz to 40 Hz		0.021	400 μA					
				40 Hz to 70 Hz		0.0175	200 μA					
				70 Hz to 1 kHz		0.021	400 μA					
			2.00001 A to 5.00000A	15 Hz to 40 Hz		0.021	1 μA					
				40 Hz to 70 Hz		0.0175	500 μA					
				70 Hz to 1 kHz		0.021	1 mA					
			5.00001 A to 10.0000A	15 Hz to 40 Hz		0.028	2 mA					
				40 Hz to 70 Hz		0.021	1.5 mA					
				70 Hz to 1 kHz		0.028	2 mA					
			10.00001 A to 30.0000A	20 Hz to 40 Hz		0.035	6 mA					
				40 Hz to 70 Hz		0.0245	4.5 mA					
				70 Hz to 1 kHz		0.035	6 mA					
			90 mA to 90.0000A	20 Hz to 40 Hz		0.035	18 mA					
				40 Hz to 70 Hz		0.0245	13.5mA					
				70 Hz to 1 kHz		0.035	18 mA					
			Current DC									

Range	1-Year specification, Tcal $\pm 2^\circ\text{C}$ \pm (% of output +V)					
8.0 mA to 300.0 mA	0.0175	30 μA		3.5		
0.300001 A to 1.00000A	0.0175	100 μA				
1.00001 A to 2.00000A	0.0175	200 μA				
2.00001 A to 5.00000A	0.0175	500 μA				
5.00001 A to 10.0000A	0.021	1.5 mA				
10.00001 A to 30.0000A	0.0245	4.5 mA				
90 mA to 90.0000A	0.0245	13.5 mA				
Current distortion						
Less than 0.1% 15 Hz to 200 kHz bandwidth				0.5		
Current output isolation (high or low Terminal)						
450 V peak maximum above earth ground. The current output terminals must only be energized by the Product Voltage output terminals.				0.5		
Voltage from the current terminals (DC & Sine Wave only)						
Range limits and impedances						
range	1.000 mV to 20.000 mV	20.001 to 330.000 mV	0.33001V to 5.00000V			
Source impedance	1 Ω	1 Ω	18 Ω	1		
Minimum load impedance to maintain specification	25 k Ω	25 k Ω	450 k Ω			
Voltage from current terminals						
Range						
1.000 mV to 20.000 mV	dc	0.05		3		
	15 Hz to 400 Hz	0.05	20 μA			
20.001 mV to 330.000 mV	dc	0.05	200 μA			
	15 Hz to 400 Hz	0.05	200 μA			
0.33001 V to 5.00000 V	dc	0.05	1 mA			
	15 Hz to 400 Hz	0.05	1 mA			
Voltage from current terminals, Distortion						
Less than 0.1 %, 15 Hz to 200 kHz bandwidth						
Phase and power factor (sine wave outputs)						
Phase range		0.0 ° to 359.99 °		3.5		
Frequency range		15 Hz to 1 kHz				
Phase resolution		0.01 °				
Power factor range		-1 to +1 (lead,lag)				
Power factor resolution		0.001				
Power factor accuracy		(1 - cos (ϕ +d ϕ))/cos ϕ)where ϕ is the phase in degrees and d ϕ is the phase specification in degrees.				
Current to Voltage Phase						
For All Voltage Outputs (1 V to 600 V)						

			Current out put	frequency	1-Year specification, Tcal $\pm 2^\circ\text{C}$						
0.008 A to 0.09999 A	0.008 A to 0.09999 A	0.008 A to 0.09999 A	15 Hz to 70 Hz	0.05 °		4.5					
			70 Hz to 400 Hz	0.1 °							
			400 kHz to 1 kHz	0.4 °							
	0.1 A to 10 A	0.1 A to 10 A	15 Hz to 70 Hz	0.01 °							
			70 Hz to 400 Hz	0.1 °							
			400 kHz to 1 kHz	0.4 °							
	10.0001 A to 30 A	10.0001 A to 30 A	15 Hz to 70 Hz	0.05 °							
			70 Hz to 400 Hz	0.1 °							
			400 kHz to 1 kHz	0.4 °							
Voltage to Voltage phase For All Voltage ranges (1 V to 600 V)											
Frequency			1-Year specification, Tcal $\pm 2^\circ\text{C}$								
15 Hz to 70 Hz			0.01 °			1.5					
70.001 Hz to 400 Hz			0.1 °								
400.001 kHz to 1 kHz			0.4 °								
Sinusoidal Power Specification at 40 Hz to 70 Hz, Power Factor 1.0 (%)											
Current output	Voltage output										
	10 V	30 V	70 V	140 V	280 V	600 V	2.5				
1.00000 A	0.037	0.037	0.037	0.037	0.037	0.039					
5.00000 A	0.037	0.037	0.037	0.037	0.037	0.039					
10.0000 A	0.043	0.043	0.043	0.043	0.043	0.046					
30.0000 A	0.046	0.046	0.046	0.046	0.046	0.048					
Sinusoidal Power Specification at 40 Hz to 70 Hz, Power Factor 0.8 (%)											
Current out put	Voltage output										
	10 V	30 V	70 V	140 V	280 V	600 V	2				
1.00000 A	0.039	0.039	0.039	0.039	0.039	0.041					
5.00000 A	0.039	0.039	0.039	0.039	0.039	0.041					
10.0000 A	0.045	0.045	0.045	0.045	0.045	0.046					
30.0000 A	0.080	0.080	0.080	0.080	0.080	0.048					
Sinusoidal Power Specification at 40 Hz to 70 Hz, Power Factor 0.5 (%)											
Current out put	Voltage output										
	10 V	30 V	70 V	140 V	280 V	600 V	2				
1.00000 A	0.047	0.047	0.047	0.047	0.047	0.049					
5.00000 A	0.047	0.047	0.047	0.047	0.047	0.049					
10.0000 A	0.053	0.053	0.053	0.053	0.053	0.055					
30.0000 A	0.158	0.158	0.158	0.158	0.158	0.158					
DC Power Specification (%)											
Current output	Voltage output										
	10 V	30 V	70 V	140 V	280 V		1.5				
5.00000 A	0.038	0.038	0.038	0.038	0.038						

10.0000 A	0.045	0.045	0.045	0.045	0.045						
30.0000 A	0.048	0.048	0.048	0.048	0.048						
Multimeter											
Function		Measuring Range		1-Year specification, Tcal $\pm 2^\circ\text{C}$ (% of reading + floor)		Resolu					
DC voltage		0V to ± 12 V		0.01 % + 1 mV		100 μV					
DC current		0 mA to ± 25 mA		0.01 % + 2.5 μA		100 nA					
Frequency		1 Hz to 15 kHz		0.005 %		10 μHz to 0.1 Hz					
Trigger , synchronization											
Max frequency		10 kHz									
Input low level max		0.8 V									
Frequency		1 Hz to 15 kHz									
Energy											
Pulse inputs											
Max frequency		1 MHz (400 Hz with input filter on)									
Min pulse width		500 ns									
Max counts		5 000 000 000									
Voltage high and low limits		Low level max 0.8V, high level min. 3.2V									
Pulse output											
Drive		Open collector									
Frequency range		0.02 Hz to 1 MHz									
Frequency specification		50ppm of output									
External pull-up		150 Ω selectable on/off									
Sink current		100 mA									
Energy											
Time range		1 to 1 0000 0000 seconds									
Time resolution		0.1 seconds									
Time interval specification		0.01 % of time interval + 0.1 seconds									
Test duration											
Maximum test duration		1000 hours		0.5							
Power quality											
Voltage and current sinusoidal and rectangular modulation flicker specifications											
Modulation depth		0 to 30 %									
Modulation depth specification		0.2 % of modulation depth									
Modulation depth setting resolution		0.001 %									
Shape of modulation envelope		Rectangular or Sinusoidal									
Duty cycle (shape = rectangular)		1 % to 99 %									
Modulating frequency specification		50 ppm of output									

		Modulation frequency range	0.001 Hz to 50 Hz			
		RMS amplitude specification	0.2 % of range			
		Fundamental frequency range	15 Hz to 1 kHz			
		Harmonic (2 to 63) frequency range	30 Hz to 5 kHz			
		For a given modulation %, the output signal swings between (output setting + modulation %) and (output setting - modulation %).				
		Harmonics and Inter-harmonic		8		
		Fundamental harmonic frequency range	15 Hz to 1 kHz			
		Fundamental harmonic amplitude specification	± 0.2 % of range			
		Harmonics (2 to 63) frequency range	30 Hz to 5 kHz			
		Interharmonic frequency range	15 Hz to 1 kHz			
		Maximum harmonic number	63			
		Number of interharmonic products	1			
		Frequency specification	± 0.005 % of output			
			15 Hz to 70 Hz: 0.2°			
		Fundamental harmonic phase specification	70 Hz to 400 Hz: 0.5°			
			400 Hz to 1 kHz: 1°			
		Harmonics (2 to 63) phase specification	5 µs			
		Voltage harmonic and interharmonic amplitudespecification (1 V to 280 V)	30 Hz to 3 kHz: 0.1 % of range 3 kHz to 5 kHz: 0.2 % of range			
		Current harmonic and interharmonic amplitude specification (8 mA to 2 A)	30 Hz to 3 kHz: 0.1 % of range 3 kHz to 5 kHz: 0.2 % of range			
		Current harmonic and interharmonic amplitude specification (2 A to 10 A)	30 Hz to 3 kHz: 0.2 % of range 30 Hz to 3 kHz: 0.2 % of range			
		Current harmonic and interharmonic amplitude specification (10 A to 30 A)	3 kHz to 5 kHz: 0.8 % of range 3 kHz to 5 kHz: 0.4 % of range			
		Maximum amplitude of harmonic products	30 % of RMS output value			
		Harmonic resolution of harmonic products	0.001 %			
		Noise and Distortion	-60 dB			
		Dip/Swell		2.5		
		AC voltage range	0.1 V to 280 V			
		AC current range	1 mA to 30 A			
		Amplitude accuracy	0.2 % of range			
		Frequency range	15 Hz to 1 kHz			
		Timing				
		T1 range	0 s to 60 s			
		T2 range	0.1 ms to 60 s			
		T3 range	2 ms to 60 s			
		T4 range	0.1 ms to 60 s			
		T5 range	0 s to 60 s			
		Environment		3		

			Operating temperature	5°C to 40 °C			
			Storage temperature	-10°C to 55°C			
			Transit temperature	-15°C to 60°C			
			Warm up time	1 hour			
			Safe operating max. relative humidity (noncondensing)	<80 %, 5°C to 31 °C ramping linearly down to 50 % at 35 °C			
			Shock	MIL-PRF-28800F class 3			
			Vibration	MIL-PRF-28800F class 3			
			Enclosure	MIL-PRF-28800F class 3			
			DIMENSIONS height x width x depth (420mmx440mm x 640 mm)		1		
			Weight approx.65 kg				
			Applicable operational software(MET CAL,MET TEAM AND SOFTWARE SERVICES)		4		
			Valid calibration certificate from an internationally recognized National Metrology Institute		2.5		
			Training at manufacturer premises		2		
			Total		100		
			Pass mark 90 %				
80	Three Phase Portable Standard (Class 0.05) for Testing Electricity Meters	1	1.0 OPERATING CONDITIONS				Nairobi
			1.1 Suitable for operation in tropical conditions -1 to 45 degrees Celsius, 80% humidity non condensing		2		
			1.3 Class 0.05 accuracy. Be capable of testing Power & Energy measurements in Domestic, Industrial and Commercial meter installations		2		
			1.4 Standard made of hard plastic &/or light aluminium profile or equivalent material to allow a weight of not more than 3 kg		1.5		
			1.5 Measurement of active, Reactive and Apparent power and Energy in s/phase and three phase, 2-wire 3-or-4 wire circuits.		1.5		
			1.6 4 quadrant power measurement		1.5		
			1.7 Direct and via clamp-on CT connection in current measurement.		1.5		
			1.8 The standard shall be able to determine the operating burden on instrument transformers for CT and PT.		2		
			1.9 The standard shall be able to perform turns ratio test by simultaneously measurement of both primary and secondary currents in CT connected measuring systems.		2		
			1.10 Capability of measuring currents up to a maximum of 2000 A per phase through external clip-on CTs to be quoted separately from the main equipment and its other accessories.		2		
			1.11 The Standard shall have a wide measuring range with auto ranging		2		
			1.12 Display of vector diagram for analysis of mains conditions and meter connections and relevant instantaneous values.		2		
			1.13 Measurement and display of waveforms		2		
			1.14 Ability to detect circuit connection faults		2		
			1.15 Ability to perform accuracy test calculate and display the error.		2		
			1.16 Capability of measuring and displaying True RMS values of current and voltage, phase angles, power factor, frequency and phase rotation.		2		
			1.17 The display of at least 6 x 4' with high resolution of at least 320x240 pixels or a LCD one.		2		
			1.18 Display of voltage sequence indication (U ₁ U ₂ and U ₃)		2		

		1.19	Storage of test data for at least 200 measurements which is capable of being sent, through serial interface to an external PC after measurement by Widows based data management software	2		
		1.20	Data management software license/license costs	2		
		1.21	Measurement of harmonics in voltage and current up to 40 THD	2		
		1.22	Pulsed output for energy (galvanic isolated)	2		
		1.23	Features like Hold-function to read the instantaneous values during meter testing and integrated START/STOP-push button for a quick visual meter check, without scanning head.	2		
		1.24	Provision for insertion of a scanning head for testing both electromechanical and static (electronic) meters.	2		
		1.25	A set of Test leads (quick connecting cable set), CT's (120 A), Accessories, Transportation case, Photoelectric Scanning head with its support contained and an additional Scanning head with magnet and sucker for expedient testing of LEDs.	2		
		1.26	Selective power measurement.	2		
		1.27	Test power and energy registers	2		
		1.28	Delivered with a MS-Windows analyzer and simulation software for vectorial diagrams.	2		
		1.29	Provision of a belt for ease of transportation by operator while operating at site	2		
		1.30	The Photoelectric Scanning head suitable for use with both electronic meters and Ferraris meters	2		
		1.31	The Photoelectric Scanning head suitable for attachment to a meter as desired.	2		
		1.32	Additional Scanning head with magnet and sucker for expedient testing of LEDs.	1		
		1.33	A rugged transportation case for storing and/or transporting the standard and its accessories	1		
		1.34	Full compliance to IEC 61010-1 standard on safety	2		
	2.0	RATINGS				
	2.1	The voltage supply switchable between the auxiliary supply (external voltage with nominal voltage 240 V,50Hz)and the test voltage at 90.....265 VAC/47.....63Hz	2			
	2.2	Voltage measurement:100 mV....300V	2			
	2.3	Current measurement: 1 mA.....12 A direct measurement 5 mA.....120A for measurement with clip-on CT	2			
	2.4	Fundamental frequency:15.....70 Hz	2			
	2.5	Accuracy class:0.05	2			
	2.6	Voltage measurement error<0.05%	2			
	2.7	Current measurement error<0.05%	2			
	2.8	Power/energy measurement error<0.1%(direct measurement)and<0.2%(with clamps/CT's)	2			
	2.9	Phase angle measurement error<0.01°(direct measurement)and <0.1°(with clamps/CTs)	2			
	2.10	Frequency measurement error ± 0.01 Hz	2			
	2.11	Harmonic measurement error < 0.2%	2			
	2.12	The influence of auxiliary voltage on the measuring results less than 0.005% at 10% variation.	2			
	2.13	Power consumption shall not be more than 28 VA	2			
	2.14	Sampling rate 16 bit and above	2			
	3.0	INSTRUCTIONS & MARKINGS				
	3.1	The Standard shall be marked legibly and indelibly	1			
	3.2	Submission of relevant technical details, schematic drawings, operational and service manuals.	1			
	3.3	List of at least three previous utilities to which the standard being offered has been supplied. The number of standards sold over a period of 5 years shall not be less than 100 standards.	1			
	4.0	TESTS				

			4.1	Submission of a certificate of calibration on the standard's performance across its operating range from an International or a National calibration laboratory.	1		
			5.0	INFORMMATION AND WARRANTY			
			5.1	The Standards to have a warranty against any defects for a period of Eighteen months from the date of delivery	1		
			5.2	Availability of essential spares and other consumables for a period of not less than 10 years	1		
			5.3	The manufacturer to meet the full costs of two engineers, for meter inspection and acceptance testing at the manufacturer's facility	1		
			5.4	The manufacturer to meet the full costs of local training on the operational and maintenance of the portable standard in Nairobi for at least 3 (three) days	1		
			5.5	The standards packaged in such a manner as to minimize damage and entry of moisture during transportation and handling	1		
			5.7	Copy of service manual with details of requirements/method for routine maintenance and calibration.	1		
				Total	100		
				Pass mark 90 %			
77	Reference Permanent Magnets	6 4	Specs;	1. Each piece shall be of homogeneous (uniform) magnetic field. 2. Type (a) Transverse reference magnets of values 1, 2, 5, 15, 30 and 50 K Gauss (b) Axial reference magnets of values 0.5, 4, 10, 40 K Gauss 3. Each piece shall be in a magnetic shield enclosure approximately <i>depth 15cm by height 10cm by width 10 cm</i> 4. Each piece of magnet shall be fixed within the magnetic shield. 5. Each piece shall have a calibration certificate from a recognized National Metrology Institute.	10 30 20 10 10 20		Nairobi
				TOTAL	100		
				PASS MARK 90 %			
78	Viscosity oils						Nairobi
			1	Kinematic Viscosity at 40 °C:	app. 20 mm ² /s	3	
				Density at 15 °C:	800 - 900 kg/m ³	3	
				Flash point:	between 180 °C - 290 °C	3	
				Quantity:	20 litres	1	
			1	Kinematic Viscosity at 40 °C:	app. 30 mm ² /s	3	
				Density at 15 °C:	800 - 900 kg/m ³	3	
				Flash point:	between 180 °C - 290 °C	3	
				Quantity:	20 litres	1	
			1	Kinematic Viscosity at 40 °C:	app. 45 mm ² /s	3	
				Density at 15 °C:	800 - 900 kg/m ³	3	
				Flash point:	between 180 °C - 290 °C	3	
				Quantity:	20 litres	1	
			1	Kinematic Viscosity at 40 °C:	app. 70 mm ² /s	3	
				Density at 15 °C:	800 - 900 kg/m ³	3	
				Flash point:	between 180 °C - 290 °C	3	

		Quantity:	20 litres	1			
	1	Kinematic Viscosity at 40 °C:	app. 100 mm ² /s	3			
		Density at 15 °C:	800 - 900 kg/m ³	3			
		Flash point:	between 180 °C - 290 °C	3			
		Quantity:	20 litres	1			
	1	Kinematic Viscosity at 40 °C:	app. 150 mm ² /s	3			
		Density at 15 °C:	800 - 900 kg/m ³	3			
		Flash point:	between 180 °C - 290 °C	3			
		Quantity:	20 litres	1			
	1	Kinematic Viscosity at 40 °C:	app. 220 mm ² /s	3			
		Density at 15 °C:	800 - 900 kg/m ³	3			
		Flash point	between 180 °C - 290 °C	3			
		Quantity:	20 litres	1			
	1	Kinematic Viscosity at 40 °C:	app. 320 mm ² /s	3			
		Density at 15 °C:	800 - 900 kg/m ³	3			
		Flash point:	between 180 °C - 290 °C	3			
		Quantity:	20 litres	1			
	1	Kinematic Viscosity at 40 °C:	app. 460 mm ² /s	3			
		Density at 15 °C:	800 - 900 kg/m ³	3			
		Flash point:	between 180 °C - 290 °C	3			
		Quantity:	20 litres	1			
		Certificate of calibration from an ISO/IEC 17025 accredited centre		10			
		Total		100			
		PASS MARK 90 %					
79	Density hydrometer	2	Density range	0.6000-2.0000 g/ml	45		Nairobi
			Resolution	0.0005g/ml	45		
			Certificate of calibration from an ISO/IEC 17025 accredited centre		10		
			Total	100			
			PASS MARK 100 %				
			PASS MARK 90 %				
80	Automatic dial indicator testing equipment	1	Performance Specifications				Nairobi
		i.	Range: 0-100 mm		12		
		ii.	Digital resolution: 0.02 µm		12		
		iii.	Accuracy: (0.2+L/250) µm (L in mm) at T=20°C		12		
		iv.	Positioning speed: 2 mm/s		10		
		v.	Automatic pre-positioning		11		
		Other Requirements					
		I.	Supply voltage: 110-230V AC		4		
		II.	Software assisted operation with certificate printing capabilities		10		
		III.	Accessories: Mount for lever-type indicators, Full set of adaptors for digital indicators and inductive probes		10		

			IV. Calibration: Certificate of calibration from a National Metrology Institute which has posted its Calibration and Measurement Capabilities at the Bureau International des Poids et Mesures (BIPM)	5		
			V. To be supplied with Colour printer and Laptop PC (minimum RAM 4GB; processor core i7, 2.8 GHz)	9		
			VI. Warranty (At least 3 years)	5		
			TOTAL SCORE	100		
			MINIMUM SCORE REQUIRED	90%		
81	Reference Generator	1	Internal Oscillator Ultra Low Phase Noise Oscillator Oscillator frequency 5/10 MHz Short term stability 1 s 1.3 x 10 ⁻¹³ 10 s 8.0 x 10 ⁻¹⁴ Phase Noise @ 10 MHz 1 Hz - 118 dBc/Hz 10 Hz - 134 dBc/Hz 100 Hz - 142 dBc/Hz 1 kHz - 146 dBc/Hz 10 kHz - 146 dBc/Hz Ageing** per day 2 x 10 ⁻¹¹ per month 5 x 10 ⁻¹⁰ per year 4 x 10 ⁻⁹ **) The aging performance specification applies after 30 days of continuous operation.	20		Nairobi
			Frequency Inputs Number of inputs 1 Connector SMA Impedance 50 Ω Input Level +3 to +10 dBm Frequency 5 or 10 MHz, sine wave Frequency configuration Automatic frequency detection Input return loss > 35 dB Pulse Inputs Number of inputs 3 Connector 1 x SMA 2 x BNC Impedance 50 Ω or high impedance Input level 1 Vpp to 5 Vpp Trigger level Configurable Signal type 1 PPS Time Code Inputs Serial Time Code RS232 Sub-D 9 NTP TCP/IP 10 Mbit/s RJ45	20		
			Frequency Outputs Connector 5 MHz Signal Output Number of outputs 4 Connector BNC Impedance 50 Ω Output Level +12.5 ± 0.5 dBm Output return loss > 33 dB	10		

		<p>Output / Output Isolation Harmonics (1st, 2nd, 3rd)</p> <p>> 80 dB -47 -47 -47 dBc</p>		
		<p>10 MHz Signal Output Number of outputs Impedance Output Level Output return loss Output / Output Isolation Harmonics (1st, 2nd, 3rd)</p> <p>4 50 Ω $+12.5 \pm 0.5$ dBm > 33 dB > 90 dB -47 -47 -47 dBc</p>		
		<p>Pulse Outputs 1 PPS Pulse Outputs Number of outputs Impedance Level Rise / fall times / width Number of outputs Level Time Code Outputs IRIG Code Generator</p> <p>4 50 Ω $5 / 10 V_{0p}$ (unloaded), $2.5 / 5 V_{0p}$ (loaded with 50 W) $t_r < 6$ ns, $t_f < 6$ ns, pulse width ~ 20 μs 1 5 V_{0p} (unloaded), $2.5 V_{0p}$ (loaded with 50 W)</p>		
		<p>IRIG codes Number of codes Data content</p> <p>IRIG A, B, D, E, G, H, NASA 36, IRIG B 5 MHz 4 different codes on 4 channels is possible BCD hour, minute, seconds, day of year straight binary seconds, extension field: year</p>	20	
		<p>IRIG Signal Outputs Number of outputs</p> <p>8 (with option 6: 12 outputs) 4 outputs on IRIG generator (standard spec) and on IRIG distributor each</p>	BNC	
		<p>Configurable items Signal amplitude Modulated output output</p> <p>Code, amplitude, modulation frequency, DC shift Configurable per output module: modulated or DC shift output Std: 0.3 to 2.8 Vpp, high power 2 to 9 Vpp (both loaded with 50 Ω) RS232 interface spec with std: +2.8V/-2.8V, high power: +10V/-10V (unloaded) or TTL level (0V/+5V) into 50 Ω load, configurable</p>		
		<p>Output impedance standard distribution module</p> <p>50 Ω</p>		
		<p>Time Code Output Number of outputs 9 pin Sub-D male</p> <p>1 (uses serial interface)</p>		
		<p>Protocol Level</p> <p>European Telephone Time code or plain ASCII, configurable RS232</p>		
		Electrical interface	10	

			Supply voltage Supply voltage Source selection	DC 24 to 32 V DC AC 230 V AC, 47 to 65 Hz Load sharing between AC and DC inputs			
			Monitoring and Control interface Serial line Protocol Availability	RS232 9 pin Sub-D male 19200 bps 8N1, plain ASCII If not used for time code input or output.			
		Ethernet Service TCP services	Port Service	10 Mbit/s twisted pair Port Telnetd Command	RJ45 23 Data output 2000	10	
		UDP services		Syslog client TFTP server	514 69 Data output NTP	configurable 123	
		Front panel To indicate time in terms of day of year, hour, minute and seconds To indicate Control details like instrument status and configuration, levels of input and output selected input, alarms and messages, event history. Keyboard for access to vital functions such as instrument set-up and configuration, input and output monitoring, input selection etc Alarm LEDs indicating the status of the unit and any malfunctions			10		
		Total			100		
		Pass mark			95		
82	Precision electronic balance (for small volume)	4	Special features Maximum Capacity Resolution Readability Interfaces Adjustment Housing Dimensions Installation, commissioning and user training To be supplied with a calibration certificate from an accredited laboratory		Weighting % 2200g 0.01g 0.01g RS232 External calibration Die-cast aluminum Not exceeding (DxHxW)320 mm x 110 mm x 210 mm 10 100	Score 20 15 15 5 15 10 5 10 5 90	Nairobi
83	Analytical electronic balance	4	Special features Maximum weighing Capacity Resolution Readability Linearity		Weighted % 220g 0.01mg 0.1mg 0.06mg	Score 10 10 10 10	Nairobi

			Minimum weight typical	0.16g	5		
			Interfaces	RS232; USB Device; USB Host	10		
			Display	color TFT touchscreen	5		
			Adjustment	Internal and External calibration	10		
			Housing	Die-cast aluminum	5		
			Weighing pan	Not exceeding 100 mm	5		
			Installation, commissioning and user training		10		
			To be supplied with a calibration certificate from an accredited laboratory		10		
			Total		100		
			Minimum score		90		
84	Microelectro nic balance	4	Special features				Nairobi
			Maximum weighing Capacity	52g	10		
			Resolution	1ug	10		
			Readability	1ug	10		
			Linearity	0.02mg	10		
			Minimum weight typical	1.4mg	10		
			Interfaces	RS232	10		
			Adjustment	External calibration	10		
			Weighing pan	Not exceeding 50mm x 50mm	10		
			Installation, commissioning and user training		10		
			To be supplied with a calibration certificate from an accredited laboratory		10		
			Total		100		
			Minimum score		90		
85	Digital handheld tachometer	4	Special features	Specifications			Nairobi
			Measuring Range	6.0 – 99999.9 r/min 0.10 -1666.66 r/sec	10		
			Resolution	0.1 r/min \pm 0.01% \pm 1 digit (r/min m/min)	10		
			Accuracy	\pm 0.05% \pm 1 digit (Other units including conversion accuracy)	10		
			Sampling Time	1.0 ~10.0 seconds	5		
			Prescale Range	0.01-999.999	5		
			Display : Measurement Display	6 digits, 7 segment LCD Display unit : /min, /sec, m/min cm/sec, y/min , in/sec , f/min	5		
			Memory display	MEM1~25 , MAX, MIN	5		
			Prescale Mode idicator	PS	2		
			Auto Power-off	After 3 minutes from last measurement or key operation	2		
			Data Hold Time Until the next data is defined Optical System:	Operating Range 50~1000 mm, \pm 40 degrees	10		
			Light Source	Laser Class 2 Wavelength 650 nm , CW	10		
			Power Output	Max. 1 mW	5		

			Power Supply	4 pcs. of AAA alkaline battery	5		
			Battery Life	approx. 30 hours continuous measurement	2		
			Storage Temperature:	-10~+60 C (Non-Freezing)	2		
			Operating Temperature:	5~40 C (Non-Freezing)	2		
			Operating Humidity:	35 ~ 85%RH (Non-Condensing)			
			Measuring Method:	Non-contact measurement: using main unit (with reflective tape) Contact type measurement : using contact adaptor (with rubber tip or surface speed wheel)	5		
			Total		100		
			Minimum score		90		
86	pH meters	4	DC Voltage source	Range: ±10 mV to ±30 V Resolution: 100 nV to 1 mV Accuracy: ±0.025% Power supply: 90 V to 240 V (50 – 60 Hz)	20 20 20 20		Nairobi
			Buffer solutions	pH 4, 5, 7, 9 and 10	20		
			Total		100		
			Pass mark 100 %				
87	Conductivity /TDS meters	4	Conductivity: TDS:	0 to 1999 µS and 0 to 1999 mS 0 to 1999 ppm (g/l) and 0 to 19.99 ppt (mg/l)	20 20		
			Reagents	Accuracy: 0.5% Full scale ±2 digits Potassium chloride Sodium chloride Hydrazinium sulphate Hexammethylenetramine	20 10 10 10		Nairobi
			Total		100		
			Pass mark 90%				
88	Turbidity meters	4	Turbidity meter	Range: 0 to 10,000 FNU Accuracy: ±2% of reading ±0.01 FNU (0 to 1000 FNU) : ±5% of reading (1000 to 4000 FNU) : ±10% of reading (4000 to 10,000 FNU) Resolution: 0.0001 FNU Sample size: 30 ml	20 20 15 15 15		Nairobi
			Turbidity calibration standards	10 FNU, 20 FNU, 50 FNU, 80 FNU, 100 FNU, 200 FNU, 500 FNU, 800 FNU, 1000 FNU and 2000 FNU.	15		
			Total		100		
			Pass mark 100%				

89	Single quartz control plates (Reference standard plates for calibration of Polarimeter/ Saccharimeter)	4	<p>Single quartz control plates</p> <p>Measurement range: -35°Z to 105°Z</p> <p>Measurement tube:</p> <p>Length: 10 to 200 mm</p> <p>Material: glass, acid resistant stainless steel</p> <p>Power supply: 90 V to 240 V (50 – 60 Hz)</p> <p>Display: 7" TFT touchscreen, 800 x 480 pixel, 16 bit colour</p> <ul style="list-style-type: none"> (i) +25°Z (ii) +50°Z (iii) +75°Z (iv) +100°Z <p>Accuracy (All): ±1°Z</p> <p>Total</p> <p>Pass mark 90%</p>	20 10 10 10 20 30 100		Nairobi
90	Radiotherapy Gamma Irradiator Systems	1	<p>The Gamma Calibration System, to be used for calibration of ionization chambers used for radiation treatment applications in the hospital. The system should measure with increase efficiency and accuracy in a variety of user applications. The irradiator should produce gamma radiation beams of variable intensity for exposing objects to gamma rays sources. The system should be available with manual operation using electronic controllers, or with full automation that includes computer control, auto set-up, automated irradiator calibration. The safety features should be clearly be highlighted</p> <p>Demonstrate that the system Irradiator is well suited for instrument calibration</p> <p>The ISO-4037 collimator minimizes scatter</p> <p>Sources can easily be added and changed at a future date.</p> <p>The system may be controlled by a computer or an electronic controller (PLC).</p> <p>With source options and attenuators, exposure rates are available from 1 uSv/hr to 100 Sv/hr</p> <p>With source options and attenuators, exposure rates are available from 1 uSv/hr to 100 Sv/hr</p> <p>Easy to use with an intuitive operator interface.</p> <p>Inherent fail-safe design.</p> <p>Cobalt-60 Sources: 0.4 GBq (10.8 mCi) to 37 GBq (1 Ci)</p> <p>Power - 120/220 VAC, 50/60 Hz, 1500 watts</p> <p>Dose Rate - 1 uSv/hr (0.10 mR/hr) to 100 Sv/hr (10mR/hr)</p> <p>Precision linear positioning track, manual or automated, 1 to 4 axes</p> <p>Safety interlock system</p> <p>Additional collimators for different beam sizes</p> <p>Video cameras for instrument and room viewing</p> <p>Jigs/fixtures</p> <p>Dosimeter phantoms</p> <p>Laser alignment</p> <p>Temperature, Pressure, Humidity Monitors</p> <p>Calibration equipment & service</p> <p>Installation and commissioning</p> <p>Demonstration of equipment calibration setup to meet the requirements of International Atomic Energy Agency (IAEA)</p>	5 3 4 3 2 3 3 2 2 2 4 3 3 3 3 3 3 2 2 3 3 3 8 20		Nairobi

		<p>Technical Report Series (TRS) no. 457</p> <p>Training to be provided at a National Metrology Institute using the equipment for 2 weeks</p> <p>Warranty 1 year</p> <p>TOTAL</p>		
		Pass mark 90%		
91	Radiation Monitoring Equipment	<p>Background : TLD is widely applied in medicine and industrial application to ensure safety of radiation dose levels are maintained.</p> <p>Technical Specifications</p> <p>Multiple, programmable, linear heating cycles such as pre-read anneal, acquire and post-read anneal cycles.</p> <p>Typical cycle time per detector: typically, 30 seconds.</p> <p>Heating temperature capability up to 400°C (standard model) or 600°C (high-temperature version).</p> <p>Thermoelectric PMT cooler for maximum gain stability.</p> <p>Options include:</p> <p>Glow curve deconvolution software (WinGCF Software)</p> <p>Various types of neutral density filters to extend the high measurement range</p> <p>TL element specific planchets for best possible reproducibility</p> <p>Instrument Performance</p> <p>Dynamic Range: 7 decades.</p> <p>HV Stability: ± 0.005% per hour, ± 0.02% per 8 hours.</p> <p>Linearity: Better than 1%.</p> <p>Test Light: Temperature-Stabilized LED</p> <p>Electrical Supply: Selectable, 110/120 VAC ± 10%, 60 Hz or 220/240 VAC ± 10%, 50 Hz</p> <p>Purified (99.995%), dry</p> <p>Pressure: 1.5 to 3 kg/cm²</p> <p>Flow Rate: 130 liters/h, subject to external regulation</p> <p>Operating Temperature: 15° to 40°C (59° to 104°F)</p> <p>Storage Temperature: -10° to 60°C (14° to 140°F)</p> <p>Humidity: Functions within specification after 24-hour exposure to 90% humidity and subsequent 6-hour recovery with use of the nitrogen supply</p> <p>Ambient Light Exposure: Functions within specifications when exposed to ambient light up to 1,000 Lux with cover on the reader</p> <p>Dosimetry Performance Using LiF:Mg,Ti (TLD-100/600/700):</p> <p>Nearly Tissue Equivalent</p> <p>Radiation Types : Photons (E > 5 keV)</p> <p>Electrons (E > 70 keV)</p> <p>Neutrons (from thermal energies up to 100 MeV, TLD-600 only)</p> <p>Measurement Range :10 µGy to 1 Gy (linear)</p> <p>1 Gy to 20 Gy (supralinear)</p> <p>Detection Threshold: < 10 µGy based on 2.26 standard deviations for 10 sequential readings of an unexposed dosimeter</p> <p>Repeatability: Less than 2% variation based on one standard deviation for 10 sequential measurements of 1 mGy Cs137</p>	Weighting %	Score
				Nairobi

			Residual TL Signal: < 0.2% of reading	2		
			Fading: < 20% in 3 months without thermal treatment; < 5% in 3 months using pre-read anneal or glow curve deconvolution software (WinGCF Software)	3		
			Batch Uniformity: ± 30% from the factory standard	3		
			Reuse: Typically, > 500	3		
			Training to be provided at a National Metrology Institute using the equipment for 2 weeks	10		
			Warranty 1 week	5		
			Calibration certificate from recognized national metrology institute	10		
			TOTAL MARKS	100		
			Pass mark 90%			
92	Oil Free Air Compressor	1	Oil Free Compression	15		
			Minimum air output at 5 bar (70 psi), 10 m ³ /h, 8 cfm, 2.5 litres/sec.	15		
			Minimum 50 litre capacity tank, with anti-oxidant treatment	16		
			Condensate absorption dryer with filters	9		
			Anti-vibration damping and low noise operation (65 dBA)	10		
			Power supplier: 220/240 V, 50 Hz	5		
			Pressure regulator with gauge	5		
			Safety valve/Fitted with thermal overload/cut-out	5		
			Pressure stainless steel tube 6 mm internal diameter from the compressor to the point of application of pressure.	3		
			2 inch diameter PVC ducting pipe including bends from the compressor position to the room of application.	3		
			Power supply to the compressor and including ducting to source.	4		
			A secured cage housing the compressor and sound proof cover	5		
			Supply, deliver, install, test and commission	5		
			Pass mark 90%			
			Total	100		
93	Bench top oil Bath	1	Application scope:	Bench top	6	
		a) Range:	-30°C to 200°C	10		
		b) Stability at -30.0°C ;	0.006°C	10		
		c) Stability at 0°C ; C	0.010°C	10		
		d) Immersion depth:	400mm	10		
		e) performance	Achieves -30°C in less than 130 minutes.	12		
		f) Input power	230 V ac, 50 Hz	10		
		g) Capacity	Approx. 40 litres	10		
		h) Power ;	2.5 KW	12		
		i) Accompanied with calibration certificate from accredited laboratory.		10		

			Total	100		
			Pass mark 90%			
94	Standard Thermocouple sensors	2 rolls	Temperature Range 0°C to 660°C 500°C to 1300°C Parameter Diameter Length Range Type Application Feature Note: Due to the fiber glass sheath the upper temperature limit will be 1260°C.	BMC(Uncertainty ±) 1.0k 2.0k Requirement expected 3.5mm 1000 meters -50°C to 1260°C K General purpose Fiber glass sheath		Kisumu
			Total	100		
			Pass mark 90%			
95	Precision Thermometer with Semi standard PRT sensor	1	a) Three input channel SPRTs), b) Temperature accuracy c) Resolution d)PRTs /SPRTs e) Input Connectors SPRTs/PRTs f) sockets g) Interface h) Operating condition	range (0-115Ω) PRTs (0-460Ω), Thermistor (0-500 Ω), Thermocouple ($\pm 115\text{mV}$) process input (4-20mA). for PRTS/SPRTs - 3Mk Thermocouples type B,E,J,K,L,N,R,S,T and Au-pt $\pm(0.23,0.03,0.05,0.04,0.06,0.17,0.19,0.05,0.12)$ Respectively. PRT-0.00001 Ω Thermistor-0.001 Ω Voltage-0.00001mV Current-0.001mA Temperature-0.0001°C Sensor current 1 mA (reversing)1.428 mA $\pm 0.4\%$ LemoEPG.1B.306 HLN 6-pin gold plated contacts Thermocouples: miniature thermocouple socket(ASTM E 1684-05) 4-20 mA 4mm 10/100MBit Ethernet(RJ45 Socket) 2*RS232(9-pin D-type plug,9600 Baud) 15°C -30°C /10-90	4 4 4 4 4 4 6 5 5 5 5 4 4 4 4 4 4 4 4 4 4	Kisumu

			d) Dimension	(255mm*255*114mm) (w*d*h)	2		
			e) Weight-	2.25kg	2		
			f) Carrying case	yes	2		
			g) Calibration certificate	for both the readout and the sensor from an accredited laboratory	3		
				Total	100		
				Pass mark 90			
96	Digital Refractometer	1	a) Measuring ranges refractive index scale(RI):	Range nD:1.26 to 1.72	12		
			b) Resolution	nD :±0.00001	12		
			c) accuracy	nD ; ±0.0002	12		
			h) Measuring Range(Brix Scale):	Range 0 to 100%	12		
			i) Resolution :	0.001%	12		
			j) Accuracy :	0.02%	15		
			k) Measuring range temperature	10 to 60°C .	15		
				To be supplied with calibration certificate from an accredited lab.	10		
				Total	100		
				Pass mark 90			
97	Hydrometer	2	a) Measurement range:	0.6000-2.0000g/ml	30		Kisumu
			b) Temp.:	Density at 20°C	30		
			c) Resolution:	0.0005g/ml	30		
			d) To be supplied with calibration certificate from an accredited lab.		10		
				Total	100		
98	Density meter		a) Measurement range:	0.6000-2.0000g/ml	30		Kisumu
			b) Temp.:	Density at 20°C	30		
			c) Resolution :	0.00001g/ml	30		
				To be supplied with calibration certificate from an accredited laboratory.	10		
				Total	100		
				Pass mark 90			
					Weighting %	Score	NAIROBI AND COAST
99	Reference Platinum Resistance thermometers	QTY -2.	-50 to 250°C temp range		8		
			6mm, diameter		7		
			350mm, probe length		7		
			25mm , sensing length		7		
			19x30mm handle		7		
			2m PTFE 4-wire cable		7		

Ro; $100\Omega \pm 0.05 \Omega$	8		
Alpha; 0.003850 ± 0.000005	8		
Standard; IEC 60751	6		
Stability; $0.010 \Omega/\text{year}$	8		
Current; 1mA	8		
Self Heating at 1mA; 0.004°C	8		
Connection; Four Wire	5		
Calibration certificate; NMI certificate fulfilling CIPM MRA	6		
Total Marks	100		
MINIMUM SCORE REQUIRED			
• Size: W114 x D172 x H148.0 mm	5		
• Weight: 490g	5		
Total Marks	100		

NAME OF LABORATORY: CHEMISTRY LAB REGION		LOCATION: COAST		
SPECIFICATION		QUAN TITY	WEIGHTING (%)	ACTUAL SCORE
Application/Scope	Rapid acid hydrolysis of food product samples prior to determination of trace levels of heavy metals	1		
1Main Features		5 Max		
a)	The equipment must be provided complete with the necessary accessories and/or parts such as to ensure that the equipment is capable of operating to the required technical and quality specifications in line with the scope of analysis. All specifications details, listed for each item, are the minimum requirements. Accessories (if it is not named in the specific technical specification) that may enhance or improve the efficiency of operation of any equipment or item of equipment or additional features offered should be clearly identified in the Supplier's offer and justified easy operation with an intuitive TFT on-screen user interface	2		
b)	Equipment which allows upgrading of capacities (except the power capacity) shall be provided in such a way that upgrades can be performed by installing additional capacity without discarding the already installed capacities	1		
c)	The Contractor must guarantee availability of software updates and upgrades for at least 10 (ten) years after final acceptance	1		
d)	All hardware shall operate on $220\text{ V} \pm 20\text{ V}$, $50\text{ Hz} \pm 0.5\text{ Hz}$, or $380\text{ V} \pm 40\text{ V}$, power supply and be suitable for direct connection to the standard power outlets in Kenya. All plugs of all the supplied equipment will have to fit exactly.	1		
TOTAL SCORE		5		
Performance/Technical Specifications: The system shall be designed for the digestion of samples from various origins (e.g. plant, fish and meat) in mineral acids. The system shall assure the complete digestion of inert samples by applying high temperature and pressure:		85		
I. Software driven with provision for method development;		5		
II. Touch screen computer;		5		

III. Equipped with an acid resistant elephant trunk exhaust duct;		5
IV. Internal Diagnostics: Shall display information on magnetron status, magnetron temperature oven temperature, transformer, cover clock during a digestion run;		5
V. Tool kit for vessel alignment and basic maintenance;		5
VI. Temperature Sensor: Shall be fibre optic type Traceable and calibrated;		5
VII. Pressure sensor: Shall be single vessel or contact less type, 90 µm PFA coating (fired at 350°C);		5
VIII. Rotor: Capable of handling 20-50 vessels;		5
IX. Turntable Continuous clockwise rotation, approx. 6 rpm;		
X. Noise level < 60dB.		5
XI. Temperature Measurement: 80-300°C		5
XII. Pressure measurement range: 0-200 bar, 5 Bar precision		5
XIII. Vessel volume: 100ml max		5
XIV. Microwave power 1,8 KW minimum		5
XV. Vessel operating pressure: 40 bar and 55 bar test pressure		5
XVI. The equipment must feature safety venting mechanisms in case of overpressure		5
Consumables Shall be supplied with digestion vessel racks and suitable accessories for the handling of two sizes of digestion vessels: One set for vessels of volume between 10 and 15 ml, and one set for vessels of volume > 25 ml Vessel material PTFE/PFA		5

50 vessels 10-15 mL 30 vessels ≥ 25 mL Must be supplied with essential spare parts kit and any special tools required to perform maintenance or cleaning in routine use		
Computer- software: The instrument shall be operated by a computer complying with the following specifications: A suitable desktop computer of reputed brand with integral, MS Windows compatible software on one PC, for complete control over all the parts of the Microwave, GLP-validated software for controlling the system, all parameters, pressures and temperatures, tuning, optimisation, calibration, security shut down and QC parameters setting. The acquisition and processing of data for qualitative and quantitative analysis methods, storage, methods validation, and generation of the report and printing. The terminal must have a spare RJ45 socket to allow connection to a local-area network, at the same time as running the instrument LCD monitor: - 24" wide, resolution (1920 x 1080), time response 5 ms, frequency 50 Hz. Color laser printer: fast printing up to 15 ppm black, 4ppm color in A4, high speed USB 2.0 connection.	5	
Power UPS: For all items of the system; 220V-240V, 50-60 Hz and interruptible power supply of corresponding capacity sufficient for minimum 3 hours operating time.	5	
TOTAL SCORE	85	
Other requirements	10	

<p>xi. Installation and Commissioning and Acceptance</p> <p>Site Preparation Instructions</p> <ul style="list-style-type: none"> I. The Contractor shall provide all the requisites for commissioning and ensure that the site has been adequately prepared accordingly by the KEBS before the time of installation. II. The Supplier shall carry out the pre-installation check at the places of installation prior to the delivery of the supplied equipment. The installation shall start immediately after the delivery and should be finished without delay. After the installation the instrument and instruments accessories has to be ready for run the test analysis and the foreseen analysis. III. The Supplier shall carry out all the electrical and other installation works associated with the installation of the equipment (where applicable) and such electrical and other installation works shall conform to local or better standards IV. The Contractor shall unpack the Microwave System at KEBS, inspect the shipment to ensure that all components are in place and that no damages occurred to the Microwave System during transportation and proceed with the installation V. The Contractor shall test (verification of functionality) of complete Microwave System on site for a minimum 4 days in the presence of representatives of the KEBS. The contractor shall provide a performance verification report. VI. The Contractor shall provide in addition to the tune/calibration solution, a suitable test/reference mixture which shall be used to demonstrate that the Microwave System performance meets the manufacturer's performance specifications and the minimum requirements specified herein as determined by KEBS VII. The tenderer must provide the Declaration of Conformity (DoC) from the manufacturer; the item must affix the CE marking. VIII. The results of the testing of the Microwave System shall be documented by the Supplier in an acceptance protocol that shall be signed by KEBS 	2	
<p>Instruction Manuals and DVD</p> <ul style="list-style-type: none"> i. The Contractor shall provide two complete sets of operation and servicing manuals and technical drawings in English language ii. The Microwave System shall be delivered with the following data items: iii. Installation instructions; 	2	

iv. Microwave System operation manuals in hard copy and electronic copy;		
v. Microwave System operation tutorial book(s) in hard copy and electronic copy;		
vi. Software license certificates; and DVD back up of all software		
vii. Operation and Service Manuals- All Manuals and DVD in English		
Warranty and Maintenance i. The warranty should be at least 24 months. ii. The Contractor shall guarantee that spare parts for the Microwave System would be available for a minimum period of 10 years after installation and acceptance of the Microwave System/equipment and proof of Nearest service center .	2	
Maintenance The Contractor shall ensure yearly operational qualification and performance qualification (OQ/PQ) and maintenance work, including an annual OQ/PQ visit and year-round technical support free of charge during the warranty period..		
iii. Brochures (in English)for the equipment to be attached with the quotations	2	
TRAINING i. The Supplier shall provide structured training material (CD-ROM, Internet or other) on the uses and applications of the equipment before the installation ii. Upon installation, the Supplier shall provide sixteen hours (16 hours over 2 working days) comprehensive training including software overview and utilisation,: software, acquisition, data processing and creation of reports; operation, calibration, maintenance and troubleshooting of the Microwave System at KEBS laboratory immediately after installing the System in order to ensure a proper running and use of the system. The 16 hours exclude the time for training preparation.	2	
TOTAL SCORE	10	
GRAND TOTAL SCORE FOR THE EQUIPMENT	100 %	
MINIMUM SCORE REQUIRED	95 %	

101. WATER METER

CALIBRATION SYSTEM FOR DOMESTIC WATER METERS - DN 15 TO DN 50

GRAVIMETRIC METHOD – SEMI-AUTOMATIC OPERATION

GENERAL DESCRIPTION

- WATCAL 1550G (S) Water Meter Calibration System is designed for calibrating the “Accuracy of Measurements” of Domestic Water Meters typically in sizes from DN 15 to DN 50 through **GRAVIMETRIC Method** in accordance to the standard **OIML R49 / ISO 4064 or Equivalent**.
- The Test Bench is **Semi-Automatically** operated, with **Pneumatic clamping system**. Air compressor (**6 Bar Oil free**) will be provided for Pneumatic Clamping. Control Switch for the Clamping Device will be provided near the Clamping Device.
- **GRAVIMETRIC method:** The Measurement of Errors of the Units Under Tests (UUT's) at various flow rates are calculated by comparing the Volumes read by the meters against water Collected - during Each Campaign - in the Stainless Steel Tanks of Nominal volumes of **55 Liters & 550 Liters mounted on the Matching Weighing Scales**.
- **Pressure Measurement devices** will be provided at both Upstream / Downstream of the test line to measure the Pressure of water.
- **Temperature Measurement devices** will be provided to measure the Temperature of Water.
- Adequate No of pumps with frequency converter (VFD) will be provided to maintain the Pressure & Flow in Test system. **Non – Return Valve** installed at the Pumps Head / Delivery Line to prevent BACK – FLOW.
- Best “Accuracy” of ‘Unit Under Test’ that can be Tested / Calibrated (Recommended): $\pm 0.5\% \text{ FS}$.
- **Water collection tray** will be provided to collect the leakage of water & drain during fixing / clamping / removing the water meters under test.
- 2 Nos. of calibrated & certified Electromagnetic Flow Meters will be used as the Flow Setting Devices.
- **Pneumatically operated Ball valves** will be provided at the Inlet & Outlet of the Test Bench.
- Adaptors / Spacers / Blanks will be provided for Matching / connecting Various Sizes of Water Meters (DN 15 to DN 50).
- Suitable drain pipes will be provided in order to drain water back to the Storage Tank / Water Reservoir.

TECHNICAL SPECS

ITEM	DESCRIPTION -QTY -1-LOCATION Nairobi	MARKS (%)	SCORE
System Operation	Semi-Automatic	3	
Method of Operation	Gravimetric	2	
Meter Sizes	DN 15 to DN 50	5	
Number of meters can be Calibrated at a time	08 Nos. of Water Meters of Size DN 15 (OR) 08 Nos. of Water Meters of Size DN 20 (OR) 06 Nos. of Water Meters of Size DN 25 (OR) 04 Nos. of Water Meters of Size DN 32 (OR) 03 Nos. of Water Meters of Size DN 40 (OR) 01 No. of Water Meter of Size DN 50	30 (each 5 marks)	
Flow Rate	Minimum 2 LPM (120 LPH) & Maximum 850 LPM (51000 LPH)	2	
Flow Setting Devices	1 No. of each Calibrated & Certified Electromagnetic Flow Meters of Sizes - DN 10 Flow Range: 0.9 LPM to 45 LPM; Accuracy: $\pm 0.4\%$ of Reading - DN 50 Flow Range: 20 LPM to 1000 LPM; Accuracy: $\pm 0.2\%$ of Reading	3 (each 1.5 marks)	
Number of Test Lines	Two Test Lines Test Line 1: For Sizes of Water Meters DN 15 to DN 40 – Screwed Connection Test Line 2: For Size of Water Meter DN 50 – Flange Connection	1	
Meter Clamping	Pneumatic Clamping System	2	
Compressed Air	6 bar through Oil free Compressor	2	
Water supply - Through Pumps	Low: 1 m³/hr. @ 10 Bar 1.5 Kw / 3 Phase / 50 Hz	High: 80 m³/hr. @ 10 Bar 37 Kw / 3 Phase / 50 Hz	3 (each 1.5 marks)
Flow Control	Through VFD's Connected to the Pumps, Manual flow Throttle valves	2	
Collection Tanks (SS) & Weighing Scales	a) A 55 Liters Collection Tank mounted on a 60 Kg Weighing Scale (Resolution: 2 g) covers the Lower ranges. b) A 550 Liters Collection Tank mounted on a 600 Kg Weighing Scale (Resolution: 20 g) covers the Medium & Higher ranges.	3 (each 1.5 marks)	
Pressure Measurement	Pressure Gauges (Inlet / Outlet) Range: 0 to 10 bar	2	
Temperature Measurement	RTD with Digital Indicator	2	

	Range: 0 to 100 Deg C		
Timer	Timer will be provided to Set & Measure the Flow campaign Time.	2	
Damping Tank	Capacity: 100 Liters, MOC: Mild Steel Power Coated, Inside Epoxy Coated	2	
Constant Level - Over Head Tank	Tapping & Ball Valve will be Provided at the Inlet of Test Section / Test Bed to enable Water Supply from Over Head Tank. <i>Over Head Tank of Capacity 100 Liters & Structure and Piping Works</i>	2	
Power Supply	3 Phase, Standard Voltage 380 to 415V AC, 50Hz, 45 Kw Single Phase – 230V AC/50 Hz	2	
Overall dimensions	Appx. 7000 x 1000 x 3000 mm (LBH)	1	
Construction materials	Powder coated mild steel for test bench frame. All other wetted parts shall be of SS 304 / Brass / Aluminum.	4	
Control Console	To mount Weighing Indicators, Temperature Indicators, Start / Stop Button, Emergency – ON / OFF, VFD Control Knobs, Pumps – ON / OFF, Compressor – On / OFF, Drain valves of Collection Tanks, Timer. UUT's & MASTERS – Flow rate Outputs and Pressure & Temperature Readings are to be entered manually to PC. The “Flocal” Software will then generate Calibration Report.	5	
Installation, Commissioning & On Job Training	To all lab staff for a period of not less than 3 days	10	
PRE DESPATCH INSPECTION / TRAINING / ORIENTATION	Done to 2 Laboratory staff at the factory for a period of not less than 4 days	10	
TOTAL		100	
PASS MARK		90	

GENERAL REQUIREMENTS

The supplier shall ensure that the following conditions are met as part of the procurement contract:

1. The supplier shall provide the English versions of the Operational and Service manuals.
2. The supplier shall provide information on where else similar equipment has been supplied in the region.
3. The supplier to indicate the date of delivery to Kenya Bureau of Standards (KEBS) upon receipt of order.
4. The supplier shall provide evidence of the nearest service centre.
5. The supplier shall provide proof of dealership from the manufacturer
6. The supplier shall install commission and provide user training on operation of equipment.
7. Specialized equipment requires training of laboratory personnel
8. The supplier shall provide warranty for a period of not less than 12 Months.
9. Brochures for equipment to be attached with quotation
10. The supplier must supply equipment's within three months(3) after being issued with LPO. Failure to supply within the stipulated time will lead to cancellation of LPO.

Section G. Tender Form and Price Schedules

(i) Form of Tender

Date: _____

Tender N°: _____

To:

[Name and address of procuring entity]

Gentlemen and/or Ladies:

1. Having examined the tender documents including Addenda Nos..... *[Insert numbers]*,
The receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver..... *[Description of goods]*
In conformity with the said tender documents for the sum of..... *[Total tender amount in words and figures]*
2. We undertake, if our Tender is accepted, to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.
3. If our Tender is accepted, we will obtain the guarantee of a bank in a sum equivalent to 10 percent of the Contract Price for the due performance of the Contract, in the form prescribed by
4. We agree to abide by this Tender for a period of *[Number]* days from the date fixed for tender opening of the Instructions to tenderers, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
5. Until a formal Contract is prepared and executed, this Tender, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.
6. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this _____ day of _____ 20_____.

[Signature]

[In the capacity of]

Duly authorized to sign tender for and on behalf of _____

(ii) Price Schedule for Goods

Name of tenderer ____ Tender Number ___. Page____ of ____.

1	2	3	4	5	6	7
Item	Description	Country of origin	Qty	Unit price	Total price DDP per item (cols.4 x 5)	Unit price of other incidental services payable
	As per attached specifications					

Signature of tenderer _____

Note: In case of discrepancy between unit price and total, the unit price shall prevail.

CONFIDENTIAL BUSINESS QUESTIONNAIRE

You are requested to give the particulars indicated in Part 1 and either Part 2 (a), 2(b) or 2(c) whichever applies to your type of business.

You are advised that it is a serious offence to give false information on this form.

Part 1 General

Business Name.....
Location of Business Premises,
Plot No, Street/Road,
Postal address Tel No. Fax Email,
Nature of Business,
Registration Certificate No.
Maximum value of business which you can handle at any one time – Kshs.
Name of your bankers.....
Branch

Part 2 (a) – Sole Proprietor

Your name in full.....Age.....
Nationality.....Country of Origin.....
Citizenship details.....

Date.....Signature of Tenderer.....

Part 2 (b) – Partnership

Given details of partners as follows

Name	Nationality	Citizenship details	Shares
1.			
2.			
3.			
4.			

Date.....Signature of Tenderer.....

Part 2 (c) – Registered Company

Private or Public

State the nominal and issued capital of company

Nominal Kshs.

Issued Kshs.

Given details of all directors as follows

Name	Nationality	Citizenship details	Shares
1.			
2.			
3.			
4.			

Date.....Signature of Tenderer.....

Section H. Tender Security Form

Whereas..... [Name of the tenderer]
(Hereinafter called "the tenderer") has submitted its tender dated [Date of submission of tender] for the supply of
[Name and/or description of the goods]
(Hereinafter called "the Tender").
KNOW ALL PEOPLE by these presents that WE.....
Of..... Having our registered office at
..... (Hereinafter called "the Bank"), are bound
unto..... [Name of procuring entity] (Hereinafter called "the Procuring entity") in the sum of
For which payment well and truly to be made to the said Procuring entity, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this _____ day of _____ 20_____.

THE CONDITIONS of this obligation are:

1. If the tenderer withdraws its Tender during the period of tender validity specified by the tenderer on the Tender Form; or
2. If the tenderer, having been notified of the acceptance of its Tender by the Procuring entity during the period of tender validity:
 - (a) Fails or refuses to execute the Contract Form, if required; or
 - (b) Fails or refuses to furnish the performance security, in accordance with the Instructions to tenderers;

We undertake to pay to the Procuring entity up to the above amount upon receipt of its first written demand, without the Procuring entity having to substantiate its demand, provided that in its demand the Procuring entity will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the above date.

[Signature of the bank]

Section I. Contract Form

THIS AGREEMENT made the _____ day of _____ 20____ between.....
[name of Procurement entity) of..... [Country of Procurement entity]
(Hereinafter called "the Procuring entity") of the one part and.....
[Name of tenderer] of..... [City and country of tenderer] (Hereinafter called "the
tenderer") of the other part:

WHEREAS the Procuring entity invited tenders for certain goods,
viz.,..... [Brief description of goods] and has accepted a tender by
the tenderer for the supply of those goods in the sum
of..... [Contract price in words and figures]
(Hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) The Tender Form and the Price Schedule submitted by the tenderer;
 - (b) The Schedule of Requirements;
 - (c) The Technical Specifications;
 - (d) The General Conditions of Contract;
 - (e) The Special Conditions of Contract; and
 - (f) The Procuring entity's Notification of Award.
3. In consideration of the payments to be made by the Procuring entity to the tenderer as hereinafter mentioned, the tenderer hereby covenants with the Procuring entity to provide the goods and to remedy defects therein in conformity in all respects with the provisions of the Contract
4. The Procuring entity hereby covenants to pay the tenderer in consideration of the provision of the goods and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, sealed, delivered by _____ the _____ (for the Procuring entity)

Signed, sealed, delivered by _____ the _____ (for the tenderer)

In the presence of _____

Section J. Performance Security Form

To:

[Name of procuring entity]

WHEREAS *[Name of tenderer]*
(Hereinafter called "the tenderer") has undertaken, in pursuance of Contract
No. _____ *[reference number of the contract]* dated _____ 20____ to
supply.....
[Description of goods] (Hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the tenderer shall furnish you with a bank guarantee by a reputable bank for the sum specified therein as security for compliance with the Tenderer's performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the tenderer a guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the tenderer, up to a total of.....
[Amount of the guarantee in words and figures], and we undertake to pay you, upon your first written demand declaring the tenderer to be in default under the Contract and without cavil or argument, any sum or sums within the limits of..... *[Amount of guarantee]* as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the _____ day of _____ 20_____.

Signature and seal of the Guarantors

[Name of bank or financial institution]

[Address]

[Date]

Section K. Manufacturer's Authorization Form

To: *[name of the Procuring entity]*.....

WHEREAS..... *[Name of the Manufacturer]*

Who are established and reputable manufacturers
of..... *[Name and/or description of the goods]*

having factories at..... *[Address of factory]*
Do hereby authorize..... *[Name and address of Agent]*

To submit a tender, and subsequently negotiate and sign the Contract with you against
tender No..... *[Reference of the Tender]*

For the above goods manufactured by us

We hereby extend our full guarantee and warranty as per the General Conditions of
Contract for the goods offered for supply by the above firm against this Invitation for
Tenders.

[Signature for and on behalf of Manufacturer]

Note: This letter of authority should be on the letter head of the Manufacturer and should
be signed by a person competent.

LETTER OF NOTIFICATION OF AWARD

Address of Procuring Entity

To: _____

RE: Tender No. _____

Tender Name _____

This is to notify that the contract/s stated below under the above mentioned tender have been awarded to you.

-
1. Please acknowledge receipt of this letter of notification signifying your acceptance.
 2. The contract/contracts shall be signed by the parties within 30 days of the date of this letter but not earlier than 14 days from the date of the letter.
 3. You may contact the officer(s) whose particulars appear below on the subject matter of this letter of notification of award.

(*FULL PARTICULARS*) _____

SIGNED FOR ACCOUNTING OFFICER