MOI UNIVERSITY

TENDER NO. MU/ONT/2/2020 – 2021

FOR

LABORATORY EQUIPMENT

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SECTION I INVITATION TO TENDER

TENDER REF NO: MU/ONT/2/2020-2021

TENDER NAME: LABORATORY EQUIPMENT

1.1 The Moi University invites sealed bids from eligible suppliers for **Laboratory Equipment**

1.2 Interested eligible candidates may obtain further information from and inspect the tender documents at Moi University, Main Campus Administration and Senate Block Ground Floor, Procurement Unit, and Moi University Nairobi Campus, Bazaar Building E Floor during normal working hours.

1.3 A complete set of tender documents may be obtained by interested candidates upon payment of non-refundable fees of Kshs. One Thousand (1,000) in cash or Bankers cheque payable to Moi University, Cash Office.

1.4 Completed tender documents are to be enclosed in plain sealed envelopes, marked with the tender number and be deposited in the tender box provided at Moi University, Main Campus, Administration block at reception area or be addressed and posted to Moi University, Main Campus, Administration and Senate Block Ground Floor to be received on or before ***Thursday 30th July, 2020 at 11.00 a.m.***

1.5 Prices quoted should be net inclusive of all taxes and delivery must be in Kenya Shillings and shall remain valid for150 days from the closing date of the tender.

1.6 Tenders will be opened immediately thereafter in the presence of the Candidates or their representatives who choose to attend at Moi University Boardroom.

PROF. NATHAN O. OGECHI
AG. DEPUTY VICE CHANCELLOR (A, P&D)
ENK

(ISO 9001: 2015 Certified Institution)

SECTION II - INSTRUCTIONS TO TENDERERS

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SECTION II - INSTRUCTIONS TO TENDERERS

2.1 Eligible Tenderers

2.1.1 This Invitation for Tenders is open to all tenderers eligible as described in the Invitation to Tender. Successful tenderers shall complete the supply of goods by the intended completion date specified in the Schedule of Requirements Section VI.

2.1.2 The Moi University's employees, committee members, board members and their relative (spouse and children) are not eligible to participate in the tender.

2.1.3 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 Moi University 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.

2.1.4 Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices.

2.2 Eligible Goods

2.2.1 All goods to be supplied under the contract shall have their origin in eligible source countries.

2.2.2 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

2.2.3 The origin of goods is distinct from the nationality of the tenderer.

2.3 Cost of Tendering

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

2.3.2 The price to be charged for the tender document shall not exceed Kshs.1,000/=

2.3.3 All firms found capable of performing the contract satisfactorily in accordance with the set prequalification criteria shall be prequalified.

2.4. The Tender Document

2.4.1 The tender document comprises the documents listed below and addenda issued in accordance with clause 2.6 of these instructions to Tenderers

(i) Invitation to Tender
(ii) Instructions to tenderers
(iii) General Conditions of Contract
(iv) Special Conditions of Contract
(v) Schedule of requirements
(vi) Technical Specifications
(vii) Tender Form and Price Schedules
(viii) Tender Security Form
(ix) Contract Form
(x) Performance Security Form
(xi) Bank Guarantee for Advance Payment Form
(xii) Manufacturer's Authorization Form
(xiii) Confidential Business Questionnaire

2.4.2 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.

2.5 Clarification of Documents

2.5.1 A prospective tenderer requiring any clarification of the tender document may notify Moi University in writing or by post at the entity's address indicated in the Invitation to Tender. The Procuring entity will respond in writing to any request for clarification of the tender documents, which it receives not later than seven (7) days prior to the deadline for the submission of tenders, prescribed by Moi University. Written copies of the Procuring entity's response (including an explanation of the query but without identifying the source of inquiry) will be sent to all prospective tenderers that have received the tender document.

2.5.2 Moi University shall reply to any clarifications sought by the tenderer within

3 days of receiving the request to enable the tenderer to make timely submission of its tender.

2.6 Amendment of Documents

2.6.1 At any time prior to the deadline for submission of tenders, Moi University, 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.

2.6.2 All prospective candidates that have received the tender documents will be notified of the amendment in writing or by post and will be binding on them.

2.6.3 In order to allow prospective tenderers reasonable time in which to take the amendment into account in preparing their tenders,Moi University, at its discretion, may extend the deadline for the submission of tenders.

2.7 Language of Tender

2.7.1 The tender prepared by the tenderer, as well as all correspondence and documents relating to the tender exchange by the tenderer and the University, 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.

2.8 Documents Comprising of Tender

2.8.1 The tender prepared by the tenderers shall comprise the following components

(a) a Tender Form and a Price Schedule completed in accordance with paragraph 2.9, 2.10 and 2.11 below

(b) documentary evidence established in accordance with paragraph 2.1 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 2.2 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 2.14

2.9 Tender Forms

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

2.10 **Tender Prices**

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

2.10.2 Prices indicated on the Price Schedule shall include all costs including taxes, insurances and delivery to the premises of the entity.

2.10.3 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 2.22

2.10.4 The validity period of the tender shall be 60 days from the date of opening of the tender.

2.11 **Tender Currencies**

2.11.1 Prices shall be quoted in Kenya Shillings unless otherwise specified in the Appendix to Instructions to Tenderers.

2.12 **Tenderers Eligibility and Qualifications**

2.12.1 Pursuant to paragraph 2.1. the tenderer shall furnish, as part of its tender, documents establishing the tenderers eligibility to tender and its qualifications to perform the contract if its tender is accepted.

2.12.2 The documentary evidence of the tenderers eligibility to tender shall establish to Moi University's satisfaction that the tenderer, at the time of submission of its tender, is from an eligible source country as defined under paragraph 2.1

2.12.3 The documentary evidence of the tenderers qualifications to perform the contract if its tender is accepted shall be established to Moi University's satisfaction;

(a) that, in the case of a tenderer offering to supply goods 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 goods.

(b) that the tenderer has the financial, technical, and production capability necessary to perform the contract;

(c) 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.

2.13 Goods Eligibility and Conformity to Tender Documents

2.13.1 Pursuant to paragraph 2.2 of this section, the tenderer shall furnish, as part of its tender documents establishing the eligibility and conformity to the tender documents of all goods which the tenderer proposes to supply under the contract

2.13.2 The documentary evidence of the eligibility of the goods shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued at the time of shipment.

2.13.3 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 characteristic of the goods;

(b) a list giving full particulars, including available source 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 Moi University; and

(c) a clause-by-clause commentary on Moi University's Technical Specifications demonstrating substantial responsiveness of the goods and service to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.

2.13.4 For purposes of the documentary evidence to be furnished pursuant to paragraph 2.13.3(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.

2.14 Tender Security

2.14.1 The tenderer shall furnish, as part of its tender, a tender security for the amount specified in the Appendix to Invitation to Tenderers.

2.14.2 The tender security shall be in the amount of 0.5 – 2 per cent of the tender price.

2.14.3 The tender security is required to protect Moi University against the risk of Tenderer's conduct which would warrant the security's forfeiture, pursuant to paragraph 2.14.7

2.14.4 The tender security shall be denominated in Kenya Shillings or in another freely convertible currency, and shall be in the form of:

a) A bank guarantee.
b) A banker's cheque.
c) An approved Insurance firm by Public Procurement Oversight Authority.
d) Letter of credit
e) A guarantee by a deposit taking microfinance institution, Sacco Society, the Youth Enterprises Development Fund or the Women Enterprise Fund.

2.14.5 Any tender not secured in accordance with paragraph 2.14.1 and 2.14.3 will be rejected by Moi University as non-responsive, pursuant to paragraph 2.22

2.14.6 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 Moi University.

2.14.7 The successful Tenderer's tender security will be discharged upon the tenderer signing the contract, pursuant to paragraph 2.27 and furnishing the

performance security, pursuant to paragraph 2.28

2.14.8 The tender security may be forfeited:

(a) if a tenderer withdraws its tender during the period of tender validity specified by Moi University 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 2.27

or

(ii) to furnish performance security in accordance with paragraph 2.28

2.15 Validity of Tenders

2.15.1 Tenders shall remain valid for 150 days or as specified in the Invitation to Tender after the date of tender opening prescribed by Moi University, pursuant to paragraph 2.18. A tender valid for a shorter period shall be rejected by the Moi University as non-responsive.

2.15.2 In exceptional circumstances, Moi University 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 2.14 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.

2.16 Format and Signing of Tender

2.16.1 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.

2.16.2 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. The latter authorization shall be indicated by written power-of-attorney accompanying the tender. All pages of the tender, except for un amended printed literature, shall be initialed by the person or persons signing the tender.

2.16.3 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 initialed by the person or persons signing the tender.

2.17 Sealing and Marking of Tenders

2.17.1 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.

2.17.2 The inner and outer envelopes shall:

(a) Be addressed to Moi University at the address given in the Invitation to Tender:

(b) Bear, tender number and name in the Invitation for Tenders and the words, "DO NOT OPEN BEFORE," ***Thursday 30th July, 2020 at 11.00am.***

2.17.3 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".

2.17.4 If the outer envelope is not sealed and marked as required by paragraph 2.17.2, Moi University will assume no responsibility for the tender's misplacement or premature opening.

2.18 Deadline for Submission of Tenders

Tenders must be received by Moi University at the address specified under paragraph 2.17.2 not later than ***Thursday 30th July, 2020 at 11.00am.***

2.18.1 Moi University may, at its discretion, extend this deadline for the submission of tenders by amending the tender documents in accordance with paragraph 2.6, in which case all rights and obligations of Moi University and candidates previously subject to the deadline will therefore be subject to the deadline as extended.

2.19 Modification and Withdrawal of Tenders

2.19.1 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 University prior to the deadline prescribed for submission of tenders

2.19.2 The Tenderer's modification or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of paragraph 2.17. A withdrawal notice may also be sent by cable, telex but followed by a

signed confirmation copy, postmarked not later than the deadline for submission of tenders.

2.19.3 No tender may be modified after the deadline for submission of tenders.

2.19.4 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 2.14.7

2.19.5 Moi University may at any time terminate procurement proceedings before contract award and shall not be liable to any person for the termination.

2.19.6 Moi University shall give prompt notice of the termination to the tenderers and on request give its reasons for termination within 14 days of receiving the request from any tenderer.

2.20 Opening of Tenders

Moi University will open all tenders in the presence of tenderers' representatives who choose to attend on ***Thursday 30th July,2020 at 11.00am.*** and in the location specified in the Invitation to Tender.

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

2.20.1 The tenderers' names, tender modifications or withdrawals, tender prices, discounts and the presence or absence of requisite tender security and such other details as Moi University, at its discretion, may consider appropriate, will be announced at the opening.

2.20.2 Moi University will prepare minutes of the tender opening.

2.21 Clarification of Tenders

2.21.1 To assist in the examination, evaluation and comparison of tenders the Moi University 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.

2.21.2 Any effort by the tenderer to influence Moi University in the Moi University's tender evaluation, tender comparison or contract award decisions may result in the rejection of the tenderers' tender.

2.22 Preliminary Examination

2.22.1 Moi University 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, and whether the tenders are generally in order.

2.22.2 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 quantify, 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 forfeited. If there is a discrepancy between words and figures the amount in words will prevail

2.22.3 Moi University 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.

2.22.4 Prior to the detailed evaluation, pursuant to paragraph 2.23 Moi University 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. Moi University's determination of a tender's responsiveness is to be based on the contents of the tender itself without recourse to extrinsic evidence.

2.22.5 If a tender is not substantially responsive, it will be rejected by Moi University and may not subsequently be made responsive by the tenderer by correction of the non-conformity.

2.23 Conversion to Single Currency

2.23.1 Where other currencies are used, Moi University will convert these currencies to Kenya Shillings using the selling exchange rate on the rate of tender closing provided by the Central Bank of Kenya.

2.24 Evaluation and Comparison of Tenders

2.24.1 Moi University will evaluate and compare the tenders which have been determined to be substantially responsive, pursuant to paragraph 2.22

2.24.2 The tender evaluation committee shall evaluate the tender within 30 days of the validity period from the date of opening the tender.

2.24.3 A tenderer who gives false information in the tender document about its qualification or who refuses to enter into a contract after notification of contract award shall be considered for debarment from participating in future public procurement.

2.25 Preference

2.25.1 Preference where allowed in the evaluation of tenders shall not exceed 15%

2.26 Contacting Moi University

2.26.1 Subject to paragraph 2.21 no tenderer shall contact Moi University on any matter related to its tender, from the time of the tender opening to the time the contract is awarded.

2.26.2 Any effort by a tenderer to influence Moi University in its decisions on tender, evaluation, tender comparison, or contract award may result in the rejection of the Tenderer's tender.

2.27 Award of Contract

(a) Post-qualification

2.27.1 In the absence of pre-qualification, Moi University 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.

2.27.2 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 2.12.3 as well as such other information as Moi University deems necessary and appropriate.

2.27.3 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 Moi University will proceed to the next lowest evaluated tender to make a similar determination of that Tenderer's capabilities to perform satisfactorily.

(b) **Award Criteria**

2.27.4 Moi University 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.

(c) **Moi University's Right to Vary quantities**

2.27.5 Moi University reserves the right at the time of contract award to increase or decrease the quantity of goods originally specified in the Schedule of requirements without any change in unit price or other terms and conditions

(d) **Moi University's Right to accept or Reject any or All Tenders**

2.27.6 Moi University 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 Moi University's action

2.28 Notification of Award

2.28.1 Prior to the expiration of the period of tender validity, Moi University will notify the successful tenderer in writing that its tender has been accepted.

2.28.2 The notification of award will constitute the formation of the Contract but will have to wait until the contract is finally signed by both parties

2.28.3 Upon the successful Tenderer's furnishing of the performance security pursuant to paragraph 2.28, Moi University will promptly notify each unsuccessful Tenderer and will discharge its tender security, pursuant to paragraph 2.14

2.29 Signing of Contract

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

2.29.2 The parties to the contract shall have it signed within 30 days from the date of notification of contract award unless there is an administrative review request.

2.29.3 Within thirty (30) days of receipt of the Contract Form, the successful tenderer shall sign and date the contract and return it to Moi University.

2.30 Performance Security

2.30.1 Within Thirty (30) days of the receipt of notification of award from Moi University, 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 Moi University.

2.30.2 Failure of the successful tenderer to comply with the requirements of paragraph 2.27 or paragraph 2.28 shall constitute sufficient grounds for the annulment of the award and forfeiture of the tender security, in which event Moi University may make the award to the next lowest evaluated Candidate or call for new tenders.

2.31 Corrupt or Fraudulent Practices

2.31.1 Moi University requires that tenderers observe the highest standard of ethics during the procurement process and execution of contracts when used in the present regulations, the following terms are defined 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 Moi University, 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 Moi University of the benefits of free and open competition;

2.31.2 The University 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.

2.31.3 Further a tenderer who is found to have indulged in corrupt or fraudulent practices risks being debarred from participating in public procurement in Kenya.

SECTION III: GENERAL CONDITIONS OF CONTRACT

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SECTION III - GENERAL CONDITIONS OF CONTRACT

3.1 Definitions

3.1.1 In this Contract, the following terms shall be interpreted as indicated:-

(a) "The Contract" means the agreement entered into between Moi University 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, machinery, and/or other materials, which the tenderer is required to supply to Moi University under the Contract.

(d) " Moi University" means the organization purchasing the Goods under this Contract.

(e) "The Tenderer' means the individual or firm supplying the Goods under this Contract.

3.2 Application

3.2.1 These General Conditions shall apply in all Contracts made by Moi University for the procurement installation and commissioning of equipment

3.3 Country of Origin

3.3.1 For purposes of this clause, "Origin" means the place where the Goods were mined, grown or produced.

3.3.2 The origin of Goods and Services is distinct from the nationality of the tenderer.

3.4 Standards

3.4.1 The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications.

3.5 Use of Contract Documents and Information

3.5.1 The tenderer shall not, without Moi University's prior written consent, disclose the Contract, or any provision therefore, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of Moi University in connection therewith, to any person other than a person employed by the tenderer in the performance of the Contract.

3.5.2 The tenderer shall not, without Moi University's prior written consent, make use of any document or information enumerated in paragraph 3.5.1 above

3.5.3 Any document, other than the Contract itself, enumerated in paragraph 3.5.1 shall remain the property of Moi University and shall be returned (all copies) to Moi University on completion of the Tenderer's performance under the Contract if so required by the Moi University.

3.6 Patent Rights

3.6.1 The tenderer shall indemnify Moi University against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in Moi University's country.

3.7 Performance Security

3.7.1 Within thirty (30) days of receipt of the notification of Contract award, the successful tenderer shall furnish to Moi University with performance security in the amount specified in Special Conditions of Contract.

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

3.7.3 The performance security shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to Moi University 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 Moi University, in the form provided in the tender documents.

3.7.4 The performance security will be discharged by Moi University 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

3.8 Inspection and Tests

3.8.1 Moi University or its representative shall have the right to inspect and/or to test the goods to confirm their conformity to the Contract specifications. Moi University shall notify the tenderer in writing in a timely manner, of the identity of any representatives retained for these purposes.

3.8.2 The inspections and tests may be conducted in 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 Moi University.

3.8.3 Should any inspected or tested goods fail to conform to the Specifications, Moi University may reject the equipment, and the tenderer shall either replace the rejected equipment or make alterations necessary to make specification requirements free of costs to Moi University.

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

3.8.5 Nothing in paragraph 3.8 shall in any way release the tenderer from any warranty or other obligations under this Contract.

3.9 Packing

3.9.1 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.

3.9.2 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

3.10 Delivery and Documents

3.10.1 Delivery of the Goods shall be made by the tenderer in accordance with the terms specified by Moi University in its Schedule of Requirements and the Special Conditions of Contract

3.11 Insurance

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

3.12 Payment

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

3.12.2 Payments shall be made promptly by Moi University as specified in the contract

3.13 Prices

3.13.1 Prices charged by the tenderer for goods 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.

3.13.2 Contract price variations shall not be allowed for contracts not exceeding one year (12 months)

3.13.3 Where contract price variation is allowed, the variation shall not exceed 10% of the original contract price.

3.13.4 Price variation request shall be processed by Moi University within 30 days of receiving the request.

3.14. Assignment

3.14.1 The tenderer shall not assign, in whole or in part, its obligations to perform under this Contract, except with Moi University's prior written consent

3.15 Subcontracts

3.15.1 The tenderer shall notify Moi University 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

3.16 Termination for default

3.16.1 Moi University 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 Moi University

(b) if the tenderer fails to perform any other obligation(s) under the Contract

(c) if the tenderer, in the judgment of the Moi University has engaged in corrupt or fraudulent practices in competing for or in executing the Contract

3.16.2 In the event Moi University terminates the Contract in whole or in part, it may procure, upon such terms and in such manner as it deems appropriate, equipment similar to those undelivered, and the tenderer shall be liable to Moi University for any excess costs for such similar goods.

3.17 Liquidated Damages

3.17.1. If the tenderer fails to deliver any or all of the goods within the period(s) specified in the contract, Moi University 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 items up to a maximum deduction of 10% of the delayed goods. After this the tenderer may consider termination of the contract.

3.18 Resolution of Disputes

3.18.1 Moi University and the tenderer shall make every effort to resolve amicably by direct informal negotiation and disagreement or dispute arising between them under or in connection with the contract

3.18.2 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.

3.19 Language and Law

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

3.20 Force Majeure

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

SECTION IV - SPECIAL CONDITIONS OF CONTRACT

4.1. Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, between the GCC and the SCC, the provisions of the SCC herein shall prevail over these in the GCC.

42. Special conditions of contract as relates to the GCC

REFERENCE OF GCC	**SPECIAL CONDITIONS OF CONTRACT**
3.7.1 *performance security*	*5% of the awarded amount*
3.12.1 *terms of payment*	*Payment after delivery of Energy Laboratory Equipment*

SECTION V - TECHNICAL SPECIFICATIONS

5.1 General

5.1.1 These specifications describe the requirements for goods. Tenderers are requested to submit with their offers the detailed specifications, drawings, catalogues, etc for the products they intend to supply

5.1.2 Tenderers must indicate on the specifications sheets whether the equipment offered comply with each specified requirement.

5.1.3 All the dimensions and capacities of the equipment to be supplied shall not be less than those required in these specifications. Deviations from the basic requirements, if any shall be explained in detail in writing with the offer, with supporting data such as calculation sheets, etc. Moi University reserves the right to reject the products, if such deviations shall be found critical to the use and operation of the products.

5.1.4 The tenderers are requested to present information along with their offers as follows:

(i) Shortest possible delivery period of each product
(ii) Information on proper representative and/or workshop for back-up service/repair and maintenance including their names and addresses.

Appendix to instructions to Tenderers

The following information regarding the particulars of the tender shall complement, supplement or amend the provisions of the instructions to tenderers. Wherever there is a conflict between the provision of the instructions to tenderers and the provisions of the appendix, the provisions of the appendix herein shall prevail over those of the instructions to tenderers.

Instructions to tenderers	**Particulars of Appendix to instructions to tenderers**
2.1	Particulars of eligible tenders: citizen enterprises/companies registered in Kenya pre-qualified suppliers for Laboratory Equipment
2.3	Price to be charged for tender documents. Kshs.1,000 for hard copy documents and free for documents issued electronically.
2.11	Particulars of other currencies allowed: None
2.12	Particulars of eligibility and qualification documents of evidence required. Copies of: i. Certificate of Registration ii. Certificate of valid tax compliance iii. Form of Tender iv. Fully filled confidential business questionnaire v.
2.14	Particulars of tender security if applicable, as below; a. Cash; b. A bank guarantee; c. Such insurance company guarantee as may be approved by the Authority; d. A letter of credit; or e. Guarantee by a deposit taking microfinance institution, Sacco Society, Youth Enterprise Development Fund or the Women Enterprise Fund. **(see MR5)**
2.15	Validity of Tenders: Tenders shall remain valid for 150 days from the opening date .
2.17.2	Bulky tenders which do not fit in the tender box shall be delivered to the Procurement Department situated at Administration Block Ground Floor.

<table>
<tr><td>2.24</td><td>Evaluation criteria
The following requirements must be met by the tenderer not withstanding other requirements in the tender documents:
a) <u>Mandatory Requirements (MR</u>)

<table>
<tr><th>No.</th><th>Requirements</th><th>Responsive or not responsive</th></tr>
<tr><td>MR1</td><td>Must submit a copy of certificate of registration/incorporation</td><td></td></tr>
<tr><td>MR2</td><td>Must submit a copy of a valid tax compliance certificate</td><td></td></tr>
<tr><td>MR3</td><td>Must fill the price schedule in the format provided</td><td></td></tr>
<tr><td>MR4</td><td>Must fill the form of tender in the format provided</td><td></td></tr>
<tr><td>MR5</td><td>Must submit a dully filled tender security form in format provided as per the schedule attached.</td><td></td></tr>
<tr><td>MR6</td><td>Must submit a dully filled up confidential business questionnaire in format provided.</td><td></td></tr>
<tr><td>MR7</td><td>A list of all the directors of the bidding company, Name of the owners and beneficiaries (Attach documentary evidence) CR 12 Copy.</td><td></td></tr>
<tr><td>MR8</td><td>The principal shareholders of the bidding company, or list of partners or the proprietor as may be appropriate;</td><td></td></tr>
<tr><td>MR9</td><td>A signed statement that the bidder does not have a conflict of interest in relation to the procurement</td><td></td></tr>
<tr><td>MR10</td><td>A signed statement that the bidder, or any of its directors or officers, have not been convicted of any criminal offence relating to professional conduct or making or false statement or misrepresentations to its qualifications to enter into a procurement contract with a period of three years preceding the commencement of procurement proceedings; and</td><td></td></tr>
<tr><td>MR11</td><td>A signed statement that the bidder is not debarred from participating in public procurement.</td><td></td></tr>
<tr><td>MR12</td><td>Certified copy of CR12 form issued by the registrar of companies for limited companies and copies of ID (s) for sole proprietor and partnership of the bidding company;</td><td></td></tr>
<tr><td>MR13</td><td>Must paginate all pages in the Bid document</td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td></td><td>At this stage, the tenderers' submission will either be responsive in all the mandatory requirements (MR) above or non-responsive. The non-responsive submission will be eliminated from the entire evaluation process and will not be considered further.</td></tr>
<tr><td>Instructions to tenderers</td><td>Particulars of Appendix to instructions to tenderers</td></tr>
</table>

b) Technical Scores (T.S)

This section (technical scores) will carry a total of 80% of the whole evaluation

No.	Evaluation Attribute	Tenderer's Response	Weighting Score	Max. Score
1	Number of years in Laboratory Equipment		• 5years and above (10marks) • 3-below 10 years and above (5marks) • 1-below 5 years (2marks) • Below 1 year (0marks)	10
2	Provide a list of clients and references which the supplier has done similar supplies in the last 3 years.		• 5 or more clients with references (10marks) • Others prorated at: No. of clients x 10 / 5	10
3	5No. inspection and acceptance certificates or serviced LPO or contracts for Laboratory Equipment		• 5 or more evidence with references (10mrks) • Others prorated at: No. of evidence x 10 / 5	10
4	Please Indicate Minimum Time Required to supply Equipment After An LPO Is Issued (Please Note That This Will Be Used In Performance Evaluation For The Successful Bidder)		• 30 days -10marks • 40 days – 8marks • 45 days – 5marks • Above 45 days – 0 mark	10
5	Physical facilities: Provide details of physical address (showroom) and contacts – attach evidence utility bills and pictures		• Details of physical address and contacts with copy of title or lease documents or latest utility bill-5marks • Pictures of the showroom-5marks\not provided – 0 marks	10
6	The supplier meeting the required specification as per the Table below.		If the service meets all the required specifications as per the technical specification provided 50marks If not 0-marks	50
Only bidders who score 70% and above will be subjected to financial evaluation. Those who score below 70% will be eliminated at this stage from the entire evaluation process and will not be considered further.				

Instructions to tenderers	Particulars of appendix to instructions to tenderers
2.27 a	Particulars of post – qualification if applicable Moi University may inspect the premises and/or check the accuracy of any of all the information provided by the bidder before awarding a contract.
2.27 b	Award criteria: Award will be made to the lowest evaluated bidder
Other's as necessary	Complete as necessary. Submit two copies, original and a copy.

TECHNICAL SPECIFICATIONS FOR LABORATORY EQUIPMENT SUPPLY, INSTALLATION, COMMISSIONING, TRAINING AND DELIVERY OF LABORATORY EQUIPMENT

Sno.	Item	Specification/description	Qty
1.	**Solar Photovoltaics (PV) Training and Research System inc. Software**	Solar Photovoltaics (PV) Training and Research System inc. Software (Like Horizon Photovoltaic Trainer) complete with the following modules: Voltage range ±2V to ±20V Current range 0.1mA to 16 A • Solar PV Modules (Mono and Poly) • Halogen lamp with regulator for artificial source of radiation • Power conditioning unit (Auto/Manual mode) • Control and measuring unit with energy meter, • Battery bank (2 batteries) • AC and DC Loads • Battery charger • PV tester kit with I-V curve tracing, and I-V measurement software • Instruction manual <u>Accessories</u> • Lux meter (like PCE-172 ICA) • Power analyser (1 -3 phase) with data logger functionality like PCE-360 • Thermal imager (Infrared) –Thermography (like PCE – HDM20) Digital Solarimeter	**1 No**

Sno.	Item	Specification/description	Qty
2.	**Hall Effect measurement System**	HMS5000 or any other equipment with similar specification Sample Size: 5x5 To 25x25 Mm Magnet Power: 0.55 T Magnet Type: Permanent Temperature Range: 77k To 350k, Upon Model Resistivity Range:10e-4 To 10e7 Ohm.Cm Concentration Range:10e7 To 10e21 Cm-3 Mobility Range:1 To 10e7 Cm2/Vs Software: Contact Check, Measure, Extraction-Export Of Parameters, Temperature. Computer: Standard Pc as shown below 	1No

Sno.	Item	Specification/description	Qty
3.	**Differential Thermal Analyzer**	**Technical Specifications** Temperature range: Room – 1150°C Measure Range: 0 - ±2000µV DTA Accuracy: ±0.1µV Heating rate: 1 – 80°C/min Temperature resolution: 0.1°C Temperature accuracy: ±0.1°C Temperature control: Heating: Process control parameters adjustable; Cooling: air-cooled process control.; Thermostat: programmable thermostats, can be set. Furnace: With the lid, instead of the traditional lift furnace. Air-flow: Gas flow meter (optional), the atmosphere	1No

Sno.	Item	Specification/description		Qty
			converter.	
		Data interface	Standard USB interface cable and operating software.	
		Display	LCD touch-screen display.	
		Parameter standard	With calibration function, temperature calibration	
		Baseline adjustable	Users can adjust by baseline slope and intercept.	
		Power	AC 220-240V	

Sno.	Item	Specification/description	Qty
4.	**Compression Moulding Machine**	**Specification** • Nominal force: 80T • Nominal force of return drive: 10T • Maximum liquid pressure: 25Mpa • Slider stroke: 300mm • The opening height: 400mm • The smallest distance between table and slider: 100mm • Platen sizes: 300*300 mm • Overall dimension; - LR- 1200 mm - FB- 1000mm - H- 200mm • Speed of slider; - Down: 100 mm/s - Pressing: 4-20 mm/s - Return: 80 mm/s • Holding pressure time:15Min (adjustable • Press working cycle: Semi-auto • Heating plates: 200-450℃ (adjustable) • Weight- 1500KG. **Cylinder Features.** • Cylinder Barrel- Made by 45# forged steel, quenching and tempering. • Fine grinding after rolling. **Piston Rod** • Made by 45# forged steel, quenching and tempering, HRC48~55 • The surface is rolled and then chrome-plated to ensure surface hardness above HRC48~55. • Roughness - 0.8 **Seals**	1No

Sno.	Item	Specification/description	Qty
		• Adopt Japanese NOK brand quality sealing ring **Piston** • Guided by copper plating, good wear resistance, ensuring long-term operation of the cylinder **Servo System Composition** • HC Series dedicated computer, CAN, CANlink, with multi-machine connection feeding robot. • High- precision position detecting device, CANopen, CAN multi-machine communication (IS580 driver, ISMG servo motor, IS630P), with multi-pump hydraulic servo system and high precision screw reciprocating position system). - **Servo Computer- Model P12EPS1** - **Computer Control System- Model Mitsubishi** - **Servo Driver, Model IS580** - **Servo Motor, Model ISMG Series** **Energy saving** • Energy saving rate up to 30%-80%. **Precision** • Position accuracy- 0.1mm • Special function position positioning accuracy ±0.01mm. • Pressure fluctuations of less than ±0.5 bar **Noise** • Noise of the hydraulic servo system should be 15-20 dB lower than that of the original variable pump. **System Features.** • Oil tank set forced cooling filtering system (industrial plate-type water cooling device, cooling by circulating water, oil temperature≤55℃, make sure machine can steadily pressing in 24 hours.) • The hydraulic system should adopt an integrated cartridge valve	

Sno.	Item	Specification/description	Qty
		control system with fast response speed and high transmission efficiency. • The oil tank should be equipped with an air filter to communicate with the outside to ensure that the hydraulic oil is not polluted. The connection between the filling valve and the fuel tank should have a flexible joint to prevent vibration from being transmitted to the fuel tank and completely solve the problem of oil leakage.	
5.	**Hub miller**	Mini posho mill 12 horse power motor 3 phase Mild steel gauge 6mm plate for the frame Electrical works 1,250-watt LG Electronics motor that gives both capacity and longevity An electric grain grinder that grinds over 100 lbs of hard samples in 1 hour without overloading Vendor must provide a one year WARRANTY Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1No

Sno.	Item	Specification/description	Qty
6.	**Alpha Step Surface Profiler Step**	The Alpha-Step D-500 stylus profiler Height: Nanometers to 1200µm • Low Force: 0.03 to 15mg • Video: 5MP high-resolution color camera • Keystone Correction: Removes distortion due to side view optics • Arc Correction: Removes error due to arc motion of the stylus • Compact Size: Smallest system footprint for a benchtop stylus profiler • Software: User friendly software interface with PC Capable of the following measurements: surface roughness, photoresist thickness depth of etched trenches, thickness of deposited material post lift-off	1No

Sno.	Item	Specification/description	Qty
7.	**Oscilliscopes**	Bandwidth: 100 MHz. Number of Channels: 2 Analog and 1 External Channel. Vertical Sensitivity: 2mV/div – 10V/div. Vertical Resolution: 8 Bits. Real Time Sampling Rate: 1GS/s (1 Channel) & 500 MS/s (Both Channels). Equivalent Sampling Rate: 25GS/s. Memory Depth: 16K Points (1 Channel) & 8K Points (Both Channels). Triggering Points: Edge, Pulse, Width, Slope, Video, Pattern, Continuous Time & Alternate. Cursor Measurements: Manual, Track & Auto. Interface/Connectivity: USB Device and Host, RS-232, P/F Out. Maximum Input Voltage: 1 MegaOhm || 15 PicoFarads, 300 Volts RMS, CATI. Display: 5.7 Inches (320x200) TFT QVGA with 64K Color LCD Backlit Display. Digital Filters: LPF, HPF, BPF & BRF.	2No

Sno.	Item	Specification/description	Qty
8.	**3D Printer (FDM**	**Printing Parameters** Printing technology: Fused Filament Fabrication Workspace: 220 x 260 x 185 mm Resolution: 0.05 mm - 0.3 mm The accuracy of the position of layers: 30 µm Positioning accuracy: XY 13 µm / Z 2.5 µm **Extruder- V-PORT (single or double head)** Maximum print temperature: 300°C Nozzle diameter: Standard: 0.4 mm (optional: 0.2, 0.6, 0.8, 1.0, 1.2) Filament diameter: 1,75 mm Recommended VSHAPER materials: HIPS, ASA, PET-G, PC-ABS, PA12, ABS, PA+CF, PA+GF, PC, PMMA Filament feeding accuracy: 1 µm **Working chamber** Construction: Closed (with constant temp. inside) Ventilation: Yes (carbon filter) **Working platform** Surface: Glass surface with exchangeable surface Heating: Yes Maximum temperature: 130°C Auto-leveling: Yes **Mechanical parameters**	1No

Sno.	Item	Specification/description	Qty
		Construction: Powdered steel Housing: Powdered aluminum + anodized aluminum Engines: Stepper motors Transmission: Linear guides **Electrical parameters** The volume of noise during printing: < 40 Db Power supply: 100-240V ~ 2A, 50-60 Hz **Control** Touch panel: Yes Display: Monochrome (128 x 64 px) Interfaces: USB, SD Card, Ethernet **Software** Control software: SOFTSHAPER Recommended operating system: Windows 10 - 64-bit **Physical description** The printer should feature a closed chamber to ensure equal temperature distribution, heated build platform, guarantee perfect first-layer adhesion and ventilation with Carbon filters to reduce the emission of harmful gas	

Sno.	Item	Specification/description	Qty
9.	**Industrial Portable Combustion gas Analyzer**	**Physical** CASE: 9.75” x 4” x 2.75” Aluminum case with magnetic Support. Weight: 3 lbs. PROBE: 9” L x 3/8” OD (other lengths available) Inconel stack probe. Probe housing connects to instrument via a 10 ft. hose (other lengths available) and water trap or Thermoelectric condenser. Maximum continuous Temperature: 2,000 F. **Electrical Power.** BATTERY: 4-6 VDC. Rechargeable NiMH (included) or 4 disposable AA alkaline cells. Approx. 6-8 hours operating time with water trap. AC Adapter/Charger: 120/240v. 60/50 Hz. 9vdc output External Battery Options. **Display.** Four line by 16 character Liquid Crystal Display with backlight illumination. **Printer.** Internal 2” thermal printer. **Data Storage**. Internal: 400 individually selectable buffers hold one complete set of measurements each in non-volatile memory. Buffer contents can be sent to printer or serial port. Data is stored by pressing the STORE key or automatically on a periodic basis.	1No

Sno.	Item	Specification/description	Qty
		Communications. Serial Port (RS-232 port) settings: 9600, N,8, 1 USB Port Bluetooth Wireless (Class 1 – 100m) **Fuels.** 15 Fuels: #2 Oil, #4 Oil, #6 Oil, Natural Gas, Anthracite, Bituminous, Lignite, Wood (50% H2O), Wood (0% H2O), Kerosene, Propane, Butane, Coke Oven Gas, Blast Furnace & Sewer Gas. Diesel, Gasoline, LPG, CNG, and all other engine fuels. Compliance level: Local, County, district, state and Federal emissions Reporting requirements. **Supplied with;** Calibration Kit without Calibration Gas (Demand Flow Regulator etc) 13" Inconel Probe Extension Thermal Printer Paper (3 per pack) Balston Filters (In-line filter after Thermoelectric Condenser) (Pack of 3) **Measurement** • O_2 (0-25%) • CO (0-8000ppm) • NO/NOx (0-5000ppm) • NO_2 (O-1000ppm) • SO_2 (0-5000ppm) • C_xH_y/HC (0-5%) • Gas sensors: Include: Field Replaceable Sensors; Stack Gas & Ambient Air Temperature Measurements; Draft & Differential Pressure Measurements; Efficiency, Loss, Excess Air, CO2 Calculations; 12"(300mm) Probe with 10'(3m) dual Hose; Water trap Assembly with Filter Cartridge; Large Full Colour	

Sno.	Item	Specification/description	Qty
		Graphic Display Screen; Rechargeable Lithium Ion Battery Pack with AC Charger; Internal Printer (Non-Fading Paper); QR Code Smartphone Apps (iOS & Android); Wireless REAL-TIME Bluetooth Smartphone App; Internal Memory for Data Storage (2000 tests); Automatic Periodic Data Saving (Data Logger); Software Package with Bluetooth & USB Cable; Protective Rubber Holster; Magnetic Support; Protective ABS Carrying Case; Instruction Manual; Calibration Certificate; Longer/High Temperature Probes	

Sno.	Item	Specification/description	Qty
10.	**Nitrogen generator with activated carbon filter Genius XE35 230V LC MS**	Battery Backup Uninterruptible Power Supply (UPS) Power Conditioner compatible with Q-TOF LC/MS MS Gas Flow: up to 35L/min Outlet Pressure: 116psi Purity: 95-99.5% Voltage: 230V AC Frequency: 50/60Hz Current: 12/8 amps Size (HxWxD) mm: 650 x 570 x 710mm Generator Weight: 92kg/202lbs Noise Level: 56 dBA UPS power Agilent backup- 10KVA online UPS Batteries Controller Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning.	1No

Sno.	Item	Specification/description	Qty
11.	**LCMS ZQ 2000 WATERS MASS SPECTROMETER ROTARY**	VACUUM PUMP SPECIFICATIONS Edwards E2M28 21 CFM Dual-Stage High Capacity Vacuum Pump Model E2M28 Vacuum pump type Dual stage rotary vane Power 240V 50/60Hz 1-PH 8.2A or 220V 50/60Hz 1-PH 4.1A (switchable) Power connection EU standard 3-PIN Motor power at 50Hz 750 watts Motor power at 60Hz 900 watts Peak pumping speed 21 CFM at 60Hz Ultimate vacuum without gas ballast 0.75 micron/millitorr Ultimate vacuum with gas ballast 11 micron/millitorr Unit dimensions (WxDxH) 23 x 6.75 x 11" Shipping dimensions (WxDxH) 31 x 11.5 x 19" Max water vapor inlet pressure 22.5 torr (30 mbar) Max allowed pressure at outlet 0.5 bar gauge/7 psig Max water vapor capacity 700 grams/hour Operating temperature range (12°C to 40°C) Oil capacity Minimum 1.4 quart (1.3 L), maximum 1.6 quart (1.5 L) Oil type Ultragrade 19 Nominal rotation speed 1400/1720 rpm	1No

Sno.	Item	Specification/description	Qty
		Noise level 57 dB(A) Inlet connection NW25/KF25 Outlet connection Nozzle 15mm external removable from 3/4 in BSP tapped hole Unit weight 45.3592 KG Shipping weight 54.4311 KG **STANDARD PACKAGE** Part description Quantity Part image Edwards E2M28 21 CFM dual stage vacuum pump 1 pc KF25 stainless steel vacuum bellow (3 ft) 1 pc KF25 wing nut flange quick clamp 2 pcs KF25 flange centering ring 2 pcs 110V standard 3-prong US power cord 1 pc Edwards ultra-grade 19 vacuum pump oil 2 pcs User's manual in a CD 1 pc This unit should be supplied with ultragrade 19 vacuum pump oil 5litres	

Sno.	Item	Specification/description	Qty
12.	**Digital heating mantle for holding 250 ml flask with magnetic stirrer**	250mL Electric Digital LCD Magnetic Stirring 0-1400prm 250Ml round bottomed flask diameter 29/32 material : pyrex Heating Mantle maximum temperature 450ºC , Power : 250W Voltage: 240V Thermometer probe Metallic stand No of heaters: one position Quantity: 2 Digital heating mantle for holding 250 mL flask with magnetic stirrer Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	2No

Sno.	Item	Specification/description	Qty
13.	**Digital heating mantle for holding 500 ml flask with magnetic stirrer.**	500mL Electric Digital LCD Magnetic Stirring 0-1400prm 500 mL round bottomed flask diameter 29/32 material : Pyrex Heating Mantle maximum temperature 450ºC , Power : 250W Voltage: 240V Thermometer probe Metallic stand No of heaters: one position Quantity: 2 Digital heating mantle for holding 250 mL flask with magnetic stirrer Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1No

Sno.	Item	Specification/description	Qty
14.	**Digital Magnetic stirrer with Electric hotplate**	Plate Size 170*170mm Heating Mantle maximum temperature 450ºC , Work Plate Material Aluminum Stirring Speed Range 100-2000rpm Power Consumption 250W Power Supply AC 240V±10%, 50/60Hz Standard Accessory PT100 sensor rack, stirrer bar External Size(W*D*H) 250*180*120mm Gross Weight: 3.4Kg Heating Temp. 380 ℃ 380℃ Thermometer probe Metallic stand Quantity: 1 Digital heating mantle for holding 250 mL flask with magnetic stirrer Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	4No

Sno.	Item	Specification/description	Qty
15.	**UPS power Agilent backup**	LCMS/LCMS/MS POWER BACK UP SPECIFICATIONS 15KW PURE SINE WAVE INVERTER The back-up system should have the following specifications. 1. Advanced performance by CPU control. 2. Auto Voltage Regulation i.e. wide input voltage from 110-275V. Should have AVR function to enable adapt to all electric environment. 3. Should have intelligent battery charging, the charging current can be adjusted based on battery capacity. 4. User can use RS232 program to change settings on shutdown time. 5. Should have under voltage, overload, over discharge and short circuit protection. TECHNICAL SPECIFICATIONS AC Input Rated voltage AC input voltage is the same value as the AC output DC Input Rated voltage 96V/ 108V/ 120V/ 192V DC (can be customized) Rated current 78A @192V DC AC Output Rated output power 15kW Output waveform Pure sine wave Rated voltage 208V/ 220V/ 230V/ 240V/ 380V/ 400V/ 415V/ 460V/ 480V (optional) Phase Single phase 4 wire+PE wire (single phase/ split phase can be	1No

Sno.	Item	Specification/description	Qty
		customized, please contact us by email) Frequency 50Hz or 60Hz Power factor >0.99 Overload ability 150%, 5 seconds Efficiency >93% Waveform distortion rate THD<3% Dynamic response (0 to 100% load) 5%, ≤50ms Display LCD Running mode Working continuously Electrical insulation properties 2000Vac, 1min Communication interface RS485 (optional) Protection Function Protection Input reverse polarity, under voltage, over-voltage, output over-current, short circuit, overheating Cooling method Fan-cooled Short-circuit protection No automatic recovery, need to restart the machine Working Environment Noise (1 meter) ≤50dB Degree of protection IP20 (indoor) Working altitude ≤2000m Working temperature -25~+55°C	

Sno.	Item	Specification/description	Qty
		Relative humidity 0~90%, non-condensing BATTERY SPECIFICATIONS S/No Specifications Quantity (pcs) 1. 12volts 200Ah solar battery With Warranty. (preferred Sollatek batteries (optional) quality is important) 8 Pcs 2. Flexible Battery Cable - 20mm sq. 10 METERS SHOULD HAVE LUGS 10 Meters B: The suppliers should be informed that this are two separate items needed. The inverter system as described above and batteries as described below and quantity required.	

Sno.	Item	Specification/description	Qty
16.	**HPLC Agilent PC desktop**	PROCESSOR: DESK PRO MT Core i7 Memory: 7700 8GB 1TB Hard drive: 1TB SATA-II 7,200-rpm HDD 18.5 inch Screen PU: 3.0GHz Intel Core i7-920 (overclocked) operating system: windows 2017 MEMORY:16 GB DDR4-2666 SDRAM (2 x 8 GB) MAXIMUM MEMORY Upgradeable to 64 GB MEMORY SLOTS 4 DIMM NETWORK INTERFACE Integrated 10/100/1000 Gigabit Ethernet LAN WIRELESS TECHNOLOGY Wi-Fi 5 (2x2) and Bluetooth EMORY SLOTS 4 DIMM POWER SUPPLY 750 W Platinum efficiency power supply EXTERNAL I/O PORTS Front:1 microphone-in; 1 headphone/microphone combo; 2 USB 3.1 Gen 1 Rear:1 USB 3.1 Type-C™ Gen 2; 4 USB 3.1 Gen 1; 1 USB 3.1 Gen 2 EXPANSION SLOTS: 1 PCIe x16; 3 M.2 COLOR: Shadow black front bezel, dark chrome logo, glass side panel POINTING DEVICE HP USB Wired Optical Mouse KEYBOARD HP USB Wired Keyboard with volume control DIMENSIONS (W X D X H) 6.5 x 14.06 x 17.05 in WEIGHT 23.15 lb	3No

Sno.	Item	Specification/description	Qty
		SOFTWARE INCLUDED WARRANTY 1 year hardware warranty Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	
17.	Air Conditioner	Ductless AC units rely on energy efficient heat pumps to heat and cool. Provide cooling and heating between 9,000 BTU's and 42,000 BTUs an hour Indoor Design Conditions Special equipment plant DB : 20°C ± 1°C (68°F ± 2°F) RH : ≤ 50% Duty Cycle : 24 Hours operation per day Noise Level: 65-70dBA For laboratory use Grilles material Used & Hardware : Aluminium Grilles & Brass Hardware. WARRANTY 1 year hardware warranty Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1No

Sno.	Item	Specification/description	Qty
18.	**HPLC Agilent printer-Laser**	COLOR laser jet PRO Paper handling: 50-sheet multipurpose input tray (Tray 1) Automatic duplex printing Colored Cartridge printer and black/white cartridge printer Connectivity: 10/100/1000 Ethernet LAN connection with IPv4 and IPv6 Hi-Speed USB 2.0 Walk-up USB port Print server for wireless network connectivity operating system: windows 2017 Height *depth *height 295.7mm* 472.3mm*43.6mm Weight: 18.9 Kg POWER SUPPLY 750 W Platinum efficiency power supply WARRANTY 1 year hardware warranty Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1No
19.	**Magnetic stirring bar**	Magnetic bar stir mixer PTFE corrosion Acid Alkali Resistance assorted sizes in sets White in color Quantity: 5 sets	5Sets

Sno.	Item	Specification/description	Qty
20.	**Soil Size Analyser - Lab Test Sieve Shaker**	**Specifications:** • Function: particle size analyser • Diameter: 200mm standard • Sieve layer: 1-7 layers is available • Screen size range: 1mm -10mm mesh • Driven mode: vibration motor driven. • Material: All stainless steel SS304.	1No

Sno.	Item	Specification/description	Qty
21.	**PCR Thermal cycler Machine**	**DETAILS OF SPECIFICATIONS** Temperature accuracy/uniformity ±0.5 °C/±0.5 ° Programme temperature range 4°C to 99.9 °C Sample capacity: 0.2 ml x 96 tubes 96 × 0.2 mL PCR tubes or 1 × 96-well PCR plate or up to 71 x 0.5 mL PCR tubes Temperature control mode: Fast, Standard, Safe Heating/cooling method: Peltier Maximum heating/heating rate: 5°C/3.5°C per second Gradient temperature range: 30°C to 99 °C Gradient block capability: 12 columns Programme memory: > 700 Programmable lid temperature: 100 to 115 °C **Includes:** 96 well block, large backlit LCD with graphical display, large alphanumeric, function and arrow keys Maximum gradient temperature difference: 1 – 20 °C Heating technology of the block: Peltier elements, Triple Circuit Technology Temperature increments/decrements Lid descent and closing pressure: flexlid technology with Thermal Sample Protection User program folder: >700 Password protected programs	1No

Sno.	Item	Specification/description	Qty
		Communication: USB, Ethernet, CAN in, CAN out Dimensions: 250 x 412 x 321mm Weight: 10.4 Kg Electrical: 240V Vendor must provide Manufacturer Authorization letter/certificate Delivery Mode : Supply, installation , testing, Training and commissioning All equipment supplied must have an after sale service available in Kenya	

Sno.	Item	Specification/description	Qty
22.	**Nano Drop Spectrophotometer**	Sample size: 2.0 – 10 µL Path length: 1 mm (with auto - ranging to 0.2 mm) Light source: Xenon flash lamp Detector type: CMOS photodiode array Wavelength range: 200 nm – 830 nm Wavelength accuracy: 1nm Wavelength resolution: ≤4 nm Absorbance precision: 0.003 absorbance (1mm path) Absorbance accuracy: ≤0.002 at A = 0 ≤0.005 (0.5 %) at A = 1 Absorbance range: 0 A – 3,0 A(260 nm) Detection limit: 2.5 ng/µL Maximum concentration : 1,500 ng/µL Measurement cycle time less than 10 seconds Sample pedestal material of construction: quartz glass and aluminium Operating voltage: 100 – 240V, 50 – 60Hz Operating power consumption: 15W Standby power consumption: 5 W Included in system Software, compatible with windows 7 or 10 Operators and maintenance manual to be supplied Training on operation and maintenance for staff On-site installation and commissioning and training	1No

Sno.	Item	Specification/description	Qty
		System warranty: One year Vendor to provide Manufacturer's Authorization Certificate	
23.	**PCR Refrigerated Microcentrifuge**	**DETAILS OF SPECIFICATIONS** Max. RCF 30,130 x g Max. speed 17,500 rpm Max. capacity: 48 x 1.5/2.0]mL Rotors available: 12 Acceleration time 14s Deceleration time 15 s Timer: 30s to 99:59h, with continuous run function SOFT brake function, yes Lid Lock Safety Yes, lid opens automatically on run completion Noise level: <58dB(A) with Rotor F-45-30-11 Dimensions (W x D x H) 230 x 262 x 131 mm Accessories Reduction Adaptors for 0.2 / 0.4 ml Microtubes Certifications: • CSA certified • CE marked • UL listed • IVD compliant Dimensions: 24 × 32 × 23 cm Supply, installation, testing, Training and commissioning Vendors must provide Letter of authorization/ certificate	1No

Sno.	Item	Specification/description	Qty
24.	**PCR Heating block**	Timer: 15s to 99:30 h, continuous Heating rate Max: 9.0 °C/min Cooling rate Max: 5.0 °C/min Interfaces: USB interface Power supply: 220 – 240V, 50 – 60Hz Max. power consumption 200 W Dimensions (W × D × H) 20.6 × 30.4 × 13.6 cm Weight w/o accessories: 4.4 kg Temperature range Min: 30°C below RT, max: 110°C Temperature accuracy Max: ±0.5°C at 20-45 °C Temperature settings: -10°C to 110 °C Wide range of interchangeable aluminum smart block alloy heat blocks provide versatility and allow for easy cleaning and disinfecting Temperature Uniformity - ≤ ± 1°C Voltage – 240V Certifications/Compliance - CE, cULus, RoHS No. of Blocks - 1 (Smartblock 1.5ml For 24 Tubes ordered separately) Fuse - 250V 5A Vendors must provide Letter of authorization/ certificate	1No

Sno.	Item	Specification/description	Qty
25.	**Water bath**	**Temperature** **Setting temperature range:** +10 to +95 °C and boiling stage **Working temperature range in °C:** min. 5 above ambient up to +95 °C with additional boiling mode **Temperature sensor:** 1 Pt100 sensor class A in 4-wire-circuit **Timer:** integrated digital timer from 1 min. to 99,59 hours for: ON continuous operation WAIT (delayed on for continuous and limited timed operation) HOLD **Temperature control:** mechanical temperature limiter TB protection class 1 switching the heating off at approx. 30°Cabove max. temperature of the bath **Temperature control:** in case of overtemperature due to failure, the heating is switched off at approx. 10°Cabove the set temperature (fixed value) **Auto diagnostic system** microprocessor PID-temperature controller with integrated auto diagnostic system with fault indicator **Heating Baths:** corrosion-proof large-area heating on three sides **Controller:** digital display (LED) of set and actual temperature (0,1°C resolution) and of (remaining)programme time **Dimensions W x H x D in mm:** w(A) x h(C) x d(B): 350 x 140 x 290 mm **Interior** easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing, material no. 1.4301	1No

Sno.	Item	Specification/description	Qty
		(ASTM 304), laser-welded **Volume** 14 l **Liquid level minimum:** (H) 97 mm **Liquid level maximum:** (I) 120 mm	

Sno.	Item	Specification/description	Qty
26.	**Gel documentation system**	**DETAILS OF SPECIFICATIONS** UV Transilluminator: 312nm, 21x26cm (WxL); 6x8W tubes Resolution: 5 mega pixels (2592x1944 pixels max) Sensor: CMOS, 1/2.5". monochrome Lens: 5mm focal length; aperture F1.2 Image Bit-Depth Sensor: 12-bit (0-4095 grey levels) Filter Camera: 620nm EtBr (standard); optional 520, 560, 580nm filters Image Storage: PC or Laptop Connection to Operating Device: USB to PC Operating System Requirements: Windows®7 , 8 and 10 (64bit & 32bit) / for Software XP / Vista Front Panel Display: LED Viewing Window: 560nm universal orange filter White Light: 6x1W LED (standard) for gel positioning Blue LED Epi-illumination: excitation wavelength 470nm; connects Safety: Safety interlock switch on front door panel; disconnects UV transilluminator on opening; complies with CE, FCCstandards USB Port: For PC Power Rating Dual voltage: 110-230 VAC Weight: 25kg Gel imager must be supplied with 10 x 10cm UV electrophoresis tray for 2 x 16 sample, 1mm thick combs, casting dams, loading guides and 300V, 400mA Mini Power supply, 60W - 100-240VAC	1No

Sno.	Item	Specification/description	Qty
27.	**PCR COOLER and cooler boxes**	PCR cooler Clear temperature indicator: Color of PCR cooler changes when temperature exceeds 7 °C Accommodates PCR-vessels as tubes, strips, or plates for flexible vessel usage Utilizes dry incubation technology Keeps an entire 96-well PCR plate cold for more than an hour at 0 °C (with two-hour precooling at -20 °C) for safe samples Handling system for sample set-up, protection, transport, and storage of sensitive samples – keep you samples safe **DNA/RNA Sample transport mini cooler boxes** > Ideal for cooling, transporting and storing deep-frozen samples > Utilizes Dry incubation technology > Holds 24 micro tubes (e.g., 0.5 mL or 1.5 mL/2.0 mL) > Two versions of IsoPack (cold pack) available: White maintains 0 °C for up to 6 hours Blue maintains -21 °C for up to 3 hour > Package should consists of a working rack, insulating box and two cool packs, specializes in cooling samples effectively and consistently at –21 °C or 0 °C over many hours. > All system components can be used separately > Racks are stackable, autoclavable and can be centrifuged in the MTP rotor	1No

Sno.	Item	Specification/description	Qty
28.	**Upright-80 Freezer and racks**	Insulation: Vacuum insulation panelling/polyurethane foam Capacity: 535 L Number of internal doors: 3 Max. racks per freezer: 12 (inclusive in the offer) Boxes per freezer: 5cm (2in) tall boxes: 336 7.5 cm (3in) tall boxes: 240 10cm (4in) tall boxes: 144 Holds up to 33,600 samples Dimensions internal (WxDxH): 64 x 61.5 x 136.5 cm Noise level: 56dB Dimensions (W × D × H): 80 × 86.7 × 195 cm Consumes only 13.2 kWh/day Number of shelves: 3 Supplier must offer 3 year warranty Supplier must provide manufacturer Authorization letter	1No

Sno.	Item	Specification/description	Qty
29.	**-20 Freezer**	Capacity: 700 L Operating range: -10° to -23°C Insulation: minimum insulation of 70 mm made of HD Injected Polyurathane Foam. Cooling system: Internal ventilation with two compressors and two independent electronics. Number of internal doors: 1 Number of shelves: 3 Max. racks per freezer: up to 8 (inclusive in the offer) standard USB port for free data transfer to computer High resistance spherical rollers for easy movement and adjustable feet Dimensions internal (WxDxH): 590x675x1500 mm Noise level: <45dB Dimensions (W × D × H): 80 × 86.7 × 195 cm 230VAC; 50Hz Supplier must offer 1 year warranty Supplier must provide manufacturer Authorization letter	1No

Sno.	Item	Specification/description	Qty
30.	**4-8**°C **Fridge- Freezer**	• Capacity: 300 L • Operating range: 0/+15°C • Insulation: minimum insulation of 70 mm made of HD Injected Polyurathane Foam. • Number of internal doors: 1 • Number of shelves: 3 • Max. racks per freezer: up to 8 (inclusive in the offer) • standard USB port for free data transfer to computer • High resistance spherical rollers for easy movement and adjustable feet • Cooling system: Internal ventilation with two compressors and two independent electronics. • Dimensions internal (WxDxH): 590x675x1500 mm • Noise level: <45dB • Dimensions (W × D × H): 480X500X845 • 230VAC; 50Hz • Supplier must offer 1 year warranty Supplier must provide manufacturer Authorization letter	1No

Sno.	Item	Specification/description	Qty
31.	**43 litre Benchtop Autoclave**	• Format: Front loading • Capacity: 43L • Temperature range: 100-138°C • Pressure range: 0.2-2.4 bar • Power requirements (heaters in chamber): Single phase version: 230V, 13A, 50/60Hz, (N+E). • Water requirements: Tap/softened water with <50ppm TDS; pH neutral. Manual fill. • Drainage requirements: A condensate bottle or a similar heat resistant receptacle is required. • Cooling locks: In accordance with H.S.E. PM73 preventing opening of the autoclave above 80ºC. (for • fluid & discard cycles) • Alarms: For Cycle Fault - Cycle Interruption - Sterilize Failure - Water Low - Door Unlocked • Controller: VGA (640x480) colour TFT + analogue resistive touchscreen • Controller hardware: Processor: Intel E620T 333Mhz • Memory: 256MB DDRAM, 32KB FRAM • Physical Memory: 2GB eMMC Flash Memory • Vendors must provide Letter of authorization/ certificate	1No
32.	**8 watt White Light Transilluminator**	• Filter Size: 21 x 21cm • Light Source: 470nm BLUE LED's or UV single wave (8W x 5 tubes) or UV dual Wave (8W x 9 Tubes) • Intensity: Switch high (100%)/ low (70%) single • Size: 400 x 190 x 350mm • UV & Blue light technology in one transilluminator. • Single or dual wavelength models available • Weight: 10.5Kg • Voltage: 110-240V (selectable) Vendors must provide Letter of authorization/ certificate	No

Sno.	Item	Specification/description	Qty
33.	**Real Time PCR**	Height - 130 mm (265 mm lid open) Width – 150 mm Length – 150 mm Weight- 2.1 Kg **THERMAL PERFOMANCE** Temperature Accuracy - + 0.25 degrees Temperature Uniformity _+ 0.05 degrees Ramp rates – Heating 4 degrees/second cooling 3 degrees /second Temperature Input range- 40-99 degrees. **OPTICAL** Detectors – Photodiode per channel. Excitation sources- High energy light emitting diode for each channel Channels- Green : ex 465 nm, em 510 nm Yellow : ex 540 nm, em 570 nm Orange : ex 585 nm, em 618 nm Red : ex 635 nm em, 675 nm Acquisition time: 1 second **REACTION VESSELS** Samples per instrument: 48 Reaction volume range: 10-30µl **ELECTRICAL**	1No

Sno.	Item	Specification/description	Qty
		AC Input: 100-240 VAC, 50/60 Hz 4.0A **OPERATING ENVIROMENT** Temperature: 18-35ºC Relative Humidity: 20-80% Equipment to come with Laptop	
34.	**Vortex Mixer combined for tubes and strips**	**SPECIFICATION;** Construction material: zinc alloy and techno-polymer to ensure optimum chemical resistance Support system: 4 anti-sliding feet for strong fixing and high stability Foam stand for n° 19 Eppendorf® type 1.5 ml microvials. Protection rating CEI EN 60529: IP 42 Electronic speed regulation: up to 3000 rpm Power Supply: 100-240V/50-60Hz Power: 15 W Weight: 2,7 Kg (5.9 lb)	1No

Sno.	Item	Specification/description	Qty
35.	**Analytical balance**	4 Decimal places Maximum weight 220g Large glass draught shield with 2 sliding doors for easy access to the items being weighed. Compact size, practical for small spaces. Simple and convenient 6-key operation. Voltage: 230V AC Large Weighing Chamber holds up to a 250mm volumetric flask Size (HxWxD) Weight: Wide Angle LCD Display Multi-Functional Weighing: %, PCS, g, mg. oz ozt, dwt, ct, mom, GN, t, TL Full Range Tare Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning.	2No

Sno.	Item	Specification/description	Qty
36.	**Rotary Evaporator**	Lift System: Manual Heating Bath: B-100 (20 - 95°C, 4L), Standard Joint: SJ 29/32 Glass Assembly: Vertical (V) Protective Coating: P+G safety coating Interface: I-100 Vacuum Pump: V-100 (1.5m3/h, 10mbar) Woulff bottle Voltage: 220 - 240V Easy plug & play extension to a fully integrated system including a digital central interface 1000mL heating flask 1000mL collection flask Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1No

Sno.	Item	Specification/description	Qty
37.	**PH Meter**	pH Range: -2.00 - 16.00 pH Resolution: 0.01 pH Dimension: 220 W - 175 D - 78 H mm Three-point calibration for the highest accuracy Automatic and manual temperature compensation Automatic and manual endpoint functions determine the stability of readings The height of the standalone electrode holder can be adjusted for maximum versatility Auto buffer recognition helps to avoid errors during the calibration process 99 sets of data memory and the ability to instantly recall the last calibration data Self-diagnostic software provides assurance that the meter is in proper working condition Each time a pH sensor is calibrated, an icon appears on the display to confirm the accuracy of the calibration process so you can ensure accurate measurement Connection to peripheral devices through RS232 port The height of the electrode holder can be adjusted to optimize placement of the electrode Quantity: 4 pH Meters Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate	4No

Sno.	Item	Specification/description	Qty
		Delivery mode: Supply, installation, testing, training and commissioning	
38.	**Conductivity Meter**	Range: 00.0 µS/cm - 199.9 mS/cm Resolution: Automatic Range, 0.1 °C Calibration: 1 Point, 3 Predefined Standards Memory: 99 Measurements, Last Calibration Data Quantity: 1 conductivity meter Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1No

Sno.	Item	Specification/description	Qty
39.	**UV Lamp visualizer Plus Cabinet**	Wavelength: 254/365/405nm Emitting area size: 33x20mm Work Plate Material Aluminum Stirring Speed Range 100-2000rpm Power Consumption 250W Power Supply AC 240V±10%, 50/60Hz Standard Accessory PT100 sensor rack, stirrer bar Product Size(W*D*H) 62*20*58mm Output intensity: 6-14W/CM2 Angle : 60º Thermometer probe Metallic stand Quantity: 1 Digital heating mantle for holding 250 mL flask with magnetic stirrer Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1No

SECTION VIII - STANDARD FORMS

8.1 FORM OF TENDER

Date _____
Tender No. _____

To: _____

_____
[Moi University]

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 deliver, install and commission (…… (*insert equipment description*) in conformity with the said tender documents for the sum of ……. (*total tender amount in words and figures*) or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Tender.

2. We undertake, if our Tender is accepted, to deliver install and commission the equipment 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 of equivalent to ____ _____ percent of the Contract Price for the due performance of the Contract , in the form prescribed by ……. …….(*Moi University).*

4. We agree to abid 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. This Tender, together with your written acceptance thereof and your notification of award, shall constitute a Contract, between us. Subject to signing of the Contract by the parties.

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 an on behalf of _____

8.2 CONFIDENTIAL BUSINESS QUESTIONNAIRE FORM

You are requested to give the particulars indicated in Part 1 and either Part 2(a), 2(b) or 2 (c) whichever applied 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 ……. E mail …….
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 ……
-

Part 2 (b) Partnership

Given details of partners as follows:

Name	Nationality	Citizenship Details	Shares
1. ……			
2. ……			
3. ……..			
4. ……..			

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. ……			
5 …….			

Date …….. Signature of Candidate ……..

- If a Kenya Citizen, indicate under "Citizenship Details" whether by Birth, Naturalization or registration.

8.3 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, installation and commissioning of …… *[Name and/or description of the equipment]* (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 Moi University}* (Hereinafter called "the Moi University") in the sum of …….. for which payment well and truly to be made to the said Moi University, 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 Moi University 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 Moi University up to the above amount upon receipt of its first written demand, without the Moi University having to substantiate its demand, provided that in its demand the Moi University 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 tender 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]*_____
(Amend accordingly if provided by Insurance Company)

BID SECURITY SCHEDULE

S/no	Item Description	Qty No	Tender Security Amount(Khs)
1	Solar Photovoltaics (PV) Training and Research System inc. Software	1	100,000
2	Hall Effect measurement System	1	50,000
3	Differential Thermal Analyzer	1	50,000
4	Compression Moulding Machine	1	100,000
5	Hub miller	1	30,000
6	Alpha Step Surface Profiler Step	1	N/A
7	Oscilliscopes	2	N/A
8	3D Printer (FDM	1	30,000
9	Industrial Portable Combustion gas Analyzer	1	30,000
10	Nitrogen generator with activated carbon filter Genius XE35 230V LC MS	1	N/A
11	LCMS ZQ 2000 WATERS MASS SPECTROMETER ROTARY	1	N/A
12	Digital heating mantle for holding 250 ml flask with magnetic stirrer	2	N/A
13	Digital heating mantle for holding 500 ml flask with magnetic stirrer.	1	N/A
14	Digital Magnetic stirrer with Electric hotplate	4	N/A
15	UPS power Agilent backup	1	N/A
16	HPLC Agilent PC desktop	3	N/A
17	Air Conditioner	1	N/A

18	HPLC Agilent printer-Laser	1	N/A
19	Magnetic stirring bar	5 set	N/A

20	Soil Size Analyzer-Lab Test Sieve Shaker	1	N/A

21	PCR Thermal cycler Machine	1	N/A
22	Nano Drop Spectrophotometer	1	N/A
23	PCR Refrigerated Micro centrifuge	1	N/A
24	PCR Heating block	1	N/A
25	Water bath	1	N/A
26	Gel documentation system	1	N/A
27	PCR Cooler and cooler boxes	1	N/A
28	Upright-80 Freezer and racks	1	N/A
29	-20 Freezer	1	N/A
30	4-8°C Fridge- Freezer	1	N/A
31	43 litre Benchtop Autoclave	1	N/A
32	8 watt White Light Transilluminator	1	N/A
33	Real Time PCR	1	30,000
34	Vortex Mixer combined for tubes and strips	1	N/A
35	Analytical balance	2	N/A
36	Rotary Evaporator	1	N/A
37	PH Meter	4	N/A
38	Conductivity meter	1	N/A
39	UV L amp visualizer plus cabinet	1	N/A

8.4 CONTRACT FORM

THIS AGREEMENT made the _____ day of _____ 20 _____ between …… [*name of Procurement entity)* of …….. [*Country of Procurement entity]* (hereinafter called "the Moi University) of the one part and …….. [*name of tenderer]* of …….. [*city and country of tenderer]* (hereinafter called "the tenderer") of the other part;

WHEREAS the Moi University invited tenders for certain 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 Moi University's Notification of Award

3. In consideration of the payments to be made by Moi University to the tenderer as hereinafter mentioned, the tender hereby covenants with Moi University to provide the goods and to remedy defects therein in conformity in all respects with the provisions of the Contract

4. Moi University hereby covenants to pay the tenderer in consideration of the provisions 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 Moi University

Signed, sealed, delivered by _____ the _____ (for the tenderer in the presence of _ _____

(Amend accordingly if provided by Insurance Company)

8.5 **PERFORMANCE SECURITY FORM**

To …….
[*Moi University]*

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 figure]* 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 you 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 _____

Signed and seal of the Guarantors

_____
[Name of bank or financial institution]

_____
[Address]

_____
[Date]

8.6 BANK GUARANTEE FOR ADVANCE PAYMENT FORM

To ……
[*Moi University]*

[Laboratory Equipment] ……..

Gentlemen and/or Ladies:

In accordance with the payment provision included in the Special Conditions of Contract, which amends the General Conditions of Contract to provide for advance payment, ……. [*name and address of tenderer]*(hereinafter called "the tenderer") shall deposit with the Moi University a bank guarantee to guarantee its proper and faithful performance under the said Clause of the Contract in an amount of …… ……. [*amount of guarantee in figures and words]*.

We, the ……. [*bank or financial institutions]*, as instructed by the tenderer, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the Moi University on its first demand without whatsoever right of objection on our part and without its first claim to the tenderer, in the amount not exceeding …… [*amount of guarantee in figures and words]*

We further agree that no change or addition to or other modification of the terms of the Contract to be performed there-under or of any of the Contract documents which may be made between the Moi University and the tenderer, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition, or modification.

This guarantee shall remain valid in full effect from the date of the advance payment received by the tenderer under the Contract until …… [*Date]*.

Yours truly,

Signature and seal of the Guarantors

_____
[Name of bank or financial institution]

_____
[Address]

_____
[Date]

8.7 MANUFACTURER'S AUTHORIZATION FORM

To [*Moi University]* ……..

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 letterhead of the Manufacturer and should be signed by a person competent.

8.8 LETTER OF NOTIFICATION OF AWARD

Address of Moi University
_____
_____

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

8.9 FORM RB 1

REPUBLIC OF KENYA

PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD

APPLICATION NO…….OF……..….20……...

BETWEEN

…….APPLICANT

AND

……RESPONDENT *(Moi University*)

Request for review of the decision of the…… (*Name of the Moi University)* of ……dated the…day of ……20…….in the matter of Tender No……..…of ……..20…

REQUEST FOR REVIEW

I/We……,the above named Applicant(s), of address: Physical address…….Fax No……Tel. No……..Email ……, hereby request the Public Procurement Administrative Review Board to review the whole/part of the above mentioned decision on the following grounds , namely:-

1.

2.

etc.

By this memorandum, the Applicant requests the Board for an order/orders that: -

1.

2.

etc

SIGNED ……. (Applicant)

Dated on…….day of ……/…20…

FOR OFFICIAL USE ONLY

Lodged with the Secretary Public Procurement Administrative Review Board on …… day of ……...20…..……

SIGNED

Board Secretary

MOI UNIVERSITY
PRICE SCHEDULE FOR GOOD

TENDER REF NO: MU/ONT/2/2020-2021

TENDER NAME: LABORATORY EQUIPMENT

SIGNATURE OF TENDERER .....

RUBBER STAMP .....

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
1.	**Solar Photovoltaics (PV) Training and Research System inc. Software**	Solar Photovoltaics (PV) Training and Research System inc. Software (Like Horizon Photovoltaic Trainer) complete with the following modules: Voltage range ±2V to ±20V Current range 0.1mA to 16 A • Solar PV Modules (Mono and Poly) • Halogen lamp with regulator for artificial source of radiation • Power conditioning unit (Auto/Manual mode) • Control and measuring unit with energy meter, • Battery bank (2 batteries) • AC and DC Loads • Battery charger • PV tester kit with I-V curve tracing, and I-V measurement software • Instruction manual Accessories • Lux meter (like PCE-172 ICA) • Power analyser (1 -3 phase) with data logger functionality like PCE-360 • Thermal imager (Infrared) –Thermography (like PCE – HDM20) Digital Solarimeter	**1**	
2.	**Hall Effect measurement System**	HMS5000 or any other equipment with similar specification Sample Size: 5x5 To 25x25 Mm Magnet Power: 0.55 T Magnet Type: Permanent Temperature Range: 77k To 350k, Upon Model Resistivity Range:10e-4 To 10e7 Ohm.Cm Concentration Range:10e7 To 10e21 Cm-3 Mobility Range:1 To 10e7 Cm2/Vs Software: Contact Check, Measure, Extraction-Export Of Parameters, Temperature. Computer: Standard Pc as shown below 	1	

Sno.	Item	Specification/description		Qty (No)	Unit Cost (ksh)
3.	**Differential Thermal Analyzer**	**Technical Specifications**		1	
		Temperature range	Room – 1150°C		
		Measure Range	0 - ±2000µV		
		DTA Accuracy	±0.1µV		
		Heating rate	1 – 80°C/min		
		Temperature resolution	0.1°C		
		Temperature accuracy	±0.1°C		
		Temperature control	Heating: Process control parameters adjustable Cooling: air-cooled process control. Thermostat: programmable thermostats, can be set.		
		Furnace	With the lid, instead of the traditional lift furnace.		
		Air-flow	Gas flow meter (optional), the atmosphere converter.		
		Data interface	Standard USB interface cable and operating software.		
		Display	LCD touch-screen display.		
		Parameter standard	With calibration function, temperature calibration		
		Baseline adjustable	Users can adjust by baseline slope		

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
		and intercept. Power AC 220-240V		

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
4.	**Compression Moulding Machine**	**Specification** • Nominal force: 80T • Nominal force of return drive: 10T • Maximum liquid pressure: 25Mpa • Slider stroke: 300mm • The opening height: 400mm • The smallest distance between table and slider: 100mm • Platen sizes: 300*300 mm • Overall dimension; - LR- 1200 mm - FB- 1000mm - H- 200mm • Speed of slider; - Down: 100 mm/s - Pressing: 4-20 mm/s - Return: 80 mm/s • Holding pressure time:15Min (adjustable • Press working cycle: Semi-auto • Heating plates: 200-450℃ (adjustable) • Weight- 1500KG. **Cylinder Features.** • Cylinder Barrel- Made by 45# forged steel, quenching and tempering. • Fine grinding after rolling. **Piston Rod** • Made by 45# forged steel, quenching and tempering, HRC48~55 • The surface is rolled and then chrome-plated to ensure surface hardness above HRC48~55. • Roughness - 0.8 **Seals** • Adopt Japanese NOK brand quality sealing ring **Piston** • Guided by copper plating, good wear resistance, ensuring long-term operation of the cylinder **Servo System Composition** • HC Series dedicated computer, CAN, CANlink, with multi-machine connection feeding robot. • High- precision position detecting device, CANopen, CAN multi-machine communication (IS580 driver, ISMG servo motor, IS630P), with multi-pump hydraulic servo system and high precision screw reciprocating position system). - **Servo Computer- Model P12EPS1** - **Computer Control System- Model Mitsubishi** - **Servo Driver, Model IS580** - **Servo Motor, Model ISMG Series** **Energy saving**	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
		• Energy saving rate up to 30%-80%. **Precision** • Position accuracy- 0.1mm • Special function position positioning accuracy ±0.01mm. • Pressure fluctuations of less than ±0.5 bar **Noise** • Noise of the hydraulic servo system should be 15-20 dB lower than that of the original variable pump. **System Features.** • Oil tank set forced cooling filtering system (industrial plate-type water cooling device, cooling by circulating water, oil temperature≤55℃, make sure machine can steadily pressing in 24 hours.) • The hydraulic system should adopt an integrated cartridge valve control system with fast response speed and high transmission efficiency. • The oil tank should be equipped with an air filter to communicate with the outside to ensure that the hydraulic oil is not polluted. The connection between the filling valve and the fuel tank should have a flexible joint to prevent vibration from being transmitted to the fuel tank and completely solve the problem of oil leakage.		
5.	**Hub miller**	Mini posho mill 12 horse power motor 3 phase Mild steel gauge 6mm plate for the frame Electrical works 1,250-watt LG Electronics motor that gives both capacity and longevity An electric grain grinder that grinds over 100 lbs of hard samples in 1 hour without overloading Vendor must provide a one year WARRANTY Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
6.	**Alpha Step Surface Profiler Step**	The Alpha-Step D-500 stylus profiler Height: Nanometers to 1200µm • Low Force: 0.03 to 15mg • Video: 5MP high-resolution color camera • Keystone Correction: Removes distortion due to side view optics • Arc Correction: Removes error due to arc motion of the stylus • Compact Size: Smallest system footprint for a benchtop stylus profiler • Software: User friendly software interface with PC Capable of the following measurements: surface roughness, photoresist thickness depth of etched trenches, thickness of deposited material post lift-off	1	
7.	**Oscilliscopes**	Bandwidth: 100 MHz. Number of Channels: 2 Analog and 1 External Channel. Vertical Sensitivity: 2mV/div – 10V/div. Vertical Resolution: 8 Bits. Real Time Sampling Rate: 1GS/s (1 Channel) & 500 MS/s (Both Channels). Equivalent Sampling Rate: 25GS/s. Memory Depth: 16K Points (1 Channel) & 8K Points (Both Channels). Triggering Points: Edge, Pulse, Width, Slope, Video, Pattern, Continuous Time & Alternate. Cursor Measurements: Manual, Track & Auto. Interface/Connectivity: USB Device and Host, RS-232, P/F Out. Maximum Input Voltage: 1 MegaOhm || 15 PicoFarads, 300 Volts RMS, CATI. Display: 5.7 Inches (320x200) TFT QVGA with 64K Color LCD Backlit Display. Digital Filters: LPF, HPF, BPF & BRF.	2	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
8.	**3D Printer (FDM**	**Printing Parameters** Printing technology: Fused Filament Fabrication Workspace: 220 x 260 x 185 mm Resolution: 0.05 mm - 0.3 mm The accuracy of the position of layers: 30 µm Positioning accuracy: XY 13 µm / Z 2.5 µm **Extruder- V-PORT (single or double head)** Maximum print temperature: 300°C Nozzle diameter: Standard: 0.4 mm (optional: 0.2, 0.6, 0.8, 1.0, 1.2) Filament diameter: 1,75 mm Recommended VSHAPER materials: HIPS, ASA, PET-G, PC-ABS, PA12, ABS, PA+CF, PA+GF, PC, PMMA Filament feeding accuracy: 1 µm **Working chamber** Construction: Closed (with constant temp. inside) Ventilation: Yes (carbon filter) **Working platform** Surface: Glass surface with exchangeable surface Heating: Yes Maximum temperature: 130°C Auto-leveling: Yes **Mechanical parameters** Construction: Powdered steel Housing: Powdered aluminum + anodized aluminum Engines: Stepper motors Transmission: Linear guides **Electrical parameters** The volume of noise during printing: < 40 Db Power supply: 100-240V ~ 2A, 50-60 Hz **Control** Touch panel: Yes Display: Monochrome (128 x 64 px)	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
		Interfaces: USB, SD Card, Ethernet **Software** Control software: SOFTSHAPER Recommended operating system: Windows 10 - 64-bit **Physical description** The printer should feature a closed chamber to ensure equal temperature distribution, heated build platform, guarantee perfect first-layer adhesion and ventilation with Carbon filters to reduce the emission of harmful gas		

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
9.	**Industrial Portable Combustion gas Analyzer**	**Physical** CASE: 9.75" x 4" x 2.75" Aluminum case with magnetic Support. Weight: 3 lbs. PROBE: 9" L x 3/8" OD (other lengths available) Inconel stack probe. Probe housing connects to instrument via a 10 ft. hose (other lengths available) and water trap or Thermoelectric condenser. Maximum continuous Temperature: 2,000 F. **Electrical Power.** BATTERY: 4-6 VDC. Rechargeable NiMH (included) or 4 disposable AA alkaline cells. Approx. 6-8 hours operating time with water trap. AC Adapter/Charger: 120/240v. 60/50 Hz. 9vdc output External Battery Options. **Display.** Four line by 16 character Liquid Crystal Display with backlight illumination. **Printer.** Internal 2" thermal printer. **Data Storage**. Internal: 400 individually selectable buffers hold one complete set of measurements each in non-volatile memory. Buffer contents can be sent to printer or serial port. Data is stored by pressing the STORE key or automatically on a periodic basis. **Communications.** Serial Port (RS-232 port) settings: 9600, N,8, 1 USB Port Bluetooth Wireless (Class 1 – 100m) **Fuels.** 15 Fuels: #2 Oil, #4 Oil, #6 Oil, Natural Gas, Anthracite, Bituminous, Lignite, Wood (50% H2O), Wood (0% H2O), Kerosene, Propane, Butane, Coke Oven Gas, Blast Furnace & Sewer Gas. Diesel, Gasoline, LPG, CNG, and all other engine fuels. Compliance level: Local, County, district, state and Federal emissions Reporting requirements. **Supplied with;**	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
		Calibration Kit without Calibration Gas (Demand Flow Regulator etc) 13" Inconel Probe Extension Thermal Printer Paper (3 per pack) Balston Filters (In-line filter after Thermoelectric Condenser) (Pack of 3) **Measurement** • O_2 (0-25%) • CO (0-8000ppm) • NO/NOx (0-5000ppm) • NO_2 (O-1000ppm) • SO_2 (0-5000ppm) • C_xH_y/HC (0-5%) • Gas sensors: Include: Field Replaceable Sensors; Stack Gas & Ambient Air Temperature Measurements; Draft & Differential Pressure Measurements; Efficiency, Loss, Excess Air, CO2 Calculations; 12"(300mm) Probe with 10'(3m) dual Hose; Water trap Assembly with Filter Cartridge; Large Full Colour Graphic Display Screen; Rechargeable Lithium Ion Battery Pack with AC Charger; Internal Printer (Non-Fading Paper); QR Code Smartphone Apps (iOS & Android); Wireless REAL-TIME Bluetooth Smartphone App; Internal Memory for Data Storage (2000 tests); Automatic Periodic Data Saving (Data Logger); Software Package with Bluetooth & USB Cable; Protective Rubber Holster; Magnetic Support; Protective ABS Carrying Case; Instruction Manual; Calibration Certificate; Longer/High Temperature Probes		

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
10	**Nitrogen generator with activated carbon filter Genius XE35 230V LC MS**	Battery Backup Uninterruptible Power Supply (UPS) Power Conditioner compatible with Q-TOF LC/MS MS Gas Flow: up to 35L/min Outlet Pressure: 116psi Purity: 95-99.5% Voltage: 230V AC Frequency: 50/60Hz Current: 12/8 amps Size (HxWxD) mm: 650 x 570 x 710mm Generator Weight: 92kg/202lbs Noise Level: 56 dBA UPS power Agilent backup- 10KVA online UPS Batteries Controller Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning.	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
11	**LCMS ZQ 2000 WATERS MASS SPECTROMETER ROTARY**	VACUUM PUMP SPECIFICATIONS Edwards E2M28 21 CFM Dual-Stage High Capacity Vacuum Pump Model E2M28 Vacuum pump type Dual stage rotary vane Power 240V 50/60Hz 1-PH 8.2A or 220V 50/60Hz 1-PH 4.1A (switchable) Power connection EU standard 3-PIN Motor power at 50Hz 750 watts Motor power at 60Hz 900 watts Peak pumping speed 21 CFM at 60Hz Ultimate vacuum without gas ballast 0.75 micron/millitorr Ultimate vacuum with gas ballast 11 micron/millitorr Unit dimensions (WxDxH) 23 x 6.75 x 11" Shipping dimensions (WxDxH) 31 x 11.5 x 19" Max water vapor inlet pressure 22.5 torr (30 mbar) Max allowed pressure at outlet 0.5 bar gauge/7 psig Max water vapor capacity 700 grams/hour Operating temperature range (12°C to 40°C) Oil capacity Minimum 1.4 quart (1.3 L), maximum 1.6 quart (1.5 L) Oil type Ultragrade 19 Nominal rotation speed 1400/1720 rpm Noise level 57 dB(A) Inlet connection NW25/KF25 Outlet connection Nozzle 15mm external removable from 3/4 in BSP tapped hole Unit weight 45.3592 KG Shipping weight 54.4311 KG **STANDARD PACKAGE** Part description Quantity Part image Edwards E2M28 21 CFM dual stage vacuum pump 1 pc KF25 stainless steel vacuum bellow (3 ft) 1 pc KF25 wing nut flange quick clamp 2 pcs	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
		KF25 flange centering ring 2 pcs 110V standard 3-prong US power cord 1 pc Edwards ultra-grade 19 vacuum pump oil 2 pcs User's manual in a CD 1 pc This unit should be supplied with ultragrade 19 vacuum pump oil 5litres		
12	**Digital heating mantle for holding 250 ml flask with magnetic stirrer**	250mL Electric Digital LCD Magnetic Stirring 0-1400prm 250Ml round bottomed flask diameter 29/32 material : pyrex Heating Mantle maximum temperature 450ºC , Power : 250W Voltage: 240V Thermometer probe Metallic stand No of heaters: one position Quantity: 2 Digital heating mantle for holding 250 mL flask with magnetic stirrer Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	2	
13	**Digital heating mantle for holding 500 ml flask with magnetic stirrer.**	500mL Electric Digital LCD Magnetic Stirring 0-1400prm 500 mL round bottomed flask diameter 29/32 material : Pyrex Heating Mantle maximum temperature 450ºC , Power : 250W Voltage: 240V Thermometer probe Metallic stand No of heaters: one position Quantity: 2 Digital heating mantle for holding 250 mL flask with magnetic stirrer Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
14	**Digital Magnetic stirrer with Electric hotplate**	Plate Size 170*170mm Heating Mantle maximum temperature 450ºC , Work Plate Material Aluminum Stirring Speed Range 100-2000rpm Power Consumption 250W Power Supply AC 240V±10%, 50/60Hz Standard Accessory PT100 sensor rack, stirrer bar External Size(W*D*H) 250*180*120mm Gross Weight: 3.4Kg Heating Temp. 380 ℃ 380℃ Thermometer probe Metallic stand Quantity: 1 Digital heating mantle for holding 250 mL flask with magnetic stirrer Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	4	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
15	**UPS power Agilent backup**	LCMS/LCMS/MS POWER BACK UP SPECIFICATIONS 15KW PURE SINE WAVE INVERTER The back-up system should have the following specifications. 1. Advanced performance by CPU control. 2. Auto Voltage Regulation i.e. wide input voltage from 110-275V. Should have AVR function to enable adapt to all electric environment. 3. Should have intelligent battery charging, the charging current can be adjusted based on battery capacity. 4. User can use RS232 program to change settings on shutdown time. 5. Should have under voltage, overload, over discharge and short circuit protection. TECHNICAL SPECIFICATIONS AC Input Rated voltage AC input voltage is the same value as the AC output DC Input Rated voltage 96V/ 108V/ 120V/ 192V DC (can be customized) Rated current 78A @192V DC AC Output Rated output power 15kW Output waveform Pure sine wave Rated voltage 208V/ 220V/ 230V/ 240V/ 380V/ 400V/ 415V/ 460V/ 480V (optional) Phase Single phase 4 wire+PE wire (single phase/ split phase can be customized, please contact us by email) Frequency 50Hz or 60Hz Power factor >0.99 Overload ability 150%, 5 seconds Efficiency >93% Waveform distortion rate THD<3% Dynamic response (0 to 100% load) 5%, ≤50ms Display LCD Running mode Working continuously Electrical insulation properties 2000Vac, 1min	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
		Communication interface RS485 (optional) Protection Function Protection Input reverse polarity, under voltage, over-voltage, output over-current, short circuit, overheating Cooling method Fan-cooled Short-circuit protection No automatic recovery, need to restart the machine Working Environment Noise (1 meter) ≤50dB Degree of protection IP20 (indoor) Working altitude ≤2000m Working temperature -25~+55°C Relative humidity 0~90%, non-condensing BATTERY SPECIFICATIONS S/No Specifications Quantity (pcs) 1. 12volts 200Ah solar battery With Warranty. (preferred Sollatek batteries (optional) quality is important) 8 Pcs 2. Flexible Battery Cable - 20mm sq. 10 METERS SHOULD HAVE LUGS 10 Meters B: The suppliers should be informed that this are two separate items needed. The inverter system as described above and batteries as described below and quantity required.		

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
16	**HPLC Agilent PC desktop**	PROCESSOR: DESK PRO MT Core i7 Memory: 7700 8GB 1TB Hard drive: 1TB SATA-II 7,200-rpm HDD 18.5 inch Screen PU: 3.0GHz Intel Core i7-920 (overclocked) operating system: windows 2017 MEMORY:16 GB DDR4-2666 SDRAM (2 x 8 GB) MAXIMUM MEMORY Upgradeable to 64 GB MEMORY SLOTS 4 DIMM NETWORK INTERFACE Integrated 10/100/1000 Gigabit Ethernet LAN WIRELESS TECHNOLOGY Wi-Fi 5 (2x2) and Bluetooth EMORY SLOTS 4 DIMM POWER SUPPLY 750 W Platinum efficiency power supply EXTERNAL I/O PORTS Front:1 microphone-in; 1 headphone/microphone combo; 2 USB 3.1 Gen 1 Rear:1 USB 3.1 Type-C™ Gen 2; 4 USB 3.1 Gen 1; 1 USB 3.1 Gen 2 EXPANSION SLOTS: 1 PCIe x16; 3 M.2 COLOR: Shadow black front bezel, dark chrome logo, glass side panel POINTING DEVICE HP USB Wired Optical Mouse KEYBOARD HP USB Wired Keyboard with volume control DIMENSIONS (W X D X H) 6.5 x 14.06 x 17.05 in WEIGHT 23.15 lb SOFTWARE INCLUDED WARRANTY 1 year hardware warranty Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	3	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
17	Air Conditioner	Ductless AC units rely on energy efficient heat pumps to heat and cool. Provide cooling and heating between 9,000 BTU's and 42,000 BTUs an hour Indoor Design Conditions Special equipment plant DB : 20°C ± 1°C (68°F ± 2°F) RH : ≤ 50% Duty Cycle : 24 Hours operation per day Noise Level: 65-70dBA For laboratory use Grilles material Used & Hardware : Aluminium Grilles & Brass Hardware. WARRANTY 1 year hardware warranty Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
18	**HPLC Agilent printer-Laser**	COLOR laser jet PRO Paper handling: 50-sheet multipurpose input tray (Tray 1) Automatic duplex printing Colored Cartridge printer and black/white cartridge printer Connectivity: 10/100/1000 Ethernet LAN connection with IPv4 and IPv6 Hi-Speed USB 2.0 Walk-up USB port Print server for wireless network connectivity operating system: windows 2017 Height *depth *height 295.7mm* 472.3mm*43.6mm Weight: 18.9 Kg POWER SUPPLY 750 W Platinum efficiency power supply WARRANTY 1 year hardware warranty Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1	
19	**Magnetic stirring bar**	Magnetic bar stir mixer PTFE corrosion Acid Alkali Resistance assorted sizes in sets White in color Quantity: 5 sets	5 Sets	
20	**Soil Size Analyser - Lab Test Sieve Shaker**	**Specifications:** • Function: particle size analyser • Diameter: 200mm standard • Sieve layer: 1-7 layers is available • Screen size range: 1mm -10mm mesh • Driven mode: vibration motor driven. • Material: All stainless steel SS304.	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
21	**PCR Thermal cycler Machine**	**DETAILS OF SPECIFICATIONS** Temperature accuracy/uniformity ±0.5 °C/±0.5 ° Programme temperature range 4°C to 99.9 °C Sample capacity: 0.2 ml x 96 tubes 96 × 0.2 mL PCR tubes or 1 × 96-well PCR plate or up to 71 x 0.5 mL PCR tubes Temperature control mode: Fast, Standard, Safe Heating/cooling method: Peltier Maximum heating/heating rate: 5°C/3.5°C per second Gradient temperature range: 30°C to 99 °C Gradient block capability: 12 columns Programme memory: > 700 Programmable lid temperature: 100 to 115 °C **Includes:** 96 well block, large backlit LCD with graphical display, large alphanumeric, function and arrow keys Maximum gradient temperature difference: 1 – 20 °C Heating technology of the block: Peltier elements, Triple Circuit Technology Temperature increments/decrements Lid descent and closing pressure: flexlid technology with Thermal Sample Protection User program folder: >700 Password protected programs Communication: USB, Ethernet, CAN in, CAN out Dimensions: 250 x 412 x 321mm Weight: 10.4 Kg Electrical: 240V Vendor must provide Manufacturer Authorization letter/certificate Delivery Mode : Supply, installation , testing, Training and commissioning All equipment supplied must have an after sale service available in Kenya	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
22	**Nano Drop Spectrophotometer**	Sample size: 2.0 – 10 µL Path length: 1 mm (with auto - ranging to 0.2 mm) Light source: Xenon flash lamp Detector type: CMOS photodiode array Wavelength range: 200 nm – 830 nm Wavelength accuracy: 1nm Wavelength resolution: ≤4 nm Absorbance precision: 0.003 absorbance (1mm path) Absorbance accuracy: ≤0.002 at A = 0 ≤0.005 (0.5 %) at A = 1 Absorbance range: 0 A – 3,0 A(260 nm) Detection limit: 2.5 ng/µL Maximum concentration : 1,500 ng/µL Measurement cycle time less than 10 seconds Sample pedestal material of construction: quartz glass and aluminium Operating voltage: 100 – 240V, 50 – 60Hz Operating power consumption: 15W Standby power consumption: 5 W Included in system Software, compatible with windows 7 or 10 Operators and maintenance manual to be supplied Training on operation and maintenance for staff On-site installation and commissioning and training System warranty: One year Vendor to provide Manufacturer's Authorization Certificate	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
23	**PCR Refrigerated Microcentrifuge**	**DETAILS OF SPECIFICATIONS** Max. RCF 30,130 x g Max. speed 17,500 rpm Max. capacity: 48 x 1.5/2.0]mL Rotors available: 12 Acceleration time 14s Deceleration time 15 s Timer: 30s to 99:59h, with continuous run function SOFT brake function, yes Lid Lock Safety Yes, lid opens automatically on run completion Noise level: <58dB(A) with Rotor F-45-30-11 Dimensions (W x D x H) 230 x 262 x 131 mm Accessories Reduction Adaptors for 0.2 / 0.4 ml Microtubes Certifications: • CSA certified • CE marked • UL listed • IVD compliant Dimensions: 24 × 32 × 23 cm Supply, installation, testing, Training and commissioning Vendors must provide Letter of authorization/ certificate	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
24	**PCR Heating block**	Timer: 15s to 99:30 h, continuous Heating rate Max: 9.0 °C/min Cooling rate Max: 5.0 °C/min Interfaces: USB interface Power supply: 220 – 240V, 50 – 60Hz Max. power consumption 200 W Dimensions (W × D × H) 20.6 × 30.4 × 13.6 cm Weight w/o accessories: 4.4 kg Temperature range Min: 30°C below RT, max: 110°C Temperature accuracy Max: ±0.5°C at 20-45 °C Temperature settings: -10°C to 110 °C Wide range of interchangeable aluminum smart block alloy heat blocks provide versatility and allow for easy cleaning and disinfecting Temperature Uniformity - ≤ ± 1°C Voltage – 240V Certifications/Compliance - CE, cULus, RoHS No. of Blocks - 1 (Smartblock 1.5ml For 24 Tubes ordered separately) Fuse - 250V 5A Vendors must provide Letter of authorization/ certificate	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
25	**Water bath**	**Temperature** **Setting temperature range:** +10 to +95 °C and boiling stage **Working temperature range in °C:** min. 5 above ambient up to +95 °C with additional boiling mode **Temperature sensor:** 1 Pt100 sensor class A in 4-wire-circuit **Timer:** integrated digital timer from 1 min. to 99,59 hours for: ON continuous operation WAIT (delayed on for continuous and limited timed operation) HOLD **Temperature control:** mechanical temperature limiter TB protection class 1 switching the heating off at approx. 30°Cabove max. temperature of the bath **Temperature control:** in case of overtemperature due to failure, the heating is switched off at approx. 10°Cabove the set temperature (fixed value) **Auto diagnostic system** microprocessor PID-temperature controller with integrated auto diagnostic system with fault indicator **Heating Baths:** corrosion-proof large-area heating on three sides **Controller:** digital display (LED) of set and actual temperature (0,1°C resolution) and of (remaining)programme time **Dimensions W x H x D in mm:** w(A) x h(C) x d(B): 350 x 140 x 290 mm **Interior** easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing, material no. 1.4301 (ASTM 304), laser-welded **Volume** 14 l **Liquid level minimum:** (H) 97 mm **Liquid level maximum:** (I) 120 mm	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
26	**Gel documentation system**	**DETAILS OF SPECIFICATIONS** UV Transilluminator: 312nm, 21x26cm (WxL); 6x8W tubes Resolution: 5 mega pixels (2592x1944 pixels max) Sensor: CMOS, 1/2.5". monochrome Lens: 5mm focal length; aperture F1.2 Image Bit-Depth Sensor: 12-bit (0-4095 grey levels) Filter Camera: 620nm EtBr (standard); optional 520, 560, 580nm filters Image Storage: PC or Laptop Connection to Operating Device: USB to PC Operating System Requirements: Windows®7 , 8 and 10 (64bit & 32bit) / for Software XP / Vista Front Panel Display: LED Viewing Window: 560nm universal orange filter White Light: 6x1W LED (standard) for gel positioning Blue LED Epi-illumination: excitation wavelength 470nm; connects Safety: Safety interlock switch on front door panel; disconnects UV transilluminator on opening; complies with CE, FCCstandards USB Port: For PC Power Rating Dual voltage: 110-230 VAC Weight: 25kg Gel imager must be supplied with 10 x 10cm UV electrophoresis tray for 2 x 16 sample, 1mm thick combs, casting dams, loading guides and 300V, 400mA Mini Power supply, 60W - 100-240VAC	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
27	**PCR COOLER and cooler boxes**	PCR cooler Clear temperature indicator: Color of PCR cooler changes when temperature exceeds 7 °C Accommodates PCR-vessels as tubes, strips, or plates for flexible vessel usage Utilizes dry incubation technology Keeps an entire 96-well PCR plate cold for more than an hour at 0 °C (with two-hour precooling at -20 °C) for safe samples Handling system for sample set-up, protection, transport, and storage of sensitive samples – keep you samples safe **DNA/RNA Sample transport mini cooler boxes** > Ideal for cooling, transporting and storing deep-frozen samples > Utilizes Dry incubation technology > Holds 24 micro tubes (e.g., 0.5 mL or 1.5 mL/2.0 mL) > Two versions of IsoPack (cold pack) available: White maintains 0 °C for up to 6 hours Blue maintains -21 °C for up to 3 hour > Package should consists of a working rack, insulating box and two cool packs, specializes in cooling samples effectively and consistently at –21 °C or 0 °C over many hours. > All system components can be used separately > Racks are stackable, autoclavable and can be centrifuged in the MTP rotor	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
28	**Upright-80 Freezer and racks**	Insulation: Vacuum insulation panelling/polyurethane foam Capacity: 535 L Number of internal doors: 3 Max. racks per freezer: 12 (inclusive in the offer) Boxes per freezer: 5cm (2in) tall boxes: 336 7.5 cm (3in) tall boxes: 240 10cm (4in) tall boxes: 144 Holds up to 33,600 samples Dimensions internal (WxDxH): 64 x 61.5 x 136.5 cm Noise level: 56dB Dimensions (W × D × H): 80 × 86.7 × 195 cm Consumes only 13.2 kWh/day Number of shelves: 3 Supplier must offer 3 year warranty Supplier must provide manufacturer Authorization letter	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
29	**-20 Freezer**	Capacity: 700 L Operating range: -10° to -23°C Insulation: minimum insulation of 70 mm made of HD Injected Polyurathane Foam. Cooling system: Internal ventilation with two compressors and two independent electronics. Number of internal doors: 1 Number of shelves: 3 Max. racks per freezer: up to 8 (inclusive in the offer) standard USB port for free data transfer to computer High resistance spherical rollers for easy movement and adjustable feet Dimensions internal (WxDxH): 590x675x1500 mm Noise level: <45dB Dimensions (W × D × H): 80 × 86.7 × 195 cm 230VAC; 50Hz Supplier must offer 1 year warranty Supplier must provide manufacturer Authorization letter	1	
30	**4-8**°C **Fridge- Freezer**	• Capacity: 300 L • Operating range: 0/+15°C • Insulation: minimum insulation of 70 mm made of HD Injected Polyurathane Foam. • Number of internal doors: 1 • Number of shelves: 3 • Max. racks per freezer: up to 8 (inclusive in the offer) • standard USB port for free data transfer to computer • High resistance spherical rollers for easy movement and adjustable feet • Cooling system: Internal ventilation with two compressors and two independent electronics. • Dimensions internal (WxDxH): 590x675x1500 mm • Noise level: <45dB • Dimensions (W × D × H): 480X500X845 • 230VAC; 50Hz • Supplier must offer 1 year warranty Supplier must provide manufacturer Authorization letter	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
31	**43 litre Benchtop Autoclave**	• Format: Front loading • Capacity: 43L • Temperature range: 100-138°C • Pressure range: 0.2-2.4 bar • Power requirements (heaters in chamber): Single phase version: 230V, 13A, 50/60Hz, (N+E). • Water requirements: Tap/softened water with <50ppm TDS; pH neutral. Manual fill. • Drainage requirements: A condensate bottle or a similar heat resistant receptacle is required. • Cooling locks: In accordance with H.S.E. PM73 preventing opening of the autoclave above 80ºC. (for • fluid & discard cycles) • Alarms: For Cycle Fault - Cycle Interruption - Sterilize Failure - Water Low - Door Unlocked • Controller: VGA (640x480) colour TFT + analogue resistive touchscreen • Controller hardware: Processor: Intel E620T 333Mhz • Memory: 256MB DDRAM, 32KB FRAM • Physical Memory: 2GB eMMC Flash Memory • Vendors must provide Letter of authorization/ certificate	1	
32	**8 watt White Light Transilluminator**	• Filter Size: 21 x 21cm • Light Source: 470nm BLUE LED's or UV single wave (8W x 5 tubes) or UV dual Wave (8W x 9 Tubes) • Intensity: Switch high (100%)/ low (70%) single • Size: 400 x 190 x 350mm • UV & Blue light technology in one transilluminator. • Single or dual wavelength models available • Weight: 10.5Kg • Voltage: 110-240V (selectable) Vendors must provide Letter of authorization/ certificate	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
33	**Real Time PCR**	Height - 130 mm (265 mm lid open) Width – 150 mm Length – 150 mm Weight- 2.1 Kg **THERMAL PERFOMANCE** Temperature Accuracy - + 0.25 degrees Temperature Uniformity _+ 0.05 degrees Ramp rates – Heating 4 degrees/second cooling 3 degrees /second Temperature Input range- 40-99 degrees. **OPTICAL** Detectors – Photodiode per channel. Excitation sources- High energy light emitting diode for each channel Channels- Green : ex 465 nm, em 510 nm Yellow : ex 540 nm, em 570 nm Orange : ex 585 nm, em 618 nm Red : ex 635 nm em, 675 nm Acquisition time: 1 second **REACTION VESSELS** Samples per instrument: 48 Reaction volume range: 10-30µl **ELECTRICAL** AC Input: 100-240 VAC, 50/60 Hz 4.0A **OPERATING ENVIROMENT** Temperature: 18-35ºC Relative Humidity: 20-80% **Equipment to come with Laptop**	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
34	**Vortex Mixer combined for tubes and strips**	**SPECIFICATION;** Construction material: zinc alloy and techno-polymer to ensure optimum chemical resistance Support system: 4 anti-sliding feet for strong fixing and high stability Foam stand for n° 19 Eppendorf® type 1.5 ml microvials. Protection rating CEI EN 60529: IP 42 Electronic speed regulation: up to 3000 rpm Power Supply: 100-240V/50-60Hz Power: 15 W Weight: 2,7 Kg (5.9 lb)	1	
35	**Analytical balance**	4 Decimal places Maximum weight 220g Large glass draught shield with 2 sliding doors for easy access to the items being weighed. Compact size, practical for small spaces. Simple and convenient 6-key operation. Voltage: 230V AC Large Weighing Chamber holds up to a 250mm volumetric flask Size (HxWxD) Weight: Wide Angle LCD Display Multi-Functional Weighing: %, PCS, g, mg. oz ozt, dwt, ct, mom, GN, t, TL Full Range Tare Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning.	2	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
36	**Rotary Evaporator**	Lift System: Manual Heating Bath: B-100 (20 - 95°C, 4L), Standard Joint: SJ 29/32 Glass Assembly: Vertical (V) Protective Coating: P+G safety coating Interface: I-100 Vacuum Pump: V-100 (1.5m3/h, 10mbar) Woulff bottle Voltage: 220 - 240V Easy plug & play extension to a fully integrated system including a digital central interface 1000mL heating flask 1000mL collection flask Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
37	**PH Meter**	pH Range: -2.00 - 16.00 pH Resolution: 0.01 pH Dimension: 220 W - 175 D - 78 H mm Three-point calibration for the highest accuracy Automatic and manual temperature compensation Automatic and manual endpoint functions determine the stability of readings The height of the standalone electrode holder can be adjusted for maximum versatility Auto buffer recognition helps to avoid errors during the calibration process 99 sets of data memory and the ability to instantly recall the last calibration data Self-diagnostic software provides assurance that the meter is in proper working condition Each time a pH sensor is calibrated, an icon appears on the display to confirm the accuracy of the calibration process so you can ensure accurate measurement Connection to peripheral devices through RS232 port The height of the electrode holder can be adjusted to optimize placement of the electrode Quantity: 4 pH Meters Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	4	
38	**Conductivity Meter**	Range: 00.0 µS/cm - 199.9 mS/cm Resolution: Automatic Range, 0.1 °C Calibration: 1 Point, 3 Predefined Standards Memory: 99 Measurements, Last Calibration Data Quantity: 1 conductivity meter Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1	

Sno.	Item	Specification/description	Qty (No)	Unit Cost (ksh)
39	**UV Lamp visualizer Plus Cabinet**	Wavelength: 254/365/405nm Emitting area size: 33x20mm Work Plate Material Aluminum Stirring Speed Range 100-2000rpm Power Consumption 250W Power Supply AC 240V±10%, 50/60Hz Standard Accessory PT100 sensor rack, stirrer bar Product Size(W*D*H) 62*20*58mm Output intensity: 6-14W/CM2 Angle : 60º Thermometer probe Metallic stand Quantity: 1 Digital heating mantle for holding 250 mL flask with magnetic stirrer Vendor must provide manufacture authorization letter/Vendor must provide manufacture authorization letter/certificate Delivery mode: Supply, installation, testing, training and commissioning	1	

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