



BID EVALUATION REPORT OF CHEMISTRY LAB EQUIPMENT ITEMS TENDER NO. 15/2022-23 (PROJECT)

1. **PPRA Reference No.** 193225T04052023985
2. **Date and Time of Bid Closing:** 29-05-2023 @ 11:00 A.M
3. **Date and Time of Bid Opening:** 29-05-2023 @ 11:30 A.M
4. **No. of bids received:** 04 (Four)
5. **Item:** Chemistry Lab Equipment's (IPB-239)

The tender opening was held on 29-05-2023 @ 11:30 A.M for Chemistry Lab Equipment's Items. Four (04) bidders participated in tendering process. The name of the bidders/firms is as under:

1. M/S Bio Chemika International
2. M/S H.A SHAH & SONS
3. M/S Kamstec International
4. M/S Prime Scientific Corporation

Technical Evaluation Report:

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstec International	Prime Scientific Corporation	Bio Chemika Int.
01	<p>UV-Visible specifications for spectrophotometer The specification mentioned below is preferred. Any equivalent or better specifications shall be mentioned in detail. System specifications: Double Beam UV-Visible Spectrophotometer Must Have Long-Life Xenon Flash Lamp with (80 Hz) Monochromator: Czerny-Turner Beam splitting system: Beam splitter Detectors: 2 silicon diode detectors for simultaneous sample and reference measurements Wavelength range (nm): 190–1100 nm Wavelength accuracy (nm): ± 0.5 at 541.94 nm Wavelength reproducibility (nm): ± 0.5 nm Photometric range (Abs) ± 4 Abs Sample compartment access: Top and front Spectral bandwidth (nm): Fixed at 1.5 nm Maximum scan rate (nm/min): 15000 nm/min Software: Must include spectrum calculator to apply mathematical operations, including addition, subtraction, division, multiplication, log, and square root functions, to spectra. The calculator also features mean, normalization, smoothing, up to fourth order derivatives, integration, and the Kubelka-Munk correction algorithm.</p>	01	<p>Technically Qualified Cary 60 UV-Visible spectrophotometer with all accessories Make: Agilent Technologies USA Origin : Malaysia</p>	Not Quoted	<p>Technically Qualified Evolution one UV-Visible Spectrophotometer with all accessories Make: Thermo Fisher Scientific Origin: USA</p>	Not Quoted

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstech International	Prime Scientific Corporation	Bio Chemika Int.
	<p>Automatic peak labeling, zoom, free and tracking cursor, multiple ordinate and abscissa formats. It also offers smart copy/paste and overlay modes, making spectral interpretation and presentation for publications a breeze.</p> <p>Accessories:</p> <ol style="list-style-type: none"> Compatible Computer System with 21" LED and Laser Jet Printer Matched pair Standard Cuvettes Q.ty: 02 Matched pair Quads Cuvettes Q.ty: 02 <p>Germany or UK or Japan or USA or equivalent</p> <p>Note: Valid authorized certificate from the manufacturers/foreign principals must be attached.</p> <p>Warranty: 01 year after installation</p> <p>Online UPS Compatible with spectrophotometer with minimum backup: 30 minutes (including batteries compatible with online UPS) and</p> <p>Desktop Computer Tower Desktop PC-11th Generation core i7-11700 processor 4GB 01 Terabyte Hard Drive Intel Shared Graphics Keyboard & Mouse included DVD R/W DOS (Dell, HP or Equivalent 01 Years Warranty) and Laser Jet Printer duplex (HP or Equivalent)</p>					
02	<p>Glassy Carbon Working Electrode Make in: China or Equivalent</p>	05	<p>Technically Qualified</p> <p>EMOGTCVJD3CIAL OrigaTip - Glassy Carbon Tip ø3 for OrigaTrod (and EDI) Make : OrigaLys ElectroChem SAS Origin : France</p>	Not Quoted	Not Quoted	Not Quoted
03	<p>Ag/AgCl Electrode Make in: China or Equivalent</p>	05	<p>Technically Qualified</p> <p>812L120S7 (OGRAGAGCL) OrigaSens - Reference Electrode Ag/AgCl Saturated KCl Porous Pin Screw head ø12 ø8 x 120 mm (XR300/OGR006/E11.OGL.01 5-1_1) Make : OrigaLys ElectroChem SAS Origin : France</p>	Not Quoted	Not Quoted	Not Quoted

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstech International	Prime Scientific Corporation	Bio Chemika Int.
04	Pt Counter Electrode Make in: China or Equivalent	05	Technically Qualified 8L120S7 (OGVPTROD1) OrigaSens - Voltammetry Electrode Pt ø1 Grinded Screw head ø12 ø8 120mm (XM110 / OGV005 / E10.OGL.028/OGV005) Make : OrigaLys ElectroChem SAS Origin : France	Not Quoted	Not Quoted	Not Quoted
05	HPLC system 1- Quaternary Pump <ul style="list-style-type: none"> ▪ Pump pressure: 5000 psi or better ▪ Flow rate range (0.01-10.0 ml/min, in 0.01 ml increments) ▪ Delay volume is <650 ul (including Sample Management delay volume) ▪ Method linking; automated system shut down ▪ Built in high efficiency, low volume, and vacuum degassing system with separate vacuum chambers for each solvent. ▪ Flow precision of <= 0.075% RSD with flow accuracy of +/- 1%. ▪ Compositional accuracy is <0.5% and compositional precision is <0.5%, both measured at 1 ml/min. 2- Autosampler with Sample Cooling <ul style="list-style-type: none"> ▪ temperature control module for controlling the sample temperature compartment between 4 and 40°C in 1° increments. ▪ Automatic routines for adding, mixing and injecting derivatized samples. ▪ Needle wash system that uses fresh solvent with each injection. ▪ Random access to any vial for multi-method operation. ▪ Programmable needle height control to help protect the needle from damage and allow greater flexibility when using advanced routines. ▪ All electric design for convenience and reliability. ▪ Precision is <0.5% for injections from 5-80 ul. Linearity is >0.999 coefficient of deviation from 1-100 ul. Carryover is <0.0025% from previous injection (Caffeine). ▪ 0.00 to 2000 ul Injection range with up to 99 injections per vial. Sample capacity is 120 (2ml) vials. Limited volume inserts allow as little as 0.1ul from 7ul. ▪ Events include 2 inject starts, inject stop and programmable contact closure. 3- Column Oven <ul style="list-style-type: none"> ▪ Forced air recirculation Peltier-based column heater module ▪ Temperature range: 4°C to 65° C ▪ Must have option to accommodate column switching valve & 300cm columns. 4- Photo Diode Array Detector <ul style="list-style-type: none"> ▪ Low noise sensitivity = <10 µAU 	01	Technically Qualified G7111A HPLC system with all accessories Make: Agilent technologies Origin: Germany	Technically Qualified Waters e2695 XE Alliance HPLC System with all accessories Make: Waters Corporation USA Origin: US, EU, Singapore	Technically Qualified Vanquish Core HPLC System with all accessories Make: Thermo Fisher Scientific Origin: USA	Not Quoted

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstech International	Prime Scientific Corporation	Bio Chemika Int.
	<ul style="list-style-type: none"> ▪ 190-800 nm with 1.2 nm Digital and Optical Resolution. ▪ Spectral exposure optimization to maximize the signal-to-noise across the entire wavelength range with a single Deuterium lamp ▪ Flexible sampling rates for normal and fast LC separations from 1 to 80 Hz ▪ Independent optimization of Data Rate and Time Constant. ▪ Lamp Optimization Software – ensures the same light energy output for the entire life of the detector lamp. ▪ One lamp – not two – cuts the cost of maintenance and avoids the problem of lamp solarization, which is seen in two lamp systems, when the light from one lamp hazes the glass of the second lamp. ▪ Only one moving part – which means fewer parts to wear. ▪ Software can run detector as a single wavelength, multi-wavelength or spectral detector. ▪ Specialized routines such as MaxPlot, Purity determinations and spectral libraries. ▪ Collect 8 channels of 2D data at user defined bandwidth for user optimization of 2D detection. <p>5- <u>Fraction Collector</u></p> <ul style="list-style-type: none"> ▪ The Fraction Collector easy-to-use, stand-alone fraction collector designed for use with HPLC, Preparative HPLC, and MS applications. ▪ Compatible with flow rates as high as 300 mL per minute, the Fraction Collector handles a variety of adapter racks and collection vessels within a compact footprint. Its flexible design accommodates fraction sizes compatible with microtiter plates up to multiple liter containers: ▪ Intuitive keypad and screen view make setup easy ▪ Review results in real time, or via a post-run results table ▪ Remote management with Software for MS applications, choose from several task-specific sample run modes of operation (time, signal, peak numbers, etc.) <p>6- <u>Software</u></p> <p>Original/ Licensed software</p> <ul style="list-style-type: none"> ▪ Complete system with original CDS software fully compliant with 21 CFR ▪ Software must have option to multi-vendor system connectivity. ▪ Software must have LIMS / LMS support ▪ System must control mass spectrometry data with mass spectrometer upgradation. ▪ Must include System suitability for HPLC & Detector ▪ System qualification services (IQ/OQ) with original documentation. advanced system control data acquisition, and custom reporting features of Software, System must provide documentation to meet GxP and 21 CFR. <p>7- <u>Accessories</u></p> <ul style="list-style-type: none"> ▪ C18. 4.6x250, 5um (Carbon Load 18%, pH Range 1-12, 130A): 01 Nos. ▪ PM Kit for Diode Array Detector : 01 No.(kit must include detector lamps and flow cell kit) ▪ PM Kit for separation module (Pump & Autosampler): 01 No. <p>(PM Kit: one diffuser assembly, one filter insert assembly, four stainless steel solvent filters, four face seals, 2 fluoroloy seals, one syringe, one compression screw, one sealwash injector tube, one needlewash frit, sealwash seals, two seals, one spacer, two</p>					

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstech International	Prime Scientific Corporation	Bio Chemika Int.
	<p>plungers, one PTFE washer, two plunger seal wash, one needle wash filter, one filter retainer, thin walled PTFE tubing, two check valve cartridge assemblies, one injector needle and one injector needle ferrule.)</p> <ul style="list-style-type: none"> ▪ 2ml Glass vial Pre-slit septa- amber/glass: 500 vials ▪ Extended injection kit of 2,000 ul injection loop & 2,500 ul injection syringe. <p>Germany or UK or Japan or USA or equivalent Note: Valid authorized certificate from the manufacturers/foreign principals must be attached. Warranty: 01 year after installation Online UPS Compatible with HPLC with minimum backup: 30 minutes(including batteries compatible with online UPS) and Desktop Computer PC-11th Generation core i7-processor, 8GB RAM, 01 Terabyte SSD Drive Intel Shared Graphics Keyboard & Mouse included DVD R/W, 21” LCD (Dell, HP or Equivalent) and Laser Jet Printer with duplexer 01 Years Warranty (HP or Equivalent)</p>					
6	<p>TGA/DSC Sample Weight Capacity: 200 mg defined as the maximum sample weight measurable (independent of pans), Weighing Precision: ± 0.1% Defined as the standard deviation of at least 10 measurements of a 100 mg standard weight, with removing and replacing the sample in between each measurement, Dynamic Baseline Drift (50 to 1,000 °C): <50 µg Defined as the maximum deviation from the smallest measured weight to the largest measured weight of an empty alumina cup, while being heated at 20°C/min in flowing nitrogen atmosphere (without any blank subtraction applied), Weight Sensitivity: 0.1 mg (1 ppm) Defined as 3X the average rms noise over the temperature range 50 to 1,500 °C or better Weight Repeatability: ± 0.1% of value or ±50 µg (whichever is greater), Temperature Range: ambient to 1500 °C or better Temperature Range: From Ambient to 1500 °C or better. Dynamic Temperature Precision: ±0.5°C, Isothermal Temperature Precision: ±0.1°C, Linear Heating Rates: 0.1 to 100°C/min in 0.01°C/min increments, Furnace Cooling: Forced Air 1600/1500°C to 50°C in < 40 min, It has a dual-beam horizontal thermo-balance design utilizing a differential weight loss between the two balances. It has intrinsically superior heat flow measurements as compared to single-beam designs. Dual-beam design also permits the unique ability to independently measure two TGA samples simultaneously (Dual Sample TGA). Software: It must include operating software which allows for the instrument to be fully calibrated and verified automatically. Calibrations must include weight, heat flow, heat capacity, cell constant and temperature. The operating software should also be capable of periodically and automatically checking for updates via an internet connection, and downloading/installing those updates if desired. The data analysis software should be unkeyed, to allow for unlimited installations within one site. As required by OSHA product safety standards, the instrument must be NRTL certified, and carry the certification mark of the specific NRTL laboratory. Products that bear only non-NRTL certification marks (including the CE mark) do not meet the OSHA standard requiring NRTL approval of the product. In addition, specific</p>		Not Quoted	<p style="text-align: center;">Technically Qualified</p> <p>Discovery SDT 650 - Simultaneous DSC-TGA with all accessories Make: TA Instruments Origin: USA</p>	Not Quoted	Not Quoted

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	<p>documentation regarding NRTL certification must be provided with the proposal/bid package. Ability to abort a test and/or segment in a test when operator specified conditions are met. Ability to continue a run when disconnected from the computer/controller.</p> <p>Hi-Res TGA is defined as an advanced heater control technology to optimize weight loss resolution using the following (3) modes. All modes are used to separate overlapping transitions.</p> <ol style="list-style-type: none"> 1. Dynamic Heating Rate to automatically and continuously change heating rate as a function of decomposition (sample weight loss). 2. Constant Reaction Rate to automatically and continuously change heating rate to achieve a pre-determined rate of sample decomposition expressed in %/min. 3. Stepwise Isothermal to automatically change from heating to an isothermal hold when pre-selected limits of weight loss in %/min are met. <p>Modulated TGA</p> <ul style="list-style-type: none"> • The ability to apply sinusoidal temperature wave to a sample. Amplitude of sine wave \pm 0.01 to 10°C; period from 100 to 1000 seconds., Calculates and displays the following kinetic parameters of decomposition on a continuous basis in real time, Activation energy (kJ/mol), \ln (Pre-exponential factor) (1/min), \ln (rate ratio), \ln Weight amplitude (mg/min), Modulated Temp (°C). <p>Modulated DSC:</p> <ul style="list-style-type: none"> • Ability to apply sinusoidal temperature wave to sample: Amplitude of sine wave \pm 0.01 to 10°C; frequency period from 10 to 1000 seconds., Must include the ability to perform quasi-isothermal experiments, i.e., holding isothermal with a small temperature modulation. • Must be able to view the following signals in real-time during the experiment: Total Heat Flow, Total Heat Capacity, Reversing Heat Capacity, Reversing Heat Flow, Non-Reversing (Kinetic) Heat Flow, Modulated Temperature, Modulated Heat Flow, Heat Flow Phase, Reference Sine Angle, Temperature Amplitude, Heat Flow Amplitude <p>Must include all standard Accessories necessary for installation/operation. Must include startup kit including sample pans/cups Must include N₂ Gas Cylinder with regulator Must include air compressor with regulator Installation and training by factory trained engineer. Germany or UK or Japan or USA or equivalent Note: Valid authorized certificate from the manufacturers/foreign principals must be attached. Warranty: 01 year after installation. Online UPS Compatible with TGA/DSC with minimum backup: 30 minutes (including batteries compatible with online UPS) and Desktop Computer Tower Desktop PC-11th Generation core i7-11700 processor 4GB 01 Terabyte Hard Drive Intel Shared Graphics Keyboard & Mouse included DVD R/W DOS (Dell, HP or Equivalent 01 Year Warranty) and Laser Jet Printer duplex (HP or Equivalent)</p>					

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstech International	Prime Scientific Corporation	Bio Chemika Int.
7	<p>Bomb Calorimeter System</p> <ul style="list-style-type: none"> Working (Operating) Temperature:15-70°C Storage Temperature:0-70°C Temperature Resolution:0.000001°C Reproducibility/Repeatability:<0.01% RSD Resolution:0.0001 MJ/Kg Results per hour:Up to 8-9 samples per hour using 3 bayonet bomb vessels and 2 Air Coolers Measuring range max. :99MJ, 99000J Working temperature min.:1°C Working temperature max: 50°C Temperature Measurement Resolution 10 ppm (parts per million) Cooling Medium: Air <p>Must include all standard Accessories necessary for installation/operation Germany or UK or Japan or USA or equivalent Note: Valid authorized certificate from the manufacturers/foreign principals must be attached. Warranty: 01 year after installation. Online UPS Compatible with TGA/DSC with minimum backup: 30 minutes (including batteries compatible with online UPS) and Desktop Computer Tower Desktop PC-11th Generation core i7-11700 processor 4GB 01 Terabyte Hard Drive Intel Shared Graphics Keyboard & Mouse included DVD R/W DOS (Dell, HP or Equivalent 01 Years Warranty) and Laser Jet Printer duplex (HP or Equivalent)</p>	01	Not Quoted	Not Quoted	Not Quoted	<p>Technically Qualified</p> <p>Make & Model : CAL3K-F Calorimeter Country of Origin: South Africa</p>

THE FINANCIAL REPORT IS AS UNDER:

The financial bids were opened on 25-08-2023 at 11:30 A.M in the office of the Purchase for the Technically Qualified items by indicating/announcing the rates for the Technically Qualified items only (from the Technical committee for Chemistry Lab items). The rates are given below;

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstech International	Prime Scientific Corporation	Bio Chemika Int.	Lowest Bidder Name	Total Amount with Taxes
01	<p>UV-Visible specifications for spectrophotometer The specification mentioned below is preferred. Any equivalent or better specifications shall be mentioned in detail. System specifications: Double Beam UV-Visible Spectrophotometer Must Have Long-Life Xenon Flash Lamp with (80 Hz) Monochromator: Czerny-Turner Beam splitting system: Beam splitter</p>	01	<p>Cary 60 UV-Visible spectrophotometer with all accessories Make: Agilent Technologies USA Origin : Malaysia</p> <p>Rs.=4,000,000/-</p>	Not Quoted	<p>Evolution one UV-Visible Spectrophotometer with all accessories Make: Thermo Fisher Scientific Origin: USA</p> <p>Rs.=4,130,000/-</p>	Not Quoted	<p>M/S H.A Shah & Sons</p>	Rs.=4,000,000/-

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstech International	Prime Scientific Corporation	Bio Chemika Int.	Lowest Bidder Name	Total Amount with Taxes
	<p>Detectors: 2 silicon diode detectors for simultaneous sample and reference measurements Wavelength range (nm): 190–1100 nm Wavelength accuracy (nm): ± 0.5 at 541.94 nm Wavelength reproducibility (nm): ± 0.5 nm Photometric range (Abs) ± 4 Abs Sample compartment access: Top and front Spectral bandwidth (nm): Fixed at 1.5 nm Maximum scan rate (nm/min): 15000 nm/min Software: Must include spectrum calculator to apply mathematical operations, including addition, subtraction, division, multiplication, log, and square root functions, to spectra. The calculator also features mean, normalization, smoothing, up to fourth order derivatives, integration, and the Kubelka-Munk correction algorithm. Automatic peak labeling, zoom, free and tracking cursor, multiple ordinate and abscissa formats. It also offers smart copy/paste and overlay modes, making spectral interpretation and presentation for publications a breeze. Accessories: 4. Compatible Computer System with 21" LED and Laser Jet Printer 5. Matched pair Standard Cuvettes Q.ty: 02 6. Matched pair Quads Cuvettes Q.ty: 02 Germany or UK or Japan or USA or equivalent Note: Valid authorized certificate from the manufacturers/foreign principals must be attached. Warranty: 01 year after installation Online UPS Compatible with spectrophotometer with minimum backup: 30 minutes (including batteries compatible with online UPS) and Desktop Computer Tower Desktop PC-11th Generation core i7-11700 processor 4GB 01 Terabyte Hard Drive Intel Shared Graphics Keyboard & Mouse included DVD R/W DOS (Dell, HP or Equivalent 01 Years Warranty) and Laser Jet Printer duplex (HP or Equivalent)</p>							

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02	Glassy Carbon Working Electrode Make in: China or Equivalent	05	EMOGTCVJD3CIAL OrigaTip - Glassy Carbon Tip ø3 for OrigaTrod (and EDI) Make : OrigaLys ElectroChem SAS Origin : France Rs.=1,357,000/-	Not Quoted	Not Quoted	Not Quoted	M/S H.A Shah & Sons	Rs.=1,357,000/-
03	Ag/AgCl Electrode Make in: China or Equivalent	05	812L120S7 (OGRAGAGCL) OrigaSens - Reference Electrode Ag/AgCl Saturated KCl Porous Pin Screw head ø12 ø8 x 120 mm (XR300/OGR006/E11.O GL.015-1_1) Make : OrigaLys ElectroChem SAS Origin : France Rs.=531,000/-	Not Quoted	Not Quoted	Not Quoted	M/S H.A Shah & Sons	Rs.=531,000/-
04	Pt Counter Electrode Make in: China or Equivalent	05	8L120S7 (OGVPTROD1) OrigaSens - Voltammetry Electrode Pt ø1 Grinded Screw head ø12 ø8 120mm (XM110 / OGV005 / E10.OGL.028/OGV005) Make : OrigaLys ElectroChem SAS Origin : France Rs.=619,500/-	Not Quoted	Not Quoted	Not Quoted	M/S H.A Shah & Sons	Rs.=619,500/-

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstech International	Prime Scientific Corporation	Bio Chemika Int.	Lowest Bidder Name	Total Amount with Taxes
05	<p>HPLC system</p> <p>8- Quaternary Pump</p> <ul style="list-style-type: none"> ▪ Pump pressure: 5000 psi or better ▪ Flow rate range (0.01-10.0 ml/min, in 0.01 ml increments) ▪ Delay volume is <650 ul (including Sample Management delay volume) ▪ Method linking; automated system shut down ▪ Built in high efficiency, low volume, and vacuum degassing system with separate vacuum chambers for each solvent. ▪ Flow precision of <= 0.075% RSD with flow accuracy of +/- 1%. ▪ Compositional accuracy is <0.5% and compositional precision is <0.5%, both measured at 1 ml/min. <p>9- Autosampler with Sample Cooling</p> <ul style="list-style-type: none"> ▪ temperature control module for controlling the sample temperature compartment between 4 and 40°C in 1° increments. ▪ Automatic routines for adding, mixing and injecting derivatized samples. ▪ Needle wash system that uses fresh solvent with each injection. ▪ Random access to any vial for multi-method operation. ▪ Programmable needle height control to help protect the needle from damage and allow greater flexibility when using advanced routines. ▪ All electric design for convenience and reliability. ▪ Precision is <0.5% for injections from 5-80 ul. Linearity is >0.999 coefficient of deviation from 1-100 ul. Carryover is <0.0025% from previous injection (Caffeine). ▪ 0.00 to 2000 ul Injection range with up to 99 injections per vial. Sample capacity is 120 (2ml) vials. Limited volume inserts allow as little as 0.1ul from 7ul. ▪ Events include 2 inject starts, inject stop and programmable contact closure. <p>10- Column Oven</p> <ul style="list-style-type: none"> ▪ Forced air recirculation Peltier-based column heater module ▪ Temperature range: 4°C to 65° C ▪ Must have option to accommodate column 	01	<p>G7111A HPLC system with all accessories Make: Agilent technologies Origin: Germany</p> <p>Rs.=22,400,000/-</p>	<p>Waters e2695 XE Alliance HPLC System with all accessories Make: Waters Corporation USA Origin: US, EU, Singapore</p> <p>Rs.=16,136,500/-</p>	<p>Vanquish Core HPLC System with all accessories Make: Thermo Fisher Scientific Origin: USA</p> <p>Rs.=23,010,000/-</p>	Not Quoted	M/S Kamstec International	Rs.=16,136,500/-

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstech International	Prime Scientific Corporation	Bio Chemika Int.	Lowest Bidder Name	Total Amount with Taxes
	<p>switching valve & 300cm columns.</p> <p>11- <u>Photo Diode Array Detector</u></p> <ul style="list-style-type: none"> ▪ Low noise sensitivity = <10 µAU ▪ 190-800 nm with 1.2 nm Digital and Optical Resolution. ▪ Spectral exposure optimization to maximize the signal-to-noise across the entire wavelength range with a single Deuterium lamp ▪ Flexible sampling rates for normal and fast LC separations from 1 to 80 Hz ▪ Independent optimization of Data Rate and Time Constant. ▪ Lamp Optimization Software – ensures the same light energy output for the entire life of the detector lamp. ▪ One lamp – not two – cuts the cost of maintenance and avoids the problem of lamp solarization, which is seen in two lamp systems, when the light from one lamp hazes the glass of the second lamp. ▪ Only one moving part – which means fewer parts to wear. ▪ Software can run detector as a single wavelength, multi-wavelength or spectral detector. ▪ Specialized routines such as MaxPlot, Purity determinations and spectral libraries. ▪ Collect 8 channels of 2D data at user defined bandwidth for user optimization of 2D detection. <p>12- <u>Fraction Collector</u></p> <ul style="list-style-type: none"> ▪ The Fraction Collector easy-to-use, stand-alone fraction collector designed for use with HPLC, Preparative HPLC, and MS applications. ▪ Compatible with flow rates as high as 300 mL per minute, the Fraction Collector handles a variety of adapter racks and collection vessels within a compact footprint. Its flexible design accommodates fraction sizes compatible with microtiter plates up to multiple liter containers: ▪ Intuitive keypad and screen view make setup easy ▪ Review results in real time, or via a post-run results table ▪ Remote management with Software for MS applications, choose from several task-specific sample run modes of operation (time, signal, 							

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13-	<p>peak numbers, etc.)</p> <p>Software Original/ Licensed software</p> <ul style="list-style-type: none"> ▪ Complete system with original CDS software fully compliant with 21 CFR ▪ Software must have option to multi-vendor system connectivity. ▪ Software must have LIMS / LMS support ▪ System must control mass spectrometry data with mass spectrometer upgradation. ▪ Must include System suitability for HPLC & Detector ▪ System qualification services (IQ/OQ) with original documentation. advanced system control data acquisition, and custom reporting features of Software, System must provide documentation to meet GxP and 21 CFR. <p>14- Accessories</p> <ul style="list-style-type: none"> ▪ C18. 4.6x250, 5um (Carbon Load 18%, pH Range 1-12, 130A): 01 Nos. ▪ PM Kit for Diode Array Detector : 01 No.(kit must include detector lamps and flow cell kit) ▪ PM Kit for separation module (Pump & Autosampler): 01 No. <p>(PM Kit: one diffuser assembly, one filter insert assembly, four stainless steel solvent filters, four face seals, 2 fluoroloy seals, one syringe, one compression screw, one sealwash injector tube, one needlewash frit, sealwash seals, two seals, one spacer, two plungers, one PTFE washer, two plunger seal wash, one needle wash filter, one filter retainer, thin walled PTFE tubing, two check valve cartridge assemblies, one injector needle and one injector needle ferrule.)</p> <ul style="list-style-type: none"> ▪ 2ml Glass vial Pre-slit septa- amber/glass: 500 vials ▪ Extended injection kit of 2,000 ul injection loop & 2,500 ul injection syringe. <p>Germany or UK or Japan or USA or equivalent Note: Valid authorized certificate from the manufacturers/foreign principals must be attached.</p> <p>Warranty: 01 year after installation Online UPS Compatible with HPLC with minimum backup: 30 minutes(including batteries compatible with online UPS) and Desktop Computer PC-11th Generation core i7-processor, 8GB RAM, 01</p>							

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	Terabyte SSD Drive Intel Shared Graphics Keyboard & Mouse included DVD R/W, 21" LCD (Dell, HP or Equivalent) and Laser Jet Printer with duplexer 01 Years Warranty (HP or Equivalent)							
6	<p>TGA/DSC Sample Weight Capacity: 200 mg defined as the maximum sample weight measurable (independent of pans), Weighing Precision: ± 0.1% Defined as the standard deviation of at least 10 measurements of a 100 mg standard weight, with removing and replacing the sample in between each measurement, Dynamic Baseline Drift (50 to 1,000 °C): <50 µg Defined as the maximum deviation from the smallest measured weight to the largest measured weight of an empty alumina cup, while being heated at 20°C/min in flowing nitrogen atmosphere (without any blank subtraction applied), Weight Sensitivity: 0.1 mg (1 ppm) Defined as 3X the average rms noise over the temperature range 50 to 1,500 °C or better Weight Repeatability: ± 0.1% of value or ±50 µg (whichever is greater), Temperature Range: ambient to 1500 °C or better Temperature Range: From Ambient to 1500 °C or better. Dynamic Temperature Precision: ±0.5°C, Isothermal Temperature Precision: ±0.1°C, Linear Heating Rates: 0.1 to 100°C/min in 0.01°C/min increments, Furnace Cooling: Forced Air 1600/1500°C to 50°C in < 40 min, It has a dual-beam horizontal thermo-balance design utilizing a differential weight loss between the two balances. It has intrinsically superior heat flow measurements as compared to single-beam designs. Dual-beam design also permits the unique ability to independently measure two TGA samples simultaneously (Dual Sample TGA). Software: It must include operating software which allows for the instrument to be fully calibrated and</p>		Not Quoted	Discovery SDT 650 - Simultaneous DSC-TGA with all accessories Make: TA Instruments Origin: USA Rs.=29,894,148/-	Not Quoted	Not Quoted	M/S Kamstech International	Rs.=29,894,148/-

Sr. No.	Tender Items	QTY	H.A Shah & Sons	Kamstech International	Prime Scientific Corporation	Bio Chemika Int.	Lowest Bidder Name	Total Amount with Taxes
	<p>verified automatically. Calibrations must include weight, heat flow, heat capacity, cell constant and temperature.</p> <p>The operating software should also be capable of periodically and automatically checking for updates via an internet connection, and downloading/installing those updates if desired. The data analysis software should be unkeyed, to allow for unlimited installations within one site. As required by OSHA product safety standards, the instrument must be NRTL certified, and carry the certification mark of the specific NRTL laboratory. Products that bear only non-NRTL certification marks (including the CE mark) do not meet the OSHA standard requiring NRTL approval of the product. In addition, specific documentation regarding NRTL certification must be provided with the proposal/bid package, Ability to abort a test and/or segment in a test when operator specified conditions are met. Ability to continue a run when disconnected from the computer/controller.</p> <p>Hi-Res TGA is defined as an advanced heater control technology to optimize weight loss resolution using the following (3) modes. All modes are used to separate overlapping transitions.</p> <ol style="list-style-type: none"> 1. Dynamic Heating Rate to automatically and continuously change heating rate as a function of decomposition (sample weight loss). 2. Constant Reaction Rate to automatically and continuously change heating rate to achieve a pre-determined rate of sample decomposition expressed in %/min. 3. Stepwise Isothermal to automatically change from heating to an isothermal hold when pre-selected limits of weight loss in %/min are met. <p>Modulated TGA</p> <ul style="list-style-type: none"> • The ability to apply sinusoidal temperature wave to a sample. Amplitude of sine wave ± 0.01 to 10°C; period from 100 to 1000 seconds., Calculates and displays the following kinetic parameters of decomposition on a continuous basis in real time, Activation energy (kJ/mol), o Log (Pre-exponential factor) (1/min), o ln (rate ratio), o Weight amplitude (mg/min), Modulated Temp ($^{\circ}\text{C}$). <p>Modulated DSC:</p> <ul style="list-style-type: none"> • Ability to apply sinusoidal temperature wave to sample: Amplitude of sine wave ± 0.01 to 10°C; 							

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	<p>frequency period from 10 to 1000 seconds., Must include the ability to perform quasi-isothermal experiments, i.e., holding isothermal with a small temperature modulation.</p> <ul style="list-style-type: none"> • Must be able to view the following signals in real-time during the experiment: Total Heat Flow, Total Heat Capacity, Reversing Heat Capacity, Reversing Heat Flow, Non-Reversing (Kinetic) Heat Flow, Modulated Temperature, Modulated Heat Flow, Heat Flow Phase, Reference Sine Angle, Temperature Amplitude, Heat Flow Amplitude <p>Must include all standard Accessories necessary for installation/operation.</p> <p>Must include startup kit including sample pans/cups</p> <p>Must include N₂ Gas Cylinder with regulator</p> <p>Must include air compressor with regulator</p> <p>Installation and training by factory trained engineer.</p> <p>Germany or UK or Japan or USA or equivalent</p> <p>Note: Valid authorized certificate from the manufacturers/foreign principals must be attached.</p> <p>Warranty: 01 year after installation.</p> <p>Online UPS Compatible with TGA/DSC with minimum backup: 30 minutes (including batteries compatible with online UPS) and Desktop Computer Tower Desktop PC-11th Generation core i7-11700 processor 4GB 01 Terabyte Hard Drive Intel Shared Graphics Keyboard & Mouse included DVD R/W DOS (Dell, HP or Equivalent 01 Year Warranty) and Laser Jet Printer duplex (HP or Equivalent)</p>							
7	<p>Bomb Calorimeter System</p> <ul style="list-style-type: none"> • Working (Operating) Temperature:15-70°C • Storage Temperature:0-70°C • Temperature Resolution:0.000001°C • Reproducibility/Repeatability:<0.01% RSD • Resolution:0.0001 MJ/Kg • Results per hour:Up to 8-9 samples per hour using 3 bayonet bomb vessels and 2 Air Coolers • Measuring range max. :99MJ, 99000J • Working temperature min.:1°C • Working temperature max: 50°C • Temperature Measurement Resolution 10 ppm (parts per million) • Cooling Medium: Air <p>Must include all standard Accessories necessary for</p>	01	Not Quoted	Not Quoted	Not Quoted	<p>Make & Model : CAL3K-F Calorimeter Country of Origin: South Africa</p> <p>Rs.=10,650,000/-</p>	M/S Bio Chemika Int.	Rs.=10,650,000/-

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	installation/operation Germany or UK or Japan or USA or equivalent Note: Valid authorized certificate from the manufacturers/foreign principals must be attached. Warranty: 01 year after installation. Online UPS Compatible with TGA/DSC with minimum backup: 30 minutes (including batteries compatible with online UPS) and Desktop Computer Tower Desktop PC-11 th Generation core i7-11700 processor 4GB 01 Terabyte Hard Drive Intel Shared Graphics Keyboard & Mouse included DVD R/W DOS (Dell, HP or Equivalent 01 Years Warranty) and Laser Jet Printer duplex (HP or Equivalent)							

Sr.#	Item Name	Lowest Evaluated Bidder Name	Required Qty.	Total Price (Rs.)
1	UV-Visible	M/S H.A Shah & Sons	01	Rs.=4,000,000/-
2.	Glassy Carbon Working Electrode	M/S H.A Shah & Sons	05	Rs.=1,357,000/-
3	Ag/AgCl Electrode	M/S H.A Shah & Sons	05	Rs.=531,000/-
4	Pt Counter Electrode	M/S H.A Shah & Sons	05	Rs.=619,500/-
5	HPLC System	M/S Kamstec International	01	Rs.=16,136,500/-
6	TGA/ DSC	M/S Kamstech International	01	Rs.=29,894,148/-
7	Bomb Calorimeter System	M/S Bio Chemika Int.	01	Rs.=10,650,000/-

◆ After the analysis of the above given rates, (items may be decreased/increased/withdrawn).

Pakeeza Ashraf 31/08/2023

Treasurer