



PROCUREMENT MANAGER
U.S.-Pakistan Center for Advanced Studies in Water

No. PM/USPCAS-W/MUET/JAM/-125
Dated: 08-Dec-2017

Assistant Manager (A&F)
Sindh Public Procurement Regulatory Authority (SPPRA),
Services General Administration &
Coordination Department Government of Sindh,
Barrack No. 8, Sindh Secretariat No.04-A, Court Road
KARACHI
Ph. NO. 021-9205356-69

Subject: - **SUBMISSION OF MEETING MINUTES AND BID EVALUATION REPORT OF THE WORK "PROCUREMENT OF LABORATORY EQUIPMENT FOR ADVANCE WATER & WASTE WATER QUALITY CONTROL LABORATORY AND PILOT SCALE WATER & WASTE WATER TREATMENT FIELD OF USPCAS-W, MUET, JAMSHORO".**

- **NIT NO. DD (PROC.)/MUET/JAM/-83, DATED: 25-08-2017**
- **SPPRA SERIAL NO. 34286, DATED: 29-08-2017.**

Dear Sir,

Please find enclosed herewith the minutes and the Bid Evaluation Report furnished in accordance with the Rule 41(9) of SPP Rules 2010 (Amended 2017), for your information and necessary action at your end.

1. Bid Evaluation Report (Original signed)
2. Minutes of Bid Opening Committee (Original signed)
3. Minutes of meeting of Technical Committee and Technical Report (Original signed)
4. Comparative Statement (Original signed)
5. Bidders Qualification Report (Original signed)
6. Attendance Sheets (Original signed)


Procurement Manager
USPCAS-W

Copy f.w.cs for information to:

1. Project Director, USPCAS-W, MUET, Jamshoro
2. Secretary to the Vice Chancellor, MUET Jamshoro

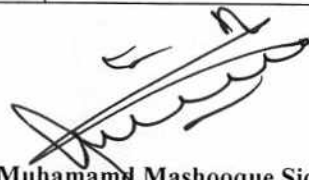
SPPRA INWARD CLERK
NO: 3454
DATED: 11-12-17

Bid Evaluation Report

1. Name of Procuring Agency: U.S-Pakistan Center for Advanced Studies in Water, Mehran University of Engineering & Technology, Jamshoro
2. Tender Reference No: PM/USPCAS-W/ MUET/JAM/83, Dated: 25-Aug-2017
3. Tender Description/Name of work/item: PROCUREMENT OF THE LAB EQUIPMENT OF ADVANCED WATER AND WASTEWATER QUALITY CONTROL LABORATORY AND PILOT SCALE WATER AND WASTE WATER TREATMENT FIELD.
4. Method of Procurement: Domestic/ Local
5. Tender Published: MUET Web Site on 25-Aug-2017 and on SPPRA Website 29-Aug-2017 SPPRA Sr. No. 34286 "Dawn News" on 27-Aug-2017 "Jung" on 27-Aug-2017 & "Sindh Express" on 27-Aug-2017
6. Total Bid documents Sold; 10 Nos.
7. Total Bids Received: 10 Nos.
8. Technical Bid Opening date: (if applicable) 21-Sep-2017
9. No. of Bid Technically Qualified (if applicable): 10 Nos.
10. Bid(s) Rejected: Nil.
11. Financial Bid Opening date: 10-Nov-2017
12. Bid Evaluation Report:

<i>S No</i>	<i>Name of Firm or Bidder</i>	<i>Cost offered by the Bidder</i>	<i>Ranking in terms of cost</i>	<i>Comparison with Estimated cost</i>	<i>Reasons for acceptance/ rejection</i>	<i>Remarks</i>
0	1	2	3	4	5	6
1.	M/s PCM Electrical Systems, Karachi.	ITEM WISE COMPARATIVE STATEMENT ATTACHED				
2.	M/s Finetech Technologies, Karachi					
3.	M/s Diagnostic Systems, Karachi					
4.	M/s Technology Links (Pvt)Ltd., Karachi					
5.	M/s Analytical Measuring Systems, Karachi					
6.	M/s Professional Systems, Islamabad					
7.	M/s Rizvi & Company, Karachi					
8.	M/s Paktech Instruments Co., Karachi					
9.	M/s KamsTech International, Karachi					


Abdul Ghafoor Kandhir,
Procurement Manager,
USPCAS-W
MUET, Jamshoro


Engr. Muhammad Mashooque Siddiqui
Director Procurement,
University of Sindh


Prof. Dr. B. K. Lashari,
Project Director,
USPCAS-W,
MUET, Jamshoro



PROCUREMENT MANAGER

U.S.-Pakistan Center for Advanced Studies in Water

SUBJECT: MINUTES OF THE MEETING OF TECHNICAL TENDER SCRUTINY COMMITTEE FOR EVALUATION OF TECHNICAL PROPOSALS SUBMITTED FOR PROCUREMENT OF LABORATORY EQUIPMENT FOR ADVANCED WATER & WASTE WATER QUALITY CONTROL LABORATORY AND PILOT SCALE WATER & WASTE WATER TREATMENT FIELD AT USPCAS-W, MUET, JAMSHORO, HELD ON 03-10-2017 AT 13:00 HRS IN THE OFFICE OF DR. RASOOL BUX MAHAR, PROFESSOR, USPCAS-W, MUET, JAMSHORO.

In order to evaluate the Technical Proposals of the venders for the above mentioned work the Committee comprising following members were constituted:

1. Dr. Rasool Bux Mahar Convener
Professor, USPCAS-W
2. Syeda Sara Hassan Member
Assistant Professor, USPCAS-W
3. Dr. Zubair Ahmed Member
Professor, USPCAS-W
4. Dr. Muhammad Yar Khawar Member
Emeritus Professor,
University of Sindh
5. Dr. Najma Memon Member
Associate Professor, NCEAC,
University of Sindh, Jamshoro

Accordingly, the meeting of the committee was convened on 02-Mar-2017. Procurement Manager, briefed the rest of the Committee members that Ten (10) firms purchased the bidding documents and submitted their bids on closing date & time i.e. on 20-09-2017 upto 12:30 PM as mentioned in the NIT published on University as well as SPPRA website and in 03 daily leading newspapers (English, Urdu & Sindhi). The following firms purchased the bidding documents & submitted the same as under:

S. No.	Name of Firm	Remarks
1.	M/s PCM Electrical Systems, Karachi.	Submitted
2.	M/s Finetech Technologies, Karachi	Submitted
3.	M/s Diagnostic Systems, Karachi	Submitted
4.	M/s Technology Links (Pvt)Ltd., Karachi	Submitted
5.	M/s Analytical Measuring Systems, Karachi	Submitted
6.	M/s Professional Systems, Islamabad	Submitted
7.	M/s Business Dynamics Enterprises, Karachi	Submitted
8.	M/s Rizvi & Company, Karachi	Submitted
9.	M/s Paktech Instruments Co., Karachi	Submitted
10.	M/s KamsTech International, Karachi	Submitted

He, further briefed that all ten (10) bidders submitted their proposals as per procedure adopted for the bidding on Single Stage-Two Envelope Procedure as per Rule 46(2) of SPP Rules-2010 (Amended 2017).

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E-mail: ag.kandhir@admin.muett.edu.pk, URL: water.muett.edu.pk



PROCUREMENT MANAGER
U.S.-Pakistan Center for Advanced Studies in Water

Later on, the Technical Proposals of the bidders were thoroughly checked & verified by the technical committee and the items mentioned in the proposals and made recommendations, which are attached as flag – 'A'.


In the light of recommendations of the Committee, all the Ten (10) venders were qualified on technical grounds. The Committee further recommended that Financial Proposal of all the technically qualified bidders shall be opened as per the guidelines provided in the SPP Rules-2010 (Amended 2017).

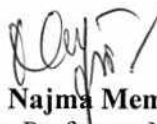

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University of Sindh, Jamshoro

Technical/ Recommendation of Departmental Scrutiny Committee for Procurement of Laboratory Equipment for Advanced Water & Waste Water Quality Control Laboratory

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
AW&W QCL (III)/01	Gas Chromatograph Mass Spectrophotometer Capillary Column Injector & other Essential accessories	1	M/S Technology Links, Karachi	Singapore GCMS-QP2020	<p>Specifications: EI without RP, High power oven type, 230V CE marked with GC-2010 Plus with AFC, SPL-2010 Plus, EI Source, 157L/s + 171L/sec GC Model: GC-2010 Plus Oven Temperature: 450 °C maximum, Sample Injection Unit Temperature: 450 °C maximum, Injection Port Temperature: 450 °C maximum, AFC Pressure Range: 970 kPa maximum, MS Type: Direct connection with capillary column, Temperature: 50 °C to 350 °C, Mass Analyzer: Metal quadrupole with pre-rod, Mass Range: m/z 1.5 to 1090, Possible setting of FWHM: 0.5 to 2.0 u, Stability: ± 0.1 u/48 hours (constant temperature), High-Speed Scan Control: ASSP™: Advanced Scanning Speed Protocol Ionization: EI (CI models are capable of CI, and NCI models are capable of CI and NCI.), Temperature: 140 to 300 °C, Filament: Dual, automatic switching, Electron Energy: 10 to 200 eV, Electron Current: 5 to 250 µA, Minimum Measurement Interval: 0.01 s (100 scan/sec maximum), Detector: Electron multiplier with low noise overdrive lens 8 × 10⁶ (dynamic range), Pump: 190 L/sec / 170 L/sec (He), Turbomolecular pump differential exhaust system, Auxiliary Pump: 30 L/min (60 Hz) oil rotary pump, Column Flow Rate: 15 mL/min maximum (He), Carrier Gas: Helium, hydrogen, nitrogen, Auto Injector: Auto injector for AOC-20i, GC-2010. Specification: Sample Injection Method : Liquid sample injection via special microsyringe, Sample</p> <p>Volume : 0.1 ~ 8.0 µl, 0.1µl steps (using 10ul syringe), 0.5 ~ 40 µl, 0.5 µl steps (using 50ul syringe), 2.5 ~ 200 µl, 2.5 µl steps (using 250ul syringe), Number of Samples : 6 vials (with option, 12 possible), Sample Vials : Glass construction, 1.5ml, 4ml, screw top, PTFE-coated septum, Rinse Solvent Vials : Glass construction, 4ml, screw top, PTFE-coated septum.</p>	1	Japan, shipment from Singapore	<p>Two vendors offered quotation for GCMS. 1. Technology link Pvt Ltd. (Shimadzu GCMS 2020, Japan, ship from Singapore), 2. Analytical Measuring Systems (AMS) Pvt Ltd. (Clarus 680/Clarus SQ 8C, ship from Singapore). Specifications of Shimadzu GCMS 2020 quoted by of M/s Technology Links are superior: e.g. Analyzer scan rate (20,000 u/sec as compared to scan rate of 12,5000 u/sec of the equipment quoted by M/S Analytical Measuring Systems, Karachi) dual filament, suitability with MS, sensitivity (EI scan S/N). The technical committee receive positive feedback regarding after sale technical support from M/S Technology Links. Therefore, technical committee recommend Shimadzu GCMS 2020. Committee does not recommend the offer from M/S Analytical Measuring Systems.</p>



 2 → *Yusuf Hameed*

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Auto Sampler AOC-20s 100/240V Auto Sampler with 1.5 ml Sample Vial Rack</p> <ul style="list-style-type: none"> • Up to 150 samples can be analyzed (1.5mL vials), • Teaching function, learning function, high transport reliability, • Can also be used with dual injection system. (GC-2010 only), GCMS (Shimadzu QP-2020), Shimadzu QP-2020 Ultra High Speed, Gas Chromatograph-Mass Spectrometer With EI/PCI/NCI Configuration, 225-35012-44 , GCMS-QP2020 W/O RP 230V 01 , APAEDW-KIT001394 , RPI Assy, 230V, CE marked, Include a Rotary pump (RPI) and connecting kit 01 223-62703-92 , LabSolutions GC, Workstation 01, 225-30444-92 , GCMS Insight Package 01 APAWLY-9781118980897 NIST Mass Spectral Library 01 225-17976-92 GC/MS Pesticides Library 3rd edition 01 225-21821-91 Maurer / Pfelegar / Weber Drug and Metabolites Mass Spectral Library 01, Flame Ionization Detector (FID) 221-73345-48 , FID-2010 Plus, 220/230/240V, CE with APC (*) 01, 221-44247-08, Standard samples: C12, C14, C16 01. 			
					<p>ACCESSORIES FOR FID : Air Cylinder with Regulator (Locally Supply) 01, Carrier Gas Supply Pipe 15m 01, MOISTURE TRAP (SILICAGEL) 01, AIR SUPPLY PIPE 01.</p> <p>ACCESSORIES FOR H2 GAS FOR FID: Multistage Pressur Regulator Hydrogen for FID (Provide Locally) 01, Gass Cylinder H2 purity 99.999% (Provide Locally) 01, Carrier Gas Supply Pipe 15m 01, Gas Filter, Molecular Sieve 01, Hydrogen Piping Adapter (Left-handed thread) 01.</p> <p>ACCESSORIES FOR N2 GAS FOR FID: Multistage N2 Gas Regulator (Provide Locally) 01, Gas N2 Cylinder 99.999% (Provide Locally) 01, Carrier Gas Supply Pipe 15m 01, Gas Filter, Molecular Sieve 01, Thermal Conductivity Detector (TCD) , CD-2010Plus 230V with APC 01, MGS-4 Manual Gas Sampler with 6-port valve 01, MGS-4 Adaptor for GC 01, Standard Sample for TCD n-decane/n-hexance, (5x2mL ampule) 01,</p> <p>Electron Capture Detector (ECD) , ECD-2010 Exceed 230V with APC, requires ECD detector unit 01, Electron Capture Detector, Controller ECD-2010 Exceed 01, Bypass Kit ECD-2010 Exceed 01, Oxygen trap 01</p>			
					<p>AUX temperature control unit, 230V 01, Auto-injector, AOC-20i for GC-2010 01, AOC 20s 100/240V Auto Sampler 01, installation attachment of AOC-20S for GC-2010 01, Utility Kit 01, Tool Kit 01, BHC Sigma Std (Supply Locally) 01, Consumables Kit (equivalent to 1-year supply) 01, Octafluoronaphthalene 1pg/ul in isoctane 01, Octafluoronaphthalene 100fg/ul in isoctane 01, Glass Lier with Wool 01, Octafluoronaphthalene 100pg/ul in isoctane 5pc/Set (For AOC-20i) 01, STANDARD SAMPLE(5 samples) Benzophenone 100pg/μL 01, Carrier Gas Supply Pipe 15m 01, GS Kits : GCMS GSKit 01:</p> <p>This GSKit includes the following items: SH-Rxi-5Sil MS, 30m, 0.25mm, 0.25um 01, Shimadzu 1 Triple (Oxygen/Moisture/Hydrocarbon)</p>			

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks	
					Helium-specific Filter Kit - 1/8" SS 01, 1.5mL Clear, Screw top Vials with caps and septa 01, This kit consists of: 1.5mL. screw, clear vials patch , Red silicone/PTFE septa and cap 01, GC Consumables trial kit , This kit consists of: 01, AOC-20i Syringe, 01, ceramic column cutter 01, 4 ferrules 01, 5 septa 01, liner split 01, liner splitless 01, Pressur Regulator Helium (Provide Locally) 01, Gass Cylinder Helium (Provide Locally) 01, Branded Personal Computer and Laser Jet Printer (Provide Locally) 01, UPS 10KVA with Built in Stabilizer (Provide Locally) 01, MICRO SYRINGE,7001N 02, MICRO SYRINGE,7105N 05, SNOOP,MS-SNOOP-80Z 01, 6 LTR ALUMINUM CYLINDER/BRASS, REGULATOR: DUAL STAGE SERIES 200 01, FERRULE SET(0.5) 10/PCT 03, FERRULE SET(0.8) 10/PCT 03, SH-Rtx-5, 0.25 um, 0.32 mmID x 30 m 05, SOAP BUBBLE FLOWMETER 01, Ferrule GVF-16-005 (10pcs/set) Required when I.D. 0.32mm 07, Ferrule GVF-16-004 (10pcs/set) 03, Glass Insert for SPL-2010/2014, for Split/Splitless Injection, for Split 10, Glass Insert for SPL-2010/2014, for Split/Splitless Injection 10, Nut, with SLIT M5 for Capillary Column Joint 03 1 Set.				
				OPTIONAL ACCESSORIES	BOX, HEAT PROCESSED (EI)	1			
					REPELLER ASSY, EI+	1			
					PM Kit for 1-year	1			
					SPL-2010 Plus, 230V with AFC Additional Injector The advantage of adding additional injector is that one more flow line including GC injector, 2nd column and GC Detectot FID/TCD/ECD cab e configured without distrubing the GCMS vacuum.	1			
					AU GASKET 5/PKT	1			
					NIPPLE,MS CLEANING	1			
					INSTALLATION PARTS,W/O PACKAGE	1			
					GC/MS Residual Pesticides Database (Quick-DB) Applicable instrument: GCMS-QP2010 Ultra, GCMS-TQ Series Quick-DB GC/MS Residual Pesticides Database This database is preregistered with calibration curves created utilizing pesticide surrogates, enabling quantitative analysis without the trouble of creating methods using standards. A total of 478 components are contained in the database, enabling the comprehensive quantitative analysis of pesticides.	1			
					GC/MS FORENSIC TOXICOLOGICAL DATABASE Applicable instrument: GCMS-QP2010 Series, GCMS-TQ Series GC/MS Forensic Toxicological Database This special database contains a comprehensive collection of dangerous drugs (illegal drugs, psychotropics, medicines, and agricultural chemicals) that are likely to be misused in crimes and poisonings. Further, relative response factors with internal standard substances have been registered for compounds frequently implicated in poisonings, so as to enable the rough estimation of quantitative values.	1			


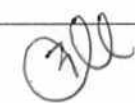



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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
			M/S Analytical Measuring Systems, Karachi	SINGAPORE CLARUS 680 GC BASE unit perkainalmer	Gas Chromatograph -Mass Spectrophotometer With FID,TCD,ECD ,Capillary Column Injector & other Essential accessories (WITH ELECTRONIC FLOW CONTROLLERS) Consisting of: CLARUS 680 GC Base Unit Instrument votage option 230V, 10 Amp, 50/60 Hz CLARUS 680 GC BASE UNIT (Electronic Flow Control) • Ten program steps and nine ramp rates temperature programming to 450°C (oven maximum software controlled). • Five method setup, generation, storage, and copy. • Up to two simultaneous analog outputs for integrator or recorder, switchable to either detector.	1	USA, shipment from SINGAPORE	
					• Digital electronic pressure readouts with capillary injectors. • Control of up to six solenoids for split vents and sampling valves • Up to 32-programmable timed events. • External computer communications allows full instrument control plus two simultaneous channels of raw data. • Battery RAM storage of GC methods, instrument configuration, and automation progrM/S Analytical Measuring Systems, Karachi.			
					• Control of up to 12 PPC modules. Oven The oven provides higher heat-up rates in defined temperature ranges to a maximum of 140 °C/min. The heat-up rates are determined by ballistic heating of the oven, after the oven has been at less than 30 °C for an hour, with a single injector and a single detector heated to 250 °C. The oven heat-up rate is met over the temperature range indicated below when the instrument's nominal AC line voltage (220 VAC, 230 VAC or 240 VAC for fast heating; 120 VAC or 230 VAC for standard heating) is applied to the instrument.			
					Typical Clarus 680 GC Dual-Channel Ramp Rates Temp. Range: 4 °C above ambient to 450 °C Temp. Prog. Ramps: 10 Level, 9 ramps Oven Volume:More than enough for two columns Ballistic oven cool-down The ballistic cool-down time for the oven from 450 °C to 50 °C is less than 2.0 minutes under the following conditions: • 1 injector and 1 detector at 250 °C • Lab conditions at 22 °C • Ballistic cool-down starts immediately after heat-up Oven Temperature			

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					Range : 4 °C above ambient (with zones at 250 °C) to 450 °C Settings : Temperature is directly selectable in 1 °C steps throughout the temperature range Average ambient : Not more than 0.05 °C change over a 5 °C change in ambient temperature, within sensitivity : High-temp protection : Firmware protection same as Clarus 500 GC firmware (prevents safety hazard) Oven Temperature Programming Temperature settings: Initial, final temperature, selectable within 1 °C increments Time settings : 1 min increments for values 0 to 998 mins 0.1 min increments for values 0 to 99.8 mins 0.01 min increments for value 0 to 9.99 mins and infinite time (999 mins)			
					Programming rate: 0.0 °C/min to 160.0 °C/min in 0.1 °C increments Program steps : 10 program steps and 9 program ramps CLARUS680 GC INTEGRAL LIQUID AUTOSAMPLER The Clarus 680 GC offers an optional, built-in syringe autosampler for maximum sampling capabilities. All control is accomplished through the keyboard or by a data system such as TotalChrom® chromatography data systems Injection speed: Normal, fast, slow Program modes : Two methods may be programmed Sample positions: 108, plus one priority Vial size: 2-mL (0.25 mL with insert) crimp-top caps			
					2-mL screw-top caps Waste and wash vials: 4 waste and 4 wash Waste and wash vial : 4 mL Syringe size: 0.5 µL, 5.0 µL or 50.0 µL Sampling volume: 0.1 µL to 0.5 µL from the 0.5-µL syringe in 0.1-µL increments or 0.5 µL to 5.0 µL from the 5.0-µL syringe in 0.5-µL increments or 5.0 µL to 50.0 µL from the 50.0-µL syringe in 5.0-µL increments			






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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Viscosity settings: 0-15 Maximum injections per vial : 15 Maximum solvent postwashes: 15 Maximum sample pumps: 15 Maximum sample prewashes: 15 Minimum sample: 5 µL when used with the 0.25-mL vial insert; 350 µL when used with the 2-mL vial Reproducibility: < 0.5% RSD for packed columns 1% C9 in C7, 1 µL injected Sample pre-rinse: Prepares the autosampler syringe in advance of the GC becoming ready SPLIT/SPLITLESS CAPILLARY COLUMN INJECTORS CH A (FRONT) CAPILLARY COLUMN INJECTOR W/PPC Include pressure regulator (0-60 psig) for digital display of column head pressure. Automatic control of split vent solenoid valve. Operating Temp.: 50°C to 450 °C in 1°C increments Flow controller: Programmable Pneumatic Control PPC (Electronic)</p> <p>Accessories: As per manufacturer standard</p> <ul style="list-style-type: none"> • PPC pneumatics – four software configurable modes: programmed flow, programmed pressure, programmed velocity or constant flow. Vacuum compensation software selectable • PPC pneumatics include automatic control of split vent by split flow or split ratio • Split ratio easily adjustable for a wide range of analysis conditions • Charcoal trap in split vent prevents contamination of split valve and lab air. • Two choices of liner: 2-mm and 4-mm internal diameter <p>Flame-ionization detector (FID) with PPC Front Includes amplifier and programmable pneumatic controls for detector combustion gases. Also provides automatic ignition of flame.</p>			
					<ul style="list-style-type: none"> • Wide linear dynamic range • No makeup gas required due to efficient sweeping of column effluent by hydrogen combustion gas • Air flow designed to minimize contamination and residue buildup • 1/8-in. fittings • PPC pneumatics – software flow control of hydrogen and air • "Flame out" warning and ready interlock 			



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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Operating temperature 100 °C to 450 °C in 1 °C increments Sensitivity > 0.015 coulombs/g C Minimum detectable quantity < 3 • 10-12 g C/sec nonane at a S/N = 2 to 1 Linearity > 106 Signal filtration 50, 200, 800 msec Input range 1, 20 Makeup gas Not required Thermal-Conductivity Detector (TCD) with PPC(1)(2) Rear Includes amplifier and programmable pneumatic control for reference gas</p> <ul style="list-style-type: none"> • Capillary-column compatible • Proven constant current design • Software protection to prevent filament burnout • Ideal for series operation • 1/8-in. fittings • PPC pneumatics -- software flow control of reference gas <p>Operating temperature 100 °C to 350 °C in 1 °C increments Sensitivity 9 µV/ppm nonane at 160 mA at the bridge with a detector temperature of 100 °C Minimum detectable quantity Typically < 1 ppm nonane Linearity > 105</p>			
					<p>Power supply Constant current with four selectable settings: 1: ±40 mA, 2: ±80 mA, 3: ±120 mA, 4: ±160 mA Signal filtration 50, 200, 800 msec Filament protection Self-limiting and resetting after transient overloads in either channel Makeup gas Not required for 0.32- to 0.53-mm i.d. columns with flows ≥ 5 mL/min Required for 0.25-mm or smaller i.d. columns Electron-Capture Detector (ECD) with PPC (3)REAR Includes amplifier and programmable pneumatic control for makeup gas.</p>			



2 → 

Item code #	Equipment/Instrument	Batch/Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<ul style="list-style-type: none"> • High sensitivity and excellent selectivity • High operating temperature for maximum stability • 1/8-in. fittings • PPC pneumatics – software flow control of makeup gas Source 15 mCi 63Ni Temperature protect 470 °C by software Carrier gas Either Ar/CH4 or N2 Operating temperature 100 °C to 450 °C in 1 °C increments Minimum detectable quantity < 0.05 pg perchloroethylene with argon/methane or nitrogen Linearity > 104 Signal filtration 200, 800 msec Makeup gas Standard DATA MANAGEMENT SYSTEM TurboMass 6.0 Software Includes the TurboMass 6.0 software CD, TurboMass Users Manual CD, and utilities CD. Note: This software			
					is only compatible with the Clarus SQ 8 MS systems. INTERNAL LINK CLRS680 GC W/TTL CHRM CS 19" LCD Laser Jet Printer MASS DETECTOR Clarus SQ 8 C with MFC (EI/CI-255 L/sec TMP) Compatible with the Clarus 680 GC, with Electron Impact (EI) and Chemical Impact (CI) ionization and 255 L/sec turbomolecular pump. Ion Source: PerkinElmer SMARTsource™—Simplified Maintenance and Removal Technology (EI and CI compatible) Filament: Marathon™—designed for long life Mass range : 1.0-1200 u (amu) Detector : Clarifi™ detector—long-life high sensitivity electron multiplier detector Analyzer: Quadrupole with prefilter Mass stability : ±0.1 m/z mass accuracy over 48 hours EI voltage : 10-100 eV Vacuum pumps: Clarus SQ 8 C MS: 255 L/sec (nitrogen) air-cooled turbomolecular pump (best-in-class helium pumping capacity) Vacuum gauge : Single wide-range gauge (standard on all models)			
					Field upgrades: Positive/negative chemical ionization (255 L/sec), standard to large turbomolecular pump (75 L/sec to 255 L/sec), water cooling (all models)			

2 → *Shubh* *Sharma* *Sharma* *Sharma*

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Pump-down time: 255 L/sec turbomolecular pump. <3 minutes for air/water check, <90 minutes for quantitative stability</p> <p>Temperature Settings: SMARTsource: Settable 50 °C – 350 °C, GC transfer line: Settable 50 °C – 350 °C</p> <p>Calibrant gas: PFTBA (FC-43), triazine for high mass calibration (optional), or user selectable</p> <p>MS Isolation: Swafer™ Micro-Channel Flow Technology</p> <p>Performance</p> <p>MS Data Collection : Full Scan, Selected Ion Monitoring (SIM), Simultaneous Full-Scan Selected Ion Monitoring (SIFI)</p> <p>Scan Rate : Fully variable up to 12,500 amu/sec</p> <p>Acquisition rate : 100 points/sec (SIM)</p> <p>Functions/Run: 32 functions or 32 ions per function</p> <p>Linear Dynamic Range: 106 dependant on acquisition rate</p> <p>Data system</p> <p>Software: TurboMass™ 6.0 designed for Windows 7 professional operating system</p> <p>Methods: Electronically transferable between all TurboMass and Clarus GC/MS systems</p> <p>GC Acquisition: Full control and data processing of a single GC/MS with up to 2 GC detectors</p>			
					<p>MS Tuning: UltraTune™: Standard Tune environmental tuning optimized for EPA methods; Custom Tune user definable optimization</p> <p>Reporting: Included in all models with specialized reports for: Environmental and forensic applications.</p> <p>Sensitivity</p> <p>Test Amount Signal to Noise Performance</p> <p>EI Full Scan 1 pg of octafluoronaphthalene 800:1</p> <p>Positive CI Full Scan 100 pg of benzophenone 1200:1</p> <p>Negative CI Full Scan 1 pg of octafluoronaphthalene 10,000:1</p> <p>Controller Clarus SQ 8 MS (PC Included)</p> <p>UK Power Cord - Linecord 2.5M 250V 10A</p> <p>TurboMass Library NIST 2017 v2.4</p> <p>GC STARTER KIT</p> <p>INCLUDES</p> <p>CAPILLARY COLUMNS</p>			

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					Rtx-CLPII Cap. Column.30m, 0.32mm ID, 0.25um Pesticide Stock Standard Organochlorine Pesticide Resolution Check Mix 1mL, 10-100ug/mL Hexane/Toluene Syringes 5ul metal plunger PTFE Tipped 0.63mm o.d. 0.5ul metal plunger 0.63mm o.d. SYRINGE 1 UL SYRINGE-0.5UL SYRINGE-GT 1001N 1.0ML SYRINGE-GT 1005N 5.0ML Other Items PORTABLE ELECTRONIC LEAK DETECTOR			
					DIGITAL-FLOW METER 50FT 1/8 COPPER TUBING KIT CAPILLARY INJECTOR STARTER KIT ACCESSORIES, SPARES & CONSUMABLES GRAPHITE FERRULES 1/16 X 0.4MM PK/10 GRAPHITE FERRULE 1/8 X 0.5MM PK/10 NUT- UNION MALE EXTEND 1/16 TBG SST GC/MS GAS PURIFIER 21IN LONG 1/8IN FIT Trap, Moisture High Capacity, 1/8" Fittings Super-Clean Click-on Trap Replacement Helium Specific Triple Trap Oxygen/Moisture/Hydrocarbon Trap, Hydrocarbon Refillable, 1/8" Fittings TRAP-MOISTURE 70ML 1/8 FTG TEST MIX-GC/MS SENSITIVITY TEST MIX-GC DET EVALUATION MultiStage Helium Gas Regulator with Helium Gas MultiStage Nitrogen Gas Regulator with Nitrogen Gas Online UPS Pure Sine Wave 10 KVA Servo Motor Type Voltage Stabilizer 10KVA			







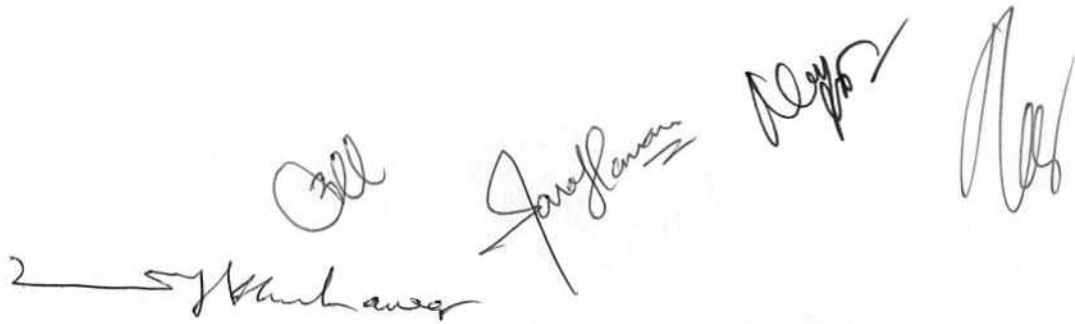

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
AW&W QCL(III)/02	Triple Quadrupole LC/ MS System	1	M/S Technology Links, Karachi	Singapore LCMS- 8050	<p>Technical Specification LCMS- 8050</p> <p>Specification: Mass range: m/z 2 to 2,000 Sensitivity : ESI positive: 1 pg reserpine, S/N > 100,000:1 (RMS) ESI negative: 1 pg chloramphenicol, S/N > 60,000:1 (RMS) Resolution: R < 0,7 u FWHM Mass stability: 0.05 u/12 hr Cross-talk: < 0.003 % Minimum pause time: 1 msec Minimum dwell time: 0.8 msec Scan speed: Max 30,000 u/sec (in all modes of scanning) (0.1 u step: 300,000 data points/sec) Polarity switching time: 5 msec Interface: ESI (Standard), APCI (Optional), DUIS (Optional) Applicable LC ow rate: ESI 1 µL/min to 2 mL/min MRM transition speed: Max 555 channels/sec</p>	1	Japan, shipment from singapore	<p>Three vendors quoted for LC/MS-MS.</p> <ul style="list-style-type: none"> - Technology links (Schimadzu, Japan, ship from Singapore); - Kamstec (Waters, USA, UK, Ship from Austria) and - Analytical Measuring Systems (AMS) Pvt Ltd (AB Sciex, USA and Canada, ship from Holland), <p>Committee ranked the offer from M/s Kamstec (Waters) #1 with all option.</p> <p>Committee ranked the offer from M/s Technology Links (Shimadzu) #2,</p> <p>Committee does not recommend the offer from M/S Analytical Measuring Systems. (AB Sciex).</p> <p>Technology link (Schimadzu) and Kamstec (Waters) maintain good reputation of backup technical support and services. Committee members conducted market survey to get direct feedback from different end users. All end users were satisfied with after sale technical support/services from M/s Technology link and M/s Kamstec. Technical committee members from Sindh University also have good experience for backup technical support from M/s Technology Links.</p>





Item code #	Equipment/Instrument	Batch/Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Block heater maximum temperature: ESI/DUIS: 500 °C APCI: 300 °C Interface maximum temperature: ESI/DUIS: 400 °C APCI: 500 °C Analysis mode: Q1 Scan/SIM Q3 Scan/SIM MRM Precursor ion scan Product ion scan Neutral loss scan Mass Analyzer and Detector Mass analyzers: Q1 & Q3 are molybdenum hyperbolic mass filters with pre-rods; Q1 includes post-rods Collision cell: Tapered multipole type ultra-high-speed collision cell (UFSweeper™ III collision cell)</p> <p>Detector: Secondary electron multiplier with off-axis conversion dynode Ion optics: Q-array focus optics operating in Field-Flow mode, multipole transfer optics Digital detection system: Operates in pulse counting mode for fastest operation Detection mode: Ultra-fast positive/negative ion switching Dynamic range (pulse counting): 2 × 10⁷ cps</p>			<p>On the basis of company/vendor services and technical specification, the quoted instruments are placed in decreasing order of quality.</p> <ol style="list-style-type: none"> 1. Waters 2. Shimadzu 3. Sciex <p>Following are basis of ranking.</p> <p>Waters (Kamtec)</p> <ul style="list-style-type: none"> - 32768 MRM channels - Z- spray technology (patent of Waters) - Thermal desorption for less sample preparation - Libraries/database for organic pollutants - MRM S/N is 100,000:1 - Waters has superior company profile - Stepwave transfer optics – leading UPLC/MS/MS sensitivity <p>Schimadzu (Technology links)</p> <ul style="list-style-type: none"> - Polarity switching is better
					<p>Vacuum system: Rotary pump: 1 unit Vacuum pumping speed: 28 m³/hr Triple-inlet turbo molecular pump: 1 unit 40 L/sec, 260 L/sec, 210 L/sec</p> <p>Pump Specification: LC-30AD, Solvent delivery unit 230V CE Solvent delivery method: Micro-volume double plunger pump</p>			<p>AB Sciex (M/S Analytical Measuring Systems) M/S Analytical Measuring Systems provided one main offer and two alternatives for LC/MS-MS- LC with triple quadruple, Q-trap and Q-TOF from AB Sciex. AB Sciex is a new company in the market. Also, they didn't provide any library match. Further, backup services for GCMS and LS/MS from M/S Analytical Measuring Systems are not up to the required</p>

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Plunger capacity: 10 µL Flow-rate setting range :0.0001 to 3.0000 mL/min (to 130 MPa) 3.0001 to 5.0000 mL/min (to 80 MPa) 5.0001 to 10.0000 mL/min (to 22 MPa) Flow-rate accuracy: ± 1% (under specified conditions) Flow-rate precision: Less than 0.06%RSD or 0.02 minSD whichever is the greater Gradient type: High-pressure/low-pressure gradient mixing Gradient mixing accuracy: ± 0.5% (under specified conditions) Plunger rinsing mechanism: Equipped with an automatic rinsing kit Safety measures: Liquid-leakage sensor, high-pressure/low-pressure limits Available pH range: 1 to 9 Operating temperature range: 4 to 35°C</p> <p>Dimensions, weight: W260 × D500 × H140 mm, 11.8 kg Power requirements: AC 110 V, 230 V, 150 VA, 50/60 Hz Degasser DGU-20A5R Specification: Number of Flow Lines : 5 lines Degassing Performance: UV absorption difference with and without using the degasser is over 300mAU in the following conditions-using UV absorption detector (wavelength of 210nm, sensitivity 0.5 AU) following methanol saturated with dissolved oxygen (HPLC grade at 25 oC) at a rate of 1mL/min Max. Operating Flow Rate 20 mL/min per flow line (Using deionized water. Applicable range varies depending on the solvent being delivered.) Internal Capacity 170µl per flow line Pressure Resistance 98kPa (1kgf/cm2) or less (only when suctioning with the delivery unit. Pressurized delivery to the degasser is prohibited.)</p>			<p>Therefore, the technical committee decided not to consider offer for this item from M/S Analytical Measuring Systems, Karachi.</p>

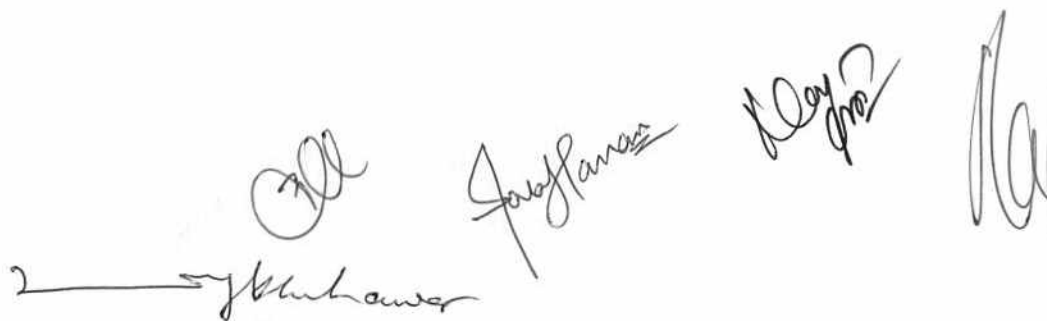


2 → Syed Khuram

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Tubing 3 mm O.D. × 1.5 mm I.D. PTFE tubing Materials Contacting Solvents Special synthetic polymers designed for all solvents (degassing membrane), PEEK (connector joints) External Output When system self-diagnostics detects an abnormality, a signal is output to the external terminal (ALARM). Self-Cleaning Includes mechanism that extends vacuum pump life by drawing in air when the vacuum pump is running. CAT NO. & DESCRIPTION Column Oven Cooling Type Specification: Temperature-control method : Forced-air circulation Cooling method: Electronic cooling Temperature-setting range : 4°C to 85°C Temperature-control precision: 0.1°C max. (typically 0.04°C max.) Temperature-control range: 10°C below room temperature to 85°C</p> <p>Storage capacity: W220 × D95 × H365 mm Storable devices: 2 manual injectors, gradient mixer, 2 high-pressure flow-line selection valves, etc. Time program: Linear temperature progrM/S Analytical Measuring Systems, Karachi supported Safety measures: Solvent sensor, temperature fuse, temperature upper limit Operating temperature range: 4°C to 35°C Dimensions, weight: W260 × D420 × H415 mm, 23 kg Power requirements: AC 110V, 230V, 600VA, 50/60Hz Auto Sampler SIL-30AC, Autosampler Specification: Injection method: Standard: Total sample injection, variable injection volume</p>			


 2 → Khan awer

Item code #	Equipment/Instrument	Batch/Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Maximum operating pressure: 130 Mpa Injection-volume setting range: Total volume injection: 0.1 to 50 µL Loop injection: 0.1 to 20 µL (select the loop from 5 µL and 20 µL) (0.1 to 9.9 µL in 0.1 µL increments, 10 to 50 µL in 1 µL increments) Number of processed samples: 175 (w/1 mL sample vials), 105 (w/1.5 mL sample vials), 50 (w/4 mL sample vials), 192 (w/2 microtiter plates each with 96 wells), 768 (w/2 microtiter plates each with 384 wells). Also, ten 1.5 mL vials in addition to each of the above. Injection-volume accuracy: ± 1% (total volume injection, under specified conditions) Injection-volume precision: RSD 0.25% (total volume injection, under specified conditions)</p>			
					<p>Cross-contamination: 0.0015% or less (without rinsing, caffeine, detection UV) Injection operating time: 22 sec (specified conditions) Number of repeated injections: 30 max. per sample Needle rinsing: Set freely before and after sample injection, outer and inner of needle, 4 solvents max. Sample cooler: Block cooling/heating, used together with dehumidifying function, 4 to 40°C Safety measures: Liquid-leakage sensor Operating pH range: 1 to 9 (1 to 14 option) Operating temperature range: 4 to 35°C Dimensions, weight: W260 × D500 × H415 mm, 30 kg Power requirements: AC 110 V, 230 V, 300 VA, 50/60 Hz CAT NO. & DESCRIPTION Photodiode Array Detector SPD-M30A Specification: Light source: Deuterium (D2) lamp Number of diode elements: 1024 Wavelength range: 190 to 700 nm Slit width: 1 nm, 8 nm</p>			



Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Wavelength accuracy: ± 1 nm Noise: 0.4×10^{-5} AU (under specified conditions) Drift: 0.5×10^{-3} AU/h (under specified conditions) Linearity: 2.0 AU (ASTM standard) Cell: Standard cell: Optical path length: 10 mm, Capacity: 1 μL, Pressure: 8 Mpa Functions: Contour output spectrum library, MAX plotting Safety measures: Liquid-leakage sensor Operating temperature range: 4 to 35°C Dimensions, weight: W260 \times D500 \times H140 mm, 12 kg Power requirements: AC 110 V, 230 V, 150 VA, 50/60 Hz Flow Control Valve Specification: FCV-20AH2, 230V CEMarked High Pressure Flow Switching Valve High Pressure 6-port, 2-position valve with controller to perform automatic 2-column switching, on-line sample pretreatment or flow line switching. Specification: Valve flow line type: 6-port, 2-position high pressure valve Usage pressure: 34.3MPa (350kgf/cm²) max. Flow line diameter: Approximately 0.5mm Flow line switching time: Approximately 0.2sec</p> <p>Liquid-contacting part materials: SUS316L, polyimide, alumina ceramic Operating Temperature Range: Ambient 4 - 35°C, valve 4 - 85°C Dimensions: W 110 \times H 150 \times D 270mm, excluding protruding parts Weight: 5kg</p>			
			M/S Kamstec International Karachi	Waters Xevo TQ-S micro LC-MS/MS System	<p>Xevo TQ-S micro, Vac Rough Pump + Freq Conv, MassLynx Workstation with TL, ACQUITY UPLC H-Class Core System, TUBING, ROLL, .0025" X 60" -QTY 3, NUT/FERR,UPCHURCH,F300,PLATFORM LC,QTY 12, MS Ref Stds Xevo TQ-S micro, ACQUITY UPLC BEH C18 1.7μm 2.1\times100mm Col, Nitrogen Gas Cylinder along with Regulator. The Xevo TQS micro is a sensitive but compact tandem quadrupole mass spectrometer featuring reliable performance with a wide dynamic range and high rates of data acquisition. robust sensitivity is enabled by proven Zspray and Stepwave which facilitate the detection of analytes at low concentrations in complex matrices and enable low volume injections with consistent, precise and accurate results. Xtended dynamic range (XDR) technology provides accessible sensitivity and method transfer. the Xevo TQS micro makes it easier to confidently quantify more analytes using reproducible high acquisition rates with Xcellerated ion transfer (XIT). Using radar which enables rapid switching btw MS full scan and MS/MS acquisition modes, analysts can understand sample complexity and improve method development. The following items are included as part of the standard system: Zspray API interface: Dual orthogonal interface for robust LC/MS.</p>	1	UK	

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Electrospray (ESI) inlet probe: for efficient ionization of a wide range of compounds, ESCi ionization capability, Intellistart fluidics: automated tuning, calibration and method development. Target Lynx XS: application manager, Open Lynx: application manager.</p> <p>1. Zspray API interface: This instrument is equipped with an atmospheric pressure ionization (API) LC interface. the source and spraying elements are visible through a transparent window in the enclosure and are easily accessible via a quick release mechanism. the source elements may be wiped cleaned in situ or removed for cleaning without the need for tools and without breaking vacuum. the nebulized spray is orientated orthogonally and positioned off axis for maximum source longevity and analyser protection against dirty samples. the source also includes facilities for de clustering ions formed at atmospheric pressure. positive and negative capability is included. positive ion, negative ion and ESCi capability is available as standard.</p>			
					<p>2. Intellistart Fluidics: the instrument is equipped with an on-board infusion system capable of delivering reference solutions from 2 built in vial locations. the on board fluidics system is controlled by the intellistart software to provide automated instrument setup, mass calibration and method development. the reference solutions are delivered via switching valves for either direct or combined (into an LC flow) infusion into the API source. the valves in addition can be programmed from the software to function as an LC flow divert. If required the fluidics can be controlled manually via the system console., 3. Tandem quadrupole analyzer: the instrument is equipped with two high performance quadrupole mass analysers with inter-element beam focusing and a mass range of 2-2000 amu. pre-filters also are fitted to the mass analysers to maximise resolution and transmission. the pre-filters also eliminate the need for cleaning of the quadrupole mass analysers. all lens and analyser voltages are digitally controlled. analyser parameters may be programmed with respect to mass for optimal performance. analyser parameters used for data acquisition are automatically recorded and opened to the relevant data file.</p>			

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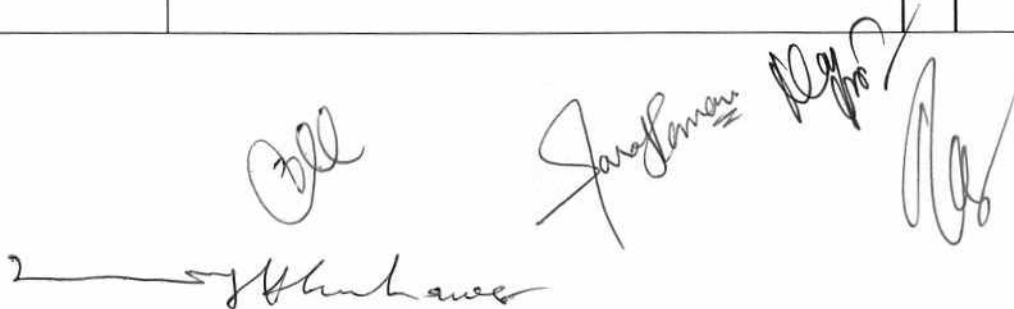
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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>4. Stepwave ion transfer optics: this instrument is equipped with patented, off-axis stepwave TM ion transfer optics. uniquely the step Wave technology both dramatically increases the efficiency of ion transfer from the ion source to the quadrupole MS analyser at the same time as efficiently eliminating undesirable neutral contaminants. the technology employed allows Xevo TQ-S micro to deliver unprecedented levels of sensitivity, speed and selectivity. , 5. Collision cell: the collision cell can be operated as a high efficiency travelling wave (T-Wave) device for collision induced dissociation. the travelling wave enables rapid cell clearance and refill for fast MRM transition switching while maintaining optimum single to noise. (T-wave: the cell can be operated as a high efficiency travelling wave (T-Wave) device for collision induced dissociation. the travelling wave enables rapid cell clearance and refill for fast MRM transition switching while maintaining optimum single to noise., Radar: an information-rich acquisition approach that allows you to collect highly specific quantitative MRM data for target compounds while providing additional spectral data to help visualize all other components in the sample.)</p>			
					<p>6. Detector extended dynamic range (XDR): the instrument is equipped with a low noise dynolite photomultiplier detector. the detector is positioned after the second analyser. a high voltage conversion dynode and phosphor are positioned at 90o off-axis to the analyser for the elimination of neutral noise. the detector features novel, integral focusing optics, which provides a detection efficiency approaching 100% for single ions. new XDR electronics incorporate 40 MS/s AND 16 bit ADC to increase the dynamic range. the photomultiplier is enclosed in its own vacuum envelope for long life., 7. Mass Lynx performance workstation with TL: multi-tasking suite of analytical applications and instrument software operating in microsoft window environment. massLynx includes, as standard the following items: -Quanpedia: An extensible and searchable data base for quantitative LC/MS method information. quanpedia offers you a simple and convenient way to rapidly create complete LC/MS data acquisition and processing methods. -QC monitor: An automated tool that provides "on time" quantitative data quality monitoring to determine whether a QC or blank sample is within tolerances specified by the user. prevents precious samples from being injected if the LC/MS system is not performing appropriately.</p>			







 2 → J. K. H. auser

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>Target Lynx: Market leading quantitation processing and reporting software. with TargetLynx the process of quantitation is simple than ever. the results browser and report generator clearly indicate when samples contain residues above minimum reporting levels and include a wide range of automated QC and confirmatory checking so potentially thousands of calculations are done automatically. -Trendplot: A data plotting tool that provides statistical information on any calculated information contained in one or more TargetLynx repots (intra and intra-batch). a) Mass spectrometer control software: (a) Data aquisition formats: scan data can be acquired to file in the following format: centroided data acquisition. profile data acquisition. multi channel Analysis(MCA) data acquisition. b) MS and MS/MS acqisition functions: The following data acquisition functions are available: 512 acquisition functions per method, each containing up to 32 MRM channels (secure operation mode only supports 32 acquisition functions per method, each containing up to 32MRM channels). MS scanning. MS selected ion recording. MS/MS precursor ion scanning (daughters) scan wave enhanced MS/MS product ion scanning (daughters) MS/MS netural loss scanning. MS/MS multiple reaction monitoring.</p>			
					<p>Data directed switching (automated MS to MS/MS scan function switching) MS full scan switching to product ion scanning (ScanWave enhanced option) Precursor ion scanning switching to product ion scanning (ScanWave enhanced option) Neutral loss scanning switching to product ion scanning (ScanWave enhanced option) polarity mode switching. ionisation mode switching (ESCi) External contact start/stop/ events. Analogue channel acquisition via an e-SAT/IN module. c) Tuning utilities: The system features easy to use atutomated and manual tuning and calibration software tools. Tuning parameters include: Ionisation mode and polarity, MS & MS/MS acquisition, All ion source parameters, All lens voltages, MS1 and MS2 resolution, MS1 & MS2 ion energy, Photomultiplier gain, d) Inlet control software: Integrated control of specific waters LC, autosampler and detector systems. third party LC and auto sampler systems from specified venders. -General mass lynx data processing and review: spectrum review and processing , chromatogram review and processing, 3-D contour plotting , spectral library search facilities (uer defined or commercial libraries) , batch processing of qualitative and quantitative sample sets., 8. Acquity uplc H-class core system : The ACQUITY UPLC H-Class core system includes integrated solvent, sample and single column heater (CH-A) configured for quaternary solvent delivery (QSM) and sample introduction via a direct inject sample manager (SM-FTN).</p>			



 2 → y h h h a w e s

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>The system may be configured for a broad range of applications supported by UPLC optional detectors, mass spectrometers and mass detectors, with a choice of instrument control and data management software. the following items are included as part of the core system: -Acquity uplc uplc H-class sample manager-flow-Through-Needle(SM-FTN) , column heater with Active Pre-Heating (CH-A), ACQUITY UPLC Solvent tray Module, ACQUITY UPLC H-Class system start up kit, leak sensores ACQUITY, UPLC BEH C18 Column, 2.1 x 50 mm, 1.7µm, ACQUITY UPLC start-up solution, information set vials, ACQUITY UPLC system Driver pack DP2017R1, H-Class Quaternary Solvent Manager(QSM)</p> <p>a) Quaternary solvent manager.: tHE Quaternary Solvent Manager (QSM) is a high-pressure pump that can simultaneously pump for degassed solvents (A, B, C, & D). A gradient proportioning valve (GPV) is used to dynamically blend solvent in any specified combination producing predictable gradient segments regardless of solvent compressibility and system backpressure. Solvent selection and blending occur on the low-pressure side of the solvent delivery system and solvents continue to blend under high pressure in each piston chamber. integrated degasser chambers (1 per solvent line) automatically remove dissolved gasses from up to four (4) elution solvents.</p>			
					<p>sample management is supported through a choice of plates and vial holders. Two (2) plates or holders are supported in the SM-FTN. Any sample position may be accessed at any time, including stat sample processing. sample injection volumes of 0.1-10µL are supported by the standard configuration. optional extension loops can extend the injection volume up to 1000µL. The robust design ensures a proper needle seal even at operating pressure up to 15,000 psi / 1,000 bar. sample temperature is regulated over a range of 4°C to 40°C using peltier technology. Dual leak sensor identify and manage solvent leaks at the injection valve and from any of the column management products, during unattended operation. programmable, integrated wash system uses a single solvent to clean the sample needle and prime the system resulting in ultra-low carryover performance (<0.004%). c) Column heater (CH-A) module.: The column heater insulates the column from ambient environment variations. Temperature controle is maintained for the range of 20C to 90C. Columns having dimensions up to 4.6mm I.D. and up to 150 mm length (including guard column) may be inserted into the heater with no tubing modification required for detector interface . The CH-A comes standard with active pre-heating (APH) enabling active solvent conditioning, prior to the column, improving chromatographic separations.</p>			




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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>ACQUITY UPLC Columns, equipped standard with eCord information Management Technology, interface with a communications reader in the column heater module to enable bidirectional communication of column manufacturing information and time-based usage of the column. All information is stored in the eCord device, and is accessible through the ACQUITY UOLC System instrument Console. The Column Heater is an integral component of the ACQUITY UOLC sample Manager. The module may be oriented outward from the sample Manager (requires optional MS interface kit) to facilitate proximal interface with a mass spectrometer. 9) (Optional) 2998 PDA detector with low dispersion analytical flow cell.: The 2998 Photodiode Array (PDA) Detector offers advanced optical detection providing unprecedented trace impurity detector for any lab application from compound identification to method development. for routine analyses, the 2998 PDA detector is reliable, easy-to-use, and has enhanced software control to provide flexibility for simultaneous 2D and 3D operation .</p>			
					<p>Features include: Patented TaperSlit flow cell ensures high sensitivity while maintaining optimal spectral performance, Low noise performance of <10 µAU - Wide, linear dynamic range with constant optical bandpass, Simultaneous quantification of high- and low-level components within a single chromatographic separation, Flexible sampling rates for normal and fast LC separations from 1 to 80 Hz, independent optimization of sampling rate and time constant gives you the ability to tune your detector to your separation goals, definitive compound identification & co-elution detection, Spectral exposure optimization ton maximize the signal-to-noise across the entire wavelength range with a single Deuterium lamp, lamp optimization for the best s/n performance over the lifetime of a Deuterium lamp, Console software for simple control, monitoring, and diagnostics , Thermal wander management for maximum baseline stability, flow cell options to match your separation scale and type, Diagnostics through front panel or Waters Console software. 10) Computer, printer, LCD, Branded Dell or HP PC 2.8 GHz or Higher , Branded PC with Licensed operating System (windows) RAM 8 GB, HD 100 GB, GB, CD/DVD ROM, FDD, Keyboard , Mouse, 21 colored Monitor, Laser Jet Printer, Warranty: 03 years Repair and maintenance. 8-10 KVA online UPS on international Brand will be locally with warranty and installation at Site.</p>			

Cell

Waters / Garofano

AS

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Item code #	Equipment/Instrument	Batch/Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>11) Local supplies of Argon gas regulator and other computer, printer, LCD, UPS.: 8-10 KVA online UPS on international Brand will be locally with warranty and installation at Site . Argon gas cylinder required purity and regulator will be provided alongwith other accessories required for installation. Site Preparation Guide is included for customer reference. 12) FAT, after fabrication test and pre inspection.; it will be arranged by KM/S Analytical Measuring Systems, Karachitec and Economy Class Air Fare, Visa Support Letter and Moderate Hotel , Meals & Local Transportation will be provided for two days. 13) Insurance.; Insurance will be covered by KM/S Analytical Measuring Systems, Karachitec from Manufacturer Location till University. 14) Local clearance transportation :Coustoms Clearance agent Charges, Local transportation and other minor expenses will be covered by M/S Analytical Measuring Systems, Karachi. 15) Standards, chemicals, glassware, utilities, environment: KM/S Analytical Measuring Systems, Karachitec will provide start up kit for installation, demonstration and training m, however MS grad standards, MS grad chemicals, Glassware , Utilities and Suitable Space will be Customer responsibility . Pre-installation requirements document is attached for Reference.</p>			
				Optional Items	<p>Nitrogen Generator NM32LA 230v PDA Detector , Not mentioned in tender and only if required PM kit for Acquity H-class quaternary solvent manager (QSM) PM kit for Acquity H-class sample manage-FTN PM kit for Acquity PDA XEVO TQ-Smicro rotary PM kit W/CHEM Local expensis including transportation, clearance, insurance etc</p>			
			M/S Analytical Measuring Systems, Karachi	SCIEX Triple Quad™3500	<p>SYSTEM SPECIFICATIONS: Sensitivity MRM mode - positive Reserpine 1 pg on column S/N > 15,000 Sensitivity MRM mode - negative Chloramphenicol 1 pg on column S/N > 15,000 Scan speed 12,000 Da/sec Polarity switching 50 msec, in MRM and Scheduled MRM™ (sMRM) modes Minimum MRM Dwell Time 1 msec Mass range (m/z) 5-2000 Cross talk for Reserpine 609/195 No signifcant cross talk detectable with 2 msec dwell time and 3 msec inter-MRM pause time Mass stability 0.1 Da over 24 hours Scan types Full scan MS and selected ion for both Q1 and Q3, product ion scan, precursor ion scan, neutral loss or gain scan, multiple reaction monitoring (MRM), Scheduled MRM (sMRM) Detector type AcQuRate™ Pulse Counting CEM Dynamic range 5 orders of magnitude Ionization source Turbo V™ source housing with TurbolonSpray® Probe or APCI probe maximum temperature: 750°C</p>	1	USA, shipment from SINGAPORE	



Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>SYSTEM SPECIFICATIONS</p> <p>The SCIEX Triple Quad 3500 System is a modernized, affordably-priced, bench top triple quadrupole mass spectrometer designed for LC-MS/MS analyses. This instrument provides the productivity, reliability, and robustness required for today's analytical laboratories. The powerful hardware offers ultimate performance on a budget for quantitation of hundreds of compounds in hundreds of samples - day after day, year after year. Flow rate compatibility 5 µL/min to 3 mL/min</p> <p>Built-in devices High-precision syringe pump and switching valve</p> <p>Software Analyst® 1.6.2 software with components for 3500 instrument or later, contains technical controls for 21 CFR Part 11 compliance; includes Scheduled MRM™ Algorithm For Research Use Only. Not for use in diagnostic procedures. RUO-MKT-04-3937-A</p>			
				<p>SCIEX QTRAP® 4500 LC-MS/MS</p>	<p>Ion Sources</p> <p>1.1 Turbo V™ Source Housing</p> <p>1.1.1 The instrument ionization source housing will have a source housing hosting interchangeable APCI (Atmospheric Pressure Chemical Ionization) probe and ESI probes. Each probe will be coded for automatic identification by the software/firmware of the host system.</p> <p>1.1.2 The source will have three high-temperature, self-cleaning ceramic heaters with embedded temperature sensors.</p> <p>1.1.3 The source will have orthogonal spraying for improved robustness.</p> <p>1.1.4 The source will have two viewing ports – one large frontal and one lateral - for best performance optimization.</p> <p>1.1.5 The source can be removed from the host system without tools and be replaced with a different one in less than 5 minutes.</p>	1	USA, shipment from SINGAPORE	

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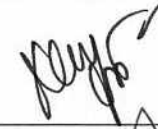


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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>1.1.6 The source housing will be fully vented to eliminate contamination of lab air.</p> <p>1.1.7 The source housing will be fully interlocked. All gas and power supplies to the source are automatically shut down when the housing is removed from the host system.</p> <p>1.2 TurbolonSpray® Probe for Turbo V™ source A unique TurbolonSpray sprayer probe compatible with the Turbo V™ source housing. When inserted in the Turbo V source, the TurbolonSpray® probe activates via firmware a pair of high temperature ceramic heaters located in the source housing, creating symmetrical turbo gas stream/S Analytical Measuring Systems, Karachi for optimum sample desolvation and concentrations.</p>			
					<p>1.2.1 The ionization voltage will be user selectable From -4.5 kV to +5.5 kV</p> <p>1.2.2 The flow rate compatibility will be from 5 µL/min to 3000 µL/min, without flow splitting.</p> <p>1.2.3 The solvent compatibility will be from 100% aqueous to 100% organic, with full gradient capability.</p> <p>1.2.4 The nebulizer gas (GS1) will be user selectable from 0 to 90 psi (0-0.62 MPa) using zero grade air (recommended) or nitrogen.</p> <p>1.2.5 The turbo gas (GS2) will be user selectable from ambient to 750° Celsius and from 0 to 90 psi using zero grade air (recommended) or nitrogen.</p>			
					<p>1.2.6 The sprayer position will be adjustable vertically and sideways with micrometer adjustment for repositioning.</p> <p>1.2.7 The probe will be resistance-coded for automated identification by firmware/software.</p> <p>1.2.8 All ion source parameters except sprayer positioning will be under computer control.</p> <p>1.3 APCI Probe for Turbo V™ source A unique APCI sprayer probe compatible with the Turbo V™ source housing. When inserted in the Turbo V source, the APCI probe activates via firmware a high temperature, self-cleaning ceramic heater for optimum sample desolvation and reduced chemical noise. APCI ionization in gas phase is achieved at the outlet of the heater by a corona discharge needle.</p> <p>1.3.1 The corona discharge current will be user selectable from -5 µA to +5 µA.</p> <p>1.3.2 The source will have a flow rate compatibility from 50 µL/min to 3000 µL/min, without flow splitting.</p>			

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>1.3.3 The solvent compatibility will be from 100% aqueous to 100% organic, with full gradient capability.</p> <p>1.3.4 The nebulizer gas will be user selectable from 0 to 90 psi (0-0.62 MPa). Zero grade air recommended. SCIE X QTRAP® 4500 LC-MS/MS System Specifications - 4 - RUO-MKT-04-3913-A For research use only. Not for use in diagnostics procedures.</p> <p>1.3.5 The desolvation temperature will be user selectable from ambient to 750° Celsius.</p> <p>1.3.6 The sprayer position will be adjustable vertically and sideways with micrometer adjustment for repositioning.</p>			
					<p>1.3.7 The probe will be resistance-coded for automated identification by firmware/software.</p> <p>1.3.8 All ion source parameters except sprayer positioning will be under computer control.</p> <p>1.4 DuoSpray™ Source The DuoSpray™ source kit is a software-selectable ESI/APCI ionization system that offers the ability to select the best ionization process during a LC run for each individual compound or compound group. Reusing the main elements of the advanced Turbo V™ source, the DuoSpray source features the same robustness and low chemical noise. The DuoSpray source enhances sensitivity over a larger compound range, improves sample throughput and accelerates method development.</p> <p>1.4.1 The source will have two sprayer probes, one ESI probe and one APCI probe for Turbo V source, with resistance-coding for automated identification by firmware/software.</p>			









Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>maximum rate of one change per second (1 Hz).</p> <p>1.4.3 The source will have an inlet valve with sample flow directed to the ESI or APCI sprayer under software control</p> <p>1.4.4 The source will have orthogonal spraying for improved robustness.</p> <p>1.4.5 The source will have two high-temperature, self-cleaning ceramic heaters with embedded temperature sensors.</p> <p>1.4.6 The source will have a flow rate compatibility in ESI mode from 5 µL/min to 3000 µL/min and APCI mode from 50 µL/min to 3000 µL/min; without flow splitting.</p> <p>1.4.7 The solvent compatibility will be from 100% aqueous to 100% organic, with full gradient capability.</p> <p>1.4.8 The ESI nebulizer gas will be user selectable from 0 to 90 psi (0-0.62 MPa). Zero grade air recommended.</p> <p>1.4.9 The desolvation temperature will be user selectable from ambient to 750° Celsius.</p>			
					<p>1.4.10 The desolvation/Turbo gas (GS2) will be user selectable from ambient to 750° Celsius and from 0 to 10 L/min for the combined flows using Zero grade air.</p> <p>1.4.11 The ESI sprayer position will be user adjustable vertically and sideways. The APCI sprayer will be user adjustable laterally (at 45° angle).</p> <p>1.4.12 The source will have two viewing ports – one large frontal and one lateral - for best performance optimization.</p> <p>1.4.13 The source can be removed from the host system without tools and be replaced with a different one in less than 5 minutes.</p> <p>1.4.14 The source housing will be fully vented to eliminate contamination of lab air.</p> <p>1.4.15 The source housing will be fully interlocked. All gas and power supplies to the source are automatically shut down when the housing is removed from the host system.</p>			
					<p>1.4.16 All ion source parameters except sprayer positioning will be under computer control.</p> <p>1.5 PhotoSpray® Source</p> <p>The PhotoSpray® source uses a UV source and ionization dopant to ionize low polar compounds by charge transfer or proton transfer and can be used for reverse phase and normal phase applications. The PhotoSpray source features a high temperature ceramic heater and orthogonal sprayer configuration similar to the Turbo V™ source for high flow characteristics and improved robustness.</p>			

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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>1.5.1 The probe will be resistance-coded for automated identification by firmware/software. 1.5.2 The source will have orthogonal spraying for improved robustness.</p> <p>1.5.3 The source will have one high-temperature, self-cleaning ceramic heater with embedded temperature sensors.</p> <p>1.5.4 The source will have a UV Krypton discharge lamp (hv = 10 eV).</p> <p>1.5.5 The source will have a lamp gas, user selectable from 0 to 10 L/min. Nitrogen recommended for best sensitivity.</p> <p>1.5.6 The source will have an input for ionization dopant: Toluene (HPLC or GC grade recommended) or other chemical compounds with appropriate ionization characteristics.</p> <p>1.5.7 The source will have a flow rate compatibility from 50 µL/min to 3000 µL/min, without flow splitting.</p> <p>1.5.8 The solvent compatibility will be from 100% aqueous to 100% organic, with full gradient capability.</p>			
					<p>1.5.9 The desolvation temperature will be user selectable from ambient to 750° Celsius.</p> <p>1.5.10 The nebulizer gas will be user selectable from 0 to 90 psi (0-0.62 MPa). Nitrogen recommended for best sensitivity.</p> <p>1.5.11 The sprayer and lamp position will be adjustable vertically and sideways. The lamp position will be adjustable vertically.</p> <p>1.5.12 The source will have two viewing ports – one large frontal and one lateral - for best performance optimization.</p> <p>1.5.13 The source can be removed from the host system without tools and be replaced with a different one in less than 5 minutes.</p> <p>1.5.14 The source housing will be fully vented to eliminate contamination of lab air.</p> <p>1.5.15 The source housing will be fully interlocked. All gas and power supplies to the source are automatically shut down when the housing is removed from the host system.</p> <p>1.5.16 All ion source parameters except sprayer positioning will be under computer control.</p>			



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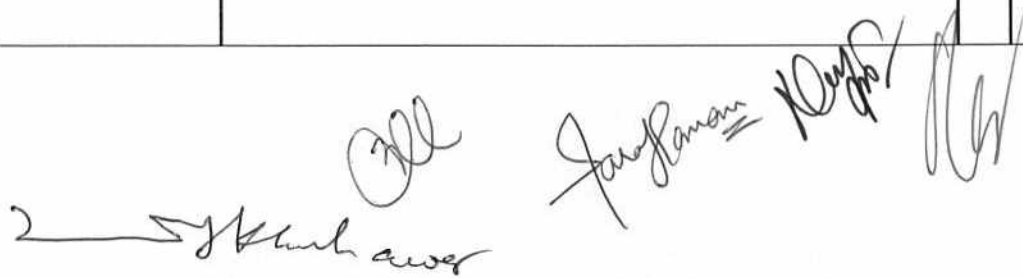
Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>1.6 NanoSpray® III Source and Heated Interface Ultralow flow source and interface designed for minimal sample consumption and highest sensitivity at flow rates from 50 nL/min to 2 µL/min. The NanoSpray® III nebulizer, arm, and mounting bracket allow tips of any length to be used in addition to packed tips. The heated interface improves ion transmission in the instrument. The arm offers x, y, and z articulation for complete spatial optimization, while fixed angle positioning of sprayer needle minimizes instrument contamination. A camera, laser lighting, and flat screen LCD monitor allow visualization of the spray.</p> <p>1.6.9 The source will have an easy plug-in source housing interface that can be removed from the host system without tools and be replaced with a different one in less than 5 minutes.</p> <p>1.6.10 The source housing will be fully interlocked. All gas and power supplies to the source are automatically shut down when the housing is removed from the host system.</p> <p>1.6.11 All ion source parameters except sprayer positioning will be under computer control.</p>			
					<p>1.6.1 The source will be resistance-coded for automated identification by firmware/software.</p> <p>1.6.2 The source arm will have full x, y, and z articulation for complete spatial optimization and a fixed angle sprayer for improved robustness.</p> <p>1.6.3 The source will have a NanoSpray® III head for nebulizing gas-assisted nanoflow chromatography applications.</p> <p>1.6.4 The source will have flow rate compatibility from 50 nL/min to 2µL/min, without flow splitting.</p> <p>1.6.5 The solvent compatibility will be from 100% aqueous to 100% organic, with full gradient capability.</p> <p>1.6.6 The interface heater will be a self-cleaning ceramic heater with embedded temperature sensor for improved transmission of ions in the mass spectrometer. Temperature setting from ambient to 250° Celsius is under computer control.</p> <p>1.6.7 A built-in camera, lighting, and monitor will allow visualization of the needle tip and spray for best performance optimization.</p> <p>1.6.8 The source will have user selectable ionization voltage from -4 kV to +4 kV.</p>			

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Item code #	Equipment/Instrument	Batch/Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>2 Software and Operating System</p> <p>2.1 Data System</p> <p>2.1.1 The system must include a Windows®-based data acquisition and editing software package that incorporates a graphical user interface utilizing multi-pane windows for easy data acquisition and analysis.</p> <p>2.1.2 The system must be compatible with a variety of commercially available LC pumps, autosamplers, manual injectors and detectors.</p> <p>2.1.3 The software must provide automatic, dynamic adjustment of the acquiring MRM transitions such that only compounds that elute within a specified time window are monitored. In addition, the process of creating the acquisition method to utilize this feature must accept a simple list of compound names, MRM transitions, and expected retention times and use this list to dynamically schedule MRM scans during the experiment. (Scheduled MRM™ Algorithm).</p>			
					<p>2.2 Data Processing Software</p> <p>2.2.1 The system software must include powerful library generation and search capability (searches based on mass and UV spectra at different fragmentation voltages and different polarities).</p> <p>2.2.2 The system software must be able to generate a contour plot display for mass and UV spectra.</p> <p>2.2.3 The system software must have a Fragmentation Interpretation Tool module.</p> <p>2.2.4 The software must have completely automated quantitative data processing and reporting capabilities.</p>			
					<p>2.2.5 The software must have direct and easy data transfer to popular word processing progM/S Analytical Measuring Systems, Karachi such as MS Word, Excel, Power Point, etc</p> <p>2.2.6 The software must be fully automated including customized data processing utilizing scripting.</p> <p>3 Mass Spectrometer</p> <p>3.1 Analyzer</p> <p>The instrument must contain a single thin aperture from atmosphere into the vacuum chamber, followed immediately by a patented, high-efficiency RF-only ion guide for ion focusing and containment. This must be followed by a patented high pressure RF quadrupole followed by a quadrupole mass filter. A pre-filter must be located between the RF quadrupole and the first mass filter to help further focus the ions. A patented high-pressure quadrupole collision cell with 180° Curved LINAC® collision cell technology must follow the first mass filter and be used for high efficiency MS/MS fragmentation. The second mass analyzer must also be a quadrupole mass filter/Linear Accelerator™ ion trap.</p> <p>3.2 Scan Types</p>			






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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					Full scan MS and selected ion monitoring for both Q1 and Q3. Product Ion Scan, Precursor Ion Scan, Neutral Loss or Gain Scan, Multiple Reaction Monitoring (MRM), Enhanced MS Scan, Enhanced Product Ion Scan, Enhanced Resolution Scan, MS3 scan, MRM3 Scan, and TripleTrap™ Scan Modes 3.3 Interface			
					The instrument must have a direct atmosphere-to-vacuum interface module with a curtain gas barrier for maintaining analyzer cleanliness and optimizing ion declustering. It must be capable of analyzing large batches of complex urine, plasma, and plant extracts over long periods of time without airtenance or performance degradation. 3.4 Vacuum System The instrument must have a differentially pumped vacuum system featuring aircooled turbo molecular pumps with fail-safe vacuum system protection. It must automatically shut-down and restart after power failures. 3.5 Detector The instrument must have a Continuous dynode Electron Multiple (CEM) that is operated in pulse counting mode and is capable of rapidly switching between positive and negative ion detection. The detector polarity must be able to switch between alternate scans. 3.6 Source Exhaust The instrument must have an active source exhaust for the removal of gasses within the ionization source. 4 System Performance 4.1 Triple Quad Mass Range The instrument must have a mass range (m/z) of 5-2000 Da			
					4.2 Linear Ion Trap Mass Range The instrument must have a mass range (m/z) of 50-2000 Da in linear ion trap mode. 4.3 Triple Quad Scan Speed The instrument must have a maximum scan speed of 12,000 Da/sec in triple quadrupole mode. 4.4 Linear Ion Trap Scan Speed The instrument must have a maximum scan speed of 20,000 Da/sec in linear ion trap mode. 4.5 Polarity Switching The instrument must be able to switch ionization mode polarity with a 50 msec settling time between polarities. The instrument is able to do this continuously. The total cycle time for acquiring 12 MRM transitions in positive mode, switching polarity, acquiring 12 MRM transitions in negative mode, and switching polarity again is 200 msec.			

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>4.6 Dynamic Range The instrument must have a dynamic range of 5 orders of magnitude.</p> <p>4.7 Mass Stability The instrument must have a mass stability of 0.1 amu over 24 hrs at m/z 906.7 with normal operating temperature and after it has reached vacuum and electronics equilibrium.</p> <p>4.8 Crosstalk The instrument must have no significant crosstalk detectable for reserpine (0.17 pmol/uL infused) while monitoring the MRM transitions of 609/195 and 100/195 with a 1 msec dwell time and 3 msec inter-MRM pause time.</p> <p>4.9 MRM Dwell Time The minimum MRM dwell time must be 1 msec.</p> <p>4.10 Fast MRM Scanning The difference in response for Minoxidil (MRM transition of 210/64) with 2 msec dwell and 3 msec inter-MRM pause time vs. 100 msec dwell with 10 msec inter-MRM pause must be < 10%.</p>			
					<p>4.11 Positive Mode TIS Sensitivity Using the TurbolonSpray probe in MRM mode on the transition m/z 609 to 195 for a 1 pg reserpine injection on column, at unit mass resolution (0.7± 0.1 amu at half height), the instrument must have a S/N > 50,000:1. S/N measurements are calculated based on 1 standard deviation of at least 3 points of noise which produce the smallest standard deviation, after applying up to 3 Gaussian smooths. S/N ratio does not imply the limit of detection (LOD) or limit of quantitation (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.</p> <p>4.12 Negative Mode TIS Sensitivity Using the TurbolonSpray probe in MRM mode on the transition m/z 321 to 152 for a 1 pg chloramphenicol injection on column, at unit mass resolution (0.7± 0.1 amu at half height), the instrument must have a S/N > 50,000:1. S/N measurements are calculated based on 1 standard deviation of at least 3 points of noise</p> <p>which produce the smallest standard deviation, after applying up to 3 Gaussian smooths. S/N ratio does not imply the limit of detection (LOD) or limit of quantitation (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.</p> <p>4.14 Negative Mode Reproducibility Using the TurbolonSpray probe in MRM mode on the transition m/z 321 to 152, for 10 replicate injections of 10 fg of chloramphenicol on column, the standard deviation of the peak area must be less than 10%.</p>			


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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>4.15 Positive Mode APCI Sensitivity Using the APCI source in positive ionization mode, for reserpine (10 pg/uL, 5 uL fixed loop injection, 1.0 mL/min), monitoring 609/195 MRM transition, the instrument must have a S/N > 40,000:1, where the noise is defined as the standard deviation of the baseline. S/N ratio does not imply the limit of detection (LOD) or limit of quantitation (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.</p> <p>4.16 Negative Mode APCI Sensitivity Using the APCI source in negative ionization mode, for 5-fluorouracil (10 pg/uL, 5 uL fixed loop injection, 1.0 mL/min), monitoring 129/42 MRM transition, the instrument must have a S/N > 500:1 where the noise is defined as the standard deviation of the baseline. S/N ratio does not imply</p> <p>4.13 Positive Mode Reproducibility. Using the TurbolonSpray probe in MRM mode on the transition m/z 609 to 195, for 10 replicate injections of 10 fg of reserpine on column, the standard deviation of the peak area must be less than 10%.</p> <p>the limit of detection (LOD) or limit of quantitation (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.</p> <p>4.17 Positive Mode EPI Sensitivity Using the TurbolonSpray probe in Enhanced Product Ion mode (product of 609.3), a 400 fg reserpine injection at a flow rate of 1.0 mL/min on column, the instrument must have a S/N > 500:1, where the noise is defined as the standard deviation of the baseline. For 10 replicate injections under these conditions, the standard deviation of the peak area must be less than 5%. S/N ratio does not imply the limit of detection (LOD) or limit of quantitation (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations.</p> <p>4.18 Positive Mode MRM3 Sensitivity Using the TurbolonSpray probe on the MRM3 transition of 609.3/397/365 for a 400 fg reserpine injection at a flow rate of 0.2 mL/min on column with a scanning cycle time of 200 msec, the instrument must have a S/N ></p>			

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Item code #	Equipment/Instrument	Batch/Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>30:1 where the noise is defined as the standard deviation of the baseline. For 10 replicate injections under these conditions, the standard deviation of the peak area must be less than 5%. S/N ratio does not imply the limit of detection (LOD) or limit of quantitation (LOQ) of the MS system or any assay; the S/N ratio presented only applies to the conditions and concentrations specified and cannot be extrapolated to any other conditions and concentrations. 4.19 Resolution in LIT Mode Scan Speed Resolution Resolution (Da/sec) m/z 322 m/z 922 50 3200 9200 250 1600 4600 1000 1090 3100 10,000 540 1540 20,000 460 1320 4.20 TripleTrap™ Scanning Cycle Time The instrument must be able to scan 100 MRM transitions followed by a precursor scan (500 Da) and a neutral loss scan (500 Da) followed by two Enhanced Product Ion scans (500 Da) in less than 1.5 seconds 5 Physical Specifications</p>			
					<p>5.1 Size and Weight (excluding roughing pumps) Equipment Height Width Length Weight Crate 90.2 cm; 35.5 94 cm; 37 in. 99 cm 39 in. 62 kg; 137 lbs. Mass spectrometer 59 cm; 24 in. 79 cm; 32 in. 79 cm; 32 in. 130 kg; 285 lbs. Roughing pump 22 cm; 9 in. 30 cm; 12 in. 42 cm; 17 in. 34 kg; 75 lbs. Optional Instrument bench 78 cm; 31 in. 100 cm; 40 in. 84 cm; 34 in. 120 kg; 265 lbs. Accessories crate 129.5 cm; 51 in. 104 cm; 41 in. 132 cm; 52 in. 178 kg; 391 lbs. 5.2 Power The instrument must be powered by two separate 208 VAC (180 to 264 VAC), 15 amp grounded single phase circuits with two receptacles each. 5.3 Power Consumption The instrument, including roughing pump, must only consume 2,200 VA maximum. 5.4 Gas Supplies: High purity nitrogen at 60 psi (maximum consumption of 10 L/min at 60 psi) must be used for the gas flow for the Curtain Gas™ Interface. Zero grade air or high purity nitrogen should be used for the ion source. Maximum combined consumption must be 22 L/min at 100 psi. Filtered,</p>			

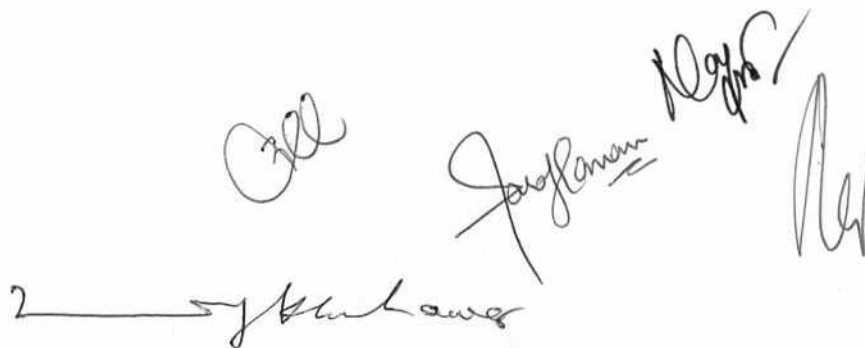
Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>dry air (free from oil) at 55 psi must be used for the ion source exhaust pump (with a typical consumption of 8 L/min).</p> <p>5.5 Exhausts The instrument must use a vent to remove ion source and rotary vane pump exhaust from the instrument.</p> <p>5.6 Lab Environment</p> <p>To ensure the proper operating conditions for the instrument, the environmental conditions must be maintained between 15°C and 30°C (59–86°F) stable within ±2°C (4°F) with a relative humidity between 20–80% non-condensing. The air conditioning requirement is approximately 1905W (6500 Btu/h) for the main console, backing pumps and heat load from the heated ion sources.</p>			
				X500R QTOF System	<p>PARAMETER SPECIFICATION: Sensitivity, Pos TOF/MS Using the Twin Sprayer probe in TOF-MS mode, reserpine 1pg on column, S/N > 750:1 RMS Sensitivity, Pos MS/MS Quant Using the Twin Sprayer probe in MS/MS mode, reserpine 1pg on column, S/N > 1750:1 RMS, Scan Speed, MS Up to 25Hz (25 spectra per second), Scan Speed, MS/MS Up to 100Hz (100 MS/MS spectra per second)</p> <p>Resolution, MS Equal to or greater than 42,000 (FWHM) measured on the (M+6H)⁶⁺ charge isotope cluster for bovine insulin at m/z 956 Mass Accuracy, Internal Less than or equal to 0.4 ppm absolute error as demonstrated on m/z 813 fragment ion of Glu-Fibrinopeptide B Mass Accuracy Over Time, External Less than 2 ppm RMS over 12 hours of LC-MS Polarity Switching Yes (computer controlled)</p> <p>Linear Dynamic Range Equal to or greater than 4 orders of magnitude inter-scan linear dynamic range without signal reduction</p> <p>Mass Range TOF: up to 40 kDa.</p> <p>Precursor ion selection: 5-2250 m/z.</p> <p>Standard Ionization Source Turbo V™ ion source with Twin Sprayer ESI Probe and Twin Sprayer APCI Probe for X500R QTOF system only Flow Rate 5 µL /min to 3 mL /min</p>	1	USA, shipment from SINGAPORE	

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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
AW&W QCL(III)/03	Liquid Scintillation Counter	1	M/S Analytical Measuring Systems, Karachi	Tri-Carb 5110TR INTERNATIONAL	<p>Varisette sample deck (counts both small and large whites in dedicated cassettes)</p> <p>*Patented programmable TR-LSC (Time-Resolved Liquid Scintillation Counting)</p> <p>*Luminescence detection and correction</p> <p>*Dynamic color-corrected single and dual label DPM</p> <p>*HSCM (High Sensitivity Count Mode)Standard or optional ultra low level count mode</p> <p>*Spectrum unfolding</p> <p>*Automatic Single Label direct DPM with Ba-133 external standard</p> <p>*Sample numeric value screening</p> <p>*SIS (Spectral Index of Sample)</p> <p>*Nuclide identification</p> <p>*Heterogeneity monitor</p> <p>*Tripple Label DPM software</p> <p>*Cassette Loading bi directional conveyor</p> <p>*linear 4000 channel spectra lyzer MCA</p> <p>*Electrostatic Controller</p> <p>*Ambient room temperature operation</p>	1	USA, shipment from SINGAPORE	Only M/S Analytical measuring systems Pvt. Ltd. quoted for this item. Specification provided from M/S Analytical Measuring Systems are well in agreement with the required specification. Committee recommend to purchase this Item from M/S Analytical Measuring Systems, Karachi.
					<p>*Group PrioStat-priority interrupt and Sample PrioStat-Sample preview interrupt</p> <p>*QuantaSmart software for the windows 8.1Os with comprehensive online help</p> <p>*60 user protocols with unlimited password protected Assays</p> <p>*Status indicator</p> <p>*Assays Specific drive and path selection for data and spectrum storage</p> <p>*Assay specific,User selectable,coincidence resolvent time, count delay, and Programmable background reduction</p> <p>*SpectraBase stores Sample Spectra while computer is used for other applications</p> <p>*Replay post run historical Assay reprocessing</p> <p>*3-D Spectral mapping</p> <p>*Sample worklisting, positive ID</p> <p>*Custom spread-sheet type calculations</p> <p>*Enhanced instrument performane assessment (IPA) with running mean and baseline charts and tables</p>			



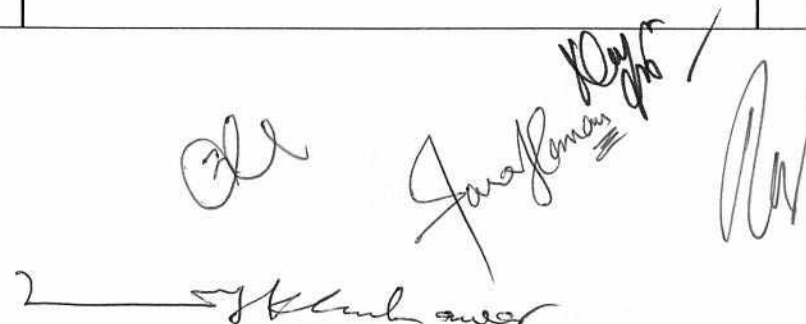
 2 → J. Khan

Item code #	Equipment/Instrument	Batch/Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					*Built in computer with windows 8.1 OS 4GB(min.) RAM and 250GB hard disk(min.) *19" wide LCD monitor *Printer ordered separately *Includes varisette starter kit for Tri-carb *Manual			
AW&W QCL(III)/04	UV Spectrophotometer, portable	1	M/S Business Dynamics Enterprises, Karachi	HACH Visible Spectrophotometer DR 1900 (For use in the field)	The DR1900 excels in the field because it is the lightest and most compact portable spectrophotometer. Your field testing takes you to potentially dusty and wet conditions where other equipment simply won't be safe. The DR1900 is built for rugged conditions, and it's flexible, --accepting the widest range of vial sizes. Built with field use in mind, the DR1900 has a large, clear screen and a simple user interface that makes testing easier than ever in even the most demanding conditions. Easy to hold, and operate, the compact DR1900 is a valuable tool for your field technicians. Underneath the rugged exterior, the DR1900 has the largest number,-- over 220-- of the most commonly tested preprogrammed methods already built in. You can also use the easy-to-use interface to create your own methods. Tests are performed with a wavelength range of 340 to 800 nm which make this a field instrument you can use to find results typically only seen in laboratory instruments.	1	USA	Three vendors quoted for this item. Following is the ranking. # 1. M/s Business Dynamics Pvt Ltd., # 2. M/S PCM Electrical Systems Pvt. Ltd. # 3. M/S Diagnostic Systems Pvt. Ltd. The item DR 6000 UV-Vis spectrophotometer quoted by M/s Business Dynamic has superior specification and the committee recommend to purchase DR 6000 (M/s Business Dynamics)
				DR 6000™ UV VIS Spectrophotometer	The DR6000™ is the industry's most advanced lab spectrophotometer. It offers high speed wavelength scanning across the UV and Visible Spectrum, and comes with over 250 pre-programmed methods which include the most common testing methods used today. With optional accessories allowing for high volume testing via a carousel sample changer, and increased accuracy with a sample delivery system which eliminates optical difference errors, this instrument ensures you are ready to handle your wide-ranging water testing needs. Wavelength range: 190 - 1100 nm Wavelength accuracy: +/- 1 nm Wavelength reproducibility: < 0.1 nm Wavelength resolution: 0.1 nm Spectral bandwidth: 2 nm Photometric accuracy: <1% at 0.5-2.0 Abs at 546 nm, 5 mAbs at 0.0-0.5 Abs Scanning Speed: 900 nm/min (in 1 nm steps)	1	USA	



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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
			M/S PCM Electrical Systems, Karachi	Model: VR-2000	- Spectrophotometer VR-2000: Model with automatic wavelength settings and blank. - Standard cuvettes, Material Quartz, 10 mm optical path length, Standard square, "macro", Pack of 2 units [P/N: 5100020] - Standard cuvettes, Material Glass, 10 mm optical path length, Standard square, "macro", Pack of 2 units [P/N: 5100020] Wavelength range: 325-1000nm Spectral bandwidth: 4 nm Optical system: Single beam diffraction grating 1200lines/mm Wavelength adjustment: automatic Wavelength accuracy: +/- 1 nm Wavelength repeatability: 0.5nm Photometric accuracy: +/- 0.5% T	1	Spain	
				Optional Accessories	5100022 Standard cuvettes, Material Polystyrene, 10 mm optical path length, Standard square, "macro" disposable , Box of 100 units 5100025 Standard cuvette, Glass, 10 mm, Flow through cell, square "micro" Pack of 2 units 5100014 Special Cuvette, Glass, 40 mm ,Rectangular, Pack of 1 unit 5100015 Special Cuvette , Glass, 10 mm, Flow through cell. Window 5 x 10 mm Pack of 1 unit 5100016 Special Cuvette ,Glass 10 mm Standard square, "micro" Pack of 1 unit 5100017 Special Cuvette ,Glass 10 mm Standard square, "macro" with round lid Pack of 1 unit 5100018 Special Cuvette , Quartz 10 mm Semi-micro Pack of 2 units 5100019 Special Cuvette, Glass 10 mm Semi-micro Pack of 2 units 5100023 Special Cuvette, Polystyrene 10 mm Square Semi-Micro, disposable Box of 100 units 5100024 Special Cuvette , Glass 5 mm Square Semi-Micro Pack of 1 unit 4120030 Cuvette holder For long cuvettes, pathlength between 1 and 50 nm. 4120031 Cuvette holder For path length 100 mm. cuvettes. 4120032 Test tubes holder For tubes from 10 to 20 mm. Ø 4120117 Ink printer (not thermal). Paper 2 1/4" (56 mm) wide roll. Includes power transformer and interface cables. (5V-3A) 4120018 Thermostatted flow Peltier cuvette holder.			



Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
			M/S Diagnostic Systems, Karachi	Model: 6305 Jenway	Range:198 – 1000 nm Resolution: 1nm Accuracy: +2nm Band width: 8 nm ,6 nm over UV range Photometrics: Photometric Transmittance: 0 to 199.9% Photometric Absorbance: - 0.300 to 1.999 Photometric Accuracy: ± 1%T Photometric Resolution: 0.1%T, 0.001A Concentration: Range:-300 to 1999Conc Resolution: 0.1 to 1 Light Source : Xenon Lamp Model: 6305 Make: Jenway U.K Model 6305 UV/Visible range Spectrophotometer (190-1000nm) supplied with mains lead, pack 100 disposable cuvettes, 10 x 10mm cell holder, PC Application Software on CD-ROM and operating instructions, for use on 230V/50Hz.	1	U.K	
				Visible Scanning Spectrophotometer Model : 7200 Make : Jenway	Wavelength Range 335 to 800nm Accuracy ± 2nm Repeatability ± 2nm Spectral bandwidth 7nm Photometrics Absorbance -0.300 to 2.500A Accuracy +/- 0.01A at 1.0A and 546nm Stability (A) +/- 0.005A/h at 0.04A and 546nm Noise +/- 0.002A at 0.04A and +/- 0.02A at 2.0A and 546nm Stray Light at 340nm, %T Model 7200 single beam, scanning, visible range spectrophotometer (335-900nm) fitted with single 10 x 10mm cuvette holder, supplied with universal power supply and instruction manual.	1	UK	



2 → J. K. Khattar

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
AW&W QCL(III) /05	Rotary Evaporator	1	M/S Diagnostic Systems, Karachi	RE400 Stuart U.K	Supplied with Pyrex Glass Diagonal Coil Condenser & 1Litre Evaporating and Receiving Flasks. Lightweight Counterbalanced Lift Mechanism. Long Life Sparkless Induction Motor. Speed Range 20-190RPM. PTFE/Glass Liquid Pathway for Chemical Inertness. Long Life Graphite Impregnated PTFE Vacuum Seal. Flask and Vapour Tube Ejection System. Continuous Feed System for Use with Large Volumes	1	U.K	Specification of Stuart Rotary evaporator, offered by M/S Diagnostic Systems, match well with the required specifications. Committee recommend to purchase Stuart Rotary Evaporator (M/S Diagnostic Systems). M/S PCM Electrical Systems has offered model RS 300-V (option 1). It is ranked #2 by the technical committee.
			M/S PCM Electrical Systems, Karachi	RS 3000-V JP Selecta	Option # 01. it is completely supplied with a tap for solution, a PT100, Prob, a coolant, one 3000ml flask, one 2000 ml flask, one 1000ml. flask and its accessories For 1000 2000 and 3000ml flasks *Compact rotatory evaporator *Composed of SS AISI 304 case *Manual elevator system *Bath made of dur-al-alloy chemically treated *Rotatory speed 20-120rpm *Bath temp. 200°C *External probe temp. upto 100°C *Vacuum breaker with air inlet filter	1	Spain	
				COM-1010 JP Selecta	Option # 02. High capacity rotatory macro evaporator "COM-1010" Membrane pump COM-401, Coolant circulation COM-30L			
AW&W QCL(III) /06	Ultrasonic processor with thumb pulse	1	No quotation received.					
AW&W QCL(III) /07	Large Capacity Shaking Incubator	1	M/S PCM Electrical Systems, Karachi	Model: D1102	Rotation amplitude: 25mm, Controllable speed range: 25-300rpm, Controllable speed in steps: 1rpm, Refrigeration: No, Heating: Yes, Controllable temperature range: 4 °C-60 °C, Controllable temperature in steps: 0.1 °C, Chamber temperature uniformity: +/- 1 °C, Timer: 0-999hrs, Useable platforms dimensions: 460*460mm, Platforms number: 1, Erlenmeyer maximum capacity: 9*1000ml or 9*500ml or 16*250ml or 20*100ml or 25*50ml, H*W*D: 620*630*840mm, Weight: 76kg, Power: 800W, Power supply: 220v 50-60Hz with (6) optional Accessories.	1	Spain	The committee ranked following offers for this item. #1. Model D2102 offered by M/S PCM Electrical Systems Pvt Ltd. # 2 Model SI600 offered by M/s Diagnostic System Pvt Ltd. #3 Model ISF-700R offered by M/S Professional Systems Pvt Ltd.
				Model: D2102	Rotation amplitude: 25mm, Controllable speed range: 25-300rpm, Controllable speed in steps: 1rpm, Refrigeration: Yes, Heating: Yes, Controllable temperature range: 4 °C-60 °C, Controllable temperature in steps: 0.1 °C, Chamber temperature uniformity: +/- 1 °C, Timer: 0-999hrs, Useable platforms dimensions: 460*460mm, Platforms number: 1, Erlenmeyer maximum capacity: 9*1000ml or 9*500ml or 16*250ml or 20*100ml or 25*50ml, H*W*D: 620*630*840mm, Weight 98kg, Power: 800W, Power supply: 220v 50-60Hz.			

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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
			M/S Professional Systems, Islamabad	IST-3075 / IST-4075R	<p>Ambient -15°C (Min. 15) to 80°C for IST-3075R / 4075R, • Competitive high shaking speed up to 500 rpm.</p> <ul style="list-style-type: none"> • Orbital shaking motion in 19mm diameter. • Microprocessor PID control. • Three point temperature calibration / Automatic tuning. • Wide speed range even with heavy workload. <p>- Equipped with a maintenance-free BLDC motor to generate smooth, quiet, uniform, and yet powerful shaking motion.</p> <ul style="list-style-type: none"> • Intuitive touch screen LCD controller with easy icons and logical menus. • Easy-set digital timer for shaking operation. (1 min. to 999 hr. 59 min.) • Wide sample monitoring and convenient sample loading. <p>- Convenient sample monitoring without affecting inside environment thanks to the three side transparent acrylic lid with bright LED lamps.</p> <ul style="list-style-type: none"> • Gas spring lid supports providing smooth motion, soft opening and closing. <p>• Repetitive task can be easily performed as the platform stops where it starts.</p> <ul style="list-style-type: none"> • Stopping the shaking platform always at the same position is highly beneficial for automated dosing or sampling process. • Corrosion resistance stainless steel interior. • Built-in RS-232 port and USB port for external control and data collection. 	1	KOREA	
			M/S Diagnostic Systems, Karachi	Model : SI600 Make : Stuart UK	<p>Combined incubator shaker 115 Litre capacity available Digital display for temperature and speed Integrated timer Unique retractable platform for easy loading and unloading Angle adjustable accessory tube racks, with Magnetic coupling system available Communications enabled for external temperature measurement Combined shaker and incubator, ideal for scientists doing cell culturing procedures, especially suspension culture applications. The unit, whilst being able to accommodate 6 x 2L flasks is still compact enough to be positioned on the laboratory bench.</p> <p>The shaker provides an orbital shaking motion, adjustable between 30 to 300rpm with a gentle start action. The shaking speed is microprocessor controlled and set via the digital LED control panel. The incubator also incorporates a versatile digital timer which can be set from 1 second to 9 days. After the timer has counted down the shaking action will stop and an alert will sound, as a safety feature the incubator will continue to run.</p>	1	UK	



2 → Khulawer

Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
					<p>The incubator features smoked acrylic windows in the door and to both sides to allow easy visibility of the samples. The incubator temperature is set via a separate bright LED display, encoder control ensures that the temperature can be quickly set between ambient temperature +5°C and 60°C. Forced air circulation ensures uniform heating of the load.</p> <p>The Incubator features a versatile clamping system which secures most sizes and mixtures of flask up to 2 litres and can typically accommodate the following: 6 x 2000ml, 8 x 1000ml or 15 x 500ml.</p>			
					<p>The unit features a retractable platform. Under normal use the platform is locked in place but whilst accessing your samples the platform can be drawn forward out of the chamber to allow easiest access to samples at the back of the incubator.</p> <p>The SI600 Incubator also features a USB connection with dedicated software to enable long term monitoring of the incubator temperature, i.e. over weekends.</p> <p>A wide range of stainless steel accessory racks are available to hold 1.5ml, 15ml and 50ml sample tubes, the angle of the tubes can be adjusted up to 30°. Accessory racks are held to the orbiting platform by a Magnalock system, allowing quick coupling and decoupling without tools.</p>			
					<p>Temperature range Ambient + 5 - 60°C Temperature display resolution 0.1°C Temperature precision ± 0.5°C Temperature fluctuation ± 0.5°C Temperature variation 0.5°C Speed range, rpm 30 to 300 rpm Orbit diameter, mm 16 Platform size, mm 526 x 390 Capacity, L 115 Internal dimensions (w x d x h), mm 623 x 465 x 395 Maximum vessel height, mm 300 Maximum load, kg 10 Overall dimensions (w x d x h), mm 675 x 542 x 642 Net weight, kg 55 Heater power 400W Electrical supply 230V, 50Hz, 450W Make : Stuart UK Accessories: SI500/1 Rack 64 x 1.5ml microcentrifuge tubes SI500/2 Rack 25 x 15ml centrifuge tubes SI500/3 Rack 12 x 50ml centrifuge tubes SI500/4 Rack 16 x 30ml universal containers</p>			









Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
AW&W QCL (III)/08	Mass balance	1	M/S Kamstec International Karachi	Switzerland Mettler Analytical Balance Model MS 105.	Range : 120 GrM/S Analytical Measuring Systems, Karachi Readability : 0.01 mg	1	Switzerland	Re-Invite
AW&W QCL (III)/09	Micro-analytical mass balance	1	M/S Kamstec International Karachi	Switzerland Model XPE 56.	Micro Balance –Six Digit SPECIFICATION: Micro Analytical Balance Model XPE 56 with below mentioned features and specifications: - High Resolution Technology, - 0.001mg Readability over the entire range upto 52 g with 52,000,000 points resolution. - Advanced Temp and time controlled internal adjustment with sensitivity, - Internal temperature control, - Static Detect &anti static kit integrated in the Balance. - Smart Grid Micro Hanging Weighing pan for high stability and safety in case of spillage, - Automatic inner and outer draft shields – Hands free operation for Zero, Tare and print, - Smart trac Dosing guide, - Graphical levelling and level warning, - Simple and fast dismantling of weighing chamber for easy cleaning. - Test Manager or Program Manager to completely record the History of the balance, -User Management with password protection, - Should be able to connect with software in future for full traceability, - MinWeigh protection, - Maximum capacity: 52g - Readability: 0.001 mg - Min sample weight as per USP: 1.4 mg - Quick settling time approx. 3.5 s and Repeatability: 0.7µg	1	Switzerland	Re-Invite
			M/S Diagnostic Systems, Karachi	Germany ADB 200-4	Weighing range (g): 210 Readout (mg): 0.1 Reproducibility (mg): 0.2 Linearity (mg): ± 0.4 Min. piece weight Counting mg/piece: 0.1	1	Germany	
AW&W QCL(III)/10	Homogenizer for biological samples contained in standard grinding tubes.	1	M/S PCM Electrical Systems, Karachi	Homogenizer CY-500.	The equipment consist of a control and power unit and an ultrasonic transducer (homogenizer). Control unit: Epoxy coated external metallic case and ABS front panel. Probe and connector for sample temperature control. It consist of a LCD display. Ultrasonic Transducer, Antinoise cabin (accessory), Control panel. with Optional Accessories.	1	Spain	Only M/S PCM Electrical Systems, has quoted for this item. The committee recommend to purchase model CY-500 offered by M/S PCM Electrical Systems.

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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
AW&W QCL(III) /11	Controlled atmosphere controlled muffle furnace	1	M/S Professional Systems, Islamabad	Model GCF 1100 GCF 1400 GCF 1600 GCF 170	<p>An atmosphere furnace provides the perfect environment for various procedures in many laboratories, providing the controlled temperature and atmosphere specific projects require. The controlled atmosphere is desired to complete tasks that require exact temperatures with no room for error. This is the best way to ensure the successful outcome of your project because it is sealed tightly to ensure the proper environment. GCF series controlled atmosphere furnaces feature a chamber with Mitsubishi (Japan) high quality alumina fiber insulation and the famous Kanthal (Sweden) heating elements. A double walled steel internal housing helps minimize heat loss to exterior surface. Furnace operation is controlled by Shimaden (Japan) 40-segment digital controller with built-in RS485 digital communications port and USB adaptor, allowing the user to connect to a PC for remote control and monitoring of the furnace.</p> <p>You can also save or export test results. All our furnaces are CE compliant Model GCF 1100 (Heating Element Type Kanthal (Sweden) resistant coil, Minimum/Constant Temperature Ambient/1100°C/1000°C, Maximum/Constant Temp: Ambient/1100°C/1000°C, Furnace Cavity Mitsubishi (Japan) 1500 grade Polycrystalline alumina fiber, GCF 1400 (Silicon carbide (SiC diameter 12-14mm), Minimum/Constant Temperature Ambient/ 1100°C/1000°C, Maximum Constant Temp: Ambient/ 1100°C/ 1000°C, grade Polycrystalline alumina fiber, GCF 1700(Molybdenum silicon (MoSi2, diameter 7mm), 300°C (recommended 800°C for longer heating), Maximum/Constant Temperature: 1600°C/1500°C 1700°C/1600°C, Furnace Cavity: Mitsubishi (Japan) 1800 grade Polycrystalline alumina fiber Electrical Requirements 208-240V 50/60Hz single phase for all. Temperature Controller Shimaden fp93 (Japan) with 4 progrM/S Analytical Measuring Systems, Karachi & 4 segments at +/-1°C Maximum Heating Rate 15°C / min Gas Inlet/Outlet ¼" hose barb with ¼" BSPT Working Environments Air, N2, Ar, NO2, CO, CO2, He, Ne, etc. (Hydrogen, up to 5%) Positive Pressure Not to exceed 0.02 MPa / 150 torr / 3psi CE Compliance Yes</p>	1		Specifications of controlled atmosphere muffle furnace offered by M/S Professional Systems Pvt Ltd, and M/s Rizvi & Company are well in agreement with the required specifications. The committee recommend to purchase Model GCF 1400 (same model is offered from both)
			M/S Rizvi & Company, Karachi	GCF 1400	<p>Controlled Atmosphere Furnace Model GCF 1400 Across International LLC Temperature: 1400°C Size: 16x12x12" Electrical Requirements 208-240V 50/60Hz single phase Heating Element Type: Silicon carbide (SiC, diameter 12-14mm) Minimum/Constant Temperature: Ambient/1100°C/1000°C</p>	1	USA	

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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
			M/S Diagnostic Systems, Karachi	Model RHF 14/35-400TN	Max. Temperature (°C) 1400 Continuous Operating Temperature (°C) 1300 Internal Volume (l) : 35 lit Chamber Dimensions: 250 * 300 * 465 mm External Dimensions: 885 x 780 x 945 Heat up time (min) 38 Max. Power (W) 16000 Supply Required W : 6000 Thermocouple Type : R Weight : 179 kg Make: Carbolite U.K Accessories a Part No: &02-3508P10 1 Upgrade to 3508P10 Temperature Controller Make: Carbolite U.K b Part No: TMP-DIGOT-F 1 Digital over-temperature protection Make: Carbolite U.K c Part No: &11-33 1 Inert gas inlet for chamber furnaces and ovens Make: Carbolite U.K	1	UK	
				OPTIONAL :	100mm Flowmeter for chamber furnaces or ovens with gas inlets or retorts (Ar 2-22 l/min) 100mm Flowmeter for chamber furnaces or ovens with gas inlets or retorts (CO2 2-20 l/min) 100mm Flowmeter for chamber furnaces or ovens with gas inlets or retorts (N2 2-25 l/min)			



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Qil

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Kyfo

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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
AW&W QCL(III) /12	Microvolume UV-Vis Spectrophotometer with Wi-Fi	1	M/S Analytical Measuring Systems, Karachi	ScanDrop2	<p>Technical data:</p> <p>*Spectral photometer data:</p> <p>*Wavelength precision: +/- 0.5nm</p> <p>*Spectral resolution: >= 1.2nm (FWHM @ Hg 253.7 nm)</p> <p>*Absorbance accuracy : 0.002 (@ 1mm path length)</p> <p>*Absorbance range: 2% (230nm)</p> <p>*Wavelength reproducibility : +/- 0.05nm (bei 361nm)</p> <p>*Photometric reproducibility: +/- 0.01 A (546nm)</p> <p>Optics:</p> <p>*Measuring principle: Polychromator system with symmetric Czerny -Turner</p> <p>*Light source: Xenon Flash Lamp</p> <p>*Detector: 220 - 1.000 nm (0.5 nm Schritte)</p> <p>*Detector: Linear CCD detector optimized to UV/Vis</p> <p>*Readout time: 4 seconds per spectrum</p> <p>*Wavelength range: 190-1000nm (0.5nm steps)</p> <p>Sample parameter:</p> <p>*No. of samples 1-16sample @ 2 path length parallel</p> <p>*Sample handling: Measurement of samples using cuvettes (10mm or CHIPCUVETTE)</p> <p>** Optional: measurements without consumables by Butterfly cuvette</p> <p>*Sample amount: 0.3 µL upto 2 ml.</p> <p>Application UV/Vis:</p> <p>*Standard cuvette: upto 10mm, upto 2ml</p> <p>*Butterfly cuvette: 1ml, 2.0-40.0 µL</p> <p>CHIPCUVETTE: 0.1mm, min, 0.3 µL</p> <p>1.0mm, min., 2.0 µL</p> <p>both, min., 4.0 µL</p> <p>*Control: PC or stand-alone (Optional)</p> <p>Features:</p> <p>*module for setup of own formulas</p> <p>*Quantification by standards, automatic evolution of results, broad range of data analysis, 2D scanning Area for different centre height of 8.5 - 15mm.</p>	1	Germany	<p>Specifications of model ScanDrop2 offered by M/s Analytical Measuring Systems (AMS) Pvt Ltd. are well in agreement with the required specifications. The committee recommend to purchase this item from M/S Analytical Measuring Systems with all optional accessories.</p> <p>Specification quoted by M/S PCM Electrical Systems, do not math with the required specifications.</p>
					<p>Display:</p> <p>*Optional : 10" tablet, colored touch WIN 8.1</p> <p>Dimensions:</p> <p>*Weight: approx. 10Kg</p> <p>*Dimension: (W*H*L) 290mm*384mm (incl. tablet) *370mm</p> <p>Interface: PC connection and USB, tablet, USB for data transfer, barcode reader</p> <p>Warranty: 2 warranty on devcie system</p> <p>Accessories: Standard cuvette adpoter for ScanDrop 2</p> <p>*Adapter for upto 8 standard cuvettes (10mm) and UV/Vis measurements using ScanDrop2</p>			


2 - Sykandar

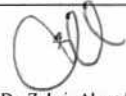
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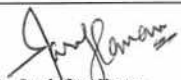
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Item code #	Equipment/ Instrument	Batch/ Year	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	Comments/Remarks
				Optional Accessories	Butterfly cuvette for ScanDrop2 *Flip-top cuvette incl. adapter for UV/Vis measurements without consumables, 9 positions with 1mm path length each *CHIPCUVETTE adapter for ScanDrop2 *Adapter for CHIPCUVETTE and UV/Vis measurements using ScanDrop2, double determination of 1-16 sample at 0.1mm and 1.0mm path length *Compatible Computer			
			M/S PCM Electrical Systems, Karachi	BioQuest CE 2501	CE 2501 Spectrophotometer 190-1100nm wavelength range 4nm Optical bandwidth Optical system: Single beam Monochromator: Littrow, 1200 L/ mm grating WL range: 900-1100nm WL accuracy: Better than 1nm WL reproducibility: Better than 0.1nm Scan speeds: 1-4000nm/min. Photometric range: 0.3-3A, 0-200% T and C Photometric noise: Better than 0.00004 A at 1A, 500nm RMS Photometric accuracy: Better than 0.005A at 1A Baseline flatness: Better than +/- 0.002A p.t.p. Method storage: 30methods security code protected Conc. curve fitting: Linear, quadratic and cubic curves, to 30 conc. standards or replicates Display screen with scrolling: Large LCD with six screen widths of scrolling for wide view Stability: Better than 0.001 A/ hrs. Computer interface: Bidirectional serial RS232 and USB ports Size and weight: 480*340*205, 18.6-19.5Kg.	1	UK	


 Dr. Rasool Bux Mahar
 Professor
 USPCAS-W


 Dr. Zubair Ahmed
 Professor
 USPCAS-W


 Dr. Syeda Sara Hissan
 Assistant Professor
 USPCAS-W


 Dr. Muhammad Yar Khawar
 Emeritus Professor
 University of Sindh, JM/S Analytical Measuring
 Systems, Karachihoro


 Dr. Najma Iemon
 Associate Professor, NCEAC
 University of Sindh, JM/S Analytical
 Measuring Systems, Karachihoro

Technical/ Recommendation of Departmental Scrutiny Committee for Procurement of Laboratory Equipment for Pilot Scale Water & Waste Water Treatment Field

As Per Tender			As Per Vendors					Remarks/Recommendation
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	
PSW&WTF(II)/ 01	Anaerobic- Anoxic/Aerobic sequencing membrane bioreactor	1	M/S Paktech Instrument Company, Karachi	Anaerobic digester PDAN	<p>Bench top unit: *Aluminium structure and panels with painted steel, *Main metallic elements in stainless steel *Diagram in the front panel with similar distribution to the elements in the real unit. *2 packed reactors (anaerobic digesters) that may be operated in series or parallel flow arrangement. each reactor has 5 litres capacity *Packings : 25mm Bio balls *For each reactor: heating jacket with control from a temperature sensor *2 feed peristaltic pumps 50cc/min. *2 volumetric tanks, for collecting and measurement of the volume of gas produced *Temperature sensors type: J, range = -60 °C to 200 °C *Water flow meters (0-50cc/min.) *thermostatic bath upto 90 °C *Water circulation pump for bath *Buffer vessel 1 litre capacity *Electronic console including: 4 temp. sensor connections, temp. sensor selector, display, 3 pumps on/off switches, heating resistance switch, Manuals. Alternate: 1. PDAN Anaerobic Digester Edibon 2. PDA Aerobic Digester Edibon</p>	1	Spain	Re-invite
PSW&WTF(II)/ 02	Fluidized bed bioreactor	1	M/S Rizvi & Company, Karachi	High-Temp Fluid Bed Reactor System	<p>High-Temp Fluid Bed Reactor System Customized System. Parr Instruments GAS FEEDS: Three reactant feed lines are included. Each has a shut-off valve, filter, bypass valve, electronic mass flow controller (MFC), and a reverse-flow check valve. The MFC's are calibrated for 0-20,000 scfm flow of H2, CO, and N2, respectively. Pressure of calibration is 300 psig inlet and 200 psig outlet. One purge gas feed line is provided with metering valve and reverse-flow check valve. The reactant lines have normally-closed shut-off valves. The purge line has a normally-open shut-off valve. These automated valves require 100 psi dry air for operation. REACTOR MODULE: The Fluid-bed Reactor Assembly includes open tubular reactor with an internal volume of ~450cc.</p>	1	USA	Re-invite

As Per Tender			As Per Vendors				Remarks/Recommendation
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty	
					<p>Reactor is made of T316SS, is rated for use to 500 psi at 600°C and has a 1" ID and 36" inner length that expands to 2.5" ID in the uppermost 2" segment. The reactor is heated with a one-zone split-tube furnace capable of 600°C. The split-ring closures on both ends are heated up to 350°C with flexible-mantle heaters. All heaters are controlled via thermocouples located in the outer wall in the middle of each zone. A pressure gage, transducer, and pressure relief valve are included at reactor inlet. The upper reactor head has an additional pressure transducer and a moveable thermocouple within a centerline thermowell.</p> <p>PRODUCT RECOVERY: A cyclone separator is provided, fashioned from stainless steel with a cone measuring 2.5" in diameter at the top. Thereactor products enter this vessel tangentially. This vessel is surrounded with a flexible mantle heater controlled via a thermocouple in the side wall. Gases and vapors exiting the top of this vessel pass through a water-cooled condenser. A manual drain valve is provided in the vessel bottom. The cooled products pass into a High Pressure Separator made of stainless steel. This non-heated vessel has 600 ml capacity and is equipped with a manual drain valve. A Back Pressure Regulator, mounted at the exit of the G/L separator, provides for controlled release of gases to atmospheric pressure. This automated regulator maintains reactor pressures up to 500 PSIG. It requires 100 psi dry air for operation. CONTROL and DATA</p>		

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Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
					ACQUISITION SYSTEM: Reactor temperature, pressure and gas flow rates are controlled by the Model 4871 Process Controller. This controller is equipped with two 8-channel analog input cards, two 4-channel analog output cards, and one 16-channel digital output card. The included operator interface provides for control and monitoring of four temperature zones, pressure, and the gas flow rates as well as displaying, monitoring, and data logging of all temperatures, gas flows, and pressure readings. The system is designed for 230V service. Twenty-foot cables are included from controller to reactor. Operational software is pre-configured at Parr and supplied on a USB thumb-drive for installation in a client-provided PC. This system is offered as a fully assembled and tested unit, mounted on a custom frame.			
			M/S Paktech Instrument Company, Karachi	Fixed and fluidized bed unit (LFF)	<p>Benchtop unit: *Both packed and fluidized studies *Aluminium structure and panels with painted steel *Main metallic elements in stainless steel *Diagram in the front panel with similar distribution to the elements in the real unit *Transparent cylindrical columns, 1 for air and 1 for water. dia 50mm and H 550mm with bed plates *glass beads (170/300 and 250/420micron) supplied *columns can be dismantled *Water tank of 10 litres capacity *pump *compressor *2 air flow meters 0.07-0.55 l./min. *Manometers *Electrical panel, *Lamp and *Manuals.</p> <p>Alternate: LFF Fixed and Fluidised Bed Unit Edibon</p>	1	Spain	

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As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
PSW&WTF(II)/ 03	Aerobic/ Anaerobic gas Respirometer	1	M/S Professional Systems, Islamabad	PF-4000 & PF-8000	Equipment items: *4- or 8-position flow measuring base *USB *Accessories Kit *4- or 8-position magnetic stirring base *Readout interval (1-720min.) *Electrical requirements (110- 240VAC, 50-60Hz), Reaction Vessel size: (50ml to 2+ L), Temperature of Operation: 5-70°C Min., flowrate detection: 0.05mL anaerobic, Aerobic sensitivity: as low as 0.03mg O2, Max. flow capacity: 1000mg O2/hr, Measurement precision: <3% CV, **Requires Pentium 233+ computer with 500MB+ HD, CD, USB port, and windows XP+	1	UK	Specifications of the system (PF 8000 and PF8000A) offered by M/S Professional Systems, are in agreement with the required specifications. The committee recommend to purchase the system offered by M/s Professional Systems Pvt Ltd.
			M/S Paktech Instrument Company, Karachi	Germany Lab MBR	Bioreactor tank , size 50x25x30cm, Feed tank of volume of 30-40 liters Level control tank of volume of 3-4 liters, feed pump, Circulation pump to level control tank, Air pump Maximum flow rate 550 l/h , Air diffuser (5 units), Bubble size 100-500µm, Air flow meters, Submerged membrane module (depend on requirement), Vacuum pump, Centrifugal pump , Pressure gauges , Valves and pipeline, 04 Cross flow membrane modules (Microfiltration) All the required components. Easy to operate and maintenance. Warranty: Minimum 03 years repair and maintenance with parts warranty.	1	Germany	
PSW&WTF(II)/ 04	Laboratory Storage Refrigerator (Freezer)	1	M/S PCM Electrical Systems, Karachi	Spain Upright Freezer TempLow S,L,M	S: digital temperature control, Temperature range from -15 to -25°C, 8 drawers with individual freezer compartments. M: digital temperature control, Temperature range from -14 to -25°C, 7 individual freezer compartments with 14 baskets. L: digital temperature control, Temperature range from -10 to -35°C, 4 shelves,	1	Spain	Specification of model "TempLow" M are matching with the required specifications. The committee recommend to purchase this item from M/S PCM Electrical Systems.

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As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
PSW&WTF(II)/ 05	Lab MBR for Wastewater Treatment	1	M/S Professional Systems, Islamabad	MEMBRANE BIOREACTOR - DENITRIFICATION / NITRIFICATION / ULTRAFILTRATION	<p>The pilote consists:</p> <p>Tanks: Alimentation tank (PE) with a capacity of 200L, equipped with a removable cover and a draining. Denitrification tank (altuglass) cylindrical form, conical bottom, capacity 20 L, draining and removable cover with probes supports. Nitrification/Aeration tank (altuglass) cylindrical form, conical bottom, capacity 40L, draining and removable cover with probes supports. Distribution of the air by flexible porous tube, held at the bottom of the tank. Washing tank (inox) conical bottom, capacity 20L with removable cover. Online cooler (2 coaxials tubes, 2 flexibles, 1 solenoide valve (with option3) for cold water or for the cold group (option 1)).</p> <p>Pumps: Dosing pump 0 to 30 L/h from the alimentation tank to denitrification tank.</p> <p>Instrumentation: Pneumatic bushel inox valve (can be changed by electrical valve if you have a problem with compressed air). 3 pressure probes, display tactile screen (option 2 and 3), 2 flowmeter with float, or 2 electromagnetic fowmeter, output 4-20 mA, ranges 0-30 L/h et 0-1000 L/h (options 2 and 3), 1 flowmeter with float 0-2 L/h and display on tactile screen (options 2 et 3) 1 flowmeter with float for gaz 0-2000 L/h 2 bar, and display on tactile screen (options 2 and 3), 2 oxygen probes and transmitter can work with the compressor (avec option 3), 2 pH probes with transmitter, 2 temperature probes Pt100 Ω with converters, Fiber membrane Electric cabinet, Control buttons and protections pumps.</p>	1	FRANCE	The specifications of lab MBR system offered by Professional systems (pvt) ltd is given rank #1 by the committee.

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As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
					<p>Tactile screen : 2 pH transmitters, 2 oxygen transmitters, 1 temperature indicator, 1 temperature regulator (option 1), 3 pressure displays, Flowmeter indicator (options 2 and 3), Flowmeter indicator permeate (options 2 and 3), Electromagnetical flowmeter displays (option 2 and 3), 1 automaton (option 3) Parameters acquisition in real time and export the data under Excel (available for option 2 and 3), 3 pressures, 2 temperatures, 4 flows, 2 pH, 2 O2, RS485 Ethernet, Programming Softwares and acquisition compatible with Windows 7, 1 computer (included in option 3).</p> <p>Softwares have to be install on local computer. With the web browser, the apparatus can be piloted from your home or wherever you are, if the local computer is turned on.</p> <p>OPTION 1: COLD group, essential if the cold water (~15°C) is not available in our compagny. OPTION 2: Datas acquisition OPTION 3: AUTOMATIZATION / PILOTAGE SYSTEM,</p> <p>NB : Option 3 need the option 2 before..</p>			
PSW&WTF(II)/ 06	Float Switch Water Level Sensor	1	Not Quoted by Any Vendor					

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Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
PSW&WTF(II)/ 07	Pilot Scale Reverse Osmosis Water Treatment Plant	1	M/S Rizvi & Company, Karachi	Reverse Osmosis and Ultrafiltration Pilot Plant Manual Version Mod. UOU/EV	*Frame work of AISI 304 stainless steel with castors *Feeding tank of AISI 304 SS with capacity of 30L *Tank of AISI 304 SS, with capacity of 30L, for permeate *Piston pump of AISI 316 SS *Centrifugal pump of AISI 316 SS *AISI 316 SS housing for 2 membranes, typical flow of permeate=5-50ml/min. *Heat Ex. of AISI 304 SS *2 variable areas flow meters for permeate and concentrate for mod. UOU/EV, only *4 pt100 with sheet of AISI 316 SS *2 bourdon guages of AISI 304 SS *Safety valve *Safety pressure switch board with ELCB	1	Italy	M/S Finetech Technologies Pvt Ltd offered two alternatives (1) 10, 000 gallons per day automatic RO water treatment plant (2) 20,000 gallons per day RO water treatment plant. They offered automatic bottle filling machine for 19 L bottles (300 bottles/hour) and 500 milliliters bottles (5000 bottles/hr). The committee recommend to purchase RO plant of capacity of 20,000 gallons per day and bottle filling plant (19 liter). -The offer for the RO system provided by M/S PCM Electrical Systems, is ranked #2. -Specifications provided by M/S Rizvi & Company and M/S Paktech Instruments Company do not match with the required specifications.
				Reverse Osmosis and Ultrafiltration Pilot Plant Manual Version with Datalogging Mod. UOUc/EV	*Besides being provided all the characteristics of mod. UOU/EV, this model also includes following additional items *2 flow meters with transmeter *2 pressure transmitters of SS *Interface for the connection with a PC included in the sitch board *Data acquisition software for windows			
			M/S Paktech Instrument Company, Karachi	Computer controlled Reverse Osmosis/ Ultrafiltration unit with SCADA (ROUC)	Advance real-time SCADA *Open control + multi control + real time control *Specialized EDIBON control software based on Lab view *Calibration exercises included; teach the user to calibrate sensor and checking accuracy before measurements *Projector and/or electronic white board compatibility allows the unit to be explained and demonstrated to entire class at one time *Capable of doing applied research, real industrial simulation, training courses, etc.		1	

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Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	
					<p>*Remote operation and control by the user and remote control for EDIBON technical support are always included</p> <p>*Safe utilizing for safety systems (mechanical, electrical, electronic and software *Optional CAL software helps the user perform calculations and comprehend the results</p> <p>TECHNICAL SPECS: ROUC Unit: *Aluminium structure and panels with painted steel *Main metallic elements in stainless steel *Diagram in the front panel with similar distribution to the elements in the real unit * SS feed tank (15l./approx. capacity) *Head positive displacement feed pump: max. flow 38l./min., press. 150bar, Operational press. 55bar, VSC, relief valve, Frequency variator.</p> <p>*Membrane module: 2 tubular membranes in series, dia 12.5mm, area: 0.000122meter-square, Tubeside volume: 75ml., Max. Operation press. 55bar. *Heat exchanger for the concentrate *SS collecting tank (15l.) *Temp. sensor type J. *Press. sensor (0-100bar) *Flow sensor (water inlet range: 0.25-6.5l./min.) Membranes of each model of the following are supplied: *Retention character (99% NaCl), Process : RO, max. press. 45bar *Retention character (20,000Da), Process : UF, max. press. 10bar *Retention character (200000Da), Process : UF, max. press. 15bar *Elements are of SS, PTFE and silicon rubber *Wheels for unit's mobility *ROUC/CIB. Control Interface Box *Sensors(-10V. to +10V.)</p> <p>*Sensors connectors interface have different pines numbers (2-16), to avoid connection errors *Control elements are permanently computer controlled *Simultaneous visualization in the computer for all parameters involved in the process *Computer control with flexibility of modifications from the computer keyboard of the parameters at any moment during the process *Data Acquisition Board: *ROUC/CCSOF computer control + data acquisition + data management software *Manuals</p>			

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As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
			M/S Finetech Technologies, Karachi	10,000 US GALLONS PER DAY AUTOMATIC REVERSE OSMOSIS WATER TREATMENT PLANT	<p>1. Chlorination; 2. Sand Filtration; 3. Activated Carbon Filtration; 4. Fine Filtration; 5. Reverse Osmosis demineralization; 6. Mineralization of Essential Salts; 7. Micro Filtration; 8. Ozonation; 9. Ultra violet (UV) Sterilization</p> <p>The proposed plant is designed on following basis: Plant Type: Single Pass Reverse Osmosis, Raw Water Source: Canal Water, Raw Water Quality: 500 ppm TDS (Max.), Plant Capacity : 10,000 US Gallons per Day, Product Water Quality : < 25 ppm TDS</p> <p>ITEMS: SPECIFICATIONS: Raw Water Tank: One Manufacturer: Super Tuff Pakistan Material of construction: PE</p> <p>Type & Color: Vertical-Black/Translucent, Capacity: 1,500 US gallons , R.O. Feed Pump: One Type: Vertical Multistage Centrifugal Pump, Make: CNP or Equivalent, M.O.C: SS-304, Head: 60 m (max.), Horse power of motor: 3 hp, Type of motor: 3 phase, 400 V, 50 Hz, 2900 rpm, Multi Media Sand Filter:</p> <p>One Filter Vessel: Fiber Reinforced Polymer (FRP), Make: Pentair (China) or equivalent, Dimension: 16"× 65", Media: Graded Silica Sand & Gravel, Pipe size: 2", Mode of operation: Automatic & Manual, Activated Carbon Filter: One Filter Vessel: Fiber Reinforced Polymer (FRP), Make: Pentair (China) or equivalent, Dimension: 16"× 65", Media: GAC (Granular Activated Carbon), Pipe size: 2", Mode of operation: Automatic & Manual, RO Skid Frame: One Material of Construction: Stainless Steel-304 (SS/Argon Weld), Multi-Cartridge Filter Housing : One Material of Construction: Stainless Steel 304, Flow Capacity: 50 gpm, Inlet & Outlet Connection: 2", Filter Rating : 5 micron Length of cartridge: 20", No. of cartridge: 5 Nos., Chemical Dosing Pumps: Three Applications: Chlorination, SMBS & Antiscalant, Capacity: upto 5 Liters /hour, Pressure: upto 5 bar, Chemical Day Tank: Three Capacity: 80 Liters.</p>	1	Italy/China/ Pakistan/France/Taiwan/Germany	

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Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty	
					<p>Material of construction: Polyethylene (Food Grade), High Pressure Pump: One Type: Vertical Multistage Centrifugal Pump, Make: CNP or Equivalent, Head: 120 m (max.) or equivalent Horse power of motor : 5.5 hp, Type of motor: 3 phase, 400 V, 50 Hz, 2900 rpm, Pressure Vessels: One, Manufacturer: PPWT/PALL/FIRSTLINE or equivalent, Material of construction: FRP (Fiber Reinforced Plastic), Size of vessels: 8" diameter x 2 Element Long, End plug material: PVC With Aluminum Plate, R.O. Membrane Elements: Two Brand: DOW Filmtec/TORAY or Equivalent, Origin: USA, Size of membranes: 8" diameter x 40" long, Membrane Type: Polyamide Thin-Film Composite, Maximum Operating Temperature : 113 oF (45OC), Maximum</p> <p>Pressure Drop: 15 psig (1.0 bar), pH Range Continuous Operation : 2 – 11, pH Range Cleaning (30 min.) : 1 – 13, Maximum Feed Flow : 85 gpm (19 m3/hr), Maximum Feed Silt Density Index SDI : <5, Free Chlorine Tolerance : <0.1 ppm, CIP System: One, CIP Pump : Vertical Multistage Centrifugal Pump, Make: CNP or Equivalent, M.O.C: Stainless Steel 304, Head: 60 psi (max.) or equivalent, Horse power of motor : 2 hp, CIP Tank: 75 Gallons, M.O.C of Tank: PE Automatic Mineral Dosing, System : One, Make: AQUA or Equivalent, Origin: Italy or Equivalent, Auto Mineral Dosing Controller : 01, Mineral Dosing pumps : 03, Mineral Dosing Tanks : 03, Stainless Steel Skid: 01, Filling Pumps (New) : Two, Manufacturer : CNP or Equivalent, Head : 30-35 psi (max.), Type of pump: Vertical Multistage Centrifugal Pump, Horse power of motor : 1.0 hp or Equivalent, Type of motor: 3 phase, 400 V, 50 Hz, 2900 rpm, Multi-Cartridge Filter Housing : One</p> <p>Material of Construction: Stainless Steel 304, Capacity: 15 gpm , Inlet & Outlet Connection: 1/2", Number of cartridges: 5 in 1 Housing, Type : Slim, Filter Rating: 1 Micron, Length of cartridge : 10".</p>		

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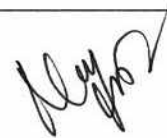


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Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
				20,000 US GALLONS PER DAY AUTOMATIC REVERSE OSMOSIS WATER TREATMENT PLANT	<p>This RO plant is designed on single pass system which ends up producing a much higher quality permeate that help to produce high quality drinking water. This RO system removes most organic compounds, viruses, bacteria and pyroxene up to 99.99+%. System involves following purification steps: 1. Chlorination; 2. Sand Filtration; 3. Activated Carbon Filtration; 4. Fine Filtration; 5. Reverse Osmosis demineralization; 6. Mineralization of Essential Salts; 7. Micro Filtration; 8. Ozonation; 9. Ultra-violet (UV) Sterilization.</p> <p>The proposed plant is designed on following basis: Plant Type : Single Pass Reverse Osmosis, Raw Water Source: Canal Water, Raw Water Quality: 500 ppm TDS (Max.), Plant Capacity: 20,000 US Gallons per Day, Product Water Quality : < 25 ppm TDS.</p> <p>ITEMS: SPECIFICATIONS: Raw Water Tank: One, Manufacturer: Super Tuff Pakistan, Material of construction: PE, Type & Color:</p> <p>Vertical-Black/Translucent, Capacity: 1,500 US gallons, R.O. Feed Pump: One, Type : Vertical Multistage Centrifugal Pump, Make: CNP or Equivalent, M.O.C: SS-304, Head: 60 m (max.), Horse power of motor: 3 hp, Type of motor: 3 phase, 400 V, 50 Hz, 2900 rpm, Multi Media Sand Filter: One, Filter Vessel: Fiber Reinforced Polymer (FRP), Make: Pentair (China) or equivalent, Dimension: 24"× 72", Media: Graded Silica Sand & Gravel Pipe size: 2", Mode of operation: Automatic & Manual, Activated Carbon Filter: One, Filter Vessel: Fiber Reinforced</p>	1	Italy/China/ Pakistan/ France/Taiwan/ Germany	

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As Per Tender			As Per Vendors				Remarks/Recommendation
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty	
					<p>Polymer (FRP), Make: Pentair (China) or equivalent, Dimension: 24" x 72", Media: GAC (Granular Activated Carbon), Pipe size: 2", Mode of operation: Automatic & Manual, RO Skid Frame: One, Material of Construction: Stainless Steel-304 (SS/Argon Weld), Multi-Cartridge Filter Housing : One, Material of Construction: Stainless Steel 304, Flow Capacity: 75 gpm, Inlet & Outlet Connection: 2", Filter Rating: 5 micron, Length of cartridge: 30", No. of cartridge: 5 Nos., Chemical Dosing Pumps: Three, Application: Chlorination, SMBS & Antiscalant Capacity: upto 5 Liters /hour, Pressure: upto 5 bar, Manufacturer: Etatron-DS or SEKO (Italy), Chemical Day Tank: Three, Capacity : 80 Liters, Material of construction: Polyethylene (Food Grade), High Pressure Pump: One, Type: Vertical Multistage Centrifugal Pump, Make: CNP or Equivalent, Head: 120 m (max.) or equivalent, Horse power of motor: 7.5 hp, Type of motor: 3 phase, 400 V, 50 Hz, 2900 rpm, Pressure Vessels:</p> <p>Three, Manufacturer: PPWT/PALL/FIRSTLINE or equivalent, Material of construction: FRP (Fiber Reinforced Plastic), Size of vessels: 8" diameter x 2 Element Long, End plug material: PVC With Aluminum Plate, R.O. Membrane Elements: Three, Brand: DOW Filmtec/TORAY or Equivalent, Origin: USA, Size of membranes: 8" diameter x 40" long, Membrane Type: Polyamide Thin-Film Composite, Maximum Operating Temperature : 113 oF (45OC), Maximum Pressure Drop : 15 psig (1.0 bar), pH Range Continuous Operation : 2 – 11, pH Range Cleaning (30 min.) : 1 – 13, Maximum Feed Flow: 85 gpm (19 m3/hr), Maximum Feed Silt Density Index SDI : <5, Free Chlorine Tolerance: <0.1 ppm, CIP System : One, CIP</p>		

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As Per Tender			As Per Vendors				Remarks/Recommendation
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty	
					<p>Pump: Vertical Multistage Centrifugal Pump, Make: CNP or Equivalent, M.O.C: Stainless Steel 304, Head: 60 psi (max.) or equivalent, Horse power of motor : 3 hp, CIP Tank : 75 Gallons, M.O.C of Tank: PE, Automatic Mineral Dosing System : One, Make : AQUA or Equivalent, Origin : Italy or Equivalent, Auto Mineral Dosing Controller : 01, Mineral Dosing pumps: 03, Mineral Dosing Tanks: 03, Stainless Steel Skid : 01, Filling Pumps (New) : Two, Manufacturer: CNP or Equivalent, Head: 30-35 psi (max.), Type of pump: Vertical Multistage Centrifugal Pump</p> <p>Horse power of motor: 1.5 hp or Equivalent, Type of motor: 3 phase, 400 V, 50 Hz, 2900 rpm, Multi-Cartridge Filter Housing : One, Material of Construction: Stainless Steel 304, Capacity : 15 gpm, Inlet & Outlet Connection: 1/2",</p> <p>Number of cartridges: 5 in 1 Housing, Type: Slim, Filter Rating: 1 Micron, Length of cartridge: 10", Product Water Tanks: Two, Manufacturer : Super Tuff Pakistan, Material of construction: PE (Food Grade), Capacity: 1,000 US gallons, Type & Color: Vertical-Translucent, Ozone Generator: One, Manufacturer: iCan (China) or Equivalent, Model: CFY-6, Capacity: 6 grams/hour (on oxygen feed), Ozone Contact Tank: One, M.O.C : Stainless Steel 316, Size: 14" x 120" (Dia x Height) approx., Capacity: 120 US gallons (approx.), UV Sterilizer: Three, Material of Construction: Stainless Steel 304, Size: 36", Lamp & Quartz: Phillips (Holland), UV-C Radiation: 15.0 W Lamps Quantity: Four, Instrumentation: Low Pressure Switch The low inlet pressure switch will cut off electrical supply to motor, if a loss of feed pressure</p>		

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Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty	Country of Origin	
					<p>occurs. High Pressure Switch The high outlet pressure switch will cut off electrical supply automatically to motor, if an excess pressure occurs. Level Switches To operate the system automatically to control the low level of feed water and high level of permeate water. Pressure Gauges in/out of Multimedia, Cartridge filter, pump discharge and concentrate. Flow meters Flow meter, for permeate and concentrate. Online TDS Meters To monitor feed, permeate and product water TDS. Totalizing Hour Meter To note the total operation hours Dissolved Oxygen Meter To determine water quality. pH Meter Use to measure hydrogen-ion activity (acidity or alkalinity) in water. Electrical Panel: The panel will house all system related controls and instruments such as; Digital Volts Meters, Digital Ampere Meters, Auto Manual Switch, Contractors with over loads, Phase Failure, Main & Control Breakers, ON / OFF Indication Lights.</p> <p>Fittings & Fixtures: Complete Set, PVC Fittings: Hydroseal (Canada) & Jeddah Polymer, Size: 1", 1 1/2", & 2", Schedule 80 & 40, Oxygen Gas Cylinder: One Set With N5 purity gas and regulator, Material of Construction: RO Skid (Frame) : Stainless Steel – 304, Electrical Panel : Stainless Steel – 304, Sand Filter : Fiber Reinforced Plastic, Carbon Filter : Fiber Reinforced Plastic Cartridge Filter Housing : Stainless Steel 304, Inlet (low pressure piping) : PVC Schedule 80, High pressure piping : PVC Schedule 80, Valves (high pressure) : UPVC, Valves (low pressure) : UPVC, Pressure gauges : SS Liquid filled,</p>			

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Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
					RO Feed Pump : Stainless Steel-304, RO High Pressure Pump : Stainless Steel-304, CIP Pump : Stainless Steel-304 Concentrate Control Valve : Stainless Steel-304, Pressure Vessels: Fiber Glass, Major Component Manufacturers: Chemical Dosing Pumps : Etatron-DS (Italy), Low & High Pressure Switch : Danfos (Germany) or equivalent RO Feed Pump : CNP, RO High Pressure Pump : CNP, Pressure Vessels : PPWT (China) or equivalent, Media Vessels : Pentair (China) or equivalent, RO Skid : Fabricated in Pakistan, Low Pressure Piping : Hydroseal (Canada) or equivalent, High Pressure Piping : Hydroseal (Canada) or equivalent, Pressure gauges : WIKA (Germany) or Equivalent, Electrical Components : Telemechanic (France) or equivalent, Indicator Lamps, Switches : Auspicious (Taiwan) or equivalent, Ozone Generator : iCAN (China), Storage Tank : Super Tuff (Pakistan), Auto Mineral Dosing System : Aqua (Italy) or equivalent.			

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As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
				CAPACITY: 300 BOTTLES PER HOUR (19 LITER)	<p>1. Full-auto lid pull off machine QS Series full-auto lid pull off machine is a special equipment design for put off of 5 gallon machine. It can insure the lid don't broken and can reused. The machine is control by computer, so the capacity can adjust, outfit of lid put off can adjust by air tank, it solve the problem about different high of barrel and wide of barrel mouth , improve the success rate of pull out lid. *Size (mm): 600*800*1700 *Pneumatic component: Airtac *Photoelectric: Autonics</p> <p>2. Automatic outside and inside brushing machine This is pre-washing machine for this production line. It consists of transmission machine, brusher, and water pump. Setting following function: main brusher, bottom brusher, side brusher and so on. Exterior brushing and spurt with water, rotate brush can carry out cleaning the outside and inside barrel, washing quality is stable. *Capacity: 300 b/h *Power: 1.2KW *Air pressure: 0.7~0.8Mpa</p> <p>3. Automatic barrel load machine The washed empty barrels are imported to auto barrel loader work place, when the barrel loader's counter take count of 8, the barrel block air tank start to work, stop empty barrel ; then air tank for push empty barrel start work, restoration after push barrels to barrel turn over frame ; at this time barrel air tank start work, make the barrel at plane state and cut in support of barrel, principle axis of air tank for washing barrel start to work, empty barrels moved with chain to one work place, then handstanded ; then the barrel loader restoration, then repeat the processing</p> <p>4. Washing, filling, capping machine QGF-300 barrel filling machine is made of stainless steel 304 and professional for produce 5 gallon barreled water. The technology import and assimilate from American Spraying Systems Co.</p>	1	China	



As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
					<p>It consist of frame, cap unscramble, cap elevator, water tank, pipeline, water pump, air tank, transmission machine, electric machine, can finish empty barrel washing , filling , capping through several washing , fit quantity filling and auto wear lid and capping. The whole working process was control by PLC; realize stability washing effect, accurate filling capacity and perfect capping effect.</p> <p>*Filling head : 2</p> <p>*Size : 3500*900*1700mm *Capacity : 300 b/h *Air pressure: 0.4-0.6Mpa *Air cylinder : Airtac 0.37m3/min *Water pump: Nanfang (famous brand in China) *Power: 3kw *Weight: 750kg *PLC: Mitsubishi</p>			
				<p>CHINA CAPACITY: 5000 BOTTLES PER HOUR (500 ML)</p>	<p>Basis of design: This project is designed based on the layout of plant and requirements of customer.</p> <p>1.1 Bottle type: Round PET bottle 1.2 Bottle size: Max. diameter is 110mm, max. height is 340mm 1.3 Drink type: pure water 1.4 Filling: gravity filling 1.5 Output: 6000bottles per hour based on 500ml 1.6 Bottle feeding: manual 1.7 Shrink sleeve label is demanded 1.8 Packing size: as your requirements 1.9 Power: 3-phase, 380V/50HZ</p> <p>SEMI AUTOMATIC BOTTLE UNSCRAMBLER MACHINE, AIR CONVEYOR, WASHING, FILLING AND CAPPING MACHINE LINE, IN LINE CAP STERILIZATION MACHINE, CAP ELEVATOR MACHINE, LIGHT CHECKER, BOTTLE DRYER, FULLY AUTOMATIC DOUBLE HEAD SHRINK SLEEVE LABELING MACHINE, INK JET PRINTER (USA), FULLY-AUTOMATIC WRAPPING AND SHRINKING MACHINE Extra conveyor</p>	1	China	

As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
			M/S PCM Electrical Systems, Karachi	MSRO- 0033	<p>MANUAL WATER FILLING MACHINE (OPTIONAL) AUTOMATIC MACHINE 0.25 TO 02 LITER (OPTIONAL) AUTOMATIC FILLING MACHINE 20 LITER (OPTIONAL) List of Consumable part within RO Plant: 1 Multimedia sand (Life 5 Years) 1 Multimedia Activated carbon (Life 2 Year) 1 Cartridges will change every Month 1 Oxygen cylinders Refilling 1 R.O. Membrane, Optional Accessories for RO Plant: 1 Voltage Stabilizer 1 Electrical Distribution Box 1 Water Bottle 19 liter. ITEMS / ACCESSORIES INCLUDED IN THE MAIN OFFERED PACKAGE: STEP -01 RAW WATER TANKS MATERIAL PE. TOTAL CAPACITY 1500 GALLON MADE IN PAKISTAN 03 STEP -02 RAW WATER FEED/BOOSTER PUMP A.TYPE:CENTRIFUGAL,GRUNDFOS</p> <p>D.MATERIAL:STAINLESS STEEL 304, 03HP, 3PHASE, 2900 RPM MADE IN ENGLAND OR EQUIVALANT 01 STEP -03 AUTOMATIC MULTIMEDIA FILTER STATION A. HOUSING 16X65 FRP, AUTOMATIC / MANUAL B. MEDIA: GRADED FUSED SILICA SAND MADE IN TAIWAN OR EQUIVALANT 01 STEP - 04 AUTOMATIC ACTIVE CARBON FILTER STATION A. HOUSING 16X65 FRP, AUTOMATIC / MANUAL B. MEDIA: ACTIVATED CARBON MADE IN TAIWAN OR EQUIVALANT 01, Step- 05 R.O.WATER TREATMENT PLANT A. SKID FRAME MATERIAL SS-304, SS WELDED MADE IN PAKISTAN OR EQUIVALANT B. CARTRIDGE FILTER HOUSING SS-316</p>	1	Taiwan	

As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
					<p>MEDIA: PP CARTRIDGE ARRAY. LENGTH 20" CAPACITY 40GPM, MICRON RATING-5 MADE IN TAIWAN OR EQUIVALANT C. CHEMICAL DOSING PUMP CAPACITY 5L/hr, PRESSURE 5 BAR, CHEMICAL TANK INCLUDED MADE IN TAIWAN OR EQUIVALANT D. HIGH PRESSURE PUMP HEAD PRESSRE 120M, 5.5HP 3PHASE MOTOR, 2900RPM MADE IN ENGLAND OR EQUIVALANT E. PRESSURE VESSEL MATERIAL FRP, DIAMETER 8", LENGTH 40', 2PCS MADE IN TAIWAN OR EQUIVALANT F. RO MEMBRANE DIAMETER 8", LENGTH 40', 2PCS.</p> <p>OPERATING TEMPERATURE 50 CO, PRESSURE 600 PSI RAW WATER CHARACTERISTICS: (TDS : 500 ppm) TOTAL RAW WATER REQUIRED: 15000 GPD TOTAL WATER PRODUCED: 10000 GPD PERCENTAGE OF WATER PRODUCE: 75-85% MADE IN USA G. MINERAL DOSING PUMP CAPACITY 5L/hr, PRESSURE 5 BAR, MINERAL TANK INCLUDED MADE IN TAIWAN OR EQUIVALANT H. OZONE GENERATOR. OZONE GENERATOR WITH OZONE MIXING TANK, SS- 304, CAPACITY 100 GALLONS, OXYGEN GAS CYLINDER 1-HP PUMP STAINLESS STEEL 304, 3PHASE, 2900 RPM MADE IN TAIWAN OR EQUIVALANT</p>			

2 → J. Khuhawer

J. Khuhawer

K. Khuhawer

[Signature]

As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
					I. UV SRETLIZER POWER 25 WATT, 254 nm. QUANTITY 4 LAMPS, LENGTH 20" LAMP MADE IN TAIWAN OR EQUIVALANT J. ACCESSORIES TDS METER, pH METER, DISSOLVED OXYGEN METER FLOW METER etc, 06 a. AUTOMATIC BOTTLE FILLING MACHINE (OPTIONAL) FILLING 0.25L TO 02L MATERIAL SS 304 SIX HEAD FILLING, CAPACITY 2000 BOTTLE PER HOUR MADE IN TAIWAN OR EQUIVALANT, b. AUTOMATIC BOTTLE FILLING MACHINE (OPTIONAL) FILLING 20L MATERIAL SS 304 TWO HEAD FILLING, CAPACITY 240 BOTTLE PER HOUR, MADE IN TAIWAN OR EQUIVALENT, c. MANUAL BOTTLE FILLING STATON (OPTIONAL), MADE IN PAKISTAN Consumable Parts Optional Accessories			
PSW&WTF(II)/ 08	Air Flow Meter	1	Not Quoted by Any Vendor					
PSW&WTF(II)/ 09	Air Sampling pump	1	Not Quoted by Any Vendor					

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Farooq Roman

Khan

Ali

2 → Khan

As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
PSW&WTF(II)/ 10	Autoclave	1	M/S Professional Systems, Islamabad	HORIZONTAL FLOOR-STANDING AUTOCLAVES SERIES 4 150 - 305 LITER	<p>BASIC LAB Recommended for the sterilization of simple materials or liquids without removal when dry. Integrated steam generator SteriTouch control, DRY LAB</p> <p>Recommended for the sterilization of non-infectious waste bags and materials which require intensive subsequent drying. Integrated steam generator Vacuum pump set SteriTouch control QUICK LAB · BASIC</p> <p>Recommended for the sterilization of large quantities of liquids. Integrated steam generator Rapid water recooling system with air-circulating fan SteriTouch control</p>	1	Germany	Re-invite



→ Khuhawer


As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
					<p>QUICK LAB Recommended for the sterilization of non-infectious waste bags, large quantities of liquids and materials which require intensive subsequent drying. Integrated steam generator Vacuum pump set Rapid water recooling system with air-circulating fan SteriTouch control</p> <p>QUICK LAB · ADVANCED Recommended for the sterilization of non-infectious waste bags, large quantities of liquids and materials which require intensive subsequent drying – this also applies to liquids in closed containers. Integrated steam generator Vacuum pump set Rapid water recooling system with air-circulating fan Steam/air mixture method (SAMM) SteriTouch control</p> <p>SAFE LAB Recommended for operation in the level S2 lab. Recommended for the sterilization of infectious waste bags and materials which require intensive subsequent drying. Integrated steam generator Vacuum pump set Exhaust air filtration EAF SteriTouch control</p> <p>COMPLETE LAB Fully equipped laboratory autoclave for operation in the level S2 lab. Recommended for the sterilization of infectious waste bags, large quantities of liquids and materials which require intensive subsequent drying. Integrated steam generator Vacuum pump set. Exhaust air filtration EAF Rapid water recooling system with air-circulating fan SteriTouch control</p>			











As Per Tender			As Per Vendors				Remarks/Recommendation	
Item code #	Equipment/ Instrument	Qty	Vendor Name	Make & Model	Specifications	Qty		Country of Origin
					OPTIMAL USE OF LABORATORY SPACE The usable volume of an angular chamber can – in contrast to a round chamber – be nearly completely utilized. As a result, the devices have smaller external dimensions. Loading example: 48 x 1-liter Schott bottles: = 150-liter chamber capacity = 220-liter chamber capacity			
PSW&WTF(II)/ 11	HEPA Disposable Filter	1			Not Quoted by Any Vendor			
PSW&WTF(II)/ 12	Membrane module	1			Not Quoted by Any Vendor			
PSW&WTF(II)/ 13	6 cc VAC cartridge	1			Not Quoted by Any Vendor			
PSW&WTF(II)/ 14	Activated Mg Silica	1			Not Quoted by Any Vendor			
PSW&WTF(II)/ 15	Laboratory scale diaphragm air pump:	1			Not Quoted by Any Vendor			


Dr. Rasool Bux Mahar
 Professor
 USPCAS-W


Dr. Zubair Ahmed
 Professor
 USPCAS-W


Dr. Syeda Sara Hassan
 Assistant Professor
 USPCAS-W


Dr. Muhammad Yar Khawar
 Emeritus Professor
 University of Sindh, Jamshoro


Dr. Najma Memon
 Associate Professor, NCEAC
 University of Sindh, Jamshoro



PROCUREMENT MANAGER
U.S.-Pakistan Center for Advanced Studies in Water

Name of Work: **PROCUREMENT OF LABORATORY EQUIPMENT FOR ADVANCE WATER & WASTE WATER QUALITY CONTROL LABORATORY AND PILOT SCALE WATER & WASTE WATER TREATMENT FIELD OF USPCAS-W, MUET, JAMSHORO.**

MINUTES OF MEETING:

A meeting for opening of financial proposals of the tender for the “**Procurement of Laboratory Equipment for Advance Water & Waste Water Quality Laboratory and Pilot Scale Water & Waste Water Treatment Field at USPCAS-W, MUET, Jamshoro**” was held on 10-11-2017 at 11:00 am in the meeting hall of USPCAS-W, MUET, Jamshoro. The following members of tender Opening Committee were present:

- | | |
|---|------------------|
| 1. Dr. Bakhshal Khan Lashari
Project Director,
USPCAS-W
MUET, Jamshoro. | Convener |
| 2. Engr. Muhammad Mashooque Siddiqui
Director Procurement,
University of Sindh. | Member |
| 3. Mr. Abdul Ghafoor Kandhir,
Procurement Manager,
USPCAS-W
MUET, Jamshoro | Member/Secretary |

The Procurement Manager briefed the Committee members that the sealed percentage/ item rate tenders were invited as per SPP Rules 2010 for the said work vide NIT No & dated: PM/USPCAS-W/MUET/JAM/83, 25-08-2017 with purchasing date starting from 05-09-2017 to 20-09-2017, whereas submission date was 21-09-2017 up to 12:30 pm. The Procurement Manager further briefed that Ten (10) bidders purchased the Bidding Documents and submitted the same in-time. Then all the Contractors were called in the Office of the Project Director, USPCAS-W, MUET, Jamshoro, so that bidding documents can be opened in their presence under Rule-41 of SPP Rules 2010 (Amended, 2017). Accordingly, the Technical Proposals of all ten (10) bidders were opened on 21-09-2017 and the meeting of Technical Tender Scrutiny Committee was conducted on 03-10-2017 (*Minutes of Technical Committee attached*). Subsequently, Opening Date of Financial Proposal was 10-11-2017 @ 11:00 am. The Procurement Manager further briefed that ten (10) bidders were qualified on technical grounds. Later on all the venders were called in the meeting hall of USPCAS-W and the Financial Proposals were opened in their presence under Rule-41 of SPP Rules 2010 (Amended 2017). The following venders took part in the bidding process:

1. M/s PCM Electrical Systems, Karachi.
2. M/s Finetech Technologies, Karachi
3. M/s Diagnostic Systems, Karachi
4. M/s Technology Links (Pvt)Ltd., Karachi
5. M/s Analytical Measuring Systems, Karachi
6. M/s Professional Systems, Islamabad

Attendance sheet attached

Tel: +92-22-2771226, Tel: +92-22-2772250-72 (Ext. 2100) Fax: +92-22-2771382

E-mail: ag.kandhir@admin.mueta.edu.pk, URL: water.mueta.edu.pk



PROCUREMENT MANAGER
U.S.-Pakistan Center for Advanced Studies in Water

7. M/s Business Dynamics Enterprises, Karachi
8. M/s Rizvi & Company, Karachi
9. M/s Paktech Instruments Co., Karachi
10. M/s KamsTech International, Karachi

The Committee started the proceedings of opening of tender in-front of aforementioned bidders and read aloud the names of each bidder one by one by opening their respective bids and also read aloud bid amount and other details as depicted here under:


S#.	Name of Firm or Bidder	Contractor quoted bid amount in Rs.
1.	M/s PCM Electrical Systems, Karachi.	Comparative Statement attached
2.	M/s Finetech Technologies, Karachi	
3.	M/s Diagnostic Systems, Karachi	
4.	M/s Technology Links (Pvt)Ltd., Karachi	
5.	M/s Analytical Measuring Systems, Karachi	
6.	M/s Professional Systems, Islamabad	
7.	M/s Business Dynamics Enterprises, Karachi	
8.	M/s Rizvi & Company, Karachi	
9.	M/s Paktech Instruments Co., Karachi	
10.	M/s KamsTech International, Karachi	

After detailed discussion & deliberations, the Committee recommended to reject the financial proposal of M/s Business Dynamics Enterprises, Karachi due to submitting less amount of Bid Security. Hence for the remaining equipment the committee recommended to award the work order on item rates to the best evaluated bidders / venders.

The meeting ended with the vote of thanks to all the members.


Abdul Ghafoor Kandhir,
Procurement Manager,
USPCAS-W
MUET, Jamshoro


Engr. Muhammad Mashooque Siddiqui,
Director Procurement,
University of Sindh


Prof. Dr. B. K. Lashari,
Project Director,
USPCAS-W,
MUET, Jamshoro

COMPARATIVE STATEMENT FOR PROCUREMENT OF LAB EQUIPMENT REQUIRED FOR ADVANCED WATER & WASTE WATER QUALITY CONTROL LAB OF USPCAS-W, MUET, JAMSHORO

Item Code	Description / Specification of items	Qty	M/s Professional Systems (Pvt) Ltd, Islamabad						M/s Technology Links (Pvt) Ltd, Karachi				
			Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost	
						P-I	P-II	Total				P-I	P-II
AW&WWQC 01	Gas Chromatograph -Mass Spectrophotometer Capillary Column Injector & other Essential accessories	1	--	N/Q	--	--	--	--	GCMS-2020 GC Japan	\$ 168,500.00	107.70	18,147,450.00	-
									GC-2010 Plus Opt	\$ 16,165.00	107.70	1,740,970.50	-
AW&WWQC 02	Triple Quadrupole LC/ MS System	1	--	N/Q	--	--	--	--	LCMS - 8050 Japan	\$ 394,500.00	107.70	42,487,650.00	-
AW&WWQC 03	Liquid Scintillation Counter	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC 04	UV Spectrophotometer, portable	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC 05	Rotary Evaporator	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC 06	Ultrasonic processor with thumb pulse	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC 07	Large Capacity Shaking Incubator	1	ISF-7100R Korea	\$ 8,186.00	107.70	881,632.20	30,000.00	911,632.20	--	N/Q	--	--	--
AW&WWQC 08	Mass balance	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC 09	Micro-analytical mass balance	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--

Signature

Signature


Total	M/s Analytical Measuring Systems (Pvt) Ltd, Karachi						M/s Kamstek International, Karachi						Make / Model	Unit Rate
	Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost				
				P-I	P-II	Total				P-I	P-II	Total		
18,147,450.00	--	--	--	--	--	--	--	N/Q	--	--	--	--	--	N/Q
1,740,970.50														
42,487,650.00	--	--	--	--	--	--	Xevo TQ-S micro	\$ 199,485.00 Opt \$ 34,216.00	107.70 107.70	21,484,534.50 3,685,063.20	--	--	--	N/Q
--	TRI CARB 5110TR	\$ 84,003.00	107.70	9,047,123.10	-	9,047,123.10	--	N/Q	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	--	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	--	--	--	--	--	--	N/Q

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M/s Rizvi & Company, Karachi				M/s Diagnostic Systems, Karachi						M/s PCM Electrical Systems, Karachi					
Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost		
	P-I	P-II	Total				P-I	P-II	Total				P-I	P-II	Total
--	--	--	--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--
--	--	--	--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--
--	--	--	--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--
--	--	--	--	6305 Jenway U.K	£ 2,850.00	142.75	406,837.50	-	406,837.50	VR-2000 Spain	Rs 322,101.00	--	--	--	322,101.00
--	--	--	--	7200 Jenway U.K	OR £ 1,800.00	142.75	256,950.00	-	256,950.00		Opt. Access: Rs 508,546.00	--	--	--	508,546.00
--	--	--	--	RE400DB Stuart U.K	£ 1,850.00	142.75	264,087.50	-	264,087.50	RS 3000-V Spain	€ 4,588.00	125.95	577,858.60	-	577,858.60
--	--	--	--								Opt. Access: € 72.45	125.95	9,125.08	-	9,125.08
--	--	--	--							COM-1010 Spain	€ 18,762.00	125.95	2,363,073.90	-	2,363,073.90
--	--	--	--								Opt. Access: € 1,256.00	125.95	158,193.20	-	158,193.20
--	--	--	--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--
--	--	--	--	S1600 Stuart U.K.	£ 4,500.00	142.75	642,375.00	-	642,375.00	D-2102 Spain	€ 5,771.70	125.95	726,945.62	-	726,945.62
--	--	--	--		Accessories £ 920.00	142.75	131,330.00	-	131,330.00		Opt. Access: € 142.00	125.95	17,884.90	-	17,884.90
--	--	--	--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--
--	--	--	--	ADB 200-4 Local supply	Rs 150,000.00	-	-	-	150,000.00	--	N/Q	--	--	--	--


Item Code	Description / Specification of items	Qty	M/s Professional Systems (Pvt) Ltd, Islamabad						M/s Technology Links (Pvt) Ltd, Karachi				
			Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost	
						P-I	P-II	Total				P-I	P-II
AW&WWQC 10	Homogenizer for biological samples contained in standard grinding tubes.	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC 11	Controlled atmosphere controlled muffle furnace	1	GCF1400	\$ 23,088.00	107.70	2,486,577.60	80,000.00	2,566,577.60	--	N/Q	--	--	--
AW&WWQC 12	Microvolume UV-Vis Spectrophotometer with Wi-Fi	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--


Abdul Ghafoor Kandhir,
 Procurement Manager,
 USPCAS-W, MUET, Jamshoro


Engr. Muhammad Mashooque Siddiqui,
 Director Procurement,
 University of Sindh, Jamshoro

M/s Rizvi & Company, Karachi				M/s Diagnostic Systems, Karachi						M/s PCM Electrical Systems, Karachi					
Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost		
	P-I	P-II	Total				P-I	P-II	Total				P-I	P-II	Total
--	--	--	--	--	N/Q	--	--	--	--	CY-500 Spain	Rs 492,570.00	--	--	--	492,570.00
											Opt. Access: Rs 41,870.00	--	--	--	41,870.00
107.70	2,917,269.90	135,702.00	3,052,971.90	RHF 14/35- 400TN Carbolite U.K.	£ 10,000.00	142.75	1,427,500.00	-	1,427,500.00	--	N/Q	--	--	--	--
					Accessories £ 1,925.00	142.75	274,793.75	-	274,793.75						
					Opt £ 2,160.00	142.75	308,340.00	-	308,340.00						
--	--	--	--	--	N/Q	--	--	--	--	BioQuest U.K.	£ 8,511.00	142.75	1,214,945.25	-	1,214,945.25
											Opt. Access: £ 3,128.00	142.75	446,522.00	-	446,522.00

M/s Analytical Measuring Systems (Pvt) Ltd, Karachi							M/s Kamstek International, Karachi							
Total	Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate
				P-I	P-II	Total				P-I	P-II	Total		
--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--		N/Q
--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--	Model GCF 1400 USA	\$ 27,087.00
--	Nano Drop Spectrophotometer with Wi-Fi	€ 10,371.00 Opt. Access: € 2,518.00	125.95 125.95	1,306,227.45 317,142.10	✓ ✓	1,306,227.45 317,142.10	--	N/Q	--	--	--	--		N/Q


Dr. Bakhshal Khan Lashari,
 Project Director,
 USPCAS-W, MUET, Jamshoro

COMPARATIVE STATEMENT FOR PROCUREMENT OF LAB EQUIPMENT REQUIRED FOR ADVANCED WATER & WASTE WATER QUALITY CONTROL LAB OF USPCAS-W, MUET, JAMSHORO

Item Code	Description / Specification of Items	Qty	M/s Professional Systems (Pvt) Ltd, Islamabad						M/s Technology Links (Pvt) Ltd, Karachi				
			Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost	
						P-I	P-II	Total				P-I	P-II
AW&WWQC-01	Gas Chromatograph -Mass Spectrophotometer Capillary Column Injector & other Essential accessories	1	--	N/Q	--	--	--	--	GCMS-2020 GC Japan	\$ 168,500.00	107.70	18,147,450.00	--
									GC-2010 Plus	\$ 16,165.00	107.70	1,740,970.50	--
AW&WWQC-02	Triple Quadrupole LC/ MS System	1	--	N/Q	--	--	--	--	LCMS - 8050 Japan	\$ 394,500.00	107.70	42,487,650.00	--
AW&WWQC-03	Liquid Scintillation Counter	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC-04	UV Spectrophotometer, portable	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC-05	Rotary Evaporator	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC-06	Ultrasonic processor with thumb pulse	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC-07	Large Capacity Shaking Incubator	1	ISF-7100R Korea	\$ 8,186.00	107.70	881,632.20	30,000.00	911,632.20	--	N/Q	--	--	--
AW&WWQC-08	Mass balance	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC-09	Micro-analytical mass balance	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--

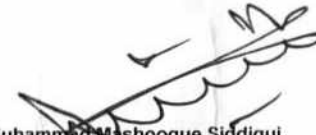
Total	M/s Analytical Measuring Systems (Pvt) Ltd, Karachi						M/s Kamstek International, Karachi						Make / Model	Unit Rate
	Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost				
				P-I	P-II	Total				P-I	P-II	Total		
18,147,450.00	--	--	--	--	--	--	--	N/Q	--	--	--	--	--	N/Q
1,740,970.50														
42,487,650.00	--	--	--	--	--	--	Xevo TQ-S micro	\$ 199,485.00 Opt \$ 34,216.00	107.70 107.70	21,484,534.50 3,685,063.20	--	--	--	N/Q
--	TRI CARB 5110TR	\$ 84,003.00	107.70	9,047,123.10	-	9,047,123.10	--	N/Q	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	--	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	--	--	--	--	--	--	N/Q

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/s Rizvi & Company, Karachi				M/s Diagnostic Systems, Karachi						M/s PCM Electrical Systems, Karachi					
Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost		
	P-I	P-II	Total				P-I	P-II	Total				P-I	P-II	Total
--	--	--	--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--
--	--	--	--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--
--	--	--	--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--
--	--	--	--	6305 Jenway U.K	£ 2,850.00	142.75	406,837.50	-	406,837.50	VR-2000 Spain	Rs 322,101.00	--	--	--	322,101.00
--	--	--	--	7200 Jenway U.K	£ 1,800.00	142.75	256,950.00	-	256,950.00		Opt. Access: Rs 508,546.00	--	--	--	508,546.00
--	--	--	--	RE400DB Stuart U.K	£ 1,850.00	142.75	264,087.50	-	264,087.50	RS 3000-V Spain	€ 4,588.00	125.95	577,858.60	-	577,858.60
--	--	--	--								Opt. Access: € 72.45	125.95	9,125.08	-	9,125.08
--	--	--	--							COM-1010 Spain	€ 18,762.00	125.95	2,363,073.90	-	2,363,073.90
--	--	--	--								Opt. Access: € 1,256.00	125.95	158,193.20	-	158,193.20
--	--	--	--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--
--	--	--	--	S1600 Stuart U.K.	£ 4,500.00	142.75	642,375.00	-	642,375.00	D-2102 Spain	€ 5,771.70	125.95	726,945.62	-	726,945.62
--	--	--	--		Accessories £ 920.00	142.75	131,330.00	-	131,330.00		Opt. Access: € 142.00	125.95	17,884.90	-	17,884.90
--	--	--	--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--
--	--	--	--	ADB 200-4 Local supply	Rs 150,000.00	-	-	-	150,000.00	--	N/Q	--	--	--	--

Item Code	Description / Specification of items	Qty	M/s Professional Systems (Pvt) Ltd, Islamabad						M/s Technology Links (Pvt) Ltd, Karachi				
			Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost	
						P-I	P-II	Total				P-I	P-II
AW&WWQC 10	Homogenizer for biological samples contained in standard grinding tubes.	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--
AW&WWQC 11	Controlled atmosphere controlled muffle furnace	1	GCF1400	\$ 23,088.00	107.70	2,486,577.60	80,000.00	2,566,577.60	--	N/Q	--	--	--
AW&WWQC 12	Microvolume UV-Vis Spectrophotometer with Wi-Fi	1	--	N/Q	--	--	--	--	--	N/Q	--	--	--


 Abdul Ghafoor Kandhir,
 Procurement Manager,
 USPCAS-W, MUET, Jamshoro


 Engr. Muhammad Mashooque Siddiqui,
 Director Procurement,
 University of Sindh, Jamshoro

M/s Analytical Measuring Systems (Pvt) Ltd, Karachi							M/s Kamstek International, Karachi							
Total	Make / Model	Unit Rate	Exch. Rate	Cost			Make / Model	Unit Rate	Exch. Rate	Cost			Make / Model	Unit Rate
				P-I	P-II	Total				P-I	P-II	Total		
--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--	--	N/Q
--	--	N/Q	--	--	--	--	--	N/Q	--	--	--	--	Model GCF 1400 USA	\$ 27,087.00
--	Nano Drop Spectrophotometer with Wi-Fi	€ 10,371.00 Opt. Access: € 2,518.00	125.95 125.95	1,306,227.45	-	1,306,227.45	--	N/Q	--	--	--	--	--	N/Q
				317,142.10		317,142.10								


Dr. Bakhshal Khan Lashari,
 Project Director,
 USPCAS-W, MUET, Jamshoro


M/s Rizvi & Company, Karachi				M/s Diagnostic Systems, Karachi						M/s PCM Electrical Systems, Karachi					
Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost			Make / Model	Unit Rate	Exch: Rate	Cost		
	P-I	P-II	Total				P-I	P-II	Total				P-I	P-II	Total
--	--	--	--	--	N/Q	--	--	--	--	CY-500 Spain	Rs 492,570.00	--	--	--	492,570.00
											Opt. Access: Rs 41,870.00	--	--	--	41,870.00
107.70	2,917,269.90	135,702.00	3,052,971.90	RHF 14/35- 400TN Carbolite U.K	£ 10,000.00	142.75	1,427,500.00	-	1,427,500.00	--	N/Q	--	--	--	--
					Accessories	£ 1,925.00	142.75	274,793.75	-	274,793.75					
					Opt	£ 2,160.00	142.75	308,340.00	-	308,340.00					
--	--	--	--	--	N/Q	--	--	--	--	BioQuest U.K.	£ 8,511.00	142.75	1,214,945.25	-	1,214,945.25
											Opt. Access: £ 3,128.00	142.75	446,522.00	-	446,522.00


U.S.-Pakistan Center of Advanced Studies in Water (USPCAS-W)
Mehran University of Engineering & Technology (MUET), Jamshoro


Attendance Sheet of the Suppliers for Opening of the Technical Proposals of Laboratory Equipment of "Advanced Water & Water Water Treatment Field and Pilot Scale Water & Waste Water Treatment Field" at USPCAS-W, MUET, Jamshoro

Dated: 21-Sep-2017

S #	Name of Vendor/ Company/ Contractor	Name of Company Representative	Signature	Remarks
1	M/s PCM Electrical Systems, Karachi	Fareeq		—
2	M/s Finetech Technologies, Karachi	Muhammad Inas		—
3	M/s Diagnostics Systems, Karachi	Imran		—
4	M/s Technology Links (Pvt.) Ltd, Karachi	MUZAFFAR HUSSAIN		—
5	M/s Analytical Measuring Systems, Karachi	Sarfaj Shah		—
6	M/s Professional Systems, Islamabad	Faisal Mohiuddin		—
7	M/s Business Dynamics Enterprises, Karachi	—	—	—
8	M/s Rizvi & Company, Karachi	G. Ghahib Khan		—
9	M/s Paktech Instruments Co., Karachi	—	—	—
10	M/s KamsTech International, Karachi	S. Niaz Ahmed		—


 Mr. Abdul Ghafoor Kandhir,
 Procurement Manager,
 USPCAS-W,
 MUET, Jamshoro




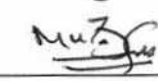

 Engr. Muhammad Mashhoque Siddiqui
 Director Procurements
 University of Sindh



 Prof. Dr. B. K. Lashari
 Project Director,
 USPCAS-W,
 MUET, Jamshoro

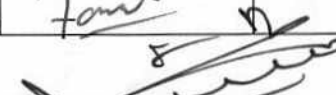
U.S.-Pakistan Center of Advanced Studies in Water (USPCAS-W)
Mehran University of Engineering & Technology (MUET), Jamshoro


Attendance Sheet

Opening of the Financial Proposals of "Laboratory Equipment of Pilot Scale & Waste Water Treatment Field And Advanced Water & Wastewater Quality Control Laboratory" at USPCAS-W, MUET, Jamshoro
 Dated: 10-Nov-2017

S #	Name of Vendor/ Company/ Contractor	Name of Company Representative	Signature	Quoted Amount	Earnest Amount	Remarks
1	M/S Paktech Intruments Company, Karachi	—	—	c.s attached	Rs 140,000/-w	Recind thru comise
2	M/S Rizvi & Company, Karachi	Ghalib Raza		c.s attached	Rs 496800/-w	—
3	M/S Business Dynamics Enterprises, Karachi	—	—	c.s attached	—	Reject-
4	M/S KAMSTEC International	Syed Niaz Ahmed	Niaz	—	Rs 540,000/-w	—
5	M/S Diagnostic Systems, Karachi	—	—	—	Rs 65000/-w	Recind thru comise
6	M/S Analytical Measuring Systems (Pvt) Ltd., Karachi	Sarfraz Ahmed		—	Rs. 1093687/-w	Present-
7	M/S Finetech Technologies, Karachi	—	—	—	Rs. 50,000/=	Recind thru comise
8	M/S PCM Electrical System	Tariq		—	Rs. 286000/-w	—
9	M/S Technology Links	MUZAFFAR HUSSAIN		—	Rs. 1204820/=	—
10	M/S Professional Systems (Pvt) Ltd.	Faisal Mohiuddin	Faisal	—	Rs. 542750/-w	—


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 MUET, Jamshoro


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