

BAHAUDDIN ZAKARIYA UNIVERSITY,
MULTAN.

TENDER DOCUMENT

For

LAB. EQUIPMENT'S FOR THE
DEPARTMENT OF AGRICULTURE ENGINEERING

Last Date of Submission: 11.01.2017

BAHAUDDIN ZAKARIYA UNIVERSITY, MULTAN

www.bzu.edu.Pk

Tel.# 9210071-5 Ext.1318

TENDER FORM OF THE BAHAUDDIN ZAKARIYA UNIVERSITY, MULTAN FOR THE YEAR 2016-17.

Spectrophotometers for the Department of Soil Sciences ON LC (C&F) Basis

Advertised Tender No. T/2016-17/59

Last Date of Receipt of Tender 11-01-2017 12:30PM

Date of Tender Opening 11-01-2017 01:30PM

Tender Price:- Rs.1000/- (Non-refundable)

Earnest Money @5% on Estimated Amount (Refundable)

VENUE TENDER: Treasurer Office B.Z. University, MULTAN.

1. All tender must be submitted on their tender document with sealed envelope and addressed to the Treasurer, Bahauddin Zakariya University, Multan.
2. Any offer not received as per terms & conditions of the tender will be rejected.
3. No offer shall be accepted if:
 - (i) It is received after the time and date fixed for its receipt.
 - (ii) Received without earnest money from the firms.
 - (iii) The tender document is unsigned.
 - (iv) The tender is ambiguous.
 - (v) The offer is conditional.
 - (vi) The offer is from a firm, black listed /suspended or removed from the approved list.
 - (vii) The offer is received by telegram or Fax.
 - (viii) The offer is received with shorter validity than required in tender enquiry.
 - (ix) The offer is not conforming to specifications indicated in the tender enquiry.

Detail

LC (C&F) Basis

Sr. No.	Item/Equipment	Qty.	Earnest Money @5% on Estimated Cost
1.	<p><u>Gas Chromatograph with Accessories</u> Should be able to measure contents of various components in a sample Basic unit which is reliable and compact, Economical and easy to use Supports at least a single detector, pressure or flow control, on column injection port(s), and analog output or better. Must have an origin from USA, UK, Europe or Japan</p>	01 No	Rs.100,000/-
2.	<p><u>Single Stage Compressor Test Unit</u> The equipment should be able to: • Allow investigation of a single stage compressor at a range of delivery pressures • Allow a safe and suitable operation for students • Allow detailed analysis of compressor Performance • Equipped with data acquisition facility Must have an origin from USA, Canada, UK, Europe or Japan</p>	02 Nos	Rs.70,000/-
3.	<p><u>Gas Turbine Model</u> Engine must utilize a centrifugal flow compressor, reverse flow manual combustor and an axial flow turbine stage. All high-heat components manufactured from stainless steel, Inconel 718 or CMR 247 Super Alloy, Engine situated behind transparent protective shields. Must have an origin from USA, UK, Europe or Japan</p>	01 No	Rs.20,000/-
4.	<p><u>Target-Less Electronic Total Station</u> Should have minimum following specifications: Accuracy 5" (1.5 mgon) Method Absolute, continuous, diametrical: at all models Display resolution 0.1" / 0.1 mgon / 0.01 mil Compensation Quadruple Axis Compensation: at all models Compensator Setting Accuracy 0.5" / 0.5" / 1" / 1.5" / 2"</p>	01 No	Rs.57,500/-

	<p>Range Round prism 3.500 m Internal memory Max.: 100'000 fix points, Max.: 60'000 measurements USB memory stick 1 Gigabyte, Transfer time 1'000 points/s Interfaces - Serial (Baudrate up to 115'200) / - USB Type A and mini B, / - Bluetooth® Wireless, class 1, 150 m - > 1000 m Data formats GSI / DXF / LandXML / CSV / user definable ASCII formats Must have an origin from USA, Canada, UK, Europe or Japan</p>		
5.	<p><u>Tripod for Total Station</u> To be used with the Total Station</p>	01 No	Rs.325/-
6.	<p><u>Single prism target set</u> To be used with the Total Station</p>	02 Nos	Rs.3800/-
7.	<p><u>Electronic Digital Theodolite, complete with carrying case</u> Complete with accessories Must have an origin from USA, Canada, UK, Europe or Japan</p>	01 No	Rs.20,000/-
8.	<p><u>Differential GPS system</u> Radius 10-20 sq Km with software</p>	01 No	Rs.40,000/-
9.	<p><u>Hydraulic Bench</u> Pump: Centrifugal Type, max. Head 21m H₂O, Max. flow 1.35L/S, Motor rating: 0.36 kW at least, Sump tank capacity: 250 liters, High flow volumetric tank: 40 liters, Low flow volumetric tank : 6 liters, Height of working surface: 1 m above floor level, The Hydraulic Bench should be equipped with U-Tube Manometer for High flow and volumetric tank to continuous measurements of flow, discharge Must have an origin from USA, Canada, UK, Europe or Japan</p>	01 No	Rs.35,000/-
10.	<p><u>Fluid Friction Measurements</u> A substantial floor standing tubular steel frame supports test circuit comprising: * 4 smooth-bore pipes of different diameters ranging from 4.5mm I.D. to 17.2mm I.D and artificially roughened pipe * 90o bends (large & small radii) and 90o elbow, 90o miter * 45o elbow, 45o Y, 90o T * sudden enlargement and sudden contraction * gate valve and globe valve and ball valve and inline strainer * perspex Venturi and perspex orifice meter * perspex pipe section with a Pitot tube & static</p>	02 Nos	Rs.80,000/-

	<p>tapping Suitable for studying Reynolds' numbers from 10³ to nearly 10⁵ A system of isolating valves, quick release manometer connection valves & self-sealing pressure tapings ensure fast accurate results A user instruction manual provides installation, commissioning and maintenance data, together with student exercises.</p> <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>		
11.	<p><u>Multipurpose Teaching Flume (With Basic Accessories and flow meter and associated Software)</u></p> <ul style="list-style-type: none"> •-A 76mm wide, 250mm high open channel for use with Hydraulic Bench -Clear acrylic sides to give visibility of the working section. - A jacking system permits the slope of the channel bed to be adjusted between -1% and +3%. - Inlet tank with flow stilling arrangement. Includes a Venturi, sharp and broad crested weirs, 2 vernier level gauges, adjustable undershot weir and crump weir. Demonstrate how to apply force-momentum and steady • Demonstrate flow energy equations to simple flow situations • Understand the relationship between water level above the crest of a weir and flowrate over the weir Using hydraulic structures to control level, e.g. syphon spillways • Understand sub-and super-critical flow and the underlying characteristics of standing waves • Demonstrate Hydraulic jump • Use hydraulic structures for control of flow e.g. sluice gate • Apply and understanding Manning's formula • Measure of velocity profiles <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>	02 Nos	Rs.130,000/-
11a.	<p><u>Windows Program for using with Multipurpose Teaching Flume</u> To be used with the Multipurpose Teaching Flume</p>	01 No	Rs.4700/-

12.	<p><u>Multi-Pump Test Rig</u> A mobile self-contained Multi-Pump Test Rig, containing all the services and instrumentation for determining the characteristic curves of eight different pumps at different speeds For rotodynamics pumps: - Pressure head vs flow -Power absorbed vs flow -Pump efficiency Vs flow For positive displacement Pumps: -Flow vs pressure head -Power absorbed vs pressure head -Volumetric efficiency vs pressure head -Contains five different pump positions (four active at the same time). Digital readout enables mounting of selected pump -Centrifugal pump and gear pump supplied as standard - Axial pump, flexible impeller pump, turbine pump, diaphragm pump, plunger pump and a second centrifugal pump are all available as accessories - Series/parallel pump demonstrations can be performed with the second centrifugal pump option -Control valve incorporated upstream of each pump (except axial pump) to demonstrate the effect of suction loss on performance - A software used to set the required speed of the pump(s) on test. A separate mimic diagram for the selected pump(s) on test displays the important measured and calculated variables - Electronic measurement of flow, pressure head, suction head and motor torque -Optional volumetric flow measurement system for reciprocating pumps Data logging and educational software included Must have an origin from USA, Canada, UK, Europe or Japan</p>	01 No	Rs.205,000/-
13.	<p><u>Drainage and Seepage Tank</u> A self-contained facility for study of flow through permeable media -The tank has a toughened glass front and aluminum back to permit the insertion of pressure tapings as required. Six tapping points are provided -The design of the side supports allows free access to the interior with minimum sight obstruction -Supply includes sump tank, pump, starter and</p>	02 Nos	Rs.67,000/-

	<p>control valve. Also a dye injection system and a selection of models</p> <p>Comprehensive instruction manual with data sheets and student experiments</p> <p>-Working section 1500 mmx 100 mm x 600 mm</p> <p>-Practical Demonstration and Visualization capabilities:</p> <p>Flow line visualization and flow net construction</p> <p>Determining seepage rates and verification of Darcy's Law</p> <p>Comparison of experimental results with analytical solutions</p> <p>-Student experiment include:</p> <p>Seepage underneath a sheet pile wall</p> <p>Seepage through an earth dam</p> <p>Control of seepage through permeable soils by sub-soil drainage</p> <p>Distribution of uplift pressure and lateral thrust by drainage</p> <p>Formation and behavior of 'Quicksand'</p> <p>Stability of an earth dam</p> <p>Draining and excavation site using wells</p> <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>		
14.	<p>Groundwater Flow Unit</p> <p>- A bench standing sand tank capable of demonstration, on a small scale, the hydrological principles of groundwater flow</p> <p>- The unit allows simple three dimensional flow situations to be set up quickly and measurements of piezometric levels taken at appropriate positions within the model under study</p> <p>- The accompanying instruction manual describes six basic demonstration of importance in Engineering Hydrology</p> <p>- Piezometers</p> <p>Range: 0 to 155 mm</p> <p>Calibrated: 1 mm intervals</p> <p>The equipment should be able to study:</p> <ul style="list-style-type: none"> • Hydraulic gradients in ground water flow, including the effect of permeability. • Cone of depression for a single well in an unconfined aquifer. • Abstraction from a single well in a confined aquifer • Cone of depression for two wells • De-watering of an excavation site using two wells • Draining of a polder or lake 	02 Nos	Rs.86,000/-

	Must have an origin from USA, Canada, UK, Europe or Japan		
15.	<p><u>Soil/Water Tank Model</u> Soil/Water Model Tank comprising: bench mounted narrow sand tank 1000mm x 25mm x 450mm (L x W x D), with one large side formed from a sheet of transparent material; metal frame supporting sump tank from which water is pumped via a flowmeter to the soil surface; flood and drip surface outlets (two can be used together by fitting a Y-connector); overflow system to remove surface water to sump; complete with user instructions manual. The equipment should be able to:</p> <ul style="list-style-type: none"> • understand surface and sub-surface effects of surface water application. • understand optimum irrigation application rates to maximize infiltration and minimize surface run-off. • visualize the drainage systems. <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>	02 Nos	Rs.55,150/-
16.	<p><u>Standard Weather Station</u> The weather station should be able to measure, record, display and save the following metrological data:</p> <ol style="list-style-type: none"> 1. Temperature 2. Wind velocity and Direction 3. Rainfall 4. Humidity etc. <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>	02 Nos	Rs.30,000/-
17.	<p><u>Resistivity Meter with software</u> Should be able to determine:</p> <ul style="list-style-type: none"> . Sub-soil groundwater prospecting at shallow, medium and great depth . Geological stratigraphy . Study of salt water contamination in fresh water . Well log . High resolution, High sensitivity, Auto ranging, Easy menu for quick use . Compatible software like 1x1D latest version <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>	01 No	Rs.125,000/-
18.	<p><u>Rainfall Hydrographs</u> - A unit designed to obtain catchment rainfall and runoff values as function of time - Comprising a bench- or floor standing tank</p>	02 Nos	Rs.113,500/-

	<p>with two overhead square pattern spray nozzles supplying water via flow control valve, flow meter and solenoid valve</p> <ul style="list-style-type: none"> - A motor driven traversing vessel with 17 compartments should move by timber beneath the outlet at a preselected rate to collect the runoff and provide an immediate display of the hydrograph - The tank is 1.2 m in length x 0.8 m wide x 0.2 m deep - The flow range is 0.4 to 4.4 liters/min - A comprehensive user manual should be included - Technical specifications: - Tank dimension: Length = 1.2m, Width = 0.6 m and Height = 0.2 m Flow meter range: 0.4 to 4.4 liters/min Runoff collector: 17x0.51 compartments The equipment should be able to study: <ul style="list-style-type: none"> • storm hydrographs from single or multiple storms • storm hydrograph from a previously saturated catchment • storm runoff from an impermeable catchment • effect of a moving storm on flood hydrograph • effect of reservoir storage on flood hydrograph • effect of land drains on flood hydrograph <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>		
19.	<p><u>Rainfall Simulator</u> Rainfall Simulator comprising: spray head assembly supported by metal stand; storage tank from which water is pumped to spray head via flow meter and control valve; small square test plots: field test plots: tilting stand for test plots: sample vessels: rain gauges: complete with user instructions and manual. The equipment should be able to:</p> <ul style="list-style-type: none"> -investigate the relationship between rainfall intensity and soil erosion -investigate the nature of soil erosion potential on different soil types -investigate the methods by which soil erosion may be prevented <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>	01 No	Rs.25,000/-
20.	<p><u>Current meter (Flow meter)</u> Price Type Current Meter along with standard</p>	02 Nos	Rs.20,000/-

	<p>accessories including wading rod set, Hand suspension cable, sounding weight, headphone set and canvas equipment bag, Analog to digital cable.</p> <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>		
21.	<p><u>Series and Parallel Pump Demonstration Unit</u></p> <p>A fixed speed pump assembly and independent discharge manifold interconnected by flexible tubing with quick release connectors. This auxiliary pump is intended to be used in conjunction with the basic Hydraulics Bench. Pump: centrifugal type max. Head 21m H₂O max. flow 1.35 liters/sec Motor rating: 0.36kW Pressure gauge range: 0 to 60m H₂O Compound gauge range: -10 to + 32m H₂O Must have an origin from USA, Canada, UK, Europe or Japan</p>	03 Nos	Rs.52,500/-
22.	<p><u>Universal Testing Machine complete with Accessories to perform Tensile, Compression & bending Test with Software</u></p> <ul style="list-style-type: none"> • Compact bench-mounting machine, ideal for classroom demonstration and student experiments • Finds tensile properties and compressive properties of many materials and structures • Can connect to data acquisition system to log experiment results and automatically calculate answers and create charts of the results • Includes set of tensile test specimens of different grades of steel for comparison experiments • Equipped with supply range of optional parts • Maximum load of 100 kN • Includes compatible data acquisition system bench top interface • Includes support table cupboard • Include Extensometer • Include 10 tensile test Specimen having no identity rings • Include 10 tensile test Specimen with one identity rings • Include 10 tensile test Specimen with two identity rings <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>	01 No	Rs.125,000/-
23.	<p><u>Brinell Hardness Tester</u></p> <p>The equipment should:</p>	01 No	Rs.15,000/-

	<ul style="list-style-type: none"> • Have the ability to undertake Rockwell and Brinell Hardness Tests • Have the ability to submit test loads of 60, 100, 150 kgf for Rockwell and 187.5 kgf with preload of 10 kgf to specimens • Have include test tables in 38 mm and 50 mm and “V” groove for round specimen • Have indenters supplied • Have dial gauge readout of “B” and “C” Scales • Have automatic selection of loading weights • Rubber bellows for protection of elevating screw • Have Tools supplied • Have comprehensive instruction manual supplied <p>Must have an origin from USA, Canada, UK, Europe or Japan</p>		
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Note:

1. For all the Brands mentioned in this tender (if any), the term “or equivalent” is hereby added and shall be considered as per PPRA rules.
2. The firm should prepare Technical bid as per requirement of Tender Document and submit with clear heading “Technical Bid/Offer”.
3. Further, Company profile may be submitted (with supporting documents) in the sequence as required for Technical evaluation of firm/tender.
4. Technical bid/offer complete in all respect being submitted be paginated by the firm.

Certificate

1. We / I hereby confirm to have read carefully the terms & conditions of your Tender Enquiry dated for opening on ----- for the purchase of ----- . We agree to abide by all these terms & conditions/instructions.
2. Certified that the prices quoted against advertises tender dated-----are not more than the prices charged from any other purchasing Agencies in the country in the financial year ----- and in case of any discrepancy, we/I hereby undertake to refund the price charged in excess if and when asked to do so.
3. Certified that the prices quoted by our firm are inclusive of G.S.T and all taxes as per rules and regulations.

1. NAME OF FIRM-----
2. ADDRESS-----
3. INCOME TAX NO-----
4. SALE S TAX REGN NO-----
5. NAME OF TENDERER-----
6. NAME OF BANK AND A/C NO.-----
7. C.N.I.C NO.-----
8. SIGNATURE OF TENDERER -----
9. DATE AND STAMP -----

CRITERIA FOR TECHNICAL EVALUATION OF THE TENDER

The quotation /bid who secure 60% marks will qualify for the competition.

Sr. No.	Parameter	Weight age
1	Technical Specification of Product	45%
2.	Age of Company/Firm	10%
4.	Financial strength of the vender	15%
5.	H.R. Strength	05%
6.	On site back up support	10%
7.	Relevant experience	10%
8.	Certified Engineer	05%
<u>Total</u>		100%

TENDER DOCUMENT

TERMS & CONDITIONS

- i. Sealed bids are invited for the purchase of Permanent Equipment for the Lab. Equipment's for the Department of Agriculture Engineering, B.Z. University Multan.
- ii. The interested bidders shall submit their bids under Single stage- two envelope procedures as defined by Govt. of Punjab Procurement Regulatory Authority.
- iii. The bidders will submit their bid in the two envelopes shall contain technical and financial proposals separately and clearly marked as "TECHNICAL PROPOSAL" & "FINANCIAL PROPOSAL" in bold letters. The financial proposal should accompany earnest money amounting to 5% of the estimated price, in the form of call deposit in favor of the Treasurer, B.Z University Multan.
- iv. In the first stage, only the envelopes containing "TECHNICAL PROPOSAL" shall be opened in the presence of bidders (or their authorized representatives) who may like to attend the tender opening meeting.
- v. The "TECHNICAL PROPOSAL" shall be evaluated and no amendments in the "TECHNICAL PROPOSAL" permitted.
- vi. **The Technical Committee may accept or reject supplier bid after inspection of their services/equipment and demonstration of the quoted equipment.**
- vii. Financial bid will be opened after the completion of all codal formulation of evaluation of the Technical Bid on the date, and time which will be communicated to the bidders.
- viii. Financial bid will be opened for those bidders who submitted their Technical bids OR fulfill the Technical requirement in the presence of the bidders in case any bidder after written call will not be present at the time of opening due to any reason then any claim by him will not be accepted in future. Otherwise their Financial Bids shall be returned un-opened to the respective bidder.
- ix. **Prices of items should be quoted on LC (C&F) basis and foreign currency to be quoted for C&F price as USD.**
- x. Bahauddin Zakariya University, Multan reserves the right to drop any items given in the tender without assigning any reason and also reserves the right to reject any or all bids.
- xi. Sole distributor certificate (if any) should be attached with the bids.
- xii. **Exclusive distributorship certificate duly signed and stamped from Principal and attested by Chamber of Commerce (as the case may be) and/or Embassy of the manufacturer Country may also be provided.**
- xiii. The quotations offering substandard product can be screened out to ensure procurement of Lab. Equipment's.
- xiv. The rates will be valid up for 120-days from the date of opening the tender.
- xv. A University Inspection committee will inspect the Lab. Equipment's and further will recommend for payment.
- xvi. The firm must attach photocopy of income tax and Sales Tax Registration with the quotation, otherwise quotation will not be accepted.
- xvii. Attached proforma/Certificate should invariable be filled and submitted with the quotation.
- xviii. All bids should reach the office of Treasurer, Bahauddin Zakariya University, Multan on or before **11.01.2017** at 12:30 pm. The bids will be opened on the same date at 01:30 pm.
- xix. Price of each item should be mentioned including GST/ all Taxes in Tender.
- xx. Quotation should be submitted in print output/typed condition preferably.
- xxi. **An affidavit on stamp paper Rs.200/- regarding Terms & Conditions of the bid contract maintenance of equipment & replacement of defective parts under warranty shall be done without any cost & that the firm has never been blacklisted on any grounds whatever.**
- xxii. The successful bidders will be responsible for payment of custom clearance/agent charges/insurance premium and transportation from Air Port/Sea to B.Z. University premises in case of LC's.

TREASURER
UAN. 111229988 Ext.1318