

Shaheed Benazir Bhutto University



TENDER DOCUMENTS

For

The Purchase/Supply of Main Item: Office Equipments & Lab Equipments for Geology Department under Main PC-1 (1.7 B) Development of University of Dir, Sheringal, Dir Upper & Lab Equipments for Geology Deptt: from Recurring Account

**SHAHEED BENAZIR BHUTTO UNIVERSITY,
MAIN CAMPUS SHERINGAL, DIR UPPER**



SHAHEED BENAZIR BHUTTO UNIVERSITY
Sheringal, Dir Upper, Khyber Pakhtoonkhwa
Advertisement No. SBBU/Adv./Td/79-2017

RE-TENDER NOTICE

(Office Equipments & Lab Equipments)

Sealed Tenders are invited from the well established/reputed Firms/Companies/Suppliers, registered with Income Tax/Sales Tax Departments for the supply of Main Item: Office Equipments, Lab Equipments for Geology Department under Main PC-1 (1.7 B) Development of University of Dir, Sheringal, Dir Upper & Lab Equipments for Geology Deptt: from Recurring Account

TERMS & CONDITIONS:

1. The detailed BOQ/Specifications along with the terms and conditions have been set forth in the tender documents.
2. Tender documents can be obtained from the office of the Deputy Director (Procurement) w.e.f. **14-04-2017 till 16-05-2017 (extended) (10:30 A.M.)** during office hours, on payment of non-refundable fee of **Rs. 2000/-** per tender. The documents may also be downloaded from the web site of the university www.sbbu.edu.pk OR **PPRA Web Site "info@ppra.org.pk"**. In case of downloading the documents, the fee can be sent through bank draft from any HBL branch (ONLY), in favor of the Treasurer, Shaheed BB University, Sheringal.
3. Tenders shall be opened on **16.05.2017 (extended) at 11.00 A.M.**, (30 minutes after closing time) in the presence (not obligatory) of the interested companies/suppliers or their authorized agents in the office of the Convener, Purchase Committee of the University.
4. Only the manufacturers/firms/companies or its authorized distributors will be eligible to apply.
5. The quotations must be accompanied with a call deposit of 2% of the quoted amount.
6. The suppliers/firms/manufacturers will not be allowed to sublet the work/contract/supply to another supplier/firm/manufacturer.
7. The University shall upon request, communicate the bidder the grounds of rejection, but it is not required to Justify those grounds.
8. Errors and omissions, if any, shall subject to rectification by the University.

Convener Purchase Committee
Shaheed Benazir Bhutto University, Sheringal, Dir Upper
Ph. No. 0944-885405/0302-8395028, Fax. 0944-885805

TENDER DOCUMENT

The Supply of Main Item: Office Equipments & Lab Equipments for Geology Department under Main PC-1
(1.7 B) Development of University of Dir, Sheringal, Dir Upper & Lab Equipments for Geology Deptt: from
Recurring Account

The proposals will be opened on 16-05-2017 at 11:00 A.M. sharp in the Office of Convener Purchase Committee in the presence of the Purchase Committee under the chairmanship of the Convener Purchase Committee, Shaheed Benazir Bhutto University, Sheringal, Dir Upper.

Name of the Company / Dealer:

Address of the Correspondent:

Date: _____

Signature and Seal

Telephone No: _____

Fax No: _____

E mail: _____

Rs. 2000/- only

Terms & Conditions of the Tender

Note:

- a. Tenderers should read these conditions carefully and comply strictly while sending their tenders.
- b. If any discrepancy, error, or omission found in the tender documents; please contact Deputy Director Procurement on or before the closing date for Tenders.
- c. Purchase Committee shall upon request, communicate the bidder the grounds of rejection, but it is not necessary to justify those grounds. The decision of the Purchase Committee shall be final.

1. General

- All Quotations should reach the undersigned within due date as specified in the advertisement only through registered post/Courier.
- **The soft copy of quotations on a CD/Email must be provided along with Hard copy.**
- Any cutting/ correction in bid will make quotation invalid.
- In case of quoting alternate prices, separate tender shall be purchased.
- Tenders forms shall be filled in ink or typed. No tender filled in pencil shall be considered.
- The bidder shall sign and stamp each page of the Technical and Financial Proposal.
- Rates shall be written both in words and figures. There should not be errors and / or over-writings. Corrections if any should be made clearly and initiated with dates.
- Quotations must be valid for **03 months**.
- Only Manufacturers / distributors / bona fide dealers of the goods shall give tenders. They shall, therefore, furnish necessary declaration along with documentary proofs for the same.
- Any bidder, interested in bidding for one or more items separately, is allowed to do so. However, preference will be given to bidder offering several items together.
- Supply order/ contract award will be issued to the successful bidders.

- **The single-stage –Single envelope procedure as per PPRA Rules, Govt. of Pakistan will be adopted. The interested parties should submit the bid(s) in a single package containing single envelope marked as Financial Proposal along with Technical (if any).**
- The contractor shall notify in written form to the purchase committee with any change in the constitution of the firm, etc. and such change shall not relieve any former member of the firm, etc., from any liability under the contract.
- The contractor, in respect of the contract, shall accept no new partner/ partners in the firm unless he / they agree to abide by all its terms, conditions and deposits with the purchase committee a written agreement to this affect. The contractor's receipt for acknowledgement or that of any partners subsequently accepted as above shall bind all of them.

- The contractor shall not assign or sub-let his contract or any substantial part thereof to any other agency.
- The purchase committee reserves the right to accept any tender not necessarily the lowest, reject any tender without assigning any reasons and accept tender for all or anyone or more of the articles for which tender has been given or distribute items of stores to more than one firm/ supplier.
- The tender shall remove the rejected articles within 15 days of intimation of rejection, after which purchase committee shall not be responsible for any loss, shortage or damage and shall have the right to dispose of such articles as it thinks fit, at the tenderer's risk and cost.

2 Scope of supply

- The firm shall enter into a contract with Shaheed Benazir Bhutto University, regarding the repairs and maintenance of the Item / equipment(s) supplied and will be responsible for the arrangements of spare parts whenever needed.
- Although, specifications and accessories have been provided, yet the University will not accept any excuse for any missing part / item needed for its full working condition.
- The tenderer, whose tender is accepted, shall arrange to supply as per schedule to be provided by the university in supply order.

3. BID price

- The Bidder shall indicate in his offer, list of items with specifications, standard accessories, make and origin, the unit price and total Bid prices of the goods.
- Prices of the optional accessories should be quoted separately. Rates quoted should be on the basis of F.O.R, Shaheed Benazir Bhutto University, Main Campus Sheringal as mentioned in the B.O.Q.
- Taxes levied by the government, if any, shall be paid by the bidder and must be included in the quoted prices.
- Security @ 10% of the total bill will be deducted for a period of One Year and will be released subject to receiving satisfactory report from the concerned office/end user (3 months for Stationary items & exemption for consumables).
- Sales Tax and Income Tax & other applicable Taxes/Levies will be deducted from the supplier's bill as per government rules.

4. Currencies of BID

- The prices shall be quoted in Pakistani rupees on F.O.R basis,

5, BID validity

- The Bid shall remain valid and open for acceptance of the purchaser for a period **Three months** from the specified date of opening.

6. Earnest Money/Call Deposit

- The Quotation must be accompanied with a call deposit of 2% of the local quoted prices with their offer in the form of Bank CDR/demand draft/pay order in favor, of the Treasurer Shaheed Benazir Bhutto University, Sheringal (refundable).
- The earnest money shall be denominated in Pakistani rupees and shall be in the form of demand draft, pay order or call deposit, issued by Pakistani bank or branch of a foreign bank, operating in Pakistan.
- In case of alternate prices, earnest money will be based on the maximum quoted price of the same items. The demand draft/CDR shall be returned to unsuccessful bidders on written request.
- The earnest money may be forfeited in the following cases:
 - i. When Tenderer withdraws or modifies the offer, after opening of tender but before acceptance of tender,
 - ii. When Tenderer does not execute the agreement if any, prescribed within the specified time.
 - iii. When the Tenderer does not deposit the security money after supply order is given & accepted.
 - iv. When he fails to commence the supply of the items as per supply order within the time prescribed.

7. Signing of BIDS

- The person signing the Bids shall initial/sign all the pages of the bid along with official seal/stamp where entries are made.

8. Dead Line for submission of Bids

- All Bids must reach and be received by the purchaser on or before the prescribed date line during the office hours.

9. Late BIDS

- Late bids will not be entertained and returned unopened to the Bidders.

10. Canvassing

- Counseling or canvassing staff or elected representatives by any Tenderer will become liable to disqualification.

11. Delivery of Equipment / Items

The tenderer, whose tender is accepted, shall arrange to supply as per schedule to be provided by the university in supply order (02 month for local items & 04 months for imported items).

- The items/ equipment (s) will be supplied in packed form and opened in front of the Purchase Committee. The working manuals, circuit diagrams, related literature and computer programs, if any, must accompany the items/ equipment(s) in original.

- The tenderer shall be responsible for the proper packing, so as to avoid damage under normal conditions of transport by sea, rail and road or air and delivery of the material in the good condition to the consignee at destination.
- In the event of any loss, damage, breakage or leakage or any shortage the tenderer shall be liable to make good such loss and shortage found at the checking / inspection of the material by the consignee. No extra cost on such account shall be admissible.
- The goods will be delivered at the destination godown in perfect condition.
- The supplier, if he so desires may insure the valuable goods against lost by theft, destruction or damage, by fire, flood under exposure to whether or otherwise viz., (war, rebellion, riot, etc.,).
- The insurance charges will be borne by the supplier and tendering committee will not be required to pay such charges if incurred.

12. Performance Security

- Within **15 days** of issuance of the purchase/supply order successful bidders shall furnish to Shaheed Benazir Bhutto University, Sheringal Dir Upper the performance security bond equivalent to 10% of the supply order amount in the form of bank guarantee/Insurance Guarantee from a company having AA ranking, the performance security shall be payable to Shaheed Benazir Bhutto University as compensation for any loss resulting from the suppliers failure to complete its obligations.
- The performance security will be discharged by the University and returned to the supplier after completion of the supplier's performance obligations under the contract.

13. Forfeiture of Security Deposit

- Security amount in full or part may be forfeited in the following cases:
 - i. When the terms and conditions of contract is breached.
 - ii. When the Tenderer fails to make complete supply satisfactorily.
 - iii. Notice of reasonable time will be given in case of forfeiture of security deposit. The decision of the Purchase Committee in this regard shall be final.

14. Mode of Payment

- Payment shall be made in the form of cheque which shall be issued after receipt of equipment / items, installation and inspection, according to the following schedule.
 - i. 90% payment will be made only after the equipment(s) is fully installed and comes in working condition.
 - ii. 10% as per schedule mentioned in Bid Price conditions from the date of commissioning/supply.
- No advance payment will be made. Payments will be made subject to the clearance of account and audit cells.

- The time specified for delivery in the tender form shall be deemed to be the essence of the contract and the successful tenderer shall arrange supplies within the specified period.
- If the supplier requires an extension of time in completion of contractual supply on account of occurrence of any hindrance, he shall apply in writing to the committee, which has placed the supply order, for the same immediately on occurrence of the hindrance but not after the stipulated date of completion of supply.

15. Prices

- Prices charged by the supplier for goods delivered & services performed under the contract shall not exceed the prices quoted by the supplier in its bids. The quantity of items to be purchased can be increased / decreased at the quoted/approved rates.
- The Purchase Committee reserves the right to consider a total package deal for all or group of some equipment with a total lowest quoted price for the package rather than lowest prices for the individual items.

16. Standard

- The equipment supplied must be tropicalized and it must be capable of functioning under the climatic conditions of Sheringal, Dir Upper.
- There shall be no deviation from specification and country of make as provided with each item. In case of any ambiguity in specification/accessories needed for the full functioning of the equipment, the firm must clear it with the Purchase Committee. However, the decision of the Purchase Committee will be final.
- The goods with standard accessories supplied under this contract shall conform to the standard maintenance in the technical specification along with the set of operational and maintenance manual it will be responsibility of the supplier to quote equipment in complete package.

17. Training

- The firm supplying the item/ equipment(s) will demonstrate the operation / working of the equipment(s) to the satisfaction of the quarter concerned and provide training if needed.

18. Calibration of item/equipment

- The approved firm will install the equipment(s) in the presence and to the satisfaction of the Purchase Committee. In case of any defect in the supplied equipment(s) or if it is not in accordance with the desired specification, the item will be changed at the cost of the supplier.

19. Guarantee / Warranty

The tenderer would give comprehensive onsite warranty / guarantee that the goods / stores / articles would continue to conform to the description and quality as specified for a period of **one year** (exemption for consumables) from the date of delivery of the said goods/stores/articles to be purchased and that notwithstanding the fact that the purchaser may have inspected and/or approved the said goods/stores/article, if during the aforesaid period of one year, the said

goods/stores/articles, be discovered not to conform to the description and quality aforesaid or have determined (and the decision of the Purchase Committee in that behalf will be final and conclusive), the purchaser will be entitled to reject the said goods/stores/articles or such portion thereof as may be discovered not to conform to the said description and quality, on such rejection the goods/articles/stores will be at the seller's risk and all the provisions relating to rejection of goods etc. shall apply.

- The tenderer shall, if so called upon to do, replace the goods etc., or such portion thereof as is rejection by Purchase Committee, otherwise the tenderer shall pay such damage as may arise by the reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the Purchase Committee in that behalf under this contract or otherwise.
- The tenderer shall also replace machinery and equipments, in case it is found defective which cannot be put to operation due to manufacturing defect, etc. In case of machinery and equipment specified by the purchase Committee, the tenderer shall be responsible from carrying out annual maintenance and repairs on the terms and conditions as may be agreed. The tenderer shall also be responsible to ensure adequate regular supply of spare parts needed for a specific type of machinery and equipments whether under their annual maintenance and repairs rate contract or otherwise. In case of change of model he will give sufficient notice to the Purchase Committee who may like to purchase spare parts from them to maintain the machinery and equipments in perfect condition.
- The firm must have a representative office in Peshawar/Islamabad/Lahore, which can be contacted in case of any problem encountered during the working of equipment(s).

20. Conforming Tender

- A conforming tender is defined as follows:
 - i. It is submitted on time.
 - ii. It is lodged at the nominated place.
 - iii. All required forms are completed.
 - iv. Documents are properly signed.
 - v. It complies with the tender conditions.
 - vi. There are no commercial and contractual qualifications to the tender.
- A non-conforming tender is one, which does not satisfy the above requirements and it may be rejected.

21. Disqualification of Tender

- The tenderer shall observe all relevant statutory and legal requirements when complete the tender. Any Tenderer engaged in collusion with other tenderers shall be disqualified from tendering.

22. Delivery Schedule

- For Local items Delivery Schedule should be **Two (2) months** from the signing of Contract within 15 days after issuance of Supply Order.
- For Imported items Delivery Schedule should be **Four (4) months** from the signing of Contract within 15 days after issuance of Supply Order.
- Keeping in view the actual problems/delays in delivering the respective items, Delivery Schedule can be relaxed with the approval of the Competent Authority.

23. Delay in Delivery

- In case of delay in the delivery, the recovery shall be made on the basis of following percentages of value of goods stores / work completion which the tenderer has failed to supply / complete the work.

Conditions with Percentage

- a. Delay up to one fourth period of the prescribed delivery period.

2.5 %

- b. Delay exceeding one fourth but not exceeding half of the prescribed period.

5.0 %

- c. Delay exceeding half but not exceeding three fourth of the prescribed period.

7.5 %

- d. delay exceeding three fourth of the prescribed period.

10.0 %

- Fraction of a day in reckoning period in supplies shall be eliminated if it is less than half a day. The maximum amount shall be 10%.
- The P. B. Security money shall be refunded immediately after expiry of warranty period provided there is no breach of contract by the supplier and provided there is no outstanding against the tenderer.

24. Recoveries

Recoveries of liquidated damages, short supply, breakage, rejected articles shall ordinarily be made from bills.

Contract Agreement

This agreement is made this day date-month-2017 between the **SHAHEED BENAZIR BHUTTO UNIVERSITY SHERINGAL, DIR UPPER, KHYBER PAKHTUNKHWA** (hereinafter called as Party One which shall include the successors and assignees in the Board/Centre) and the Tenderer/Contractor, M/S XYZ (hereinafter called as Party Two which includes its successors and assignees)

Whereas the Party One having invited tender, **SHAHEED BENAZIR BHUTTO UNIVERSITY SHERINGAL, DIR UPPER, KHYBER PAKHTUNKHWA** decided to accept the tender of **M/S XYZ**

The detail of items is as under for the supply of (quoted item in tender)

SUPPLY ORDER FOR THE PURCHASE OF XXXXXXXX, TENDER # 00/2016, S.O NO #

SBBU/Proc/000 DATED 00-00-2016, amounting to Rs-000,000/- *Rupees*

Now this deed witnessed as follows:

(a) The SBBU Dir Upper hereby appoints M/S XYZ for the work/items mentioned in **S.O NO #**

SBBU/Proc/000 DATED 00-00-2016, TENDER # 00/2016, & SBBU agrees to pay the amount mentioned in **S.O NO # SBBU/Proc/000 DATED 00-00-2016, TENDER # 00/2016**

1. The work/items will be supplied to **SHAHEED BENAZIR BHUTTO UNIVERSITY SHERINGAL, DIR UPPER, KHYBER PAKHTUNKHWA** as per specifications mentioned in the supply order and tender documents as well as warranty.
2. Delivery of work/items and relevant bill(s) to **SHAHEED BENAZIR BHUTTO UNIVERSITY SHERINGAL, DIR UPPER, KHYBER PAKHTUNKHWA** will be completed within the specified period from the date of contract as per supply order conditions.
3. All the items will be delivered at **SHAHEED BENAZIR BHUTTO UNIVERSITY SHERINGAL, DIR UPPER, KHYBER PAKHTUNKHWA** at the cost of the firm/supplier.
4. The function and operation of the equipments/items will be demonstrated at **SHAHEED BENAZIR BHUTTO UNIVERSITY SHERINGAL, DIR UPPER, KHYBER PAKHTUNKHWA** by the firm/supplier.
5. Sub-standard or not according to specification, the items will be rejected and returned on the expenses of the firm/supplier.
6. A performance bond @ 10% (Rs-00,000) of the bid amount in the shape of bank draft/call deposit/D.D./Bank or Insurance Guarantee will be submitted to **Treasurer Shaheed Benazir Bhutto University Sheringal, Dir Upper** at the time of contract. The performance bond security will be returned after completion of supply order.
7. Failure in supply of items within stipulated period shall entail forfeiture of earnest money & performance bond.
8. The Party Two agrees for completion of the job according to the designs and samples approved by the SBBU within specified period from the date of contract. In case of delay, the SBBU reserves the right to impose a penalty up to 10% of the total amount of the contract as per tender terms & conditions.

Signature: _____

Name: M/S XYZ

Seal of the firms: _____

Convener Purchase Committee

SBBU Sheringal, Dir Upper

Witness # 1

Witness # 2

List of Retendered Office Equipments from Main PC-1 (1.709 B)

S.#	Name of Item	Specification	Quantity
1	Photocopier for Academic Blocks & Offices	Copy Speed 45 CPM +/- Copy Resolution: 600dpi x 600dpi Input Capacity: 500~1000 Sheets + 100 Bypass Tray Media Size: A3, A4, A5, letter, legal, executive Memory: 256MB or Higher Connectivity: USB 2.0, Network Printing Enable Printing Resolution 600dpi x 600 dpi Network Printer Yes Built-in Data Storage 30,000 pages approx, Toner Life to be mentioned, Scanner Yes Zoom 25% - 400% Multiple Copies 1—999 Interface Key pad- Touch Screen Automatic Feature AES, AMS, AOS, ATS Trolley Yes/No Warranty Comprehensive with Parts and Labor, Any other feature may be given with offer	04 Units

List of Lab Equipments for Geology Department from Main PC-1 (1.709 B)

S.#	Name of Item	Specification	Quantity
1	CBR Compression Testing Machine (With all accessories)	CBR Testing Machine, 50 kN EN 13286-47, ASTM D1883, BS 1377-4:1990, AASHTO T193, CNR UNI 10009, NF P94-078 Loading capacity: 50kN Test speed: 1.27 mm/min Ram travel: 120mm Upper beam can be adjusted in height. Foreseen of fast approach device of the base plate and electric end of stroke switches of the load plate to save the machine from wrong manipulations. The CBR Machine Comprises: CBR motorized frame.CBR penetration piston. Load ring 50 kN capacity + stop device with dial gauge of 0.001 mm resolution and relevant calibration certificate. Stem Brake Device, it holds the maximum applied load on the dial gauge of the load ring, with manual zero setting. Electric device for automatic stop of the CBR machine when reaching the maximum capacity load, to prevent any overload damage. Dial gauge 10 x 0.01 mm. Dial gauge holder. Power Supply: 220V, 50 Hz. Accessories for Sample Preparation both for CBR and Marshall compatible with ASTM standards: CBR Mould with Collar & Perforated Base, Spacer Disc with "T" Handle, Perforated Plate with Adjustable Stem, Tripod (Dial Gauge Support) Dial Gauge, 10 mm Range, 0.01 mm. Annular Surcharge Weight, Slotted Surcharge Weight, Cutting Edge, Straight Edge, Filter Paper Diameter(2 packs),	1 set
2	PROCTOR MOULD (complete set) Local/Equivalent	The Soil Compaction Mold both for, Standard and modified proctor test. Fit the Automatic Mechanical Soil Compactors, and also may be used with manual soil compactors. Molds of different sizes i.e. 4" and 6" of perforated and solid base both for standard and modified test with detachable extension collar and base plate, and are plated for rust resistance., straight edge, (complete set including coarse cleaning brush, tamping rod, wash bottle etc)	1 set each for standard & modified proctor test
3	PROCTOR HAMMER MANUAL	Standard Soil Compaction Hammer with drop height 12in (305mm). Enclosed in a guide sleeve with vent holes to insure unrestricted free-fall. Manual Modified Soil Compaction Hammer. Enclosed in a guide sleeve with vent holes to insure unrestricted free-fall. Drop height is 18in (457mm).	One + One each
4	SEIVE ANALYSIS (including all sieve sizes both inch and number sieves)	203 mm dia ASTM sieve op 2" (50 mm), 203 mm dia ASTM sieve op 3" (75 mm), 203 mm dia ASTM sieve op 1 1/2" (37.5 mm), 203 mm dia ASTM sieve op 1" (25.0 mm), 203 mm dia ASTM sieve op 3/4" (19.0 mm), 203 mm dia ASTM sieve op 1/2" (12.5 mm), 203 mm dia ASTM sieve op 3/8" (9.5 mm), 203 mm dia ASTM sieve No 4 (4.75 mm), 203 mm dia ASTM sieve No 8 (2.36 mm), 203 mm dia ASTM sieve No 10 (2.00 mm), 203 mm dia ASTM sieve No 16 (1.18 mm), 203 mm dia ASTM sieve No 30 (0.600 mm), 203 mm dia ASTM sieve No 40 (0.425 mm), 203 mm dia ASTM sieve No 50 (0.300 mm), 203 mm dia ASTM sieve No 80 (0.180 mm), 203 mm dia ASTM sieve No 100 (0.150 mm), 203 mm dia ASTM sieve No 200 (0.075 mm), Wet washing sieve 8"diameter x 4"deep all stainless steel fitted with 75 micron mesh Along with top cover, intermediate pans, bottom pans and mixing pans/tray of different sizes Local made standard quality/equivalent	1 set each
5	SPEEDY MOISTURE TESTER along with full accessories	> Speedy moisture tester complete with electronic balance, accessories and carrying case 01 Number Accessories >Portable pressure calibrator for Speedy moisture tester 01 Number >Moisture tester reagent box 02 numbers	1+1+2

6	SHEAR BOX ASSEMBLY With accessories	SHEAR BOX ASSEMBLY With accessories Shear box for square specimen, Sample cutter for square samples, Extrusion dolly for square samples, load ring complete with adapters for shear machine, load ring complete with adapters for shear machine, Dial gauge, Dial gauge.	1
7	WEIGHT SET	WEIGHT SET Set of slotted steel weights tot.37.5kg: 2x0.250kg; 2x0.500kg; 2x1kg; 3x2kg; 3x4kg; 2x8kg	1
8	STANDARD PENETRATION TEST APPARATUS	SPT split sampler stainless steel , spt hammer of 140 lbf, spt guide rod assembly, spt lifting hook assembly, spt drilling rod 42mm x 5 feet approximately. with coupling nipple (6), spt tripod set 2" dia (15 ft approximately), manila rope (rate per foot) (50), screw wrench 18" Local made standard quality/equivalent	1
9	LOS ANGELES ABRASION MACHINE	Los Angeles Abrasion Machine Conforming to standards: EN1097-2, ASTM C131, UNI 8520-19, EN 12697-17, EN 12697-43, NF P18-573, UNE 83116, AASHTO T96, Used to determine the resistance of aggregates to abrasion. The machine is fitted with an automatic digital counter which can be preset to the required number of revolutions of the drum. The cylinder is counter-balanced so that the filling opening stays in position without tilting; a push-button allows to position such opening for the loading/unloading operations. Power. 230V, 50Hz, 1ph., Included with set of 12 abrasive charges ASTM/UNI Italy/ Equivalent	1
10	LIQUID LIMIT	Liquid limit device with counter ASTM-AASHTO- UNI model. ACCESSORIES Grooving Tool to ASTM D 4318, Glass plate 500 x 500 x 10 mm, Flexible spatula 100 mm blade, Flexible spatula 160 mm blade, Graduated glass cylinder 100 ml Plastic wash bottle 500 ml, , Porcelain evaporating dish dia. 120 x 50 mm h, Moisture content tin dia. 75X30 MM (6 quantity)	1
11	PLASTIC LIMIT	Plastic limit set accessories: Glass plastic limit plate, Stainless steel rod dia 3 mm, Porcelain evaporating dish, Flexible spatula 100 mm blade, Aluminum cup with cover. Set of 6 moisture container	1
12	HYDROMETER Complete set	Hydrometer particle size test set to ASTM D422 -AASHTO T88. 230V, 50Hz, 1ph. Comprising: Hydrometer jar 1000 ml. Graduated glass., Rubber bung for cylinder, Soil hydrometer 151/H, Laboratory thermometer -10 to + 50 deg.C, Constant temperature water bath. 230V/50Hz/Ph, High speed stirrer. 230V/50-60Hz/1Ph, Sodium hexameta phosphate 1000 g, Borosilicate glass beaker 250 ml Italy/ equivalent	1
13	CAPPING MACHINE	The combination 4" / 6" Vertical Combo Capping Fixture makes capping cylinders easy. Heavy, 1" thick base provides a solid foundation for application of melted capping compound to cylinder. Base is surface ground plane to within .002". Comes complete with heavy duty 1" thick base, two posts, 4 donuts, 6" and 4" diameter capping ring. Meets or exceeds ASTM, C-31, C-39, C-192, C-617, AASHTO T-22, T-23, T-126, T-231.	1
14	SOUNDING SET Complete set	Sulfate Soundness 8" Sieve Holder Sulfate Soundness Solution Bucket-8" Sieves, Sulfate Soundness Washing Tank, Sodium Sulfate Soundness Hydrometer, Magnesium Sulfate Soundness Hydrometer-8in, Full-Height Stainless Steel Blank Sieve Frame,	1
15	SOIL POCKET PENETROMETER (Aluminum) with full accessories	The Soil Pocket Penetrometer (Alluminum) is spring operated and used to measure compressive strength of soil. Constructed from anodized aluminum. A material tougher than steel, and measure dia. Comes with penetrometer, wrench, and carrying belt pouch.	2
16	ROCK CORE DRILLING MACHINE Universal (With full optional accessories)	Universal drilling frame complete(<i>both for rocks and concrete coring</i>) Coring machine used in the laboratory, to obtain cores from irregular rock samples. To be used with the Core Drilling Barrels (accessory). The 2 speed electric motor 1140/2040 rpm at free load and 730/1340 rpm at max load, is equipped with friction device and double safe isolation to CE Directive. Complete with specimen's clamp device, water cooling system and water tank. Power supply: 230 V 50/60 Hz 1ph 1800W Weight: 60 kg approx. Strap Wrench useful for unblocking, any type of Bit Must contain the following Core sizes. <u>Description dia mm D.C.D.M.A. Reference</u> Diamond core bit for 21.46 mm EX Diamond core bit for 30.10 mm AX Diamond core bit for 38.10 mm 1.5 inch Diamond core bit for 42.04 mm BX Diamond core bit for 54.74 mm NX (Needs 2 bits) Diamond core bit for 63.5 mm HQ Diamond core bit for 50mm (Needs 2 bits) Diamond core bit for 100mm Italy/ equivalent	1
17	Rock Chisel Local/Equivalent	Rock Chisel, 1.25 "W x 8" L, is top quality for digging, splitting, prying. Made from one piece forged steel. Handle has nylon-vinyl grip.	4

	ent		
18	SAND CONE DENSITY APPARATUS (Full set)	The Sand Cone Density Apparatus Set is a 1gal (3.8L) threaded plastic jar with detachable brass double cone fitting. The brass cone is threaded on one end, flanged to 6-1/2in on the other, with a brass cylindrical valve of 1/2in dia. orifice., The Sand Cone Density 12"x12" Density Plate is made of aluminum alloy with 1/2in high edge walls to contain soil samples that are dug using 6-1/2in (165mm) center hole of plate as a guide., The In-Place Density Accessory Kit has all items necessary for field tests with either the Voluvessel or Sand Cone Density apparatus. Kit includes 100 sample bags, 25°-125°F dial thermometer, brush, 1in chisel, spoon, scoops, straight edge, geotechnical gauge, and rubber mallet Local made/ Equivalent	1
19	MIXING TRY FOR SAND AND AGGREGATE (one each size) local made/equivalent	GALVANIZED SAMPLING TRAY (12"x12"x2"), GALVANIZED SAMPLING TRAY (18"x18"x3"), GALVANIZED SAMPLING TRAY (24"x18"x3"), GALVANIZED SAMPLING TRAY (36"x24"x3"), CYLINDER MOULD FOR CONCRETE 6" DIA x 12" HEIGHT	One each
20	ASTM GENERAL LAB-THERMOMETER	The ASTM #1C General Lab-Thermometer, -20 to 150C x 1.0 div. accuracy is assured by inspection and testing of samples from each production run. The thermometer must be compatible with a statement of compliance to E 1 and E 77 requirements.	1
21	UTM Universal testing machine	Compression Machine ASTM D2664, ISRM, UNI 9724-8, ASTM D5407, ASTM D2938, ASTM 3148 Descriptions: • The triaxial test is made on a rock specimen placed into a container (Hoek Cell), closed into a latex membrane. The specimen receives an axial load and a constant isotropic pressure normally between 5 and 6 Mpa for the whole test. The electric extensometers are directly applied on the surface of the rock specimen and they are used for the automatic reading in real time of the different parameters and find different information as: • Radial deformation combined with the axial deformation to obtain the Poisson value. • Stress value in relation with the axial and radial deformation. • The maximum or breaking value. • Tangent and secant Young's modulus measured on the axial deformation curve. • Maximum stress value in triaxial conditions. • The standards require that during the compression test the load on the rock specimen is applied in a continue way in order to obtain the breaking of the specimen within a time included between 5 and 10 minutes, with a constant increase of the load included between 0.5 and 1.0 Mpa/second. • For this reason it is recommended the use of a compression load frame with capacity of 1500, 2000 or 3000 kN (higher capacity machine can also be used) combined with the automatic servo controlled system "Servo-Plus Evolution" and to the automatic system for theElastic Modulus on rocks, that includes the data acquisition and processing software. • The side pressure set by the user is kept constant between ±1% using: Automatic servo controlled system "Servo-Plus Evolution" that grants a setting of the pressure up to 70/80 Mpa. ACCESSORIES Must contain the following accessories. 1- Flexure testing set for centre and third point test on concrete and rocks beams. 2- Electronic universal extensometer/compressometer for cylinders, prisms and cubes. Supplied with short distance piece for use with prisms 40x40x160 mm, adjusting template and 2 elastic bands 3- Hoek Triaxial Cell BX, 42,04 mm dia. Hoek Triaxial Cell NX, 54,74 mm dia. Hoek Triaxial Cell HQ, 63,5 mm dia. 4- Automatic pressure maintainer Software for data acquisition, processing, management	1
22	Color Image Scanner	Auto Scan mode automatically adjusts settings. Detects what is scanning for improved imaging effortlessly. Supports optical resolutions up to 4800 dpi, High-speed color scanning. Must Scan a letter-	1

		size image in about 10 seconds. USB cable power supplier. Great for scanning books and other bound materials. Auto Document Fix for better results. Canon /HP or equalient	
23	Automatic thin section polisher Local/equivalent	Dual wheel units(300mm wheel size) Specimen holder/mover that can hold at least six thin sections at a time of 1inchx 3inch size. A complete set of grinding papers Compressor Variable speed of 50-100rpm	1
24	GPS (Global Positioning System) Map Based	Physical and Technical Dimensions (W x H x D): 6.1 x 16 x 3.6 cm Display Size (W x H): 3.6 x 5.5 cm Display Resolution (W x H): 160 x 240 pixels Display Type: transfective, Battery: 2 AA batteries Battery Life: 20 hours, typical Waterproof: Yes High-sensitivity Receiver: Yes Interface: high-speed USB and NMEA compatible Operating Temperature: -15°C to 70°C Maps and Memory Basemap: Yes Ability to Add Maps: Yes Built-in Memory: 2 GB Accepts Data Cards: microSD card Waypoints/favourites/locations: 2000 Routes: 200 Track Log: 10,000 points, 200 saved tracks	2
25	Brunton compass (japan)	Adjustable needle locking mechanism Hinge clinometers with 1° increments for 1/2° readable dip measurements Two long-level bubbles on the outside of the aluminum housing for no guess leveling from the side or the bottom Cover hinge assembly designed for increased durability "Buck Horn" style sights for increased accuracy when sighting azimuth or vertical angles Single NdFeB magnet resists demagnetization better than any other type of magnet Percent grade scale with increments of 5% Induction damped needle for quick, accurate readings Sapphire jewel bearing allows for smooth needle movement Magnetic declination adjustment allows for east or west declination setting to +/- 180° Precision aligned mirror with convenient "see through" sighting capability 6061 -T6 hard anodized aluminum body for permanent color and scratch resistance Ball and Socket tripod mount is centered for increased accuracy of rotation O-rings make the GEO a waterproof compass for increased reliability Aluminum billet body assembly makes Brunton GEO nearly indestructible Durable leather carrying case included	2
26	Fossils kit	12 premium educational fossils, Each with an illustrated description card, Geologic Time Chart Card denoting evolutionary milestones.	2
27	Gem Kit	Beautiful collection of polished gemstones is a must for the beginner or seasoned gemstone collector. Must have variety of 25 different Gemstones. Mineral samples range between 3/8 - 1/2 inch	5
28	Polariscope	condensing lens/ Interference Spheres, immersion cell.GEM Polariscope	4
29	Refractometer	with additional polarizing filter attachment, mono chromatic light source Gem-A	1
30	Refractometer liquid	Gem Refractometer Liquid nD = 1.81 +/- 0.005 @ 25°C,	5 bottles
31	Dichroscope	Small hand held London dichroscope Gem-A	5
32	Tweezers	Mudder 6 Pieces Anti-static ESD Tweezer Kit Non-magnetic ESD Tweezers with Storage Bag	5
33	lenses/loupes	Glass Jeweler Geology Antique Loupe Eye Magnifier Magnification: 30/60 ;	3
34	Chelsea Color Filter	Helps identify certain green, red, and blue stones. Detects dyes in certain gems like dyed green and blue chalcedony.	5
35	Spectroscope	Kassoy Prism type spectroscope, Adjustable slit aperture with slide focus	3
36	Digital Specific Gravity	Lightweight Gem Holder Support and Underwater Weighing Pan bullet Independent, Spill-Resistant, <i>Adjustable Beaker Support</i> <i>bullet Beaker for filling with water - 50 to 100ml capacity</i>	1

	Balance	bullet Aluminum Test Weight whose SG = 2.70 bullet Stainless Steel Tweezers bullet Complete instructions (although this method is very simple) bullet Table of 300 common minerals/gems sorted by specific gravity, with 6 other properties, including refractive index. (Or purchase our Mineral Search software and let your computer do the work of searching a gem and mineral database by specific gravity and other properties)	
37	Double goose neck (Fiber optic light)	150W Fiber Optic Dual Gooseneck Microscope Illuminator	1
38	lamps	Table Lamp in Black... Table Lamp Colour: Black Bulbs : Included	5
39	Trinocular Gem Microscope Camera package (MIC850)	Am Scope Digital Trinocular Gemology Stereo Zoom Microscope, WH10x Eyepieces, 3.5X-90X Magnification, 0.7X-4.5X Zoom Objective, Halogen and Fluorescent Lighting, Inclined Pillar Stand, 110V-120V, Includes 0.5X and 2.0X Barlow Lenses, 5MP Camera with Reduction Lens, and Software	1

List of Lab Equipments/Instruments for Geology Department from Recurring Account

S.#	Name of Item	Specification	Quantity
1	Ward's Mineral/Equal Thin Sections	Set of 38 minerals A to Z minerals thin sections for petrography lab including igneous, metamorphic and sedimentary rocks	1 set of thin section for each rock.
2	Photo state/Photo Copier Machine must have the facilities of Copy, Print, Fax and Scan	Digital Copier with Printer, Scanner Fax Card Copy Print Speed Black & White: 22 ppm Copy Print Speed Colour: 22 ppm Copying Resolution: 600x600 dpi CPU: Dual Sheeva ARM Interface: USB Magnification Zoom: 25 - 400% Media Sizes: A4, A5, B-Oficio, B5, Executive, Foolscap, Legal, Letter, M-Oficio, Oficio Multiple Copy Prints: 1 to 999 sheets Network Protocol: SMB, SMTP, TCP/IP (FTP, WebDAV)(IPv4/IPv6) Paper Capacity (Sheets): 1000 Sheets Paper Weight: 60 to 300 gsm Photocopier Type: Desktop Print Resolution: 600x600 dpi Processor speed: 800 MHZ Scan Resolution: 600x600 dpi	01

		<table border="1"> <tr> <td>Warm-up Time:</td> <td>38 Second seconds</td> </tr> <tr> <td>Weight:</td> <td>71 Kg</td> </tr> <tr> <td>Functionality:</td> <td>Copy, Print, Scan</td> </tr> <tr> <td>Warranty:</td> <td>1 Year(s)</td> </tr> <tr> <td>Memory:</td> <td>2</td> </tr> <tr> <td>Power Consumption:</td> <td>1.58 KW</td> </tr> <tr> <td>Power Supply:</td> <td>220-240V 4.5A 50/60Hz</td> </tr> <tr> <td>OS:</td> <td>Windows Server 2003 (x32, Windows Vista (x32, x64), x64)/ 7 (x32, x64)/ 8 (x32, x64)/ 8.1 (x32, x64)/ Server 2003 R2 (x32, x64)/ Server 2008 R2/ Server 2012/ Server 2012 R2, x64)/Server 2008 (x32</td> </tr> </table>	Warm-up Time:	38 Second seconds	Weight:	71 Kg	Functionality:	Copy, Print, Scan	Warranty:	1 Year(s)	Memory:	2	Power Consumption:	1.58 KW	Power Supply:	220-240V 4.5A 50/60Hz	OS:	Windows Server 2003 (x32, Windows Vista (x32, x64), x64)/ 7 (x32, x64)/ 8 (x32, x64)/ 8.1 (x32, x64)/ Server 2003 R2 (x32, x64)/ Server 2008 R2/ Server 2012/ Server 2012 R2, x64)/Server 2008 (x32	
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3	Sample Splitter/ Quartering box	Universal Sample Splitter w/ 0.55ft ³ Hopper Capacity	1																
4	Specific Gravity & Absorption of Fine Aggregate Set	<p>The SG-1 Specific Gravity & Absorption of Fine Aggregate Set is an all-in-one solution used to calculate the volume occupied by the fine aggregate in various mixtures. Features:</p> <ul style="list-style-type: none"> • SG-1 Set includes all items to perform test per ASTM and AASHTO standards • Jar and Top alone available as SG-2 • Mold and Tamper available separately as SG-3 <p>Included Items:</p> <ul style="list-style-type: none"> • 1 qt (0.95L) threaded glass jar Pycnometer with rubber gasketed top • Conical Mold • tamper with 25mm diameter face <p>Meets Standard(s):</p> <ul style="list-style-type: none"> • <u>AASHTO T 84 & ASTM C128</u> 	1																
5	Specific Gravity & Absorption of Coarse Aggregate Set	Specific Gravity & Absorption of Coarse Aggregate Set is available with a #8 stainless steel wire mesh basket and a polyethylene water container sold together as a handy all-in-one solution	Full set																
6	Thickness Gauge (Flakiness Index)	Thickness Gauge (Flakiness Index) is a slotted stainless steel gauge for rapid hand trying of particles from the seven sieve fractions to determine the flakiness index.	1																
7	Length Gauge (Elongation)	Length Gauge (Elongation Index) has six labeled openings between metal pins for measuring length of particles from each of the six sieve cuts below 50mm, for elongation index determinations.	1																

	Index)		
8	Sand Equivalent Test Set	Sand Equivalent Test Set includes four Clear Plastic Graduated Cylinders, a Siphon Assembly, Irrigator Tube, Weighted Foot, Funnel, Measuring Tin, Solid Stopper and 8oz of Stock Solution. All items are packed in a convenient, vinyl-covered latching wooden case with carrying handle.	1
9	Slump Test set with full accessories	Clean Slump Test Set includes a steel slump cone, high-density polyethylene base plate, steel tamping rod, capacity polished aluminum Round-Bowl Scoop, aluminum Filling Funnel, a measuring tape and a sturdy, acid-resistant scrub brush with handle. The slump cone and base plate are easy to clean-up after use and will not corrode. Components meet specification requirements. Meets Standard(s): AASHTO T 119 , BS 1881 , ASTM C143 , ASTM C143M	1
10	Concrete Dial Penetrometer	Concrete Dial Penetrometer is a compact instrument fitted with an easy to read 2.25in (57mm) diameter dial gauge. Dual scales of 0 to 700psi and 0 to 50kg/cm ² indicate resistance. Maximum readings are locked in until released by push button. The instrument can be calibrated using an ordinary platform balance and adding or removing the register plates provided. Plastic case, factory certification and instructions are included.	1
11	Standard Auger complete set	3in (76mm) Carbon Steel Standard Auger	1
12	Geotechnical Classification Charts along with Sand gauge and geotechnical gauge	Munsell Soil Color Charts for classifying soil color, but may also be used for rocks, archeological specimens, and other natural products. Munsell Charts are a standard tool for geologists, civil engineers, and soil scientists. The tabbed charts include color ranges. Charts for tropical and semitropical soils, and for Australia, SE Asia are now included. A two page Gley Chart for submerged soils covers weak chromas and neutrals of blue and green hues. A white page is used to describe carbonate, silica, gypsum, soluble salt participates and more. Openings between chips allow easy visual comparison with soil samples. Illustrations of soil grain structures, charts for estimating proportions of mottles and coarse fragments, color name diagrams, and instructions are furnished. Color chips are mounted on neutral gray, water resistant pages in a loose-leaf binder.	As per available
13	Tinned Sample Container (Package of 12)	3 ounce tinned sample containers are used to measure Stock Solution when preparing working solution, as well as for sampling and measuring specimen material. Containers are round and metal. Meets Standard(s): AASHTO T 176 , AASHTO T 210 , CALIFORNIA 217 , CALIFORNIA 229 , ASTM D2419	12
14	Flasks and	Glass flask of 100ml, 250ml, 500ml and 1000ml Volumetric Flasks are useful for specific gravity tests such as ASTM D854 and contain the indicated	6 each

	volumetric flask	<p>volume at 20°C. These Flasks are available with capacities from 100 to 1,000ml and come with a plastic snap cap. Features: Optimal for specific gravity testing Compliant with ASTM D854</p> <p>Included Items: Volumetric Flask</p> <p>Meets Standard(s): AASHTO T 100, ASTM D854, ASTM E288, ASTM E694</p>	
15	Chemicals Stock Solution for Sand Equivalent Test	<p>Stock Solution is a concentrated calcium chloride solution formulated especially for Sand Equivalent testing. The Solution meets ASTM and AASHTO requirements and must be properly diluted to prepare a working solution for testing.</p> <p>Meets Standard(s): AASHTO T 176, AASHTO T 210, CALIFORNIA 217, CALIFORNIA 229, ASTM D2419</p>	1gal
16	Sodium Hexametaphosphate (1lb Bottle)	<p>This dispersion agent in dry powder form is mixed in soil hydrometer solutions to prevent clay platelets from sticking together.</p> <p>Meets Standard(s): >AASHTO T 88 >ASTM D422 >ASTM C775</p>	6 bottles
17	Glass Beakers	Glass Beakers are useful for handling, collecting corrosive solvents and bitumen samples. Sizes: 250 ml, 500 ml and 1000ml	6 each
18	Graduated Cylinders	50ml, 100ml,250ml,500ml, 1000ml Both glass and plastic made	6 each size
19	China dish	Made of ceramic, max. Temp. Up to 800°C	5
20	Spirit lamp	125ml Spirit capacity with burner	5
21	Burner stand	local made for spirit lamp	3
22	Funnels	100ml, 200ml, 500ml, 1000ml	5 each