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| **Sindh Gov Logo.jpg** | Employment through Skill  **Sindh Technical Education &**  **Vocational Training Authority (STEVTA)**  ST-19, Block-6, Near N.I.P.A., University Road,  Gulshan-e-Iqbal, Karachi. Tel: 021-99243818  ~~~~~~~~~~~~~~~~~~~~~~~ | STEVTA Logo.jpg |

**Bidding Document**

**Procurement of**

**Machinery/Equipment/Tools & Apparatus**

**For Various Laboratories/Workshops**

**for**

**Government Monotechnic Institute,**

**Garhi Khuda Bux, District Larkana**

**Estimated Cost Rs.22.391 (Million)**

Date & Time of Bid Submission: 24-05-2017 up to 11:00 a.m.

Date & Time of Bid Opening: 24-05-2017 (at 11:30 a.m. )

**( TECHNICAL PROPOSAL )**

**PART ONE (FIXED)**

* **Instructions to Bidders (ITB)**
* **General Conditions of Contract (GCC)**

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**RECIEPT**

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**( A. HAFEEZ ABRO )**

**Director (Procurement)**

**Section – I**

**Instructions to Bidders**

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**Instructions to Bidders**

### Introduction

The Sindh Technical Education & Vocational Training Authority (STEVTA) has been allocated funds under “Revenue Component” during financial year 2016-17, for implementation of scheme “Establishment of Government Monotechnic Institute at Garhi Khuda Bux, District Larkana. These funds would be utilized for procurement of machinery/equipment/apparatus for various laboratories & workshops of the said institution.

1. **Source of Funds.**
   1. Government of Sindh.

02. **Eligible Bidders.**

2.1 This Invitation for Bids is open to all suppliers from eligible source as defined in the SPPRA Rules, 2010 and its Bidding Documents except as provided hereinafter.

2.2 Bidders should not be associated or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Procuring agency to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation for Bids.

2.3 Government-owned enterprises in the Province of Sindh may participate only if they are legally and financially autonomous, if they operate under commercial law, and if they are not a dependent agency of the Government of Sindh.

2.4 Bidders shall not be eligible to bid if they are under a declaration of ineligibility for corrupt and fraudulent practices issued by the any government organization.

1. **Eligible Goods and Services.** 
   1. The Goods and related services to be supplied under the contracts (such services here in after referred to services) shall have their origin in eligible countries, as specified in Section-V and all expenditures made under the contract will be limited to such equipment and services.
   2. For purposes of clause 3.1 above, “origin” shall be considered to be the place where the goods are mined, grown, produced, or the place from where the related services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially-recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.
   3. The origin of goods and services is distinct from the nationality of the Bidder.
2. **Cost of Bidding / Contract**

4.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Procuring agency named in the Bid Documents, hereinafter referred to as “the purchase’s” will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

05. **Assurance**

5.1 The successful bidder will be required to give satisfactory assurance of its ability and intention to deliver the goods and services pursuant of the contract, within the time set-forth therein.

### B. The Bidding Document.

1. **Contents of Bidding Document**

6.1 The bidding documents include:

(a) Instructions to Bidders (ITB)

(b) Evaluation Criteria List

(c) General Conditions of Contract (GCC)

(d) Special Conditions of Contract (SCC)

(e) Schedule of Requirements

(f) Technical Specifications

(g) Bid Form and Price Schedules

(h) Bid Security Form

(i) Contract Form

(j) Performance Security Form

(k) Manufacturer’s Authorization Form

6.2The Bidder is expected to examine all instructions, forms, terms and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or to submit a bid not substantially responsive to the bidding documents in every respect will be at the Bidder’s risk and may result in the rejection of its bid.

1. **Clarification of Bidding Document**

7.1 Prospective Bidders requiring any clarification of the bidding documents may notify the Procuring agency in writing. The Procuring agency will respond in writing to any request for clarification of the bidding documents which it receives no later than three working days prior to the deadline for the submission of bids prescribed in the Bid Documents. Written copies of the Procuring agency’s response (including an explanation of the query but without identifying the source of inquiry) will be sent to all interested bidders that have received the bidding documents.

1. **Amendment of Bidding Document**

8.1 At any time prior to the deadline for submission of bids, the Procuring agency, for any reason, whether at its own initiative or in response to a clarification requested by an interested Bidder, may modify the bidding documents by amendment

8.2 The amendment shall be the part of the Bidding documents, pursuant to clause 8.1 will be notified in writing to all prospective Bidders who have received the Bidding documents and will be binding on them. The Bidders will be required to acknowledge receipt of any such amendment to the Bidding Documents.

8.3 In order to afford prospective Bidders reasonable time in which to take amendment into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of Bids.

### C. Preparation of Bids

1. **Language of Bid.**

9.1 The Bid prepared by the Bidder and all correspondence and documents relating to the Bid exchanged by the Bidder and the Procuring agency, shall be written in the English Language. Any printed literature furnished by the Bidder may be written in Urdu, Sindhi and English languages, provide that Urdu and Sindhi literature is accompanied by an English translation, in which case, for purpose of interpretation of the Bids, the English translation shall govern.

1. **Documents Comprising the Bid.**

10.1 The bid prepared by the Bidder shall comprise the following components:

1. a Bid Form and a Price Schedule completed in accordance with ITB Clauses 11, 12 and 13;
2. documentary evidence established in accordance with ITB Clause 14 that the Bidder is eligible to bid and is qualified to perform the contract if its bid is accepted;
3. documentary evidence established in accordance with ITB Clause 15 that the goods and ancillary services to be supplied by the Bidder are eligible goods and services and conform to the bidding documents; and

(d) Bid Security / Earnest Money furnished in accordance with Clause-16 of this document.

1. **Bid Form.**

11.1 The Bidder shall complete the Bid Form and the appropriate Price Schedule furnished in the bidding documents, indicating the goods to be supplied, a brief description of the goods, and their country of origin, quantity, and prices

1. **Bid Price.**

12.1 The Bidder shall indicate on the appropriate Price Schedule the unit prices (where applicable) and total price per article and total bid price, expected countries of origin and make/model of the goods it proposes to supply under the contract

12.2 Prices indicated on the Price Schedule shall be delivered duty paid (DDP) prices. The price of other (incidental) services, if any, listed in the Bid Data Sheet will be entered separately.

12.3 The Bidder’s separation of price components in accordance with ITB Clause 12.2 above will be solely for the purpose of facilitating the comparison of bids by the Procuring agency and will not in any way limit the Procuring agency right to contract on any of the terms offered.

12.4 Prices quoted by the Bidder shall be fixed during the Bidder’s performance of the contract and not subject to variation on any account, unless otherwise specified in the Bid Documents. A bid submitted with an adjustable price quotation will be treated as nonresponsive and will be rejected, pursuant to ITB Clause 26. If, however, in accordance with the Bid Documents, pricesquoted by the Bidder shall be subject to adjustment during the performance of the contract, a bid submitted with a fixed price quotation will not be rejected, but the price adjustment would be treated as zero.

1. **Bid Currencies.**

13.1 Price shall be quoted in Pak Rupees.

1. **Documents Establishing Bidder’s Eligibility and Qualification.**

14.1 The Bidder shall furnish, as part of its bid, documents establishing the Bidder’s eligibility to bid and its qualifications to perform the contract if its bid is accepted.

14.2 The documentary evidence of the Bidder’s eligibility to bid shall establish to the Procuring agency satisfaction that the Bidder, at the time of submission of its bid, is from an eligible country.

14.3 The documentary evidence of the Bidder’s qualifications to perform the contract if its bid is accepted shall establish to the Procuring agency satisfaction:

1. that, in the case of a Bidder offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods’ Manufacturer or producer to supply the goods in the Procuring agency country;
2. that the Bidder has the financial, technical, and production capability necessary to perform the contract;
3. that, in the case of a Bidder not doing business within the Procuring Agency’s country, the Bidder is or will be (if awarded the contract) represented by an Agent in that country equipped, and able to carry-out the Supplier’s maintenance, repair, and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications; and
4. that the Bidder meets the qualification criteria listed in the Bid Evaluation Criteria (Annexure A)
5. **Documents Establishment Good’s Eligibility and Conformity to Bidding Documents.**

15.1 Pursuant to ITB Clause 10, the Bidder shall furnish, as part of its bid, documents establishing the eligibility and conformity to the bidding documents of all goods and services which the Bidder proposes to supply under the contract.

15.2 The documentary evidence of the eligibility of the goods and services shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued from the foreign principle.

15.3 The documentary evidence of conformity of the goods and services to the bidding documents may be in the form of literature, drawings, and data, and shall consist of:

1. a detailed description of the essential technical and performance characteristics of the goods;
2. a detailed schedule of work under the contract (dispatch/work schedule) outlining key activities and critical items on the schedule which could influence the contract completion date;
3. a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period of two years, following commencement of the use of the goods by the Procuring agency; and
4. an item-by-item commentary on the Procuring agency Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.

15.4 For purposes of the commentary to be furnished pursuant to ITB Clause 15.3(c) above, the Bidder shall note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by the Procuring agency in its Technical Specifications, are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names, and/or catalogue numbers in its bid, provided that it demonstrates to the Procuring agency satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

15.5 In order to prove that the goods offered are of acceptable quality and standard, the bidders shall furnish the documentary evidence that the Goods offered have been in production for several years and reasonable units of similar capacity have been sold and have been in operation satisfactorily to the end users.

1. **Bid Security (Earnest Money)**

16.1 The bidder shall furnish, as part of its Bid, a bid security / earnest money@ **5%** of quoted total bid value through a Pay Order / Call Deposit / Demand Draft in favour of **“Sindh Technical Education & Vocational Training Authority”**.

16.2 The bid security is required to protect the Sindh Technical Education & Vocational Training Authority against the risk of Bidder’s conduct which would warrant the security’s forfeiture, pursuant to ITB Clause 15.6.

16.3 The bid security shall be denominated in Pak. Rupees (PKR) and shall be valid for a period of at least thirty (30) days beyond the validity of the Bid and shall be in form of pay order / call deposit /demand draft or Bank Guarantee.

16.4 Any bid not secured in accordance with ITB Clauses 16.1 and 16.3 will be rejected by the Procuring agency as nonresponsive, pursuant to ITB Clause 17.

16.5 Unsuccessful bidders’ bid security will be discharged or returned as promptly as possible, but not later than thirty (30) days after the expiration of the period of bid validity prescribed by the Procuring agency pursuant to ITB Clause 19.

16.6 The successful Bidder’s bid security will be discharged upon the Bidder signing the contract, Pursuant to ITB Clause 32, and furnishing the performance security, pursuant to ITB Clause 33.

16.7 The bid security may be forfeited:

1. If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form; or

(b) In the case of a successful Bidder, if the Bidder fails:

1. to sign the contract in accordance with ITB Clause 33;or
2. to furnish performance security in accordance with ITB Clause 34.
3. **Period of Validity of Bid**

17.1 Bids shall remain valid for a period not less than Ninety (90) days, after the date of bid opening prescribed by the Procuring agency, pursuant to ITB Clause 19. A bid valid for a shorter period shall be rejected by the Procuring agency as non-responsive.

17.2 In exceptional circumstances, the Procuring agency may solicit the Bidder’s consent to an extension of the period of Bid validity. The request and the responses thereto shall be made in writing. The bid security provided under ITB Clause 15 shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid, except as provided in the bidding document.

18. **Alternative Bids**

18.1 Bidders may submit Alternative Bids, which do not conform to the specifications of Goods but meet the performance prescribed in, or the objectives of the specifications. However, only the Alternative Bids of the Bidders whose main Bid is the lowest evaluated substantially responsive Bid will be considered. If a bidder wishes to have its Alternative Bid or Bids considered on an equal basis with all other main Bids, it shall submit a bid Earnest Money to each Alternative Bid. All Alternative Bids submitted in this manner will be treated as main Bids. Alternative Bid must be submitted in a sealed envelope clearly marked “Alternative Bid” separate from the main Bid.

1. **Format and Signing of Bid**

19.1 The original of the bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the contract. All pages of the bid, except for un-amended printed literature, shall be initialed by the person(s) signing the bid.

19.2 Any interlineations, erasures, or overwriting shall be valid only if they are initialed by the person or persons signing the bid.

19.3 The Bidder shall furnish information as described in the Form of Bid on commissions or gratuities, if any, paid or to be paid to agents relating to this Bid, and to contract execution if the Bidder is awarded the contract.

### D. Submission of Bids

1. **Sealing and Marking of bids.**

20.1 The Bidder shall seal the Technical & Financial Proposals of the bid in separate envelopes, duly marking the envelopes as **“TECHNICAL”** and **“FINANCIAL”**. Both the said envelopes shall then be sealed in an outer envelope.

20.2 The inner and outer envelopes shall be addressed to:

**The Director (Procurement)**

**Sindh Technical Education &**

**Vocational Training Authority (STEVTA),**

**Street-19, Block-6, Gulshan-e-Iqbal,**

**Near NIPA Chowrangi, Karachi.**

**Phone: 021-99243818.**

20.3 The Envelop should contain at the left corner:

**Tender No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,**

**“DO NOT OPEN BEFORE”***(date & time of bid opening given in bid notice/document).*

20.4 The inner envelopes shall also indicate the name and address of the Bidder to enable the bid to be returned unopened in case of disqualification / rejection.

20.5 If the outer envelope is not sealed and marked as required by ITB Clause 20.1, the Procuring agency will assume no responsibility for the bid’s misplacement or premature opening.

1. **Deadline of Submission of Bids**

21.1 Bids must be received by Procuring agency at the address specified under ITB Clause 20.2, not later than the time and date specified in the Bid Notice / Documents.

21.2 The Purchaser may at its discretion, extend this deadline for the submission of bids by amending the bidding documents in accordance with ITB Clause 8, in which case all rights and obligations of the Procuring agency and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

1. **One Bid per Bidder**

22.1 Each Bidder shall submit only one Bid either by itself or as a partner in a joint venture. A Bidder who submits or participates in more than one Bid (except alternative Bid pursuant to Clause 18.3) will be disqualified.

1. **Late Bids**

23.1 Any bid received by the Procuring Agency after the deadline for submission of bids prescribed by the Procuring agency pursuant to ITB Clause 21 will be declared **“Late”** and rejected and may be returned unopened to the Bidder.

1. **Modification and withdrawal of Bids.**

24.1 The Bidder may modify or withdraw its bid after the bid’s submission, provided that written notice of the modification, including substitution or withdrawal of the bids, is received by the Procuring agency prior to the deadline prescribed for submission of bids.

24.2 The Bidder’s modification or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of ITB Clause 20. A withdrawal notice may also be sent by Telex or Cable but must be followed by a signed confirmation copy.

24.3 No bid may be modified after the deadline for submission of bids.

24.4 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid Form. Withdrawal of a bid during this interval may result in the Bidder’s forfeiture of its bid security, pursuant to the ITB Clause 15.7.

### E. Bid Opening and Evaluation

1. **Opening of Bids by the Procuring agency**

25.1 The Procuring Agency will open all bids in the presence of bidders’ representatives who choose to attend, at the time, on the date, and at the place specified in the Bid Notice / Documents. The bidders’ representatives who are present shall sign a register evidencing their attendance.

25.2 The bidders’ names, bid modifications or withdrawals, bid prices, discounts, and the presence or absence of requisite bid earnest money and such other details as the Procuring agency, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened to the Bidder pursuant to ITB Clause 20.

25.3 Bids (and modifications sent pursuant to ITB Clause 22.2) that are not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances. Withdrawn bids will be returned unopened to the bidders.

25.4 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendation for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process. Any effort by a bidder to influence the Purchaser’s processing of Bids or award decisions may result in the rejection of the bidder’s Bid.

25.5 The Procuring agency will prepare minutes of the bid opening.

1. **Clarification of Bids.**
   1. To assist in the examination, evaluation and comparison of Bids, the Purchaser may at its discretion, ask the Bidder for a clarification of its bid, if any. All responses to request for such clarification shall be in writing, and no change in the prices or substance of the Bid shall be sought, offered or permitted.
2. **Preliminary Examination.**

27.1 The Procuring agency or his nominee will examine the Bids to determine whether;

a) they are complete in all respect;

b) computational errors, if any have been made;

c)required sureties have been furnished

d) documents have been properly signed; and

e) bids are generally in order.

27.2 Arithmetical errors will be rectified on the following basis:

a)If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected.

b) If the Supplier does not accept the correction of the errors, its bid will be rejected, and its bid security may be forfeited. If there is a discrepancy between words and figures, the amount in words will prevail.

27.3 The Procuring agency may waive any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

27.4 Prior to the detailed evaluation, pursuant to ITB Clause 28 the Procuring agency will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these Clauses, a substantially responsive bid is one which conforms to all the terms and conditions of the bidding documents without material deviations. Deviations from, or objections or reservations to critical provisions, **such as**those concerning Bid Security (ITB Clause 15), Applicable Law (GCC Clause 30), and Taxes and Duties (GCC Clause 32), will be deemed to be a material deviation. The Procuring agency determination of a bid’s responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

27.5 If a bid is not substantially responsive, it will be rejected by the Procuring Agency and may not subsequently be made responsive by the Bidder by correction of the nonconformity.

1. **Evaluation and Comparison of Bids**

28.1 The Procuring agency will evaluate and compare the bids which have been determined to be substantially responsive, pursuant to ITB Clause 27.

28.2 The Procuring agency evaluation of a bid will be on delivered duty paid (DDP) price inclusive of prevailing duties and will exclude any allowance for price adjustment during the period of execution of the contract, if provided in the bid.

28.3 The Procuring agency evaluation of a bid will take into account, in addition to the bid price quoted in accordance with ITB Clause 11.2, one or more of the following factors as specified in the Bid Data Sheet, and quantified in ITB Clause 25.4 :

(a) incidental costs;

(b) delivery schedule offered in the bid;

(c) deviations in payment schedule from that specified in the Special Conditions of Contract;

(d) the cost of components, mandatory spare parts, and service;

(e) the availability Procuring agency of spare parts and after sales services for the equipment offered in the bid;

(f) the projected operating and maintenance costs during the life of the equipment;

(g) the performance and productivity of the equipment offered; and/or

(h) other specific criteria indicated in the Bid Data Sheet and/or in the Tech: Specifications.

28.4 For factors retained in the Bid Data Sheet pursuant to ITB 28.3,one or more of the following quantification methods will be applied, as detailed in the Bid Data Sheet:

1. Incidental costs provided by the bidder will be added by Procuring agency to the delivered duty paid (DDP) price at the final destination.

(b) *Delivery schedule*

(i) The Procuring agency requires that the goods under the Invitation for Bids shall be delivered at the time specified in the Schedule of Requirements which will be treated as the base, a delivery “adjustment” will be calculated for bids by applying a percentage, specified in the Bid Data Sheet, of the DDP price for each week of delay beyond the base, and this will be added to the bid price for evaluation. No credit shall be given to early delivery; or

(ii) The goods covered under this invitation are required to be delivered (shipped) within an acceptable range of weeks specified in the Schedule of Requirement. No credit will be given to earlier deliveries, and bids offering delivery beyond this range will be treated as nonresponsive. Within this acceptable range, an adjustment per week, as specified in the Bid Data Sheet, will be added for evaluation to the bid price of bids offering deliveries later than the earliest delivery period specified in the Schedule of Requirement; or

1. The goods covered under this invitation are required to be delivered in partial shipments, as specified in the Schedule of Requirements. Bids offering deliveries earlier or later than the specified deliveries will be adjusted in the evaluation by adding to the bid price a factor equal to a percentage, specified in the Bid Data Sheet, of DDP price per week of variation from the specified delivery schedule.

(c) *Deviation in payment schedule.*

(i) Bidders shall state their bid price for the payment schedule outlined in the SCC. Bids will be evaluated on the basis of this base price. Bidders are, however, permitted to state an alternative payment schedule and indicate the reduction in bid price they wish to offer for such alternative payment schedule. The Procuring agency may consider the alternative payment schedule offered by the selected Bidder; or

(ii) The SCC stipulates the payment schedule offered by the Procuring agency. If a bid deviates from the schedule and if such deviation is considered acceptable to the Procuring agency, the bid will be evaluated by calculating interest earned for any earlier payments involved in the terms outlined in the bid as compared with those stipulated in this invitation, at the rate per annum specified in the Bid Data Sheet.

(d) *Cost of spare parts.*

(i) The list of items and quantities of major assemblies, components, and selected spare parts, likely to be required during the initial period of operation specified in the Bid Data Sheet, in annexed to the Technical Specifications. The total cost of these items, at the unit prices quoted in each bid, will be added to the bid price; or

(ii) The Procuring agency will draw up a list of high-usage and high-value items of components and spare parts, along with estimated quantities of usage in the initial period of operation specified in the Bid Data Sheet. The total cost of these items and quantities will be computed from spare parts unit prices submitted by the Bidder and added to the bid price; or

1. The Procuring agency will estimate the cost of spare parts usage in the initial period of operation specified in the Bid Data Sheet, based on information furnished by each Bidder, as well as on past experience of the Procuring agency or other procuring agencies in similar situations. Such costs shall be added to the bid price for evaluation.

1. *Spare parts and after sales service facilities in the Procuring agency’s country.*

The cost to the Procuring agency of establishing the minimum service facilities and parts inventories, as outlined in the Bid Data Sheet or elsewhere in the bidding documents, if quoted separately, shall be added to the bid price.

The cost to the Procuring agency of establishing the minimum service facilities and parts inventories, as outlined in the Bid Data Sheet or elsewhere in the bidding documents, if quoted separately, shall be added to the bid price.

(f) *Operating and maintenance costs.*

Since the operating and maintenance costs of the goods under procurement form a major part of the life cycle cost of the equipment, these costs will be evaluated in accordance with the criteria specified in the Bid Data Sheet or in the Technical Specifications.

(g)*Performance and productivity of the equipment.*

(i) Bidders shall state the guaranteed performance or efficiency in response to the Technical Specifications. For each drop in the performance or efficiency below the norm of 100, an adjustment for an amount specified in the Bid Data Sheet will be added to the bid price, representing the capitalized cost of additional operating costs over the life of the plant, using the methodology specified in the Bid Data Sheet or in the Technical Specifications; or

(ii) Goods offered shall have a minimum productivity specified under the relevant provision in the Technical Specifications to be considered responsive. Evaluation shall be based on the cost per unit of the actual productivity of goods offered in the bid; an adjustment will be added to the bid price using the methodology specified in the Bid Data Sheet or in the Technical Specifications.

(h) *Specific additional criteria indicated in the Bid Data Sheet and/or in the Technical Specifications.*

The relevant evaluation method shall be detailed in the Bid Data Sheet and/or in the Technical Specifications.

### F. Award of Contract(s)

1. **Contracting the Procuring Agency**
   1. Subject to ITB Clause 23, no Bidder shall contact the Procuring agency on any matter relating to its bid, from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Procuring agency, it should do so in writing.
   2. Any effort by a Bidder to influence the Procuring agency in its decisions on bid evaluation, bid comparison, or contract award may result in the rejection of the Bidder’s bid.
2. **Purchaser’s Right to Accept any Bid and to Reject any or all Bids**
   1. The Purchaser reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at any time prior to award of Contract, without thereby incurring any Liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder of the grounds for the Purchaser’s action.
3. **Post Qualification**

31.1 In the absence of prequalification, the Procuring agency will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in Clause 13.3.

31.2 The determination will take into account the Bidder’s Financial, Technical, and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder’s qualifications submitted by the Bidder, pursuant to ITB Clause 13.3, as well as such other information as the Procuring agency deems necessary and appropriate.

31.3 An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the Bidder’s bid, in which event the Procuring agency will proceed to the next lowest evaluated bid to make a similar determination of that Bidder’s capabilities to perform satisfactorily.

1. **Award Criteria**

32.1 An affirmative determination will be prerequisite for award of the Contract to the Bidder. A negative determination will result in rejection of the Bidder’s Bid.

32.2 The Procuring agency will award the contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined to be the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily.

1. **Procuring agency’s Right to Vary Quantities at Time of Award.**

33.1 The Procuring agency reserves the right at the time of contract award to increase or decrease, by the percentage indicated in the Bid documents, the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.

1. **Notification of Award.**

34.1 Prior to the expiration of the period of bid validity, the Procuring agency will notify the successful Bidder in writing by registered letter, to be confirmed in writing by registered letter, that its bid has been accepted.

34.2 The notification of award will constitute the formation of the Contract until the Contract has been affected pursuant to Clause 35.

34.3 Upon the successful Bidder’s furnishing of the performance security pursuant to ITB Clause 34, the Procuring agency will promptly notify each unsuccessful Bidder and will discharge its bid security, pursuant to ITB Clause 15.

1. **Signing of Contact.**

35.1 At the same time as the Procuring agency notifies the successful Bidder that its bid has been accepted, the Procuring agency will send the Bidder the Contract Form provided in the bidding documents, incorporating all agreements between the parties.

35.2 Within thirty (30) days of receipt of the Contract Form, the successful Bidder shall sign and date the contract and return it to the Procuring agency.

1. **Performance Security.**

36.1 Within Seven (7) days of the receipt of notification of award from the Procuring agency, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, in the Performance Security Form provided in the bidding documents, or in another form acceptable to the Procuring agency.

36.2 Failure of the successful Bidder to comply with the requirement of ITB Clause 32 or ITB Clause 33.1 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the Procuring agency may make the award to the next lowest evaluated Bidder or call for new bids.

1. **Integrity Pact - Corrupt or Fraudulent Practices.**

37.1 The Government of Sindh requires that Procuring agency’s (including beneficiaries of donor agencies’ loans), as well as Bidders/Suppliers / Contractors under Government-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the SPPRA, in accordance with the SPP Act, 2009, and Rules made there under:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) “corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and

(ii) “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution a contract to the detriment of the Procuring agency, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Procuring agency of the benefits of free and open competition;

(b) will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract is question;

(c) will declare a firm ineligible, either indefinitely or for a standard period of time, to be awarded a Government-financed contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in com6peting for, or in executing, a Government-financed contract.

37.2 Furthermore, Bidders shall be aware of the provision stated in sub-clause 5.4 and sub-clause 24.1 of the General Conditions of Contract.

**Section - II**

**General Conditions of Contract**

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**General Conditions of Contract**

**1. Definitions**

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

(a) “The Contract” means the agreement entered into between the Procuring agency and the Supplier, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

(b) “The Contract Price” means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligation.

(c) “The Goods” means all of the equipment, machinery, and/or other materials which the Supplier is required to supply to the Procuring agency under the Contract.

(d) “The Services” means those services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Supplier covered under the Contract.

(e) “GCC” mean the General Conditions of Contract contained in this section.

(f) “SCC” means the Special Conditions of Contact.

(g) “The Procuring agency” means the organization purchasing the Goods, as named in SCC.

(h) “The Procuring agency’s country” is the country named in SCC.

1. “The Supplier” means the individual or firms supplying the Goods and Services under this Contract.

(j) “The Project Site” where applicable, means the place or placed named in SCC.

(k) “Day” means calendar day.

**2. Application**

2.1 These General Conditions shall apply to the extent that they are not superseded by provisions of other parts of the Contract.

**3. Country of Origin**

3.1 All Goods and Services supplied under the Contract shall have their origin in the countries and territories eligible under the rules and further elaborated in the SCC.

3.2 For purpose of this Clause, **“origin”** means the place where the Goods were mined, grown, or produced, or from which the Services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basis characteristics or in purpose of utility from its components.

3.3 The origin of Goods and Services is distinct from the nationality of the Supplier.

**4. Goods conform to the standard**

4.1 The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standards appropriate to the Goods’ country of origin. Such standards shall be the latest issued by the concerned institution.

**5. Use of Contract Documents and Information; Inspection and Audit by the Government**

5.1 The supplier shall not, without the Procuring agency’s prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Procuring agency in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure toany such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

5.2 The Supplier shall not, without the Procuring agency’s prior written consent, make sure of any document or information enumerated in GCC Clause 5.1 except for purposes of such performance.

5.3 Any document, other than the Contract itself, enumerated in GCC Clause shall remain the property of the Procuring agency and shall be returned (all copies) to the Procuring agency on completion of the Supplier’s performance under the Contract if so required by the Procuring agency.

5.4 The Supplier shall permit the Procuring agency to inspect the Supplier’s accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by the procuring agency, if so required.

**6. Patent Rights**

6.1 The Supplier shall indemnify the Procuring agency against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in the Procuring agency’s country.

**7. Performance Security**

7.1 Within Seven (7) days of receipt of the notification of Contract award, the successful Bidder shall furnish to the Procuring agency the performance security in the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the Procuring agency as compensation for any loss resulting from the Supplier’s failure to complete its obligations under the Contract.

7.3 The performance security shall be denominated in the currency of the Contract acceptable to the Procuring agency and shall be in one of the following forms:

1. A Bank Guarantee for the balance amount after conversion of Earnest Money into Performance Security/Security Deposit, issued bya reputable bank acceptable to the Procuring agency or in such other form as is acceptable to the Procuring agency; or
2. A Pay Order or Bank Draft of the amount as in Clause 7.3(a), in favour of Procuring Agency.

7.4 The performance security will be discharged and returned or both by the Procuring Agency after submission (by Supplier) of Bank Guarantee of 5% of the ordered material to cover the Warrantee period, but not later than thirty (30) days following the date of Final Acceptance, pursuant to Clause 12.1.

**8. Inspections and Tests**

8.1 The Procuring agency or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Procuring Agency. SCC and the Technical Specifications shall specify what inspections and tests the Procuring agency requires and where they are to be conducted. The Procuring agency shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.

8.2 The inspections and tests may be conducted by the **“Inspection Committee of STEVTA”** on the premises ofthe Supplier or its subcontractor(s), at point of delivery, and/or at the Goods’ final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Procuring agency.

8.3 Should any inspected or tested Goods fail to conform to the Specifications, the Procuring agency may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Procuring agency.

8.4 The Procuring agency’s right to inspect, test and, where necessary, reject the Goods after the Goods’ arrival in the Procuring agency’s country shall in no way be limited or waivedby reason of the Goods having previously been inspected, tested, and passed by the Procuring agency or its representative prior to the Goods’ shipment from the country of origin.

8.5 Nothing in GCC Clause 8 shall in any way release the Supplier from any warranty or other obligations under this Contract.

**9. Packing**

9.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, roughhandling during transit and exposure to extreme temperatures,salt and precipitation during transit, and open storage. Packingcase size and weights shall take into consideration, whereappropriate, the remoteness of the Goods’ final destination andthe absence of heavy handling facilities at all points in transit.

9.2 The packing, marking, and documentation within and outside thepackages shall comply strictly with such special requirements asshall be expressly provided for in the Contract, includingAdditional requirements, if any, specified in SCC, and in anysubsequent instructions ordered by the Procuring agency.

**10. Delivery andDocuments**

10.1 Delivery of the Goods shall be made by the Supplier inaccordance with the terms specified in the Schedule ofRequirements. The details of shipping and/or other documents tobe furnished by the Supplier are specified in SCC.

10.2 Documents to be submitted by the Supplier are specified in SCC.

**11. Insurance**

11.1 TheGoods supplied under the Contract shall be delivered duty paid (DDP) under which risk is transferred to the buyer after having been delivered, hence, insurance coverage is seller’s responsibility.

**12. Transportation**

12.1 TheSupplier is required under the Contract to transport the Goods to a specified place of destination within the Procuring agency’s country, transport to such place of destination in the Procuring agency’s country, including insurance and storage, as shall be specified in the Contract, shall be arranged by the Supplier, and related costs shall be included in the Contract Price.

**13. Incidental Services**

13.1 The Supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:

1. performance or supervision of on-site assembly and/or start-up of the supplied Goods;
2. furnishing of tools required for assembly and/or maintenance of the supplied Goods;
3. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;
4. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
5. Training of the Procuring agency’s personnel, at the Supplier’s plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.

13.2 Prices charged by the Supplier for incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged for other parties by the Supplier for similar services.

**14. Spare Parts**

14.1 As specified in SCC, the Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

1. Such spare parts as the Procuring agency may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
2. In the event of termination of production of the spare parts:
3. Advance notification to the Procuring agency of the pending termination, in sufficient time to permit the Procuring agency to procure needed requirements; and
4. Following such termination, furnishing at no cost tote Procuring agency, the blueprints, drawings, and specifications of the spare parts, if requested.

**15. Warranty**

15.1 The Supplier warrants that the Goods supplied under the Contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the Procuring agency’s specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.

15.3 The Procuring agency shall promptly notify the Supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the Supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective Goods or parts thereof, without costs to the Procuring agency.

15.5 If the Supplier, having been notified, fails to remedy the defect(s)within the period specified in SCC, within a reasonable period, the Procuring agency may proceed to take such remedial actions may be necessary, at the Supplier’s risk and expense and without prejudice to any other rights which the Procuring agency may have against the Supplier under the Contract.

**16. Payment**

16.1 The method and conditions of payment to be made to the Supplier under this Contract shall be specified in SCC.

16.2 The Supplier’s request(s) for payment shall be made to the Procuring agency in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and Services performed, and by documents submitted pursuant to GCC Clause10, and upon fulfillment of other obligations stipulated in the Contract.

16.3 Payments shall be made promptly by the Procuring Agency, butin no case later than sixty (60) days after submission of an invoice or claim by the Supplier.

16.4 The currency of payment is Pak. Rupees.

**17. Prices**

17.1 Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in SCC or in the Procuring agency’s request for bid validity extension, as the case may be.

**18. Change Orders**

18.1 The Procuring agency may at any time, by a written order given to the Supplier pursuant to GCC Clause 31, make changes within the general scope of the Contract in any one or more of the following:

1. Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Procuring agency;
2. The method of shipment or packing;
3. The place of delivery; and/or
4. The Services to be provided by the Supplier.

18.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier’s performance of any provisions under the Contract, an equitable adjustment shall bemade in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier’s receipt of the Procuring agency change order.

**19. Contract Amendments**

19.1 Subject to GCC Clause 18, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

**20. Assignment**

20.1 The Supplier shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Procuring agency’s prior written consent.

**21. Subcontracts**

21.1 The Supplier shall notify the Procuring agency in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the Supplier from any liability or obligation under the Contract.

21.2 Subcontracts must comply with the provisions of GCC Clause 3.

**22. Delays in the Supplier’s Performance**

22.1 Delivery of the Goods and performance of Services shall be made by the Supplier in accordance with the time schedule prescribed by the Procuring agency in the Schedule of Requirements.

22.2 If at any time during performance of the Contract, the Supplier orits subcontractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Procuring agency in writing of the fact of the delay, it’s likely duration and its cause(s). As soon as practicable after receipt of the Supplier’s notice, the Procuring agency shall evaluate the situation and may at its discretion extend the Supplier’s time for performance, with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of Contract.

22.3 Except as provided under GCC Clause 25, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 23, unless an extension of time is agreedupon pursuant to GCC Clause22.2 without the application ofliquidated damages.

**23. Liquidated Damages**

23.1 Subject to GCC Clause 25, if the Supplier fails to deliver any orall of the Goods or to perform the Services within the period(s)specified in the Contract, the Procuring agency shall, without prejudice to its other remedies under the Contract, deduct fromthe Contract Price, as liquidated damages, a sum equivalent tothe percentage specified in SCC of the delivered price of thedelayed Goods or unperformed Services for each week or partthereof of delay until actual delivery or performance, up to amaximum deduction of the percentage specified in SCC. Oncethe maximum is reached, the Procuring agency may considertermination of the Contract pursuant to GCC Clause 24.

**24. Termination for Default**

24.1 The Procuring agency, without prejudice to any other remedy forbreach of Contract, by written notice of default sent to theSupplier, may terminate this Contract in whole or in part:

1. if the Supplier fails to deliver any or all of the Goods withinthe period(s) specified in the Contract, or within anyextension thereof granted by the Procuring agency pursuantto GCC Clause 22; or
2. if the Supplier fails to perform any other obligation(s)under the Contract.
3. if the Supplier, in the judgment of the Procuring agency hasengaged in corrupt or fraudulent practices in competing foror in executing the Contract.For the purpose of this clause:“corrupt practice” means the offering, giving, receiving orsoliciting of anything of value to influence the action of apublic official in the procurement process or in contractexecution.“fraudulent practice” means a misrepresentation of facts inorder to influence a procurement process or the executionof a contract to the detriment of the Borrower, and includescollusive practice among Bidders (prior to or after bidsubmission) designed to establish bid prices at artificialnon-competitive levels and to deprive the Borrower of thebenefits of free and open competition.

24.2 In the event the Procuring agency terminates the Contract inwhole or in part, pursuant to GCC Clause 24.1, the Procuring agency may procure, upon such terms and in such manner as itdeems appropriate, Goods or Services similar to thoseundelivered, and the Supplier shall be liable to the Procuring agency for any excess costs for such similar Goods or Services.However, the Supplier shall continue performance of theContract to the extent not terminated.

**25. Force Majeure**

25.1 Notwithstanding the provisions of GCC Clauses 22, 23, and 24,the Supplier shall not be liable for forfeiture of its performancesecurity, liquidated damages, or termination for default if and tothe extent that its delay in performance or other failure toperform its obligations under the Contract is the result of anevent of Force Majeure.

25.2 For purposes of this clause, “Force Majeure” means an eventbeyond the control of the Supplier and not involving theSupplier’s fault or negligence and not foreseeable. Such eventsmay include, but are not restricted to, acts of the Procuring agency in its sovereign capacity, wars or revolutions, fires,floods, epidemics, quarantine restrictions, and freight embargoes.

25.3 If a Force Majeure situation arises, the Supplier shall promptlynotify the Procuring agency in writing of such condition and thecause thereof. Unless otherwise directed by the Procuring agency in writing, the Supplier shall continue to perform itsobligations under the Contract as far as is reasonably practical,and shall seek all reasonable alternative means for performancenot prevented by the Force Majeure event.

**26. Termination for Insolvency**

26.1 The procuring agency may at any time terminate the Contract giving written notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Procuring agency.

**27. Termination for Convenience**

27.1 The Procuring agency, by written notice sent to the Supplier, may terminated the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Procuring agency’s convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

27.2 The Goods that are complete and ready for shipment within thirty (30) days after the Supplier’s receipt of notice of termination shall be accepted by the Procuring agency at the Contract terms and prices. For the remaining Goods, the Procuring agency may elect:

1. to have any portion completed and delivered at the Contract terms and prices; and/or.
2. to cancel the remainder and pay to the Supplier and agreed amount for partially completed Goods and Services and for materials and parts previously procured by the Supplier.

**28. Resolution of Disputes**

28.1 The Procuring agency and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

28.2 if, after thirty (30) days from the commencement of such informal negotiations, the Procuring agency and the Supplier have been unable to resolve amicably a Contract dispute, either party may required that the dispute be refused for resolution to the formal mechanisms specified in SCC. These mechanisms may include, but are not restricted to, conciliation mediated by a third party, adjudication in an agreed manner and/or arbitration.

**29. Governing Language**

29.1 The contract shall be written in the language specified in SCC. Subject to GCC Clause 30, the version of the Contract written in the specified language shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

**30. Applicable Law**

30.1 The Contract shall be interpreted in accordance with the laws of the Procuring agency’s country, unless otherwise specified in SCC.

**31. Notices**

31.1 Any notice given by one party to the other pursuant to this Contract shall be sent to the other party in writing or by cable, telex, or facsimile and confirmed in writing to the other party’s address specified in SCC.

* 1. A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

**32. Taxes and Duties**

32.1 Supplier shall be entirely responsible for all taxes, duties, license fees, etc, incurred until delivery of the contracted Goods to the Procuring agency.

**33. Headings**

33.1 Headings, whether of Clauses or of other parts of the Contract, are for reference only and are not be construed as part of the contract.

**34. Waiver**

34.1 Failure of either party to insist upon stores performance by the other party of any provision of the contract shall in no way be deemed or construed to effect in any way the right of that party to require such performance.

**35. Income / Sales Tax**

35.1 Income Tax and Sales Tax will be deducted at source from the payments made to the Contracting firms, as per the Income/Sales Tax Laws, amended to date.

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| --- | --- | --- |
| **Sindh Gov Logo.jpg** | **Sindh Technical Education &**  **Vocational Training Authority (STEVTA)**  ST-19, Block-6, Near N.I.P.A., University Road,  Gulshan-e-Iqbal, Karachi. Tel: 021-99243818  ~~~~~~~~~~~~~~~~~~~~~~~ | STEVTA Logo.jpg |

**Procurement of**

**Machinery/Equipment/Tools & Apparatus**

**For Various Laboratories/Workshops**

**for**

**Government Monotechnic Institute,**

**Garhi Khuda Bux, District Larkana.**

**PART-TWO**

**(PROCUREMENT SPECIFIC PROVISIONS)**

* **Invitation of Bids (IFB)**
* **Bid Evaluation Criteria (BEC)**
* **Bid Data Sheet (BDS)**
* **Eligible Countries**
* **Special Conditions of Contract (SCC)**
* **List of Consignees**
* **Schedule of Supply**
* **Supply Requirement**
* **Technical Specifications**

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**Section – I**

**Invitation of Bids**

**TENDER NOTICE**

**PROCUREMENT OF MACHINERY/EQUIPMENT & LIBRARY/E LIBRARY BOOKS**

**FOR GOVT. MONOTECHNIC INSTITUTE, GARHI KHUDDA BUX, DISTRICT LARKANA.**

Sealed bids are invited from reputed/established firms/suppliers/contractors, registered with Income Tax and Sales Tax authorities, for procurement of Machinery Equipment & Library/E Library Books for Govt. Monotechnic Institute, Garhi Khudda Bux, District Larkana.

|  |  |
| --- | --- |
| **Cost of Bidding Document:** | **Rs.2,000/- in form of PO/DD.** |
| **Bid Security in the form of PO/DD:** | **5% of total bid value** |
| **Tender Document Collection (Start Date):** | **Publication/Hoisting of Notice.** |
| **Tender Document Collection (End Date):** | **24.05.2017.** |
| **Tender Document Submission Date & Time:** | **24.05.2017 up till 11:00 A.M.** |
| **Tender (Technical) Opening Date & Time** | **24.05.2017 at 11:30 A.M.** |
| **Tender (Financial) Opening Date & Time**  **(for technically acceptable bidders only)** | **Shall be communicated later through letters.** |

**DOCUMENTS COLLECTION:**

Tender documents can be obtained on submission of a written request on company letterhead, supported with copies of GST & NTN Certificates, during office working hours, on payment of Tender document Cost Rs.2,000/- (non-refundable/non-transferable) in form of PO/DD in favour of ***“Sindh Technical Education & Vocational Training Authority”*** from the below address:

**Director (Procurement)**

**Sindh Technical Education & Vocational Training Authority (STEVTA)**

**Street-19, Block-6, Gulshan-e-Iqbal,**

**Near NIPA Chowrangi, Karachi. Ph: 99243818.**

**NOTES:**

* Sealed bids with necessary attachments accompanied by the Bid Security should be dropped in Tender Box (marked **“Procurement”**) at Sindh Technical Education & Vocational Training Authority, Street-19, Block-6, Gulshan-e-Iqbal, Near NIPA Chowrangi, Karachi, on the tender document submission date and time.
* Bid opening procedure will be based on Single Stage – Two Envelopes System (bid shall comprise a single package containing two separate envelopes inside). One envelope shall contain technical proposal containing complete material specifications, company profile, NTN and GST Certificate of the company or any other information deemed necessary, whereas the other envelop shall contain the financial bid. The envelopes should clearly mark as **“Technical Proposal”** and **“Financial Proposal”** in bold legible letters. Initially only Technical Proposals shall be opened.
* Technical bids and financial bids (of the technically qualified bidders only) will be opened on the aforementioned date & time in the presence of bidders or their authorized representatives. Prospective bidders are invited to attend the tender opening (single representation).
* Incomplete or conditional tenders cannot be considered or entertained.
* STEVTA reserves the right to accept or reject any bid, subject to relevant provisions of Sindh Public Procurement Rules, 2010.

**Director (Procurement)**

**Section – II**

**Bid Evaluation Criteria**

**Evaluation and Comparison of Technical & Financial Bids**

Bidders who have been qualified on the basis of the preliminary evaluation shall be eligible for a detail evaluation.

The purchaser will evaluate and compare the bid that has been determined to be substantially responsive. The evaluation will be performed assuming the Contact will be awarded to the highest evaluated bibber for the entire information system.

The purchase's evaluation of responsive bids will take into account technical factors, in addition to cost factors.

**Section – III**

**Bid Data Sheet**

The following specific data for the goods to be procured shall complement, supplement, or amend the provision in the Instructions to Bidders (ITB) Part One. Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

|  |  |
| --- | --- |
| **Introduction** | |
| **ITB 1.1** | Name of Procuring Agency: **Sindh Technical Education & Vocational Training Authority (STEVTA).** |
| **ITB 1.1** | Government of Sindh |
| **ITB 1.1** | Government of Sindh |
| **ITB 1.1** | Name of Contract:  **“Supply of Machinery/Equipment, Library & E-Library Books for Govt. Monotechnic Institute, Garhi Khuda Bux, District Larkana”.** |
| **ITB 4.1** | Name of Procuring agency: **Sindh Technical Education & Vocational Training Authority (STEVTA).** |
| **ITB 6.1** | Procuring agency’s address, telephone, telex, and facsimile numbers:  **Sindh Technical Education & Vocational Training Authority (STEVTA)**  **Street-19, Block-6, Gulshan-e-Iqbal, Near NIPA Chowrangi, Karachi.**  **Phone: 99243818, Fax: 99244118.** |
| **ITB 9.1** | Language of the Bid:**English.** |
| Bid Price and Currency | |
| **ITB 12** | The price quoted shall be: **in Pak Rupees.**  **In addition to delivered duty paid (DDP) price.** |
| **ITB 12.4** | **The Prices shall be fixed.** |
| **Preparation and submission of Bids** | |
| **ITB 14** | **Qualification requirements:**  **Technical and Financial Capabilities are as under:**  **Evaluation of bid/recommendation of award of contract shall be subject to following para-meters:**   1. **Minimum 5 Years relevant business experience.** 2. **Minimum 3 contracts of Rs.15 million each of similar nature supplies in last 5 years (copies of PO be attached)** 3. **Annual turnover of at-least 100 Million for one year in last 03 years (Copies of audited financial statements be attached).** 4. **NTN & Sales Tax Registration (Copies of certificates be attached).** 5. **Affidavit of firm that it is not black listed (on stamp paper).** 6. **Broachers/detailed specifications of the quoted articles (be attached)** 7. **Rates must be quoted for all the articles to complete the package.** |
| **ITB 14.3 (b)** | Spare parts required for: **N/A.** |
| **ITB 16.1** | Amount of bid security:  **Five percent (5%) of the bid amount.** |
| **ITB 17** | Bid validity period:  **The validity should be Ninety (90) days.** |
| **ITB 19** | Number of copies: **One (Original).** |
| **ITB 20.20** | Address for bid submission:  **The Director (Procurement),**  **Sindh Technical Education & Vocational Training Authority (STEVTA),**  **St-19, Block-6, Gulshan-e-Iqbal, Near NIPA Chowrangi, Karachi.** |
| **ITB 20.3** | IFB title and number: **IFB # Machinery/Equipment/Tools for GMI Garhi Khuda Bux** |
| **ITB 21.** | Deadline for bid submission **24.05.2017 up till 11.00 a.m.** |
| **ITB 25.** | Time, date, and place for bid opening:  **On 24.05.2017 at 11:30 a.m at head office of Sindh Technical Education & Vocational Training Authority (STEVTA), St-19, Block-6, Gulshan-e-Iqbal, Near NIPA Chowrangi, Karachi.** |
| Bid Evaluation | |
| **ITB 27.1** | Criteria for bid evaluation:  **Criteria listed in ITB Clause 25.3 (e.g, 25.3 (b) and (c)), and in the reference under ITB 25.4 below. Retain only the evaluation method to apply and the relevant parameters corresponding to be retained**  ***Criteria (e.g., 25.4 (b) (i) and (c) (ii)).*** |
| **ITB 28.4 (a)**  **ITB 28.4 (b)** | **One option only.**  **Delivery Schedule 90 days.** |
| **Option (i)**  **Option (ii)**  **Option (iii)** | **adjustment expressed as a percentage, or**  **Adjustment expressed in an amount in the currency of bid evaluation, or**  **adjustment expressed as a percentage**  *[A rate of one-half (0.5) percent per week is a reasonable figure. The percentage of liquidated damages specified in SCC should be higher.]* |
| **ITB 28.4 (ii)** | **Deviation in payment schedule.**  **(Annual interest rate).** |
| **ITB 28.4 (d)** | **Cost of Spare parts:**  ***[specify the applicable method – (i), (ii), or (iii) – and factors (e.g, number of years) and reference to the Appendix to the Technical Specifications, as required]*** |
| **ITB 28.4 (e)** | **Spare parts and after sales service facilities in the Procuring agency’s country:**  **After sales service facilities according to requirement.** |
| **ITB 28.4 (f)** | **Operating and maintenance costs:**  **Factors for calculation of the life cycle cost:**  ***(i) number of years for life cycle*** *[it is recommended that the life cycle period should not exceed the usual period before a planned major.*  *Overhaul of the goods].*  ***(ii) Operating costs*** *[e.g,. fuel and/or other input, unit cost, and annual and total operational requirements];*  ***(iii) Maintenance costs*** *[e.g,. spare parts – without duplication of above clause 25.4(d) requirement – and/or other input];* ***and***  **(iv) rate, as a percentage, to be used to discount all annual future costs calculated under (ii) and (iii) above to present value; or**  **Reference to the methodology specified in the Technical**  **Specifications of elsewhere in the bidding documents 0.05%** |
| **ITB 28.4 (g)** | Performance and productivity of equipment: **required** |
| **ITB 28.4 (h)** | Details on the evaluation method of reference to the Technical Specifications:  **According to criteria mentioned.** |
| **ITB 28.4 Alternative** | Specify the evaluation factors.  **According to criteria mentioned.** |
| Contract Award | |
| **ITB 33.1** | Percentage for quantity increase or decrease:  **Procuring Agency reserves the right to increase or decrease the quantities at the time of award of contract.** |

1. **All offers be made on Price Schedule of this document. Additional Pages may be used, if needed. In order to facilitate the bidders, the price schedule with description of articles is given in Financial Proposal document.**
2. **Quoted prices must cover all expenses including freight, taxes, octroi/duties, insurance etc.**
3. **Goods would be required to be delivered at Consignee end as per schedule.**

**Section-IV**

**Eligible Countries**

**List of Eligible Countries of the Asian Development Bank**

As notified by Government of Pakistan from time to time.

**Section- V**

**Special Conditions of Contract**

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

**1. Definitions**

GCC 1.1 The Procuring agency is **“Sindh Technical Education & Vocational**

**Training Authority (STEVTA)”.**

GCC 1.2 The Procuring agency country is **“Islamic Republic of Pakistan”.**

GCC 1.3 Eligible countries as notified by Government of Pakistan.

**2. Country of Origin (GCC Clause 3)**

All countries and territories as indicated in Part Two Section VI of the bidding documents, “Eligibility for the Provisions of Goods, Works, and Services in Government-Financed Procurement”.

**3. Performance Security**

GCC 3.1 The amount of **performance security is 10%**of the Contract Price.

GCC 3.2 After delivery and acceptance of the Goods, the performance security shall be reduced to two (2) percent of the Contract Price to cover the Supplier’s warranty obligations in accordance with Clause GCC 15.2.

**4. Inspections and Tests (GCC Clause 8)**

Inspection and tests prior to shipment of Goods and at final acceptance areas follows:

1. Technical Specification.
2. Performances of Equipments and other items should be as per warranty / guarantee card.
3. All legal documents should be available on site/work place.

**5. Packing (GCC Clause 9)**

GCC 9.3 The following SCC shall supplement GCC Clause 9.2:

**6. Delivery and Documents (GCC Clause 10)**

GCC 10.3 Upon shipment, the supplier shall notify the procuring agency the full details of the shipment, including contract number, description of goods, quantity and usual transport document. The supplier shall main the following documents to the Procuring agency:

1. copies of the Supplier’s invoice showing Goods’ description, quantity, unit price, and total amount;
2. original and tow copies of the usual transport document (for example, a negotiable bill of lading, a non-negotiable sea waybill, and inland waterway document, an air waybill, a railway consignment note, a road consignment note, or a multimodal transport document) which buyer may require to take the goods;
3. copies of the packing list identifying contents of each package;

(iv) insurance certificate;

1. Manufacturer’s or Supplier’s warranty certificate;
2. inspection certificate issued by the nominated inspection agency, and the Supplier’s factory inspection report; and
3. certificate of origin.
4. **Insurance (GCC Clause 11)**

GCC 11.1 The Goods supplied under the Contract shall be delivered duty paid (DDP) under which risk is transferred to the buyer after having been delivered; hence insurance coverage is seller’s responsibility. Since the insurance is seller’s responsibility they may arrange appropriate coverage.

1. **Incidental Services (GCC Clause 13)**

GCC 13.1- Incidental services to be provided are:

*[Selected services covered under GCC Clause 13 and/or other should be specified with the desired features. The price quoted in the bid price or agreed with the selected Supplier shall be included in the Contract Price.]*

**9. Spare Parts (GCC Clause 14)**

GCC 14.1 – Additional spare parts requirements are:

***Sample provision***

GCC 14.1- Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods. Other spare parts and components shall be supplied as promptly as possible, but in any case within six (6) months of placing the order and opening the letter of credit.

**10. Warranty (GCC Clause 15)**

GCC 15.2

***Sample provision***

GCC 15.2 – In Partial modification of the provisions, the warranty period shall be eighteen months form date of acceptance of the Goods or 15 months of Date of shipment, whichever occurs earlier. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the Contract. If for reasons attributable to Supplier, these guarantees are not attained in whole or in part, the Supplier shall, at its discretion, either:

**Or**

pay liquidated damages to the Procuring agency with respect to the failure to meet the contractual guarantees. The rate of these liquidated damages shall be **0.5%**. per week.

[The rate should be higher than adjustment rate used in bid evaluation under ITB 25.4 (f) or (g)]

GCC 15.4& 15.5 – The period for correction of defects in the warranty period is:**30 days**.

**11. Payment (GCC Clause 16)**

***Sample provision***

GCC 16.1 – The method and condition of payment to be made to the Supplier under this Contract shall be as follows:

**Payment for Goods supplied:**

Payment shall make in Pak. Rupees in the following manner:

1. No advance payment shall be made by Procuring agency, until the goods are delivered.
2. 100% of the Contract Price of each individual consignment upon delivery at the consignees end of the goods against presentation of the following documents:
   1. Copies of the Supplier’s invoice showing Goods description, quantity, unit price and total amount of payment due.
   2. Manufacturer’s Warranty Certificate.
   3. Inspection certificate issued by the authority nominated by the Purchaser;
   4. Certificate of the receipt of Goods issued by the consignee.
   5. Certificate of origin.
3. Part Payment on part supply may also be allowed on discretion of procuring agency as well subject to nature/type of stores.

**12. Prices (GCC Clause 17)**

***Sample provision***

GCC 17.1 – Prices shall be adjusted in accordance with provisions in the Attachments to SCC.

*[to be inserted* ***only*** *if price is subject to adjustment.]*

**13. Liquidated Damages.**

GCC 23.1 - Application rate: **0.5% per week** of the value of non-supplied stores.

Maximum deduction: 10% of the total contract value.

**14. Resolution of Disputes (GCC Clause 28)**

GCC 28.3 - The disputes resolution mechanism to be applied pursuant to GCC Clause 28.2

shall be as follows:

In the case of dispute between the Procuring agency and the Supplier, the dispute shall be referred to adjudication or arbitration in accordance with the laws of the Procuring agency’s country.

**15. Governing Language (GCC Clause 29)**

GCC 29.1—The Governing Language shall be: **English**.

**16. Applicable Law (GCC Clause 30)**

GCC 30.1—The Contract shall be interpreted in accordance with the laws of Islamic Republic of Pakistan which includes the following legislation:

**The Employment of Children (ECA) Act 1991. The Bonded labour System (Abolition) Act of 1992. The Factories Act 1934.**

**17. Notices (GCC Clause 31)**

GCC 31.1 Procuring agency’s address for notice purposes:

**The Managing Director,,**

**Sindh Technical Education &**

**Vocational Training Authority (STEVTA),**

**Street-19, Block-6, Gulshan-e-Iqbal,**

**Near NIPA Chowrangi, Karachi.**

**Phone 021-99244112-7.**

Supplier’s address for notice purpose:

**“As mentioned on bidder’s letter head”**

**Section-VI**

**List of Consignees**

1. Government Monotechnic Institute, Garhi Khuda Bux, District Larkana.

**Section-VII**

**Schedule of Supply**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Package** | **Consignee**  **Name & Address** | **Estimated Delivery Date/Period** | **Remarks** |
|  |  |  |  |  |

Date. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In Capacity of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Bidder’s Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Stamp \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Section-VIII**

**Technical Specifications &Supply Requirement**

**(Govt. Monotechnic Institute, Garhi Khudda Bux, Larkana)**

| **Item No** | **Description / Specifications** | **Estimated Quantity** | **Specifications Offered by Bidder** |
| --- | --- | --- | --- |
| **A** | **(PACKAGE-I) SOIL MECHANICS & HIGHWAY LABORATORY:-** | | |
| 1 | **Dispatch Electric Over Economy Forced**  **Convection Bench.**  Chamber Size is 37× 37×35 “(W×D×H),  Overall Size is 43×43×.5×51.5”(W×D×H),  Capacity is 27 cubic feet, Maximum Operation  Temperature is 204°C (400°F),  Electrical phase is 1,240 Volts, 16.4 Amps, 4.8  Heater KW, Exhaust Capacity is 14 CFM,  Must be hard wired. | 02 |  |
| 2 | **ASTM Thermometer**  Length 12.1 “, Immersion 2.3”,Range 20 to  760°F, Div.5.0°. All ASTM thermometers have  rigid manufacturing tolerance. Each  thermometer is and supplied with a  manufacturing’s certificate of ASTM E1 E77  physical specifications. | 02 |  |
| 3 | **Steel Handling Pan**  15×30×4H (Inches) | 10 |  |
| 4 | **Steel Sample Pan**  29×12×9 “H (Inches) Capacity 54.0- Quart. Painted, weld, durable for long life.  Cross-stacking Pans have chute end and swing-down handle to permit oven access.  Others have end flanges for lifting. | 04 |  |
| 5 | **Stainless Steel Round Bowl**  7.7 diam.×2.7H (Inches) Capacity 1.5- Quality  seamless construction with rounded corners.  Rectangular pans have straight sides. SC-45  thru SC-47 have drop handles, others have  oversize flange for handling. Round pans have  tapered sides. | 04 |  |
| 6 | **Large Round Plastic Sample Container**  10.3 diam. ×12.0H(Inches),case of 12. Capacity  12.0- Quarts. Lightweight & enclosed to protect  from moisture, dust, etc. Large sizes are  polypropylene wide-jars with leak proof. | 04 |  |
| 7 | **Stainless Steel Scoop**  4oz. (118ml) Capacity, Rounded Bottom, Bowl  5.5× 3.3” Overall 12oz.(355ml) Capacity, Flat  Bottom, Bowl 5.5×3” (L×W), 9.0” Overall Length. | 04 |  |
| 8 | **Sample Can**  1-Quart, Case of 12 One-quart cans are 4.3"diam. x 4.9"H (105x124mm). Shipping Data: 6 lb (2.7kg); Cu. Ft.: 0.7 for case of 12. One-gallon Cans are 6.6"diam. x 7.5"H (168x191mm). Shipping Data: 8 lb (3.6kg); Cu. Ft.: 1.3 for case of 6. Sold in case lots only. | 04 |  |
| 9 | **Fine Sieve Brush**  This soft black bristle, 1-1/4 “ diameter brush is  ideal for cleaning No. 16 and round sieves and  pans. It has a nickeled steel ferrule, clear  lacquered wood and is 5-3/4” long. | 06 |  |
| 10 | **Coarse Sieve Brush**  This 8-1/2” curved plastic handle brush has  1-1/2” × 1-3/4” inches of slanted brass wire bristle-  perfect for No. 30 and coarser wire cloth in round  sieves. | 06 |  |
| 11 | **Spatula, 4×3/4” (L×W) Blade**  With top quality with mirror- finished stainless  steel blades riveted to hardwood handles.  HMA-11A meets ASTM C 1252 and AASHTO  T3024. | 04 |  |
| 12 | **Stainless Steel Spatula and Spoon**  Handy for mixing, scraping, and handling  Powders. Constructed entirely of stainless steel,  the overall length is 7.8”(198mm). Spatula blade  is 1.8×0.4”(30×9mm). | 04 |  |
| 13 | **Wash Bottle**  250ml Polyethylene squeeze dispensing; adjust  Flow by cutting tip. | 04 |  |
| 14 | **Beaker Tong**  9” (229mm) long, Ni-plated steel with riveted  joint. MA-195 has 4.5” plastisol jaws to fit  50-2000ML breakers. | 04 |  |
| 15 | **Evaporating Dish**  80ml, 80×34mm (Diam. × Ht.). Porcelain, glazed  inside and out.  120ml, 93 × 40mm (Diam. × Ht.). Porcelain,  glazed inside and out.  250ml, 122 ×51mm (Diam. × Ht.) Porcelain,  glazed inside and around rim is not glazed. | 06 |  |
| 16 | **A&D Top loader Balance**  Range × Readability 2100 × 0.001 g, Precision is  0.001g, Linearity ±0.002g, Pan Size 5.0” × 5.0”.  (41-104°F). Power: Supplied with 110V AC  adapter, Dimension: 8.3 × 12.5 × 3.4” (210 × 317  × 86mm), W×D×H. | 01 |  |
| 17 | Vibratory Sieve Shaker  110-120/200-240V (Selectable), 50-60Hz. | 01 |  |
| 18 | **Full Height International Round Test Sieve ,**  **Brass Frame, Stainless Steel**  International set of Test Sieves 6”,12” for fine  and coarse material brass frames with stainless  steel mesh and nominal opening sizes of the  International Organization for Standardization  (ISO) Mesh sizes range from 125mm to 125mm  to 20µm India (IS 460), Pakistan. | 01 |  |
| 19 | **Sieve Ware Software:** | 01 |  |
| 20 | **Bucket Augers**  Standard, 2.25-inch  Standard, 5-inch  Mud (Clay), 2.25-inch  Stand;2.25-inch  Sand, 5-inch | 02 |  |
| 21 | **CBR test apparatus with Accessory Set**  60 CBR Mold, 6” ID × 7” h, plus 2” H, plus 2” collar extension perforated base plate fit either end of mold, plated steel, Surcharge Weight, lead, 5-7/8” OD, 5 1b. ea., annular with 2-1/8” OD hole Same, slotted with 2-1/8” slot Swell plate, brass with perforated 5-7/8”base & adjustable stem Swell Tripod with dial indicator, 1” range × 0.001” with revolution counter Filter Screens, No. 100 stainless mesh, 5-15/16” diam. | 01 |  |
| 22 | **Relative Density Set**  w/Table,2 Mold Sets, and Gauge Set,  230V/50Hz. | 01 |  |
| 23 | **Soil Cement Apparatus** | 01 |  |
| 24 | **Dropping Weight Compacting Machine** | 02 |  |
| 25 | **Mechanical Soil Compactor**  230V/50Hz compactor automatically counts the  number of hammer blows and Soil Compaction Mold.  4-inch Std, 1/30 Cu. Ft.  Soil Compaction Mold  4-inch Std, 1/30 Cu. Ft.  Soil Compaction Mold  6-inch Std, 1/13.333 Cu. Ft.  Soil Compaction Mold.  6-inch Split, 1/13.333 Cu. Ft.  Calibration Kit  Lead Calibration Cylinders; Pkg. Of 100 | 01 |  |
| 26 | Liquid Limits Machines-Motorized with counter  220V/50Hz For testing soil samples on standard  of AASHTO T89, ASTM D 4318 with all  Accessories. | 01 |  |
| 27 | Grooving Tool, Casegrande (ASTM),(AASHTO) | 01 |  |
| 28 | **Plastic Limit Test Roller with accessories.** | 01 |  |
| 29 | **Digital Direct Shear Machine, 220v/50hz**  Requires 220v/50Hz supply) and 90psi (6.2 bar)  Compressed air supply. Overall dimension: 36 ×  14.5 × 54 in (914 × 368 ×137mm) W×D×H.  Shipping data: 3001bs without weights; Cu. Ft:16 | 01 |  |
| 30 | **Unconfined Load frame, UC/Trial-0.001**” to  1”/min. 220v/50hz ASTM D 2166; AASHTO  T-208. | 01 |  |
| 31 | **Multi Loader Frames, CBR, UCC-100:1-001” TO .1 MIN, 220V/50Hz**  ASTM D 1559,D1633, D-1883, D-2166,  D-2850, D-2850, D-3668, Other: AASHTO  T193, T-208, T-245. | 01 |  |
| 32 | **Direct/Residual Shear Machine**  ASTM d 3080; AASHTO T236  Weight Set, 32 kg.  Weight Set, 88kg  Weight Set, 16 Ton.  Shear Rings/Boxes, 2.0” Diameter.  Shear Rings/Boxes, 2.42” Diameter.  Shear Rings/ Boxes, 4.0” Diameter.  Shear Rings/Boxes, 4” Square.  Displacement Transducer, Horizontal 0.6 × 0.00001’  Displacement Transducer, Vertical 1.0 × 0.00001 | 01 |  |
| 33 | SHEAR BOX, 100MM × 100M × 100MM × 25MM  EXTRUDERS:  2.5” diam × 1” Extruder.  4.0” diam ×”1”: Extruder.  4” × 4” × 1” Extruder. | 02 |  |
| 34 | **ASTM/AASHTO Permeameters.**  3.0" (76.2mm) Diameter  4.0" (114.3mm) Diameter  6.0" (152.4mm) Diameter  6.0" (228.6mm) Diameter  used to determinecoefficient of  permeability by constant head method for  laminar flow of water through granular soil  Samples. Offered in five different sizes from  2.5 to 9.0 in (63.5 to 228.6mm) in diameter,  they allow soils with a wide range of grain  sizes to be tested to ASTM and AASHTO  Requirements. | 01 |  |
| 35 | **Sand Cone Density Apparatus** | 02 |  |
| 36 | **Pocket Penetrometer**  Lightweight direct reading penetrometer gives  instant information for of cohesive soils on site  or in the lab. | 02 |  |
| 37 | **Soil Strength Classifier**  250 1bf/110 kgf Capacity. | 01 |  |
| 38 | **Soil Sampling Kit:**  Items including in kit:  Straight Chopping Bit (for loosening hardpan)  Drive Head Assembly (head, handle & tee)  Glass sample jars(with metal caps), per dozen  Drill Rod Section (with coupling)  Thin Wall Undisturbed Sampler (for 13” sample)  Split Tube Sampler(for 12” sample)  Split Tue Only(without head or shoe)  Special Coupling(for longer split tube samples)  Paper Liners(2)(to hold/preserve S/T samples)  Closed Spiral Auger(for dry clay/ gravel, 18”L)  Open Spiral Auger(to catch/pack moist clay, 18”L)  Probe to fit drill rods (for sewers, rock contours)  Iwan Post Hole Auger(start holes; loose sampling)  Pipe Wrench, 18”long(to couple drill rods)  Basket Retainer(holds loose soil in S/T sampler)  Trap Valve (holds thin watery soil in S/T sampler)  Saw tooth Shoe (tears hard soils for S/T sampling)  Pocket Shoe (for loose sand/gravel in S/T sampler)  L.A.D Retainer(for split tube sampler)  Metal Wheeled Cart with Handles.  Economy wooden carrying case. | 01 |  |
| 39 | **Speedy 2000 Moisture Tester:**  For 20g Samples, up to 20mm Particles Each  Speedy 2000 Kit includes the OB-200SM  electronic digital balance, reagent measuring  scoop, one can of reagent, brush, cleaning cloth,  and instructions in a heavy-duty, waterproof  case, include two steel b Speedy Moisture. | 01 |  |
| 40 | **Complete Soils Chemical Analysis Test Set:**  100 pH, 50 Others, 750 Total test Capacity. | 01 |  |
| 41 | **4-Station Proportional Caliper Device:**  6 × 16” (152 × 406mm) base plate with two  fixed posts and a 13”(330mm) Arm mounted  between the posts so that there is an opening at  each end of the pivoting arm adjusts by securing  a pivot screw at one of four threaded Positions  to provide. | 01 |  |
| 42 | **Thickness Gauge (Flakiness Index)**  For determining Elongation Index. Aggregate is separated into 7 sieve fractions from 63mm to 6.3mm, and each fraction is evaluated separately. Thickness has 7 labeled slots for rapid hand trying of particles from each of the 7 sieve the mass of | 02 |  |
| 43 | **Length Gauge (Elongation Index)**  For determining Elongated Index. Aggregated  is separated into 7 sieve fractions from  63mm,and each fraction is evaluated separately  Thickness has 7 labelled slots for rapid hand  Thickness has 7 labelled slots for rapid hand  trying of particles from each of the 7 sieve.  The mass of | 02 |  |
| 44 | **Filter Flask**  1000ml Capacity | 04 |  |
| 45 | **Filter Flask**  2000ml Capacity. | 04 |  |
| 46 | **4-Liter Filter Flask**  400ml Capacity | 04 |  |
| 47 | **Specific Gravity & Absorption of Fine Aggregates Set**  Specific Gravity & Absorption of Fine  Aggregate Set includes pycnometer with  Conicalmold and tamper. Pycnometer is 1 qt.  (0.95 liter) threaded glass jar with rubber-  gasketed brass top tapered to 1/8” (10mm) hold  at top. Mold is 40mm ID at top, 90mm at | 04 |  |
| 48 | **Pycnometer Bottle with Thermometer**  **10ml Capacity**  For determining specific gravity of pigment  Samples. Conical-shaped body has tube with  Vented cap and a capacity of 10ml.  Thermometer has range of 14-37°C. | 02 |  |
| 49 | **In 0.2 °C increments**  **100ml Capacity**  For determining specific gravity of pigment  samples. Conical-shaped body has tube with  vented cap and a capacity of 10ml.  Thermometer has range of 14-37°C in 0.2°C  increments. | 02 |  |
| 50 | **Volumetric Flask**  100ml Capacity  Calibrated to contain 100ml capacity at 20°C  when filled to mark. Supplied with plastic snap  cap. | 04 |  |
| 51 | **Volumetric Flask**  1000ml Capacity  Calibrated to contain 1000ml capacity at 20°C  when filled to mark. Supplied plastic snap cap. | 04 |  |
| 52 | **Bitumen meters**  1500ml Capacity For specific gravity testing of  solid bitumen, solvents, and other materials. Glass  bottle includes stopper with 2” long capillary stem  for volume adjustment overflow cap with a  capacity of 1500ml. | 04 |  |
| 53 | **Specific Gravity Bench**  ASTM : C20, C127, C642, C830,D1188, D 2041  & D 2726/ AASHTO:  T85, T166, T209, & T275 Specific Gravity  Bench is designed for convenient weigh-below  use when determining specific gravity of  aggregates, hardened concrete, bituminous  mixtures, refractory brick, and similar materials  where weighing must be made with sample  suspended water | 01 |  |
| 54 | **Marshall Automatic Mechanical**  **Compactor:**  6” Single Specimen, 230V/50Hz. The Marshall system is widely used for design and control of bituminous paving . Mistures. Contents Marshall Economy SampleEjector Max. Ejections 9. Marshall Stability Compaction Assemblies 4- inch for MS-10, MS-12. Marshall Stability Compaction Mold 4-inch to fit MSA-100 6”Mechanical Spare Hammer Assembly for MS-1 and MS-1F. 100mm Molds. Heat Resistant Gloves. | 01 |  |
| 55 | Tamping Rod. | 01 |  |
| 56 | Aggregate Impact Value. | 01 |  |
| 57 | Aggregate crushing value apparatus 150mm | 01 |  |
| 58 | Metal Measure 115mm dia × 180mm deep | 01 |  |
| 59 | Tamping Rod 5.12 16mm Dia × 600mm Long,  Hemispherical at both ends | 01 |  |
| 60 | Friction Tester | 01 |  |
| 61 | Base plate with Specimen Mounting Block for  Laboratory use | 01 |  |
| 62 | Detachable Scale | 01 |  |
| 63 | Rota test 1500 220/240V 50/60H2 1ph. | 01 |  |
| 64 | Filter Discs, Pack of 100. | 01 |  |
| 65 | Bowl 1500 gm. | 01 |  |
| 66 | Compaction Mould, BS 598 ASTMD 1559 | 01 |  |
| 67 | Compaction Pedestal to BS 598. | 01 |  |
| 68 | Compaction Hammer. | 01 |  |
| 69 | Aluminium Test Pan, 10.18 thin- film test  140mm dia × 9.5mm deep. | 01 |  |
| 70 | Penetration Tin, for penetrations below 200;  Nominally 55mm dia × 35mm deep. | 01 |  |
| 71 | Penetration Needle, verify by NPL. | 01 |  |
| 72 | Concrete Core Drill with Petrol DRIVEN  Motor Unit 3hp 2-Stroke Engine complete with water swivl | 01 |  |
| 73 | 100mm Core Barrel solid back end type | 01 |  |
| 74 | Triple beam balance 2610g × 0.1g | 01 |  |
| 75 | 6 Inch (152mm) Sand Cone. | 01 |  |
| 76 | 5Liter Plastic Container for Sand Cone | 01 |  |
| 77 | Density Plate for El 29. 4300. | 01 |  |
| 78 | Cleveland Flash cup | 01 |  |
| 79 | Series Humidity Oven | 01 |  |
| 80 | Syringe With Rubber bulb | 01 |  |
| 81 | Deep freezer 18 c-ft | 01 |  |
| 82 | Thermometer (Local) | 12 |  |
| 83 | Bowl and pans different of sizes | 20 |  |
|  | **(PACKAGE-II) FLUID MECHANICS/HYDRAULICS/IRRIGATION LAB:** | | |
| 1 | Hydraulic Bench | 01 |  |
| 1.a | **ACCESSORIES COMPRISE:-**  Dead weight calibrator. | 01 |  |
| 1.b | Hydrostatic Pressure. | 01 |  |
| 1.c | Flow Over Weirs Model. | 01 |  |
| 1.d | Mata centric Height Model. | 01 |  |
| 1.e | Bernoulli’s Theorem Demonstration. | 01 |  |
| 1.f | Impact of Jet Model. | 01 |  |
| 1.g | Orifice & Free Jet Flow Model. | 01 |  |
| 1.h | Orifice Discharge Model. | 01 |  |
| 1.i | Energy Losses in Pipes Model. | 01 |  |
| 1.j | Flow Channel Model. | 01 |  |
| 1.k | Osborne Reynolds’s Demonstration. | 01 |  |
| 1.l | Flow Meter Demonstration. | 01 |  |
| 1.m | Energy Losses in Bends. | 01 |  |
| 1.n | Free & Forced vortices. | 01 |  |
| 1.o | Hydraulic Ram. | 01 |  |
| 1.p | Demonstration Pelton Turbine. | 01 |  |
| 1.q | Series/Parallel pumps. | 01 |  |
| 1.r | Centrifugal Pump Characteristic. | 01 |  |
| 1.s | Computer Aided Learning Software. | 01 |  |
| 1.t | Fluid Friction Apparatus. | 01 |  |
| a) | Digital Pressure Meter. | 01 |  |
| b) | 1m Pressurized Water Manometer. | 01 |  |
| c) | Educational Software for Manual Data Entry. | 01 |  |
| d) | Data Logging Accessory with Software | 01 |  |
| 2 | Precision Pressure Gauge Apparatus | 01 |  |
| 3.a | Centrifugal Fan Demonstration Unit | 01 |  |
| 3.b | Interface Device | 01 |  |
| 3.c | Integrating Wattmeter | 01 |  |
| 4.a | Axial Fan Demonstration Unit | 01 |  |
| 4.b | Interface Device | 01 |  |
| 4.c | Integrating Wattmeter | 01 |  |
| 5.a | Centrifugal Compressor Demonstration Unit | 01 |  |
| 5.b | Interface Device | 01 |  |
| 5.c | Integrating Wattmeter | 01 |  |
| 6.a | Centrifugal Pump Demonstration Unit | 01 |  |
| 6.b | Interface Device | 01 |  |
| 6.c | Integrating Wattmeter | 01 |  |
| 7.a | Parallel Pumps Demonstration Unit | 01 |  |
| 7.b | Interface Device | 01 |  |
| 7.c | Integrating Wattmeter | 01 |  |
| 8.a | Gear Pump Demonstration Unit | 01 |  |
| 8.b | Interface Device | 01 |  |
| 8.c | Integrating Wattmeter | 01 |  |
| 9.a | Plunger Pump Demonstration unit | 01 |  |
| 9.b | Interface Device | 01 |  |
| 10.a | Axial Flow Impulse Turbine (Hydro Power) | 01 |  |
| 10.b | Turbine Service Unit | 01 |  |
| 10.c | Interface Device | 01 |  |
| 11.a | Radial Flow Reaction Turbine Demonstration unit | 01 |  |
| 11.b | Turbine Service Unit | 01 |  |
| 11.c | Interface Device | 01 |  |
| 12.a | Pelton Turbine Demonstration Unit. | 01 |  |
| 12.b | Turbine Service Unit | 01 |  |
| 12.c | Interface Device | 01 |  |
| 13.a | Propeller Turbine Demonstration Unit  (Small Scaled Hydropower unit). | 01 |  |
| 13.b | Interface Device | 01 |  |
|  | **(PACKAGE-III) LIBRARY BOOKS:** |  |  |
|  | **DEPARTMENT OF CIVIL TECHNOLOGY LIST OF BOOKS REQUIRED:-** | | |
|  | **ENGINEERING GEOLOGY:** |  |  |
| 1 | Geology for Engineers, Blyth FGH 7TH Arnold International student edition. | 02 Nos. |  |
| 2 | Geology and Engineering,Legged, RF 3rd edition McGraw Hill International edition. | 02 Nos. |  |
| 3 | Principals of Engineering Geology and Geotechniques, Keyline, DP 1st edition McGraw Hill International edition. | 02 Nos. |  |
|  | **MECHANICS OF MATERIALS:** | -- | -- |
| 1 | Mechanics of Materials (S.I.Units) by Benham and F.V. Warnock, Edison Weseley Longman. January 1996 (Latest Edition) Text. | 02 Nos. |  |
| 2 | Mechanics of Materials (S.I.Version) E.P. Popov. 2nd Edition, Printice Hall, Inc. 1976 (Latest edition) Reference. | 02 Nos. |  |
| 3 | Strength of Materials by F.L. Singer Harper & Row Publishers. | 02 Nos. |  |
| 4 | Engineering Mechanics by Timoshenko & D.H. Young. 4th edition McGraw Hill (Latest Edition). | 02 Nos. |  |
|  | **MATERIALS AND METHODS OF CONSTRUCTION:** | -- | -- |
| 1 | Materials of construction by R.C. Smith and C.K.Andres, ISBN: 0070585040, McGraw Hill, January 1987 Latest Edition (Text). | 02 Nos. |  |
| 2 | Fundamental of Building Construction: Material and Methods By Edward B. Allen, (Latest edition). | 02 Nos. |  |
| 3 | Building Construction Vol. I to IV by Mickay (Latest Edition) (Reference). | 02 Nos. |  |
| 4 | Building Construction by Mitchall (Latest Edition) (Reference) | 02 Nos. |  |
| 5 | Building Construction by Huntigton (Latest Edition) (Reference). | 02 Nos. |  |
| 6 | Civil Engineering Materials by Neil Jackson Latest Edition (Reference). | 02 Nos. |  |
| 7 | Construction Materials by P.D.Domone, University College , London, latest edition (Reference). | 02 Nos. |  |
|  | **FLUID MECHANICS:** | -- | -- |
| 1 | Fluid Mechanics for Civil Engineering by N.B.Webber, Chapman, & Hall, (Latest Edition) Text. | 02 Nos. |  |
| 2 | Fluid Mechanics with Engineering Applications by Dougherty, Francine and Fennimore, McGraw , New York.(Latest Edition) Reference. | 02 Nos. |  |
| 3 | An Introduction to Engineering Fluid Mechanics by J.A. Fox, Macmillan Company (Latest edition). | 02 Nos. |  |
| 4 | Mechanics of fluids by B.S.Massey, wanNost Reinhold International Rand hold Company Ltd. London (Latest Edition) Reference. | 02 Nos. |  |
| 5 | Mechanics of Fluids by J.W. Ireland, Bulterworth& | 02 Nos. |  |
| 6 | Company, London. (Latest Edition) Reference. | 02 Nos. |  |
|  | **CONSTRUCTION SURVEYING:** | -- | -- |
| 1 | Surveying theory of practice by R.E. Davis J.Anderson, F.S. Foote, McGraw Hill (Latest Edition).Text. | 02 Nos. |  |
| 2 | Surveying by Jack C.McCormac, (Latest Edition) Reference. | 02 Nos. |  |
| 3 | Surveying: with construction Applications by Barry F. Kavanagh, prentice Hall (Latest Edition). Reference. | 02 Nos. |  |
| 4 | Scgaym’s Outline of Introductory Surveying By R.H.Wirshing, Roy Wirshing, James R. Wirshing, (Latest Edition) Reference. | 02 Nos. |  |
| 5 | Plane and Geodetic Survey Vol. I & II by David Clark. Trans-Atlantic Publications. (Latest Edition). | 02 Nos. |  |
| 6 | Design of Concrete Structures by H.Nilson, McGraw.(Latest Edition). Text. | 02 Nos. |  |
|  | **CONCRETE TECHNOLOGY- I:** | -- | -- |
| 1 | Properties of Concrete by A.M. Venille; Wiley John & Sons. (Latest Edition) Reference. | 02 Nos. |  |
| 2 | Reinforced Concrete- Design &Behavior by C.K.Wang& Salmon. Reference. | 02 Nos. |  |
| 3 | Elementary Reinforced Concrete by W.Morgan (Latest Edition) Reference. | 02 Nos. |  |
| 4 | R.C. designers Handbooks by Charles. E.Reynold; Chapman & Hall. (Latest Edition) Reference. | 02 Nos. |  |
|  | **STRUCTURAL MECHANICS:** | -- | -- |
| 1 | Statically Indeteminate Structures by C.K.Wang, McGraw Hill (Latest Edition) Text Book. | 02 Nos. |  |
| 2 | Elementary Theory of Structures by Yuan-Yu Hsieh. Prentice Hall, Inc. (Latest Edition) Reference. | 02 Nos. |  |
| 3 | Theory of Structures by Timoshenko. McGraw Hill ( Latest Edition). Reference | 02 Nos. |  |
| 4 | Structural Analysis by J.I. Laursen; McGraw Hill (Latest Edition) Reference. | 02 Nos. |  |
| 5 | Theory of Structures by J.C.Mccormac. Harper &Colins Publishers (Latest Edition) Reference. | 02 Nos. |  |
|  | **SOIL MECHANICS:** | -- | -- |
| 1 | Fundamentals of Soil Mechanics by M. S. Qureshi& Aziz Akbar, A-1 Publishers, Urdu Bazar,Lahore. (Latest Edition) Text. | 02 Nos. |  |
| 2 | Soil Mechanics by A.R Jumikis (Latest Edition) Reference. | 02 Nos. |  |
| 3 | Fundamental of Soil Mechanics bhy D.W. Taylor (Latest Edition). Reference. | 02 Nos. |  |
| 4 | Elements of Soil Mechanics by G.N.Smith (Latest Edition) Reference. | 02 Nos. |  |
| 5 | Engineering properties f Soil and their Measurment by J.E. Bowles. McGraw Hill. (Latest Edition) Reference. | 02 Nos. |  |
|  | **HIGHWAY AND TRANSPORATION TECHNOLOGY:** | -- | -- |
| 1 | Highway Engineering by C.H.Oglesby, Russelll G. Hicks. ISBN: 047102936X. John Willey & Sons. January 1982 (Latest Edition) Text Book. | 02 Nos. |  |
| 2 | A Policyon Geometric Design of Highways & AASHTO Staff, ISBN: 156010013. January 1990 (Latest Edition) Reference Book. | 02 Nos. |  |
| 3 | Hand Book of Highway Engineering by Baker ( Latest Edition) reference. | 02 Nos. |  |
| 4 | Railways, Bridges and Tunnels by S.K.Sharma (Latest Edition) Reference. | 02 Nos. |  |
| 5 | Roads , Railways, Bridges and Tunnels by DeshpandeAntia and Shahna (Latest Edition) Reference. | 02 Nos. |  |
| 6 | Highway design Manual Highway Department, Govt. of Punjab (Latest Edition) Reference. | 02 Nos. |  |
|  | WATER SUPPLY AND WASTE WATER MANAGEMENT: | -- | -- |
| 1 | Water Supply and Sewerage by E. W.Steel and L.J.McGhee. McGraw Hill, New York, 1979 (Latest Edition) Text. | 02 Nos. |  |
| 2 | Water and Wastewater Technology by M.J. Hammer, John Wiley & Sons. New York, 1986(Latest edition) Reference. | 02 Nos. |  |
| 3 | Wastewater Engineering: Collection and Pumping of Wastewater by Metcalf and Eddy. McGraw Hill, New york 1981 (Latest Edition) Reference. | 02 Nos. |  |
|  | **COST ESTIMATE AND CONTROL DOCUMENTS.** | **--** | **--** |
| 1 | Estimating Construction Costs by R.L. Peurifoy . McGraw Hill. (Latest Edition) Text Book. | 02 Nos. |  |
| 2 | Contract Specifications by Daniel and W.Mead (Latest edition) Reference. | 02 Nos. |  |
| 3 | Construction Scheduling, Cost Optimization and | 02 Nos. |  |
| 4 | Management by H.Adeli and A. Karim. (Latest Edition) Reference. | 02 Nos. |  |
| 5 | MES/Pak PWD Schedule of Rates(Latest Edition) Reference. | 02 Nos. |  |
| 6 | WAPDA Drafting Standards (Latest Edition) Reference. | 02 Nos. |  |
|  | **IRRIGATION AND HYDRAQULIC STRUCTRURES** | **--** | **--** |
| 1 | Irrigation and Hydraulic Structures (Theory, Design and Practice by Dr. Iqbal Ali, Institute of Environmental Engineering & Research, NED University of Engineering & Technology, Karachi (Latest edition) Text. | 02 Nos. |  |
| 2 | Irrigation Canals by Iqtidar H. Siddiqi (Latest edition) | 02 Nos. |  |
| 3 | Fundamentals of Irrigation Engineering by V.B.Piryani (Latest Edition) Reference. | 02 Nos. |  |
|  | **CONCRETE TECHNOLOGY-II:** | **--** | **--** |
| 1 | Properties of Concretes by A.M. Neville; John & Sons. (Latest edition) Text Book. | 02 Nos. |  |
| 2 | R.C. C Designers Handbooks by Charles. E. Raynold; Chapman & Hall. Reference. | 02 Nos. |  |
| 3 | Reinforced Concrete by J-Faber and F.Meed, Chapman and Hall. Reference. | 02 Nos. |  |
| 4 | Reinforced Concrete- Design &Behavior by C.K. Wang & Salmon. Reference. | 02 Nos. |  |
| 5 | Design of Concrete Structures by H. Nilson, McGraw Hill. | 02 Nos. |  |
|  | **ARCHITECTURE AND TOWN PLANNING:** | **--** | **--** |
| 1 | Architecture in Pakistan, Kamal Khan Mumtaz, 1st Edition Concept Media Ltd. Singapore, 1985. | 02 Nos. |  |
| 2 | Architecture History, John Mosgrove, 19th edition Butterworth, 1987. | 02 Nos. |  |
| 3 | Urban and Regional Planning, Peter Hall 5th edition Billing and Sons Ltd. London, 1989. | 02 Nos. |  |
| 4 | Town Planning, S.C Rangwala, 3rd edition Farooq Kitab Ghar, Karachi. 1989. | 02 Nos. |  |
|  | **PROJECT MANAGEMENT:** | -- | -- |
| 1 | Babcock D. L. MANAGING ENGINEERING AND TECHNOLOGY. Prentice Hall, UK (Latest Edition ) | 02 Nos. |  |
| 2 | INDUSTRIAL MANAGEMENT.  Rabbani Printing Press Lahore (Latest Edition) &Zuberi M. H. | 02 Nos. |  |
| 3 | Bateman T. S. and snell S. A MANAGEMENT. Building competitive advantages. Times mirror higher education group, USA (Latest Edition) | 02 Nos. |  |
| 4 | Spinner M. Elements Of Project Management. Prentice Hall, Uk (Latest Edition) | 02 Nos. |  |
|  | **STEEL STRUCTURES:** | -- | -- |
| 1 | Steel Structure by Z.A Siddiqi, M.A Chaudhary and M. Ashraf, Civil Engineering Series Publishers (Latest Edition) | 02 Nos. |  |
| 2 | LRFD Steel Design Aids in SI Units by Z.A Siddiqi, M.A Chaudhry and M. Ashraf; Civil Engineering Series Publishers. | 02 Nos. |  |
| 3 | Structural Steel Design LRFD Method (Second Edition) by Jack C. McCormac; Harper Collins Publishers. LSBN: 0065016270. January 1994. | 02 Nos. |  |
| 4 | Design of Steel Structure by E.H Gaylord, C.N Gaylord; McGraw Hill. 1991. | 02 Nos. |  |
| 5 | Steel Structure Design &Behavior by Charles G. Salmon, John E. Johnson. | 02 Nos. |  |
| 6 | Structure Steel Designers Handbook by Fredrick S. Merritt. | 02 Nos. |  |
| 7 | LRFD Steel Design by William T. Segui; PWS | 02 Nos. |  |
| 8 | Publishers. LSBN: 053493353X. January 1993. | 02 Nos. |  |
| 9 | Design in Structure Steel BY John E. Lothers. | 02 Nos. |  |
|  | **TOTAL QUALITY MANAGEMENT:** |  |  |
| 1 | Oakland J.S TOTAL QUILITY MANAGEMENT. Butterworth- Heinemann Ltd UK (Latest Edition). | 02 Nos. |  |
| 2 | ISO 9000 Series of Standards | 02 Nos. |  |
| 3 | ISO 14000 Series of Standards | 02 Nos. |  |
| 4 | TOTAL QUILITY CONTROL. McGraw Hill Book Co., USA (Latest Edition) | 02 Nos. |  |
| 5 | TOTAL QUILITY MANAGEMENT IN ACTION. Prentice-Hall, UK (Latest Edition) | 02 Nos. |  |
| 6 | Musa K. ISO 9000. Ibrahim Publishers, Lahore. | 02 Nos. |  |
| 7 | W.L.A PRACTICAL GUIDE FOR OBTAINING ISO 14000 CERTIFICATION. Prentice- Hall UK (Latest Edition). | 02 Nos. |  |
|  | **TRAFFIC ENGINEERING:** |  |  |
| 1 | Fundamentals of Transportation Engineering, Robert G. Hennes. 2nd Edition, McGraw Hill. | 02 Nos. |  |
| 2 | Introduction to Transportation Engineering, Jason C Yu, 2nd Edition McGraw Hill | 02 Nos. |  |
| 3 | Transportation Engineering V-1, V.N Vazirani . 3rd Edition, Khanna Publishers Delhi. | 02 Nos. |  |
| 4 | Modes of Transportation Engineering, JF Thomson 5th Edition, London Butter works, 1983. | 02 Nos. |  |
|  | **HYDROLOGY** | **--** | **--** |
| 1 | Hydrology for Engineering by Lesley, Kohler and Paul us. McGraw Hill, New York, 1982 (Latest Edition) | 02 Nos. |  |
| 2 | Handbook of Applied Hydrology by Chow, McGraw Hill, New York (Latest Edition) | 02 Nos. |  |
| 3 | Introduction to Hydrology By Vies man, Lewis and Knapp. Harper and Row, New York (Latest Edition) | 02 Nos. |  |
|  | **COMPUTER AIDED ANALYSIS & DESIGN:** | **--** | **--** |
| 1 | Finite Element Structure Analysis by T.Y Yang, Prentice Hall Inc. Englewood Cliffs, (Latest Edition) | 02 Nos. |  |
| 2 | Matrix Structure Analysis by Ronald L. Sack; Waveland Press. (Latest Edition). | 02 Nos. |  |
| 3 | A First Course in the finite element method by William B. Bickford, IRWIN, Homewood, (Latest Edition) | 02 Nos. |  |
| 4 | Structure Analysis Programmed (Latest Version). | 02 Nos. |  |
|  | **APPLICATION OF GIS IN CIVIL TECHNOLOGY:** | **--** | **--** |
| 1 | Transportation GIS by Laura Lans, ISBN: 1879702471, Environmental Systems Research 2. Institute. January 1999 | 02 Nos. |  |
| 2 | Multidimensional GIS by Jonathan Raper, ISBN: 0748405070. January 2000 (Latest Edition). | 02 Nos. |  |
| 3 | Cartographic Design Using Arc view GIS by Lin Liu, ISBN: 1566701871 (Latest Edition). | 02 Nos. |  |
| 4 | Exploring Spatial Analysis In GIS by Yue-host Version, ISBN: 1566901197. January 1996 (latest Edition). | 02 Nos. |  |
| 5 | Understanding GIS: The ARC-INFO Method, Host Version, ISBN: 1879102013. January 1998 (Latest Edition). | 02 Nos. |  |
| 6 | Systems for Resource Management in Developing Countries – Kluwer Academic Publications, dordrecht (Latest Edition). | 02 Nos. |  |
|  | **FOUNDATIONS AND PAVEMENTS:** | **--** | **--** |
| 1 | Foundation Analysis and Design by J. E. Bowles, 5th Edition, McGraw Hill. ISBN: 007006839. January, 1996. | 02 Nos. |  |
| 2 | Foundation Engineering by Ralph B. Peck, W. E. Hanson, Thomas H. Thornburg; John Willey & Sons, ISBN: 0471675857. January 1974. | 02 Nos. |  |
| 3 | Foundation Design and Construction by Michael. J. Tomlinson; Longman Publishing Group. ISBN: 058222697X. January 1996. | 02 Nos. |  |
| 4 | Foundation Design by W. C. Teng; Prentice Hall. ISBN: 0133298051.’ | 02 Nos. |  |
| 5 | Geotechnical Engineering: Foundation Design by John. N. Cernica, John; Willey & Son. ISBN: 0471308870. January1994. | 02 Nos. |  |
|  | **PAVEMENTS:** | **--** | **--** |
| 1 | Principles of Pavement Design by E. J. Yoder M. W. Witezak, ISBN: 0471977802, Wiley John & Son. January 1975 (Latest Edition). | 02 Nos. |  |
| 2 | Pavement Analysis & Design by Yang H. Huang, ISBN: 0136552757. January 1992 (Latest Edition). | 02 Nos. |  |
| 3 | Flexible pavement design and Management Materials Characterization, ISBN: 0309021286 (Latest Edition). | 02 Nos. |  |
| 4 | Traffic Engineering by T. M. Matson; McGraw Hill. ISBN: 0070409102 (Latest Edition). | 02 Nos. |  |
| 5 | Highway Engineering by C. H. Oglesby, R. G. Hicks; john Willey & Sons. ISBN: 047102936X. January 1982 (Latest Edition). Cast | 02 Nos. |  |
| 6 | Transportation Engineering by O.O. Flaherty. | 02 Nos. |  |
|  | **PRE-CAST AND PRE-STRESSED CONCRETE TECHNOLOGY:** | **--** | **--** |
| 1 | Pre-stressed Concrete Structures by T. Y> Lin, Ned H. Burns, (Latest Edition). | 02 Nos. |  |
| 2 | PCI Design Handbook: Precast & Pre-stressed Concrete by Precast/Pre-stressed Concrete Institute, (Latest Edition). | 02 Nos. |  |
| 3 | Pre-stressed Concrete Design by Computer by R. Hulse, W. H. Mosley, (Latest Edition). | 02 Nos. |  |
| 4 | Introduction to Pre-stressed Concrete Vol. I by B. W. Abeles (Latest Edition). | 02 Nos. |  |
| 5 | Pre-stressed Concrete by Khachaturian (Latest Edition). | 02 Nos. |  |
| 6 | Pre-stressed Concrete for Beams Design and Logical Analysis by niby (Latest Edition). | 02 Nos. |  |
| 7 | Pre-stressed Concrete for Architects Engineers by H. Kent. Preston (Latest Edition). | 02 Nos. |  |
| 8 | Modern Pre-stressed Concrete by James R. Libby (Latest Edition). | 02 Nos. |  |
|  | **Note:** Selection & Quantity of Technical Books for Library depends on need & as per requisition of Subject Teacher. | | |
|  | **GENERAL BOOKS:** | **--** | **--** |
| 1 | Encyclopaedia Science & Technology Latest Addition. | 01 |  |
| 2 | World Almanac 2017. | 01 |  |
| 3 | Oxford Dictionary. | 02 |  |
| 4 | Layman Dictionary. | 02 |  |
| 5 | Cambridge. | 02 |  |
| 6 | Urdu to English Oxford Dictionary. | 02 |  |
| 7 | English Sindhi Dictionary. | 02 |  |
| 8 | English Chinese Dictionary. | 01 |  |
| 9 | English German Dictionary. | 01 |  |
| 10 | Urdu Arabic Dictionary. | 02 |  |
| 11 | English to French Dictionary. | 01 |  |
| 12 | English – Japnies Dictionary. | 01 |  |
| 13 | Feroz-ul-Loghut Dictionary. | 01 |  |
| 14 | Shah Jo Resalo. | 02 |  |
| 15 | Quran Majeed Sindhi Translation. | 02 |  |
| 16 | Quran Majeed Urdu Translation. | 02 |  |
| 17 | Quran Majeed English Translation. | 01 |  |
| 18 | Quran Sharif Complete 30 Chapters. | 02 Sets. |  |
| 19 | Consize Encyclopaedia Britannica. | 01 Set. |  |
|  | **Note:** Quality Paper, Binding Hard Bag (HPU) with dust jacket if available not published before 2010. As Library discount policy. | | |
|  | **(PACKAGE-IV) E-LIBRARY ARTICLES:** | **--** | **--** |
| 1 | **Computer System**  Dell OptiPlex 7040MT Core i7 6700 3.4GHZ (6TH GENERATION) 4GB RAM - 500GB SATA HARD DRIVE INTEL HD GRAPHICS - DVD RW - KEYBOARD - MOUSE | 07 |  |
|  | **Display/LED**  Dell LED   E1916HE 18.5" BLACK WIDESCREEN | 07 |  |
|  | **UPS**  Emerson: UPS 600VA/360W 230V AVR with USB Shutdown Software | 07 |  |
|  | **LAP TOPs**  Dell Inspiron 3567: Core i3 6100u 2.3GHZ 4GB RAM 1TB HDD 15.6" LED Dos INTEL HD GRAPHICS -LAN- WiFi-BT- with Warranty | 01 |  |
| 2 | **UHF RFID LIBNRARY MANAGEMENT SYSTEM. Complete Accessories**  RFID Equipments for Shelf Checking-Out, Tagging, Self Management, Check in/Out Services, Anti-Theft Detection, Book Drop Facilities | 1 |  |
| 3 | **HF/UHF Passive Tags for RFID Library System**  Water proof RFID Tag for Books | 2000 |  |
| 4 | **Electronics DDC**  Electronic Dewy Decimal Classification Scheme 23 Edition | 1 |  |
| 5 | **High capacity powerful long-lasting magnetic card printer**  Complete Set CD-ROM with the printer driver and user manual, Cleaning kit, USB cable, Power supply and cords | 1 |  |
| 6 | **Magnetic Cards**  Plastic ID Cards for RFID | 1500 |  |
| 7 | **LED TV**  32" Samsung | 1 |  |
| 8 | **DVD/LCD Player**  Samsun E360 | 1 |  |
| 9 | **Multimedia Projector**  SONY: VPL-EX-246 (3200L) Zoom x1.6, Lamp 7000, USB, HDMI, Lan | 1 |  |
| 10 | **Multifunction Printer**  Printing, Copying, Scanning, Memory Card features | 1 |  |
| 11 | **Over Head Book Scanner**  Book scanner price 5M 10M Document scanne | 2 |  |
| 12 | **Binding Machine**  46 Holes 500 Paper Sheets Desktop Manual Coil Spiral Binding Machine | 1 |  |
| 12 | **Wireless N300 Cloud Router**  **Device Interfaces** IEEE 802.11ac wireless LAN1 IEEE 802.11n/g/b/a wireless LAN 10/100/1000 Gigabit WAN port Four 10/100/1000 Gigabit LAN ports Two USB ports **Antenna Type** Three dual band high-gain antennas **Minimum Requirements** Windows 8/7 or Mac OS X 10.4 or higher Internet Explorer 11, Firefox 12.0, Chrome 20.0, Safari 4.0, or other Java-enabled browser Ethernet interface or Wi-Fi Cable or DSL Modem Subscription with an Internet Service Provider (for Internet access) | 1 |  |
| 13 | **Audio/Video Switch 8 Ports RCA Audio Video Switch TV/DVD Splitter Box**  Channel one AV input to 8 AV output You can display one AV input to 8 AV output devices at the same timeCompatible with AV devices Supports resolution of 1024 x 768 @ 85 Hz Perfect for office or home use Works with standard AV (yellow-red-white) connector Powered by AC 110/220V (adapter compatible with your country) On/Off switch LED power indicator | 1 |  |
| 14 | **AV Connector**  Audio Video Connector | 30 |  |
| 15 | **Headphone**  Wire less Bluetooth Head Phone, Adonic | 5 |  |
| 16 | **Headphone**  Adonic Max 50 Head Phone | 10 |  |
| 17 | **Electronics Books on Civil Technology & G Engineering** | 50 |  |
| 18 | **Electronics CDs on Various G Knowledge Books** | 50 |  |
| 19 | **Electronics Book on CD on Islamic Studies** | 50 |  |
| 20 | **Electronics Book Science & Technology** | 50 |  |
| 21 | **Electronics CDs on Languages (ie English, Chinese, German, Italian, Spanish, Urdu, Sindh, Arabic, Parsietc)** | 50 |  |
| 22 | **External Hard Disks**  4TB MY PASSPORT ULTRA USB 3.0 (USB POWERED) **NEW MODEL** | 2 |  |
| 23 | **USB(s)**  128GB USB DRIVE 3.0 | 2 |  |
| 24 | **SD Memory Cards**  MICRO SD 128GB MEMORY CARD (CLASS-10) | 5 |  |
| 25 | **Optical Drives**  1= ASUS BLUE RAY WRITER 16X 1= ASU SBLUE RAY COMBO 12X | 2 |  |
| 26 | **Readable CD Packs(contain25 CDs each)** | 25 |  |
| 27 | **Re-Write able CDs Pack** | 5 |  |
| 28 | **Web Cam**  Logitech Webcam C270 | 5 |  |