**Balochistan Public Private Partnership Authority**

**Request for Proposals**

**for**

**Award of Concession**

**in respect of the**

**[operation and maintenance of**

**Technical Training Center - Kharan**

**under the**

**Balochistan** **Public Private Partnership act, 2021]**

**[February 18, 2023]**

# Letter of Invitation

The Government of Balochistan (GoB) intends to engage a private party on Public Private Partnersship (PPP) mode to operate and manage the “Kharan TVET Institute” (KTI). The institute would specializein indigenous and marketable innovative technologies to meet the immediate workforce requirements in Balochistan by utilizing existing infrastructure. Technical details including the project scope can be examined in Volume II of this Request for Proposals (“**RFP**”).[[1]](#footnote-1)

The Implementing Agency which jointly includes the Labor & Manpower Department, Balochistan TEVTA and the Balochistan Public Private Partnership Authority (BPPPA), invites the Bidders to participate in the Bidding Process and to submit their Bids for the Project in accordance with the requirements of the Applicable Evaluation Documents.

The Bidders are required to submit only one (1) Bid, comprising of one (1) original Technical Proposal and one (1) original Financial Proposal, and four (4) hard copies of each, with one (1) soft copy of each (on CDs/ DVDs/ USBs) and other supporting documents (as applicable), as identified in the RFP, no later than ***12:00* hours PST** **(12PM)** by the Bid Submission Date (**March 09, 2023)** at the submission address, each as indicated in the Data Sheet.

The Technical Proposals will be opened on the Bid Submission Date at **13:00** **hours PST** **(1PM)** on **March 09, 2023** in the presence of the representatives of the Bidders who may wish to attend. The Financial Proposals of only technically qualified Bidders will be opened and evaluated, as per the requirements of the Applicable Evaluation Documents.

All Bidders are required to furnish, as part of their Technical Proposals (in a separately sealed envelope) a Bid Security, equivalent to 2 % of the Project Value (Pakistani Rupees [⚫] only)[[2]](#footnote-2). The Bid Security shall be an irrevocable, bank guarantee in the form attached as Bidding Form T6 (*Form of Bid Security*) of Part 2 (*Bidding Forms*) of Volume I (*Bidding Procedure*) of the RFP, issued in accordance with the requirements set out in the Instructions to Bidders.

It is mandatory for the Bids to be prepared using the standard formats for Technical Proposals and Financial Proposals, as provided in the RFP. Bids that are not prepared on the prescribed formats may not be considered by the Evaluation Committee (Technical & Finanical Evaluation Committee (**“TFEC”**)). If any information required in the prescribed forms is found missing, or written elsewhere, no credit will be given during evaluation and may lead to rejection of the Bid.

Subject to the provisions of the Applicable Evaluation Documents, the Implementing Agency reserves the right to cancel the Bidding Process at any time. The Implementing Agency may amend the RFP by issuing an addendum or a corrigendum as per the requirements specified in the RFP, at any time prior to the Bid Submission Date.

The *Interested Parties* may obtain further information in relation to the Project and acquire the RFP either: (a) physically, by submitting a written application; or (b) electronically, by sending an email, to the address / email, given below on a working day during office hours, not later than one (1) business day before the Bid Submission Date, in each case specifying its full name, address and contact details. The RFP will be made available on the website(s) of Balochistan Board of Investment and Trade (BBOIT) and Planning & Development Department (P&D) website.

*All capitalized terms used herein and not otherwise defined shall have the meaning given to them in Volume I (Bidding Procedure) of the RFP.*

**Designation:** Director (Projects), Balochistan PPP Authority

**Address:** Office # 35 Second Floor, P & D department Civil Secretariat Quetta

**Phone No.:** 081-9202723

**Email:** bpppauthority@gmail.com

**Website(s):** www.bboit.gob.pk

Sincerely,

***Project Director***

***BPPPA***

**Important Notice**

The Request for Proposals, together with all volumes, attachments, forms, annexures and appendices, attached thereto, is issued by the Implementing Agency and is provided to the recipients solely for use in preparing and submitting the Bids.

Bids submitted in response to the RFP by the Bidders shall be upon full understanding and agreement of all terms of the RFP and such submission shall be deemed as an acceptance to all the terms and conditions stated in the RFP.

The Implementing Agency does not make any representations (express or implied) or warranties as to the accuracy or completeness of the information contained in the RFP, or in any other document made available to a person in connection with the Bidding Process for the Project; and the same shall have no liability for the RFP or for any other written or oral communication transmitted to the recipient in the course of the recipient’s evaluation of the Project. The Implementing Agency shall not be liable to reimburse or compensate any recipient for any costs, fees, damages or expenses incurred by the recipient in evaluating or acting upon the RFP or otherwise in connection with the Project.

The RFP shall neither constitute a solicitation to invest, or otherwise participate, in the Project, nor shall it constitute a guarantee or commitment of any manner on the part of the Implementing Agency that the Project will be awarded. The Implementing Agency reserves the right, in its full discretion, to modify the RFP and/or the Project requirements at any time to the fullest extent permitted by applicable laws and shall not be liable to reimburse or compensate the recipient for any costs, taxes, expenses or damages incurred by the recipient in such an event. The Implementing Agency makes no representation whatsoever, express, implicit or otherwise, regarding the accuracy, adequacy, correctness, reliability and / or completeness of any assessment, assumptions, statement or information provided by it, and the Bidder shall have no claim whatsoever of any nature against the Implementing Agency in this regard.

Subject to the provisions of the Applicable Evaluation Documents, the Implementing Agency reserves the right to cancel the Bidding Process at any time. The Implementing Agency may amend the RFP by issuing an addendum or a corrigendum as per the requirements specified in the RFP, at any time prior to the Bid Submission Date.

*All capitalized terms used herein and not otherwise defined shall have the meaning given to them in Volume I (Bidding Procedure) of the RFP.*

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**Volume I:**

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**Part 1**

**Instructions to Bidders**

Glossary

*Unless otherwise specified / defined, all capitalized terms used herein shall bear the meanings set out below. References to any law, rule or regulation shall include any amendments, modifications or any re-enactment thereof*.

*The headings in Instructions to Bidders, including the table of contents, are for convenience of reference only and not for purposes of construction or interpretation of the Instructions to Bidders.*

|  |  |
| --- | --- |
| **Term** | **Definition** |
| **Acceptable International Credit Rating[[3]](#footnote-3)** | With respect to a person or instruments issued by such person,   1. in relation to such a person, that is rated A- or higher by S&P, A3 or higher by Moody’s or A- or higher by Fitch; and 2. in relation to such an instrument, that is rated A- or higher by S&P, A3 or higher by Moody’s or A- or higher by Fitch,   provided that where a person or any instrument is rated by more than one of S&P, Moody’s or Fitch, then the lowest rating will apply for determining whether the person or instrument has an Acceptable International Credit Rating. |
| **Acceptable Pakistan Credit Rating[[4]](#footnote-4)** | With respect to a person or instruments issued by such person:   1. in relation to such a person, that is rated AA+ or higher by PACRA or AA+ or higher by VIS; and 2. in relation to such an instrument, that is rated AA+ or higher by PACRA or AA+ or higher by VIS,   provided that where a person or any instrument is rated by more than one of PACRA or VIS, then the lowest rating will apply for determining whether the person or instrument has an Acceptable Pakistan Credit Rating. |
| **Acceptance of Notification of Award** | Has the meaning given to it in Sub-Section 7.3.3 of the Instructions to Bidders. |
| **Affiliate** | With respect to a person (being the Bidder, or where the Bidder is a Consortium, each Consortium Member), means:   * + - * 1. any company or entity that directly or indirectly Controls or is Controlled by, or is under common Control with a Bidder (or where the Bidder is a Consortium, a Consortium Member);         2. any director, senior executive or manager either of such Bidder (or where the Bidder is a Consortium, a Consortium Member) or of any company or entity referred to in paragraph (a) above;         3. any consultant, agent or representative supporting such Bidder (or where the Bidder is a Consortium, a Consortium Member) in connection with the Project (including the Bidding Process for the Project); and / or         4. any person with an aggregate ultimate beneficial interest in at least five percent (5%) of the share capital or ownership interest in a Bidder (or where the Bidder is a Consortium, a Consortium Member) (howsoever held). |
| **Applicable Evaluation Documents** | Collectively: (a) the PPP Act; (b) the PPP Rules; and (c) any applicable order, instruction, guideline, regulations or instrument issued under the PPP Act and the PPP Rules; and (d) the RFP. |
| **Best Evaluated Bid** | A Bid which is determined to be the ‘*best evaluated bid*’ for the award of Concession in terms of the requirements of the Applicable Evaluation Documents. |
| **Bid** | The proposal (constituting the Technical Proposal and Financial Proposal) submitted by a Bidder in response to the RFP, which is prepared and submitted in accordance with this RFP. |
| **Bidder** | An Interested Party, that has submitted Bid in response to the RFP, either individually or as a Consortium. |
| **Bidding Forms** | The forms provided in Part 2 (*Bidding Forms*) of Volume I (*Bidding Procedure*) of the RFP, that are required to be submitted with the Technical Proposals and the Financial Proposals. |
| **Bidding Process** | The competitive bidding process being conducted for the selection of the Successful Bidder for the award of the Concession for the Project. |
| **Bid Price** | [*Financial consultant to confirm the bid price* *definition based on the transaction structure*]. |
| **Bid Security** | Has the meaning given to it in Sub-Section 4.7.1 of the Instructions to Bidders. |
| **Bid Submission Date** | The last date for submission of Bids as specified in the Data Sheet. |
| **Bid Validity Period** | The period of *ninety (90)* days starting from the Bid Submission Date, as may be extended from time to time as per the Applicable Evaluation Documents. |
| **Concession** | Has the meaning given to it in the Concession Agreement. |
| **Concession Agreement** | The agreement titled “Concession Agreement” attached in Volume III (*Concession* *Agreement and Appendices*) of the RFP. |
| **Concession Documents** | The Concession Agreement with appendices; |
| **Concession Period** | Has the meaning given to it in the Concession Agreement. |
| **Consortium** | A Bidder comprised of two (2) or more Consortium Members, formed to submit the Bid. |
| **Consortium Member(s)** | Each member of a Consortium, including the Lead Member. |
| **Consortium Undertaking** | The consortium undertaking to be submitted by a Bidder, in case the Bidder is a Consortium, in accordance with the requirements of the RFP (including Annexure D (*Requirements for Consortium Undertaking*) of the Part 4 (*Annexures*) of Volume I (*Bidding Procedures*) of the RFP. |
| **Construction Performance Security** | Has the meaning given to it in the Concession Agreement. |
| **Construction Performance Security Expiry Date** | Has the meaning given to it in the Concession Agreement. |
| **Data Sheet** | The data sheet provided in Section 9 (*Data Sheet*) of the Instructions to Bidders. |
| **Eligible Countries** | All countries of the world with whom Islamic Republic of Pakistan has commercial / trade relations and which are not subject to sanctions imposed by the United Nations Security Council. |
| **Financial Proposal** | The financial proposal (including all forms, documents and information required in terms of the RFP and submitted therewith), submitted by a Bidder as part of its Bid pursuant to the RFP. |
| **Implementing Agency** | (i) The Labor & Manpower Department, (ii) Balochistan TEVTA and (iii) the Balochistan Public Private Partnership Authority (BPPPA) |
| **Integrity Pact** | Has the meaning given to that term in Sub-section 8.3 (*Integrity Pact*) of the Instructions to Bidders. |
| **Interested Party** | A person who has obtained the RFP in the manner as specified in the Letter of Invitation. |
| **Lead Member** | Has the meaning given to it in Sub-Section 2.12(b) of the Instructions to Bidders. |
| **Letter of Invitation** | The letter of invitation issued by the Implementing Agency and attached with the RFP |
| **Notification of Award** | The notification of award to be issued by the Implementing Agency to the Successful Bidder as per Sub-Section 7.3.1 of the Instructions to Bidders. |
| **PKR** | Pakistani Rupees, the lawful currency of the Islamic Republic of Pakistan. |
| **PPP** | Public Private Partnership. |
| **PPP Act** | The Balochistan PPP Act, 2021 (Act No. XXV of 2021). |
| **PPP Authority** | The PPP Authority established under Section 8 (*Establishment of the Balochistan Public Private Partnership Authority*) of the PPP Act. |
| **PPP Rules** | The Balochistan PPP Procurement Rules, 2022. |
| **Project** | Has the meaning given to it in the Concession Agreement. |
| **PST** | Pakistan Standard Time. |
| **RFP** | The Request for Proposals document issued by the Implementing Agency in relation to the Project, containing the documents specified in Sub-Section 3.1.1 of the Instructions to Bidders, and includes any amendments and / or modifications thereto. |
| **Site** | Has the meaning given to it in the Concession Agreement. |
| **Successful Bidder** | The Bidder whose Bid determined is the Best Evaluated Bid in terms of the requirements of the Applicable Evaluation Documents. |
| **Scope of Work** | means the works that the Implementing Partner (IP) would have to perform during the Installation Period and O&M Period under the terms of Management Contract and a description of such works is provided in Volume II. |
| **Technical Proposal** | The technical proposal (including all forms, documents and information required in terms of the RFP and submitted therewith), submitted by a Bidder as part of its Bid pursuant to the RFP. |
| **TFEC / Evluation Committee** | The technical and financial evaluation committee formed in accordance with the applicable laws. |

General

## Introduction

The **Balochistan Public Private Partnership Authority (BPPPA)** along with the **Labor & Manpower Deprtment** and **BTEVTA** intends to operate and manage the “Kharan TVET Institute” (KTI) on the public-private partnership model. The institute would specializein indigenous and marketable innovative technologies to meet the immediate workforce requirements in Balochistan by utilizing existing infrastructure. Further details in relation to Project background and scope of work can be examined in **Volume II (*Project Scope*)** of the RFP.

This RFP is being issued as a part of the competitive selection process to invite the Bidders to submit its Bid with the intent to enter into a PPP Agreement for the Project.

All risks and obligations of the Implementing Agency and the Successful Bidder shall be in accordance with the RFP (including the Concession Documents) and the Bidders shall be deemed to have full and complete understanding of the risks relating to the Project and their allocation, as set out in the RFP (including the Concession Documents).

By submitting the Bid, the Bidder acknowledges the acceptance of all tax related obligations. The bidders’s obligations with regards to taxation are clearly identified in the Concession Agreement. For the sake of clarity, the bidder shall be required to pay all the taxes, duties, levies, stamp duties, rents, and other charges payable to any local government, provincial or federal government (as applicable) and it would not be allowed to seek any support from the Implementing Agency if it was unaware or ignorant of any taxes, duties, levies, stamp duties, rents, and other charges.

The Implementing Agency does not make any representation or warranty, express or implied, as to the accuracy or completeness of such information, or any information on which this RFP is based, or any other background or reference information or documents prepared and made available to the Bidders, and any liability related to such information is hereby expressly disclaimed.

Before submitting the Bids, the Bidders should carefully examine all the information provided in the RFP (including the Concession Documents).

## Overview of the Procurement Process

### For the purposes of the Project, the Implementing Agency has issued the RFP for conducting the Bidding Process for the selection of a Successful Bidder for the award of the Concession, in accordance with the requirements of the Applicable Evaluation Documents.

### In terms of the Applicable Evaluation Documents, the single stage two envelope bidding procedure has been adopted. A Bidder whose Bid is determined to be the Best Evaluated Bid, shall be awarded the Concession.

## Indicative Schedule

The indicative timelines in relation to the Bidding Process for the Project (as may be amended by the Implementing Agency in its discretion) are as follows:

|  |  |
| --- | --- |
| **Activity** | **Date (*Tentative*)** |
| **Issuance of RFP** | 18-02-2023 |

|  |  |
| --- | --- |
| **Responses to Bidder’s queries** | Within 07 days of query |
| **Release Amended Bidding Documents (if required)** | As required. |

|  |  |
| --- | --- |
| **Bid Submission Date & Opening of Technical Proposals** | 09-03-2023 |

|  |  |
| --- | --- |
| **Technical Bid Evaluation Report AND Invitation to the bidders pre-qualified for opening of Financial Bids** | After 21 days from bid submission date |

|  |  |
| --- | --- |
| **Opening of Financial Proposals** | After 7 days from the bid evaluation |
| **Announcement of Bid Evaluation Results** | After 3 days from opening of the financial proposal |
| **Award of Project to Successful Bidder** | After 10 days from the announcement of Bid Evaluation results |
| **Signing of the Concession Agreement** | Within 30 days post successful negotiation of the concession agreement |

\* In the event of any public holiday (including a gazetted holiday) occurring on the above-mentioned dates, the immediately succeeding business day will be considered as the day on which the respective milestone shall take place.

Eligible Bidders

## General Requirements

### A Bid received from a Bidder, shall only be considered for further evaluation in accordance with the requirements of the Applicable Evaluation Documents, if the criteria, as set out in Annexure A (Basic Eligibility Criteria) of Part 4 (Annexures) of Volume I (Bidding Procedure) of the RFP, is satisfied. Any non-compliant Bid shall be rejected by the Implementing Agency/TFEC.

### For the purposes of the RFP, a Bid may be submitted by a single entity or a Consortium. In case a Bid is submitted by a Consortium:

### all members of the Consortium shall be jointly and severally liable in respect of their obligations in relation to the Project;

### one (1) member of the Consortium shall be nominated as being in-charge and shall act the lead member (the “**Lead Member**”) who shall have the authority to represent and irrevocably bind the Consortium in all matters connected with the Bidding Process, conduct all business for and on behalf of any and all Consortium Members during the Bidding Process, and in case the Consortium is awarded the Project, finalize the Concession Documents.

### This authorization shall be evidenced by submitting a power of attorney in the form and substance as set out in Part B (Power of Attorney for Appointment of Lead Member) of Bidding Form T2 (Form of Power of Attorney) of Part 2 (Bidding Forms) of Volume I (Bidding Procedure) of the RFP), signed by legally authorized signatories of all the Consortium Members, appointed pursuant to the power of attorney in Part A (Power of Attorney to Authorize a Person to Sign the Documents) of Bidding Form – T2 (Form of Power of Attorney) of Part 2 (Bidding Forms) of Volume I (Bidding Procedure) of the RFP;

### the Bid shall contain a formal executed copy of the Consortium Undertaking complying with the laws of Pakistan and the requirements indicated in Annexure E (Requirements for Consortium Undertaking) and specifically appointing the Lead Member of the Consortium and identifying the roles of each Consortium Member. Following the Bid Submission Date, there shall be no change in the composition of the Consortium, by addition/withdrawal of a Consortium Member or change in percentage shareholding of any Consortium Member, except as may be permitted by the Implementing Agency in accordance with the Concession Documents; and

### in case the Successful Bidder is a Consortium, such Successful Bidder shall be required to comply with the requirements regarding Ownership Stake matters including transfer restrictions set out in the Concession Agreement.

### Each Bidder shall authorize a representative who shall have the authority to represent and irrevocably bind the Bidder in all matters connected with the Bidding Process, conduct all business for and on behalf of Bidder during the Bidding Process, and in case the Bidder is awarded the Project, finalize the Concession Documents. Such authority shall be in the form of a power of attorney in favour of the authorized representative in the form attached as Part A (Power of Attorney to Authorize a Person to Sign the Documents) of the Bidding Form – T2 (Form of Power of Attorney) of Part 2 (Bidding Forms) of Volume I (Bidding Procedure) of the RFP.

### A Bidder (including any Consortium Member) shall not have a conflict of interest. All Bidders (including any Consortium Members) found to have a conflict of interest shall be disqualified. the Implementing Agency will take appropriate actions to manage such conflicts of interest, which may include rejecting the Bid if it determines that a conflict of interest may affect the integrity of the Bidding Process.

### The circumstances giving rise to a conflict of interest for the purposes of the Bidding Process have been set out in Annexure A (Basic Eligibility Criteria) of Part 4 (Annexures) of Volume I (Bidding Procedure) the RFP and such circumstances are not exhaustive. The Implementing Agency shall be the sole determinant of when a conflict of interest shall arise.

### A Bidder (or any Consortium Member) which has been declared ineligible or has been blacklisted by any of its employers, any Federal or Provincial governmental or non-governmental department / agency in Pakistan, or any other provincial government / governments of any foreign countries or their governmental bodies as at the Bid Submission Date or thereafter, shall not be considered.

### 

### Each Bidder (including a Consortium Member) shall indemnify the Implementing Agency, fully in respect of any damage, cost, penalty or expense of any kind incurred by such person arising from a Bidder’s or its representative (including a Consortium Member’s or its representatives) breach of its obligations under the RFP.

### A Bidder may undertake the works and / or services as contemplated in the RFP (including the Concession Documents), either itself or may sub-contract the same in accordance with the requirements set out in the RFP (including the Concession Documents). For any part of the scope of works and / or services for the Project, which the Bidder intends to sub-contract, the Bidder shall give details of the name and nationality of the proposed contractor, including the entities which are part of the proposed contractor. Proposed contractor can be single entities or may comprise a consortium. In addition, the Bidder shall include in its Bid, information establishing compliance of the proposed contractor (in case of a consortium, the consortium members) with the requirements specified in Annexure A (Basic Eligibility Criteria) of Part 4 (Annexures) of Volume I (Bidding Procedure) the RFP.[[5]](#footnote-5)

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### The Bidder shall be responsible for ensuring that any proposed contractor (including its representative(s)) complies with the requirements of RFP (including the Concession Agreement) and the applicable laws. The engagement of the Contractors for the Project shall not absolve a Bidder from its obligations under the RFP (including the Concession Documents) and the applicable laws.

### Bidders are encouraged to submit their respective Bids after visiting the Site and ascertaining for themselves the [site conditions, location, surroundings, climate, availability of power, water and other utilities for construction,] access to site, handling and storage of materials, weather data, applicable laws including but not limited to the Applicable Evaluation Documents and the Balochistan Environmental Protection Act 2012, the general and local conditions associated with implementing the Project and any other matter considered relevant by them. The costs and permission(s) (if any) for the purposes of visiting such site(s) shall be at the Bidder’s own expense and liability. Bidders shall be required to seek prior written permission of the Implementing Agency for visiting such site(s). Regardless of the Bid and outcome of the Bidding Process, the Implementing Agency shall not be liable in any manner for any costs incurred as a result of such visit(s).

### A Bidder or any of its representatives, personnel or agent may enter the site(s) where the works and services in relation to the Project are to be performed and undertaken, only upon the express condition that the Bidder, its representatives, its personnel and agents will release and indemnify the Implementing Agency and its representatives, personnel and agents from and against all liability in respect thereof, and the Bidder will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

### A Bidder is expected to examine all instructions, forms, terms and specifications in the RFP. Failure to furnish all information or documentation required by the RFP may result in the rejection of the Bid.

RFP Document

## Contents of the RFP

### The RFP comprises the documents stated below and should be read in conjunction with any addendum issued in accordance with Sub-Section 3.4 (Amendment of RFP) of the Instructions to Bidders.

1. **Volume I – Bidding Procedure**
   * + - 1. Part 1 – Instructions to Bidders.
         2. Part 2 – Bidding Forms.
         3. Part 3 – Bidding Documentary Requirements.
         4. Part 4 – Annexures

Basic Eligibility Criteria (Annexure A);

Evaluation Criteria (Annexure B);

Form of Construction Performance Security (Annexure C); and

Requirements for Consortium Undertaking (Annexure D).

1. ***Volume II – Project Scope***
   * + - 1. *Part 1 – Project Description.*
         2. *Part 2 – Scope of Works and Services; and*
         3. *Part 3* ***–*** *Annexures*
2. **Volume III – Concession Agreement and Appendices**

Concession Agreement with Appendices*.*

### The Bidding Forms comprise the forms stated below and should be read in conjunction with any addendum issued in accordance with Sub-Section 3.4 (Amendment to RFP) of the Instructions to Bidders:

1. For the Technical Proposal:
   * + - 1. Bidding Form T1 – Letter of Technical Proposal;
         2. Bidding Form T2 – Form of Power of Attorney;
         3. Bidding Form T3 – Form of Affidavit;
         4. Bidding Form T4 – Basic Information Form;
         5. Bidding Form T5 – Historical Non-Performance and Pending Litigation;
         6. Bidding Form T6 – Form of Bid Security;
2. For the Financial Proposal
   * + - 1. Bidding Form F1 – Letter of Financial Proposal;

## Completeness of RFP

### The Implementing Agency shall not be responsible for the completeness of the documents comprising the RFP and its addenda / corrigenda, if a Bidder has not obtained the same directly from the source(s) stated by the Implementing Agency in the Letter of Invitation.

### Bidders are expected to carefully examine all instructions, forms and terms in the RFP and to furnish all information or documentation required pursuant to the RFP. Failure to comply with the requirements of Bid submission set out in the RFP will be at the Bidders’ own risk and may result in the rejection of the Bid. Pursuant to Sub-Section 6.2.3 (Determination of Responsiveness of Bids) of the Instructions to Bidders, Bids which are not responsive to the requirements of the RFP shall be rejected.

## Clarifications of RFP

### An Interested Party requiring any clarification pertaining to the RFP shall contact the Implementing Agency in writing, at address or through email provided in the Data Sheet or raise its enquiries during the Pre-Bid Meeting(s). the Implementing Agency will respond in writing to any request for clarification provided that such request is received no later than Seven (07) days prior to the Bid Submission Date. The response shall be communicated to all the Interested Parties. Should the Implementing Agency deem it necessary to amend the RFP as a result of a request for clarification, it shall do so following the procedure under Sub-Section 3.4 (Amendment of RFP) of the Instructions to Bidders. No markup of the RFP (including the Concession Documents and / or other documents / instruments attached to the RFP) shall be accepted.

## Amendment of RFP

### At any time prior to the Bid Submission Date, the Implementing Agency may amend the RFP by issuing an addendum / corrigendum.

### Any addendum / corrigendum issued shall be part of the RFP. Such addendum / corrigendum shall be communicated to all the Bidders and shall be published in widely circulated national dailies and on the websites mentioned in earlier section of this RFP.

### The Implementing Agency may, at its discretion, extend the Bid Submission Date in accordance with the Applicable Evaluation Documents, if it considers that as a result of issuance of any addendum / corrigendum, additional time will be required by the Bidders for preparation of their Bids.

Preparation of Bids

## Costs for Bids

Bidders shall bear all costs associated with the preparation and submission of their Bids, including, without limitation, all costs and expenses relating to preparation of responses to any clarifications sought by the Implementing Agency in accordance with Sub-Section 6.1.1 of the Instructions to Bidders. the Implementing Agency shall in no case be responsible or liable for such costs, regardless of the conduct or outcome of the Bidding Process.

## Language of the Bids

The Bid, and all correspondence and documents related to the Bid and the Bidding Process between the Bidder and the Implementing Agency shall be written in the English language. In case any document / information furnished by the Bidder is in a language other than English, it will need to be accompanied by an English translation (duly notarized by Notary Public and attested by Pakistan Embassy / Consulate in the country of origin, and once brought into Pakistan, to be attested / stamped by the Ministry of Foreign Affairs, Pakistan) of its pertinent passages for the purposes of interpretation of the Bid. In case of any discrepancy, the English translation shall prevail.

## Documents Comprising the Bid

### The Bid shall comprise a Technical Proposal, containing the documents listed in Sub-Section 4.4 (Technical Proposal) of the Instructions to Bidders, and a Financial Proposal, containing the documents listed in Sub-Section 4.5 (Financial Proposal) of the Instructions to Bidders, each submitted simultaneously in separately sealed envelopes clearly marked “TECHNICAL PROPOSAL” and “FINANCIAL PROPOSAL” respectively, in accordance with manner provided herein.

### Bidders are expected to carefully examine the RFP when preparing their Bids and use only the Bidding Forms specified in Sub-Section 3.1.2 of the Instructions to Bidders. Bidding Forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested. Any deviations / omissions / reservations from the formats provided in the RFP shall not be accepted and may form basis for the rejection of the Bid. Material deficiencies in providing the information requested may result in rejection of a Bid.

### 

### In case a document required to be submitted as part of the Technical Proposal, is submitted with the Financial Proposal; or a document required to be submitted with the Financial Proposal, is submitted with the Technical Proposal, it shall not be considered for evaluation and such document shall be considered as not submitted by the Bidder.

## Technical Proposal

### The Technical Proposal shall demonstrate the Bidder’s unconditional acceptance of the complete scope of works and services under the RFP. Any material omission, reservation, deviation or condition attached in the Technical Proposal may cause the Bid to be rejected by TFEC as non-responsive. Under no circumstances shall the TFEC consider / accept a conditional Technical Proposal or a Financial Proposal.

### The Technical Proposal submitted by the Bidder shall include the following information:

* + - 1. signed and filled out ‘Letter of Technical Proposal’, as set out in Bidding Form T1 (*Letter of Technical Proposal)* of Part 2 *(Bidding Forms)* of Volume I (*Bidding Procedure*) of the RFP;
      2. authorization in the form of a power of attorney on behalf of the Bidder, and in case of a Consortium, each Consortium Member, authorizing its representative to sign the relevant documents as per the requirements of the RFP, on its behalf, in the format attached as Part A(*Power of Attorney to Authorize A Person to Sign the Documents*)of Bidding Form T2 (*Form of* *Power of Attorney*) of Part 2 *(Bidding Forms)* of Volume I (*Bidding Procedure*) of the RFP;
      3. in case the Bidder is a Consortium, a power of attorney, to be executed by the authorized representatives of the Consortium Members, in favour of the Lead Member, to authorize it to represent and bind all Consortium Members, as set out in the form attached as Part B(*Power of Attorney to authorize the Lead Member*)of Bidding Form T2 (*Form of* *Power of Attorney*) of Part 2 *(Bidding Forms)* of Volume I (*Bidding Procedure*) of the RFP;
      4. in case the Bidder is a Consortium, Consortium Undertaking prepared and executed based on the requirements set out in Annexure E (*Requirements for Consortium Undertaking*), of Part 4 (*Annexures*) of Volume I (*Bidding Procedure*) of the RFP;
      5. an affidavit from the Bidder (in case of Consortium, each Consortium Member), in the form and substance as set out in Bidding Form T3 *(Form of Affidavit)* of Part 2 *(Bidding Forms)* of Volume I (*Bidding Procedure*) of the RFP;
      6. basic information form, in the form and substance as set out in Bidding Form T3 *(Basic Information Form)* of Part 2 *(Bidding Forms)* of Volume I (*Bidding Procedure*) of the RFP;
      7. all the information, along with the documents evidencing compliance with the eligibility criteria for Bidders set out in Annexure A (*Basic* *Eligibility Criteria*) of Part 4 (*Annexures*) of Volume I (*Bidding Procedure*) of the RFP;
      8. following Bidding Forms, specified in Part 2 *(Bidding Forms)* of Volume I (*Bidding Procedure*) of the RFP, each prepared as per the requirements and containing the details specified therein:

1. Bid Security, as set out in Bidding Form T6 (*Form of Bid Security*), in accordance with Section 4.7(*Bid Security*) of the Instructions to Bidders;
2. Bidding Form T7 (*[Technical Forms to be submitted as part of Technical Proposal to be listed]*);
   * + 1. any other documents required under the RFP.

### The Technical Proposal shall not include any direct or indirect financial information relating to the Financial Proposal. Technical Proposal having such financial information shall be declared non-responsive.

## Financial Proposal

### In preparing the Financial Proposals, Bidders are expected to fully understand the requirements and conditions set out in the RFP, including all contractual obligations of the Implementing Agency, the Successful Bidder under the Concession Documents (as applicable) and the scope of works and services to be performed by the bidder (as the concessionaire) in relation to the Project.

### Any omission, reservation, deviation or condition included in the Financial Proposal to the contrary shall cause the Bid to be rejected by TFEC as non-responsive. Under no circumstances shall TFEC consider / accept a conditional Financial Proposal.

### The Financial Proposal submitted by the Bidder shall comprise the following:

* + - 1. signed and filled out Letter of Financial Proposal, as set out in Bidding Form F1 (*Letter of Financial Proposal*) of Part 2 *(Bidding Forms)* of Volume I (*Bidding Procedure*) of the RFP;
      2. information as required in the relevant forms as set out in Bidding Form F2 (*Financial Forms*) of Part 2 *(Bidding Forms)* of Volume I (*Bidding Procedure*) of the RFP;
      3. financial model with the working of the bidder and
      4. any other document required in the RFP.

## Currencies of Bid and Payment

### All Bids and other supporting documents shall be typed in the English language and state all monetary amounts in Pakistan Rupees (PKR).

## Bid Security

### The Bidder shall furnish, as part of the Technical Proposal, in a separately sealed envelope, a Bid Security equivalent to 2 % of the proposed Project cost PKR (the “**Bid Security**”).

### The Bid Security shall be an irrevocable, bank guarantee in the form attached as Bidding Form T6 (Form of Bid Security) of Part 2 (Bidding Forms) of Volume I (Bidding Procedure) of the RFP.

### The Bid Security shall be issued and maintained in PKR by a scheduled bank in Pakistan or a foreign bank outside Pakistan, in each case, having the Minimum Credit Rating at all times, acceptable to the Implementing Agency. Where the Bid Security is issued by a foreign bank outside Pakistan, such Bid Security shall be counter-guaranteed / confirmed by a scheduled bank in Pakistan (having the Minimum Credit Rating at all times, acceptable to the Implementing Agency).

### 

### The Bid Security shall be valid until twenty-eight (28) days following the Bid Validity Period, as may be extended in accordance with Sub-Section 4.8.2 of the Instructions to Bidders. If the Performance Security has not been issued by the Successful Bidder seven (7) days prior to the expiry of the Bid Security, then the Successful Bidder shall extend the Bid Security until such date as notified by the Implementing Agency.

### Any Bid not accompanied by a compliant Bid Security (as exclusively determined by the Implementing Agency / TFEC), shall be rejected by TFEC as non-responsive and the Bidder shall not be allowed to submit Bid Security at a later stage. The Bid Security issued by a foreign bank and not counter-guaranteed / confirmed from a local scheduled bank in Pakistan shall result in the rejection of the Bid.

### Bidders are required to submit the original Bid Security with their original Technical Proposals. TFEC shall reject a Bid if only a photocopy of original Bid Security is attached with the original Technical Proposal and such Bid may not be further evaluated.

### The Bid Security of the unsuccessful Bidders shall be returned as soon as reasonably possible once the Successful Bidder furnishes the Construction Performance Security pursuant to Sub-Section 7.5 (Performance Security) of the Instructions to Bidders.

### The Bid Security of the Successful Bidder shall be returned as soon as reasonably possible once the Successful Bidder has furnished the required Performance Security pursuant to Sub-Section 7.5 (Performance Security) and has signed the Concession Agreement pursuant to Sub-Section 7.6 (Signing of the Concession Agreement), each of the Instructions to Bidders.

### The Bid Security shall be forfeited:

1. if a Bidder:

#### withdraws its Bid during the Bid Validity Period (except as provided in Sub-Section 5.4.4 of the Instructions to Bidders);

#### is found to be engaged in any corrupt and fraudulent practices;

#### is found to be blacklisted by any agency of the Federal or Provincial Government;

#### does not accept the arithmetical corrections of its Bid in accordance with Sub-Section 6.2.2.4 of the Instructions to Bidders; and / or

#### fails to fulfil its obligations under the RFP in terms thereof.

1. if the Successful Bidder, as applicable:
   * + - 1. fails to sign the Concession Agreement, in accordance with Sub-Section 7.6 (*Signing of the Concession Agreement*) of the Instructions to Bidders;
         2. fails to furnish Performance Security pursuant to Sub-Section 7.5 (*Performance Security*) of the Instructions to Bidders; and / or
         3. fails to comply with the requirements set out in the Notification of Award.]

### The Bid Security is required to protect the Implementing Agency against the risk of Bidder’s conduct which would warrant the Bid Security’s forfeiture, pursuant to Sub-Section 4.7.9 of the Instructions to Bidders.

## Bid Validity

### Bids shall remain valid for the Bid Validity Period, as may be extended by the Implementing Agency in accordance with Sub-Section 4.8.2 of the Instructions to Bidders. A Bid valid for a shorter period shall be rejected as being non-responsive.

### In exceptional circumstances, prior to the expiration of the Bid Validity Period, the Implementing Agency may request all Bidders to extend the period of validity of their Bids. Any such request by the Implementing Agency with respect to extension of the Bid Validity Period and the response by the Bidder shall be in writing. The Bid Security requested in accordance with Sub-Section 4.7 (Bid Security) of the Instructions to Bidders, shall also be extended accordingly for a corresponding period not exceeding the original Bid Validity Period. Extension of Bid Security may be requested upon the extension the period of Bid Validity Period. A Bidder may refuse the request following which such Bidder’s Bid will be disqualified and its Bid Security shall be returned without forfeiture. A Bidder accepting the request shall not be required or permitted to modify its Bid.

## Manner of Signing of Bid

### The Bidder shall prepare one (1) original of the Technical Proposal and one (1) original of the Financial Proposal comprising the Bid as described in Sub-Section 4.3 (Documents Comprising the Bid) of the Instructions to Bidders, and clearly mark each as “ORIGINAL – TECHNICAL PROPOSAL” and “ORIGINAL – FINANCIAL PROPOSAL”, respectively, in addition to the marking stipulated in Sub-Section 4.3 (Documents Comprising the Bid) of the Instructions to Bidders. The Bidder shall submit as “COPY” four (4) hard copies, printable softcopies (PDF), and editable soft copies (MS Word, MS Excel etc., as may be relevant). The CDs / DVDs / USBs should be clearly marked “Technical Proposal” and “Financial Proposal” and placed in their respective envelopes containing the Technical Proposal and the Financial Proposal marked as “Electronic Copy”. In the event of any discrepancy between the original and the copies, the original shall prevail. Note that the Bid Security is required to be submitted in a sealed envelope, separately in the envelope marked as “Technical Proposal”.

### The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorised to sign on behalf of the Bidder. This authorization shall consist of a written power of attorney, as set out in Bidding Form T2 (Form of Power of Attorney) of Part 2 (Bidding Forms) of Volume I (Bidding Procedure) of the RFP, as per the requirements set out in the Instructions to Bidders. This authorization must contain the name and position held by each person signing the authorization and name and position of the authorised signatory.

### The hard copy of each Bid should be bound in the hard book binding form to avoid the possibility of removal or insertion of page(s). All pages of the Bid must be signed and stamped in original by the Bidder’s authorized representative. All the pages must be numbered starting from the first page to the last. Any Bid not substantially adhering to these requirements may be rejected by TFEC.

### Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the authorized representative signing the Bid.

### The Implementing Agency / TFEC reserves the right to reject a Bid which does not meet the requirements in Sub-Section 4.9 (Manner of Signing of Bid) of the Instructions to Bidders.

Submission and Opening of Bids

## Sealing, Marking and Submission of Bids

### In accordance with Sub-Section 4.9.1 of the Instructions to Bidders, each Bid shall be in a separate envelope indicating the Bid as original or copy clearly marked as “Original” and “Copy”, as appropriate. The Technical Proposal shall be placed in a sealed envelope clearly marked “Technical Proposal” and the Financial Proposal in the sealed envelope clearly marked “Financial Proposal”. These two envelopes, in turn, shall be sealed in an outer envelope bearing the address for Bid submission indicated in the Data Sheet. The envelope shall be clearly marked: “Do Not Open, Except In Presence Of TFEC”.

### The outer envelope of the Technical Proposal shall bear a warning not to open the envelope before the Bid Submission Date. The outer envelope of the Financial Proposal shall bear a warning not to open the envelope before the Technical Proposal has been evaluated. Any Bidder (including a Consortium Member) who submits or participates in more than one (1) Bid shall be disqualified. The inner and outer envelopes of the Technical Proposal and the Financial Proposal shall bear the name of the Bidder and be addressed to the Implementing Agency and shall the mention the name of the Project.

### If all the envelopes are not sealed and marked as required, the Implementing Agency / TFEC shall not assume any responsibility for the misplacement or premature opening of the Bid. In case of such misplacement of Bids or premature opening of Bid which results in disclosure of any direct or indirect financial information prior to the scheduled opening of the Financial Proposal, the Bid shall be rejected by TFEC as non-responsive.

### All Bidding Forms forming part of the Technical Proposal and the Financial Proposal, as specified in the RFP are to be properly completed and signed. No alteration is to be made in the Letter of Financial Proposal, Letter of Technical Proposal or in the Bidding Forms, except in filling up the blanks as directed. If any alteration is made or if these instructions have not been fully complied with, the Bid shall be rejected.

### Bids shall be submitted by the Bidders: (i) through courier / express mail; or (ii) by hand at the address indicated in the Data Sheet.

## Deadline for Submission

### Bids must be received by the Implementing Agency no later than the Bid Submission Date at the address provided in the Data Sheet.

### Bids received after 1300 PST hours (PST) on the Bid Submission Date will be returned to the sender unopened. Bidders are responsible for ensuring that their Bids are timely submitted at the address provided in the Data Sheet. Any Bid or any document received by the Implementing Agency after the Bid Submission Date shall be declared late, rejected, and returned unopened to the Bidder.

### No arrangements shall be made by the Implementing Agency with Bidders for collection of the Bids from any delivery point. Bidders shall bear all expenses incurred in the preparation and delivery of Bids. No claims for refund of any expense shall be entertained.

### Where delivery of the Bid is by courier / express mail and Bidder wishes to receive an acknowledgment of receipt of such Bid, the Bidder shall make a request for such acknowledgement in a separate letter attached to (but not included in) the sealed Bid.

### The Implementing Agency may, at its discretion, extend the Bid Submission Date by issuing an addendum in accordance with Sub-Section 3.4 (Amendment of RFP) of the Instructions to Bidders, in which case all rights and obligations of the Implementing Agency and the Bidders previously subject to the earlier Bid Submission Date shall thereafter be subject to extended Bid Submission Date.

### Delays in the mail, delays of person(s) in transit, or delivery of a Bid to an incorrect location, shall not be accepted as an excuse for failure to deliver a Bid at the proper place and time. It shall be the Bidder’s responsibility to ensure delivery of its Bid in a timely manner.

## Modification, Substitution and Withdrawal of Bids

### Any Bidder may modify, substitute, or withdraw its Bid after submission provided that written notice, duly signed by authorised representative, for the modification, substitution or withdrawal is received by the Implementing Agency prior to the Bid Submission Date.

### The notice for modification, substitution or withdrawal of any Bid shall be prepared, sealed, marked and delivered in accordance with the provisions applicable to the original Bid with additional marking of “MODIFICATION” or “SUBSTITUTION” on all envelopes in case of modification or substitution, or “WITHDRAWAL” on the envelope containing the notice, in case of withdrawal.

### Withdrawal of a Bid during the interval between the Bid Submission Date and the expiration of the Bid Validity Period (or any extension thereof) thereof pursuant to Sub-Section 4.8.2 of the Instructions to Bidders) shall result in forfeiture of the Bid Security pursuant to Sub-Section 4.7.9 of the Instructions to Bidders.

### Bids requested to be withdrawn in accordance with Sub-Section 5.3.1 of the Instructions to Bidders shall be returned unopened to the requesting Bidder(s) on the Bid Submission Date.

### After the Bid Submission Date, no changes to the Concession Documents shall be permitted other than those requested by the Implementing Agency and agreed to by the Bidder and inclusion of details of the Successful Bidder (to whom the Concession is awarded) and any other information that was incomplete prior to the Bid Submission Date.

### Bids submitted in response to the RFP by the Bidders shall be upon full understanding and agreement of all terms of the RFP (including the Concession Documents) and such submission shall be deemed as an acceptance to all the terms and conditions stated in the RFP (including the Concession Documents).

## Opening of bids

### TFEC and the Implementing Agency shall conduct the opening of Technical Proposals on the same day as the Bid Submission Date at time and address provided in the Data Sheet, in the presence of Bidders’ designated representatives who choose to attend.

### If the Technical Proposal and the Financial Proposal are submitted together in one envelope, other than as specified in the Instructions to Bidders, TFEC may reject the entire Bid. If any document, required to be submitted with Technical Proposal, is submitted with the Financial Proposal, or if any document required to be submitted with the Financial Proposal is submitted with the Technical Proposal, such document shall not be considered for evaluation and may also form the basis of rejection of a Bid.

### The Financial Proposals shall remain unopened and will be held in custody of the Implementing Agency until the specified time of their opening, as communicated by the Implementing Agency to the Bidders.

### First, envelopes marked “WITHDRAWAL” shall be opened and read out and the inner envelope with the corresponding Bid shall not be opened but returned to the Bidder. No Bid shall be withdrawn unless the corresponding withdrawal notice contains a valid authorization by the Bidder to request the withdrawal and is read out during the Bid opening.

### Second, outer envelopes marked “SUBSTITUTION” shall be opened. The inner envelopes containing the substitute Technical Proposal and / or substitute Financial Proposal shall be exchanged for the corresponding envelopes being substituted, which shall be returned to the Bidder unopened. Only the substituted Technical Proposal, if any, shall be opened, read out, and recorded. Substituted Financial Proposal, if any, will remain unopened in accordance with Sub-Section 5.4.3 of the Instructions to Bidders. No Bid shall be substituted unless a valid authorization by the Bidder to request the substitution is submitted and is read out and recorded during the Bid opening.

### Next, outer envelopes marked “MODIFICATION” shall be opened. The original Technical Proposal shall be opened, read out, and recorded, followed by the opening, reading out and recording of the modification to the Technical Proposal. Any modification to the Financial Proposal shall remain unopened in accordance with Sub-section 5.4.3 of the Instructions to Bidders. No Bid shall be modified unless a valid authorization by the Bidder to request the modification is submitted and is read out and recorded during the Bid opening.

### All other envelopes holding the Technical Proposals shall be opened one at a time, and the following read out and recorded:

* + - 1. the name of the Bidder;
      2. the presence and value of the Bid Security;
      3. whether there is a modification or substitution; and
      4. any other details as the Implementing Agency may consider appropriate.

### Only Technical Proposals which are read out and recorded during the Bid opening shall be considered for evaluation as per the requirements of the RFP. No Bid shall be rejected at the time of opening of Technical Proposals except for late Bids, in accordance with Sub-Section 5.2.2 of the Instructions to Bidders.

### TFEC shall prepare a record of the opening of Technical Proposals, that shall include, as a minimum: the name of the Bidder, presence or absence and the value of Bid Security and whether there is a withdrawal, substitution, or modification. The Bidders’ representatives who are present shall be requested to sign the attendance sheet. The omission of a Bidder’s signature on the attendance sheet shall not invalidate the contents and effect of the record.

### At the end of the evaluation of the Technical Proposals, TFEC shall invite Bidders who have submitted responsive Technical Proposals pursuant to the requirements of the RFP and who have been determined as technically qualified for award of Concession to attend the opening of the Financial Proposals. The date, time, and location of the opening of Financial Proposals shall be advised in writing by the Implementing Agency.

### The Implementing Agency shall notify in writing at any time prior to the opening of the Financial Proposals, the Bidders who have been rejected on the grounds of their Technical Proposals not being responsive to the requirements of the RFP. Such Bidders shall be required to collect their Financial Proposals unopened from the Implementing Agency on the date notified by the Implementing Agency.

### TFEC shall conduct the opening of Financial Proposals of all Bidders who have technically qualified, in the presence of Bidders’ representatives who choose to attend at the address, date and time specified by the Implementing Agency. The Bidders’ representatives who are present shall be requested to sign an attendance sheet/ register evidencing their attendance.

### Financial Proposals of the Bidders shall be opened one at a time and the following shall be read out and recorded:

* + - 1. the name of the Bidder;
      2. whether there is a modification or substitution;
      3. the Bid Price; and
      4. any other details as the Implementing Agency may consider appropriate.

### Only the Financial Proposals which are read out and recorded during the opening of Financial Proposals shall be considered for evaluation. No Financial Proposal shall be rejected at the time of opening of Financial Proposals.

### TFEC shall prepare a record of the opening of Financial Proposals that shall include, as a minimum: the name of the Bidder and the Bid Price. The Bidders’ representatives who are present shall be requested to sign the attendance sheet. The omission of a Bidder’s signature on the attendance sheet shall not invalidate the contents and effect of the record.

Clarification and Evaluation of Bids

## Clarification of Bids

### To assist in the examination, evaluation and comparison of the Technical Proposals and / or Financial Proposals, TFEC may, at its discretion, ask the Bidders for any clarification, additional information or supporting documentation in respect of any matter associated with the documentation submitted by the Bidders in their Bids. Any such request and the response shall be in writing. No change in the price in the Financial Proposals or substance of the Bid shall be sought, offered or permitted except to confirm the correction of arithmetic errors discovered by TFEC in the evaluation of the Bids, in accordance with Sub-Section 6.2.2.4 of the Instructions to Bidders.

### If a Bidder does not provide clarifications of the information requested by the date and time set in TFEC’s request for clarification, its Bid shall be rejected.

## Evaluation of Bids

### During the evaluation of Bids, the following definitions apply:

#### *“Deviation”* is a departure from the requirements specified in the RFP;

#### *“Reservation”* is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the RFP; and

#### *“Omission”* is the failure to submit part, or all of the information or documentation required in the RFP.

### **Preliminary Examination of Bids**

* + - 1. Prior to the detailed evaluation of Bids pursuant to Sub-Section 6.2.3 (*Determination of Responsiveness of Bids*) of the Instructions to Bidders, TFEC shall examine each Bid to determine whether:
      2. the Bid is complete and does not deviate from the scope of works and services to be performed in relation to the Project;
      3. any computational errors have been made;
      4. required sureties (including the Bid Security) have been furnished;
      5. documents have been properly signed;
      6. valid authorization(s) is / are present;
      7. the Bid is valid till the Bid Validity Period; and
      8. the Bidder is compliant with the basic eligibility requirements set out in Annexure A (*Basic Eligibility Criteria*) of Part 4 (*Annexures*) of Volume I (*Bidding Procedure*) of the RFP.
      9. Prior to conducting detailed evaluation of Bids pursuant to Sub-Section 6.2.3 (*Determination of Responsiveness of Bids*) of the Instructions to Bidders, TFEC shall examine each Bid as follows, and a Bid may not be considered acceptable if:
      10. it is unsigned; or
      11. its validity is less than the Bid Validity Period.
      12. Prior to the detailed evaluation of Bids pursuant to Sub-Section 6.2.3 (*Determination of Responsiveness of Bids*) of the Instructions to Bidders, TFEC shall examine each Bid as follows, and a Bid shall not be considered acceptable if:
      13. it is not accompanied by a Bid Security;
      14. it is received after the Bid Submission Date;
      15. it is submitted through fax, email, or any other form of electronic transmission;
      16. the Bidder refuses to accept arithmetic correction(s); or
      17. it materially deviates from the requirements of the RFP.
      18. During the evaluation of Financial Proposals, the Implementing Agency / TFEC shall correct arithmetical errors on the following basis:
      19. [the relevant input amount and the output (i.e., total) amount in any Bidding Form, due to any error in calculation, the relevant input amount shall prevail, and the output (i.e., total) amount shall be corrected][[6]](#footnote-6); and
      20. the words and figures, the amount in words shall prevail.
      21. If the Bidder does not accept the corrected amount of the Bid, its Bid shall be rejected, and its Bid Security shall be forfeited.

### **Determination of Responsiveness of Bids**

* + - 1. TFEC shall determine the responsiveness of each Bid to the RFP. The Technical Proposals that conform to all the terms and conditions of the RFP without material deviations, reservations or omissions shall be declared responsive. A material deviation, reservation or omission is one that:

#### if accepted, would:

1. affect in any substantial way the scope, quality, or performance of the works and services in relation to the Project as specified in the RFP; or
2. limit in any substantial way the Implementing Agency’s rights or the Bidder’s or the successful bidder’s obligations under the RFP; or

#### if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Technical Proposals.

* + - 1. TFEC’s determination of a Bid’s responsiveness may be based on the contents of the Bid itself without recourse to extrinsic evidence.
      2. Any minor non-conformity or irregularity in a Technical Proposal that does not constitute a material deviation, reservation or omission may be waived by the Implementing Agency or required by the Implementing Agency to be rectified, provided such waiver or rectification does not prejudice or affect unfairly the competitive position of other responsive Technical Proposals.
      3. Provided that a Bid is substantially responsive, TFEC may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify non-material non-conformities in the Bid related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the Financial Proposal. Failure of the Bidder to comply with the request may result in the rejection of its Bid.
      4. If a Technical Proposal is not substantially responsive to the requirements of the RFP, it shall be rejected by TFEC and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.
      5. A responsive Financial Proposal is one which meets the requirements of the RFP without any deviation, reservation or omission. No change in the Financial Proposals shall be allowed and shall be evaluated as per the information provided by the Bidders. A non-responsive Financial Proposal may not subsequently be made responsive by correction of the deviation, reservation, or omission.

### **Evaluation Criteria**

* + - 1. Bids of only those Bidders shall be considered who meet the basic eligibility criteria set forth in Annexure A (*Basic Eligibility Criteria*) of Part 4 (*Annexures*) of Volume I (*Bidding Procedure*) of the RFP.
      2. In addition, and subject to the requirements set out in Sub-Section 6.2.2 (*Preliminary Examination of Bids*) and Sub-Section 6.2.3 (*Determination of Responsiveness of Bids*) each of the Instructions to Bidders, the Bidders shall be evaluated against the evaluation criteria for the Technical Proposals and the Financial Proposals set out in Annexure B (*Evaluation Criteria*) of Part 4 (*Annexures*) of Volume I (*Bidding Procedure*) of the RFP.
      3. The TFEC shall attribute a technical score to responsive Technical Proposals.
      4. Technical Proposals scoring less than 70 points shall be rejected. The technical score shall be calculated as follows:

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Criteria** | **Weightage/ Marks** |
|  | Financial Soundness | 20 points |
|  | Experience of Management | 40 Points |
|  | Methodology and Work Plan | 20 Points |
|  | Key Professionals | 20 Points |
|  | **Total** | **100 Points** |

For technical qualification, a Bidder must score at least *seventy (70)* or more marks. The detailed technical evaluation criteria for Technical Proposal is set out in Annexure B (*Evaluation Criteria*) of Part 4 (*Annexures*) of Volume I (*Bidding Procedure*) of the RFP.

Evaluation of bids will be based on Quality cost-based selection (QCBS) method. The weightage to the technical and financial proposals are 70:30.

* + - 1. After complete evaluation of the Technical Proposals, the Financial Proposals of the Bidders, who have been qualified technically, shall be evaluated as per the requirements set out in Volume I (*Bidding Procedure*) of the RFP.

### **Successful Bidder**

* + - 1. The Bidder who secures the best evaluated bid based on the technical and financial evaluation criteria, and whose Bid is determined to be the Best Evaluated Bid in terms of the Applicable Evaluation Documents, shall be declared the Successful Bidder.
      2. If a Financial Proposal, in the opinion of TFEC, is seriously unbalanced or is seen to unfairly exploit the evaluation mechanism, TFEC may require the relevant Bidder to produce detailed price analysis for any or all items of the Bid, to demonstrate the internal consistency of those prices. After evaluation of the price analysis, taking into consideration the terms of payments, the Implementing Agency / TFEC may require the Bidder to rationalize the costs and / or terms of payments.

### **the Implementing Agency’s Right to Verify Documents**

### The Implementing Agency retains the right to verify particulars regarding any information, statements and / or documents furnished with a Bid. Any Bidder found to be misrepresenting information may be disqualified at any stage of the Bidding Process and their Bid Security shall be forfeited.

Award of Concession

## Award Criteria

### Subject to Sub-Section 7.2 (Implementing Agency’s Right to Accept / Reject Bids), the Implementing Agency shall award the Concession to the Bidder whose Bid has been determined to be the Best Evaluated Bid in terms of the requirements of the Applicable Evaluation Documents.

## Implementing Agency’s Right to Accept / Reject Bids

### No Bid shall be considered to have been accepted, unless such acceptance is confirmed in writing and notified to the Successful Bidder by the Implementing Agency.

### The Implementing Agency reserves the right to annul the Bidding Process and reject all Bids at any time prior to the issuance of the Notification of Award, without thereby incurring any liability to Bidders or providing any reason for rejection of the Bids. In case of such annulment, all Bids submitted and specifically, the Bid Securities, shall be promptly returned to the Bidders. The decision of the Implementing Agency shall be final and binding and no correspondence shall be entered into with the Bidders.

### The Implementing Agency shall not be responsible for, or pay for, any expenses or losses which may be incurred by any Bidder in the preparation of, or in connection with, its Bid.

### Each Bidder fully waives off any and all rights to claim in respect of such expenses or losses and agrees to indemnify the Implementing Agency, its affiliates and their advisors fully in respect of any direct or indirect losses, damages, costs or expenses of any kind incurred by any of them.

## Notification of Award

### Prior to expiration of the Bid Validity Period, the Implementing Agency shall notify the Successful Bidder through the Notification of Award that its Bid has been accepted.

### The Implementing Agency shall, at least ten (10) business days prior to the issuance of the Notification of Award, publish results of the Bidding Process in the form of a report.

### The Successful Bidder shall acknowledge and return the Notification of Award with its acceptance (the “**Acceptance of Notification of Award**”) within seven (7) days of the issuance of Notification of Award, failure of which may constitute sufficient grounds for the annulment of the award and forfeiture of its Bid Security.

## Performance Security

### The Successful Bidder shall, at least seven (7) day(s) prior to the date of signing of the Concession Agreement, furnish to the Implementing Agency satisfactory Performance Security and shall maintain the same in full force and effect until the Performance Security Expiry Date, in accordance with the requirements of the Concession Agreement and the RFP.

### Failure of the Successful Bidder to comply with the requirements of Sub-Section 7.5.1 of the Instructions to Bidders shall constitute sufficient grounds for the annulment of the award and forfeiture of its Bid Security. Prior to execution of the Concession Agreement, the Performance Security may be encashed for the same reasons as the Bid Security and for such other purpose as specified in the RFP. Following execution of the Concession Agreement, the Performance Security shall be encashed in terms of the Concession Agreement.

## Signing of the Concession Agreement

### The Concession Agreement shall be executed between, the Implementing Agency and the Successful bidder (as the concessionaire), within thirty (30) days of issuance of the Notification of Award or within such extended timeline as determined by the Implementing Agency in its sole discretion. In case the Concession Agreement is not executed within the aforesaid timeline, the Bid Security or the Performance Security (as applicable) shall be encashed by the Implementing Agency and the award shall be canceled, if such failure is due to reasons attributable to the Successful Bidder.

## Award to Next Best Evaluated Bidder

### In the event the Successful Bidder / Bidder fails to comply with Sub-Section 7.5 (Performance Security) and / or Sub-Section 7.6 (Signing of the Concession Agreement) of the Instructions to Bidders, the Implementing Agency shall be entitled to revoke and terminate the Notification of Award and / or the Acceptance of the Notification of Award, as the case may be.

### Thereafter, the Implementing Agency may issue (at its sole discretion) the Notification of Award to the Bidder whose Bid has been determined to be second Best Evaluated Bid in terms of the RFP. Upon the issuance of the Notification of Award, such Successful Bidder shall be required to comply with all the provisions set out in the RFP.

Other Considerations

## Confidentiality

### Subject to Sub-Section 8.1.3 of the Instructions to Bidders and Sub-Section 3.3 (Clarifications of RFP), no Bidder shall contact the Implementing Agency / TFEC on any matter relating to its Bid from the time of Bid Submission Date.

### 

### Any attempt by a Bidder to influence the Implementing Agency / TFEC in relation to the Bidding Process may result in the rejection of its Bid and encashment of its Bid Security.

### Notwithstanding Sub-Sections 8.1.1 and 8.1.2 of the Instructions to Bidders, from the time of Bid opening to the time of award of the Concession, if any Bidder wishes to contact the Implementing Agency / TFEC on any matter related to the Bidding Process (including for the matters set out in Sub-Section 3.3 (Clarifications of RFP), it should do so in writing.

### Information relating to the examination, clarification, evaluation and recommendation for the Bidder shall not be disclosed to any person who is not officially concerned with the Bidding Process or is not a retained professional advisor advising the Implementing Agency in relation to, or matters arising out of, or concerning the Bidding Process. The Implementing Agency will endeavour to treat all information, submitted as part of the Bid, in confidence and will require all those who have access to such material to treat the same in confidence. The Implementing Agency may not divulge any such information, unless it is directed to do so by any statutory entity that has the power under law to require its disclosure, is required under the applicable laws in Pakistan, or it is to enforce or assert any right or privilege of the Implementing Agency, a statutory entity.

### All information supplied by the Implementing Agency in connection with this RFP, shall be treated as confidential and the Bidders shall not, without the prior written consent of the Implementing Agency, at any time make use of such information for their own purposes or disclose such information to any person (except as may be required by applicable law). Subject to the provisions of this RFP, the RFP shall remain the property of the Implementing Agency and is issued solely for the purpose of preparation and submission of the Bid in accordance herewith.

### The RFP and every part of it and all other information provided by or on behalf of the Implementing Agency must be treated as private and confidential. Bidders shall not disclose the fact that they have been invited to submit a Bid or release details of the RFP other than on a strictly confidential basis to those parties whom they need to consult for the purposes of preparing the Bids.

### Bidders shall not at any time release any information concerning the RFP and / or their Bid and / or any related documents and / or any discussion with the Implementing Agency in this connection for publication in the press or on radio, television, screen or any other medium without the prior written approval of the Implementing Agency.

### Each Bidder undertakes to indemnify the Implementing Agency and to keep the Implementing Agency indemnified against all actions, claims, demands, liability, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection with any breach of the provisions of this Sub-Section 8.1 (Confidentiality).

### Any Bid submitted in response to the RFP is submitted upon a full understanding and agreement of terms of this Sub-Section 8.1 (Confidentiality) and therefore the submission of the Bid in response to the RFP would be deemed as an acceptance to the said terms.

## Corrupt and Fraudulent Practices

### The Implementing Agency / TFEC will reject a Bid if it determines that a Bidder (including any of its Affiliates) has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the Bidding Process and / or shall declare such Bidder ineligible, either indefinitely or for a stated period of time, to engage with the Implementing Agency.

### “Corrupt and fraudulent practice” has the meaning given to that term in the PPP Rules.

## Integrity Pact

The successful bidder shall sign and stamp form of integrity pact, in the form and substance to be provided with the Notification of Award (the “Integrity Pact”). Failure to provide the Integrity Pact may result in the cancellation of the award.

## Grievance Redressal

Any Bidder being aggrieved by any act or decision of the Implementing Agency / TFEC, may after the issuance of the RFP, lodge a written complaint to the “*complaint redressal committee*” constituted by the Implementing Agency in accordance with the Applicable Evaluation Documents. The mechanism for redressal of grievances of Bidders shall be as per the Applicable Evaluation Documents.

## No Lobbying

### The Bidders (including any member of the Consortium) will not attempt to communicate, directly or indirectly, with the Implementing Agency and / or the TFEC at any stage of the Bidding Process (including during the evaluation process), except as expressly permitted under this RFP, directed or permitted by the Implementing Agency, or except as may be required and permitted under another procurement process, project or other assignment, in which event the Bidder will not have any discussions regarding the Project.

### The Implementing Agency / TFEC reserves the right to disqualify any Bidder that, in the Implementing Agency / TFEC’s opinion, has engaged in lobbying in connection with this Project.

Data Sheet[[7]](#footnote-7)

The following specific data shall supplement the provisions in the Instructions to Bidders.

|  |  |  |
| --- | --- | --- |
| **1.** | **Address for seeking clarifications on the RFP** | **Designation:** Director (Projects), BPPPA  **Address:** Office #35 Second floor P & D Department  **Phone No.:** 081-9202723  Requests for clarifications to be sent to the following email addresses:  *bpppauthority@gmail.com*  Subject of email to be Attn: RFP [*Name of Bidder*] - KTI. |
| **2.** | **Address for submission of Bids** | **Designation:** Director (Projects), BPPPA  **Address:** Office #35 Second floor P & D Department  **Phone No.:** 081-9202723 |
| **3.** | **Address for opening of Bids** | Conference Hall, P&D Department, Civil Secretariat |
| **4.** | **Bid Submission Date** | 09-03-2023 |
| **5.** | **Bid Opening Date (Technical Proposals only)** | 09-03-2023 |
| **6.** | **Name of Project** | O&M of KTI under Public Private Partnership mode. |
| **7.** | **Number of Trades** | 22 |
| **8.** | **Name of Trades** | 1. Beautician 2. Dress Designing 3. Hand Embroidery (Balochi) 4. Machine Embroidery 5. Computer 6. Welding 7. Motorcycle 8. Refrigeration & Air Conditioning 9. Auto Mechanic 10. Wood Work 11. Mobile Repairing 12. Motor Winding Trade 13. Computer 14. Electronics 15. Electrical Wiring 16. Plumbing 17. Solar 18. Livestock farm manager 19. Horticulture 20. Agriculture 21. Construction 22. Mining |

**Part 2**

**Bidding Forms**

### **Bidding Forms**

### The Bidding Forms comprise the forms stated below. Each relevant form is required to be submitted with the Technical Proposal and the Financial Proposal, as applicable.

### In case a document / Bidding Form required to be submitted as part of the Technical Proposal, is submitted with Financial Proposal; or a document / Bidding Form required to be submitted with Financial Proposal, is submitted with Technical Proposal, it shall not be considered for evaluation and such document / Bidding Form shall be considered as not submitted by the Bidder and may also form the basis of rejection of a Bid.

1. For the Technical Proposal:

#### **Form T1 – Letter of Technical Proposal;**

#### **Form T2 – Form of Power of Attorney;**

#### **Form T3 – Form of Affidavit;**

#### **Form T4 – Basic Information Form;**

#### **Form T5 – Historical Non-Performance and Pending litigation;**

#### **Form T6 – Form of Bid Security;**

1. For the Financial Proposal:
   * + - 1. **Form F1 – Letter of Financial Proposal;**

* 1. **Technical Proposal Bidding Forms**

**Bidding Form T1 – Letter of Technical Proposal**

**[Date]**

**To:** **[*Insert name of the Implementing Agency*]**

[*Insert Address and Email details*]

**Re:** [*Design, finance, build, operate, maintain and transfer*][[8]](#footnote-8) of the [*insert name of the project*] project (the **“Project”**).

Dear [Sir/Madam],

Reference the Request for Proposals document issued on [⚫], by [insert name of the Implementing Agency] (the “**Implementing Agency**”), (the “**RFP**”) in relation to the Project.

We, [*Name of the Bidder*] hereby submit our Technical Proposal in conformity with the requirements of the RFP.

*All capitalized terms unless defined herein shall bear the meaning as ascribed thereto in the RFP.*

We, agree, confirm, undertake and declare that:

1. We have examined and have no reservations to the RFP, including Addenda No(s) / Corrigenda No(s).................................................
2. We, [including all Consortium Members,] fully and completely understand and accept the terms of the RFP and hereby undertake to comply with the requirements specified therein.
3. As security for due performance of the undertakings and obligations of this Bid, we submit unconditionally herewith a Bid Security equivalent to PKR [⚫]/- (Pakistani Rupees [⚫] only) drawn in your favour or made payable to you and valid for a period [twenty-eight (28)] days beyond the period of validity of Bid. We confirm that the Bid Security has been issued and maintained in accordance with the requirements of the RFP.
4. We offer to perform and undertake the works and services in respect of the Project in conformity with the RFP (including the Concession Documents) without any omission, reservation and deviation; and we accept and undertake to comply with all requirements in the RFP, including the appendices / annexures attached to the RFP.
5. We, [including all Consortium Members,] and the proposed contractors as per the requirements of the RFP, respectively:
   * + 1. have nationalities of Eligible Countries;
       2. do not have any conflict of interest; and
       3. have not been declared ineligible/blacklisted by any of our employers, by any Federal or Provincial governmental or non-governmental department / agency in Pakistan, as at the Bid Submission Date.
6. Our Bid consisting of the Technical Proposal and the Financial Proposal shall be valid for a period of [one hundred twenty days (120)] days from the Bid Submission Date in accordance with the RFP, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
7. We understand that all the volumes, appendices / annexures attached to the RFP are integral part of the RFP.
8. We have reviewed and accepted the form of the Concession Agreement along with the appendices attached thereto (attached as Volume III (*Concession* *Agreement and Appendices*) to the RFP), and undertake to execute the same within the time period stipulated in Notification of Award.
9. We acknowledge that the Implementing Agency will be relying on the information provided in our Bid and the documents accompanying it to determine the Successful Bidder. We certify that all information provided in our Bid is true and correct and that nothing has been omitted which renders such information misleading.
10. We certify that in the last [five (5)] years, we have neither failed to perform on any contract, as evidenced by imposition of a penalty by any arbitral or judicial authority or a judicial pronouncement or arbitration award, nor have been expelled from any project or contract by any public authority, nor have had any contract terminated by any public authority for breach by us or, if we are a Consortium, by any of our Consortium Members and the proposed contractors.
11. We understand that this Bid, together with your written acceptance thereof included in your Notification of Award, shall constitute a binding contract between us, until the Concession Agreement (attached as Volume III (*Concession* *Agreement and Appendices*) to the RFP) is executed.
12. We are not participating, as a Bidder in more than one Bid in this Bidding Process in accordance with the requirements of the RFP.
13. We understand that the Implementing Agency may cancel the Bidding Process at any time and that the Implementing Agency is not bound either to accept any Bid that it may receive, without incurring any liability to the Bidders.
14. We agree to permit the Implementing Agency, and any persons, representatives or auditors appointed and authorized by the Implementing Agency to inspect and audit our accounts, records and other documents relating to our Bid.
15. All the information submitted along with our Bid, including the enclosed forms and documents, is accurate in all respects.

1. We accept the right of the Implementing Agency to: (i) request additional information reasonably required to assess the Bid; (ii) amend the procedures and requirements or make clarifications thereof; and (iii) extend or amend the timelines as stipulated in the RFP.
2. All information, representations and other matters of fact communicated (whether in writing or otherwise) to the Implementing Agency by us or on our behalf, in connection with or arising out of the Bid are true, complete and accurate in all respects.
3. We hereby declare that all the information and statements made in this Bid are true and accept that any misrepresentation contained in it shall lead to our disqualification, forfeiture of the Bid Security and / or our blacklisting by the Implementing Agency.
4. We, [including all Consortium Members,] have made our own investigations and research and have satisfied ourselves in respect of all matters (whether actual or contingent) relating to the Bid and the Project.
5. We undertake, if our Bid is accepted, to furnish the Construction Performance Security as per the requirements of the RFP.
6. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a Bid for the Project.
7. We understand that the RFP has been issued by the Implementing Agency for the Project; and we undertake and confirm that if our Bid is accepted, we and the bidder (to be incorporated by us, in case the Project is awarded to us), as applicable, shall execute the Concession Agreement (including other Concession Documents) (attached as Volume III (*Concession* *Agreement and Appendices*) to the RFP and all other instruments as may be required to be executed in relation to the Project as per the requirements of the RFP.

Name

In the capacity of

Signed

…………………………………….. (Seal)…

Duly authorized to sign the Bid for and on behalf of: (*Insert* *Name of the Bidder/names of all Consortium Members*)

Date

|  |  |
| --- | --- |
| **Witness # 1:** | **Witness # 2:** |
| Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| CNIC/Passport No.:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | CNIC/Passport No.:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Bidding Form T2 – Form of Power of Attorney**

**A.** **Power of Attorney to Authorize a Person to Sign the Documents**

***Notes for Execution of Power of Attorney***

* *To be executed by each Bidder and in case the Bidder is a Consortium, by each Consortium Member, authorizing the relevant attorney to sign the required documents on its behalf. Such attorney may be the same person authorised to submit documents on behalf of the Bidder (or Consortium Member) or may be a separate person.*
* *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.*
* *The Power of Attorney should comply with the requirements set out in Part 3 (Bidding Documentary Requirements) of Volume I (Bidding Procedure) of the RFP.*

**Know All By These Presents**, **We**, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (*name of the entity and address of the registered office*) do hereby irrevocably constitute, nominate, appoint and authorise Mr. / Ms. (Name), son / daughter / wife of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ holding [*CNIC / Passport*] Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and presently residing at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, who is presently employed with [us / [in case of Consortium, insert name of Consortium Member] and holding the position of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, as our true and lawful attorney (hereinafter referred to as the “**Attorney**”) to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to the requirements of the request for proposals document issued on [⚫] (the “**RFP**”) by [*insert name of the Implementing Agency*] (“**the Implementing Agency**”) in relation to [*design, finance, build, operate, maintain and transfer*] of the [*insert name of project*] (the “**Project”**), including but not limited to signing and submission of all documents and providing information / responses to the Implementing Agency, representing us in all matters before the Implementing Agency, and generally dealing with the Implementing Agency in all matters in connection with our Bid for the Project.

We hereby ratify all prior and/ or future acts, deeds and things lawfully done or caused to be done by the Attorney in relation to the Project (including with respect to the submission of our Bid in response to the RFP) pursuant to this Power of Attorney and we hereby agree that all prior and/ or future acts, deeds and things done by the Attorney in relation to the Project (including with respect to the submission of our Bid in response to the RFP) shall, and shall always be deemed to have been done by us.

In witness whereof we, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, have executed this Power of Attorney on this \_\_\_\_\_\_\_\_\_\_ day of \_\_\_\_\_\_\_\_\_\_, 20­­­­\_\_\_.

For & On Behalf of:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (*name of the entity)*

By Its Duly Authorized Signatory

………………………………………..

(Signature)

(Name, Title and Address)

**Witnesses:**

|  |  |
| --- | --- |
| **Witness 1:** | **Witness 2:** |
| ……………………………………… | ……………………………………… |
| Name: | Name: |
| CNIC / Passport Number: | CNIC / Passport Number: |
| Address: | Address: |

**Signature of Attorney**

[Notarised]

………………………………………

(Signature)

(Name, Title and Address of the Attorney)

**B.** **Power of Attorney to Authorize the Lead Member**

***Notes For Execution of Power of Attorney***

* *This Power of Attorney for the appointment and authorization of Lead Member, is to be executed by the authorized representative of each Consortium Member (appointed pursuant to the power of attorney in Form A (Power of Attorney to Authorize a Person to Sign the Documents)).*
* *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.*
* *The Power of Attorney should comply with the requirements set out in Part 3 (Bidding Documentary Requirements) of Volume I (Bidding Procedure) of the RFP.*

**Whereas,** the [*insert name of Implementing Agency*] (“**the Implementing Agency**”) has invited bids for the ‘[insert name of Project] (the “**Project**”) pursuant to the request for proposals document issued on [⚫] by the Implementing Agency (as amended from time to time) (the “**RFP**”);

**Whereas,** \_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_ (each hereinafter referred to individually as a “**Consortium Member**” and collectively as “**Consortium Members**”) have formed a consortium (the “**Consortium**”) in accordance with the requirements of the RFP and have formed a consortium as per the requirements of the RFP;

**And Whereas,** the Consortium Members issue this Power of Attorney for the appointment and authorization of the ‘**Lead Member**’ with all necessary powers and authority to represent and irrevocably bind all the Consortium Members in all matters connected with the Bidding Process and during execution of the relevant agreements in relation to the Project, in case the Consortium is awarded the Project.

**know all men by these presents**

**We**, \_\_\_\_\_\_\_\_\_\_\_\_ , having our registered office at \_\_\_\_\_\_\_\_\_\_\_\_, M/s. \_\_\_\_\_\_\_\_\_\_\_\_, having our registered office at \_\_\_\_\_\_\_\_\_\_\_\_, and M/s. \_\_\_\_\_\_\_\_\_\_\_\_, having our registered office at \_\_\_\_\_\_\_\_\_\_\_\_, do hereby irrevocably designate, nominate, constitute, appoint and authorise M/s \_\_\_\_\_\_\_\_\_\_\_\_, having its registered office at \_\_\_\_\_\_\_\_\_\_\_\_\_, being one of the Consortium Members, as the Lead Member and true and lawful attorney of the Consortium (hereinafter referred to as the “**Attorney**”) and hereby irrevocably authorise the Attorney (with power to sub-delegate) to conduct all business for and on behalf of the Consortium and any one of us during the Bidding Process being conducted by the Implementing Agency pursuant to the RFP and to do on our behalf and on behalf of the Consortium, all or any of such acts, deeds or things as are necessary or required or incidental to the Project, including but not limited to signing and submission of our Bid, all applications and other documents and writings, participate in conferences / meetings, respond to queries, submit information / documents, sign and execute contracts and undertakings including the Acceptance of Notification of Award, as applicable (if awarded the Project) and generally to represent the Consortium in all its dealings with the Implementing Agency and / or any other governmental agencies or any person, in all matters in connection with or relating to or arising out of the Consortium’s Bid and its acceptance by the Implementing Agency.

We hereby ratify all prior and future acts, deeds and things lawfully by the Attorney in relation to the Project (including with respect to the submission of our Bid in response to the RFP) pursuant to this Power of Attorney and we hereby agree that all prior and/ or future acts, deeds and things done by the Attorney in relation to the Project (including with respect to the submission of our Bid in response to the RFP) shall, and shall always be deemed to have been done by us.

In witness whereof we the above named have executed this power of attorney on this \_\_\_\_\_\_\_\_ day of \_\_\_\_\_\_\_\_ 20\_\_\_.

For:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Signature)

(Name, Title and Address)

For: :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Signature)

(Name, Title and Address)

For: :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Signature)

(Name, Title and Address)

**Witnesses:**

|  |  |
| --- | --- |
| **Witness 1:** | **Witness 2:** |
| ……………………………………… | ……………………………………… |
| Name: | Name: |
| CNIC / Passport Number: | CNIC / Passport Number: |
| Address: | Address: |

(Executants)

(To be executed by all the Consortium Members in favour of Lead Member)

**Bidding Form T3 – Form of Affidavit**

**Affidavit**

(this “**Affidavit**”)

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**[Insert name of Implementing Agency]**

[Address]

Reference the Request for Proposals document issued on [⚫], by [*insert name of the Implementing Agency*] (the “**RFP**”), in relation to the [*design, finance, build, operate, maintain and transfer*][[9]](#footnote-9) of the [*insert name of the project*] project.

We, [*insert name of Bidder / Consortium Member*] hereby represent and warrant that, as of the date of this Affidavit [*name of Bidder / Consortium Member]* (as applicable):

1. are not in bankruptcy or liquidation proceedings;
2. are not blacklisted by any governmental or non-governmental department / agency;
3. have not been convicted of, fraud, corruption, collusion or money laundering;
4. are not aware of any conflict of interest or potential conflict of interest arising from prior or existing contracts or relationships which could materially affect our capability to comply with the obligations under the Concession Agreement;
5. [are legally and financially autonomous and operate under commercial law][[10]](#footnote-10);
6. [there is no pending litigation which represents more than [*fifty percent (50%)*] of our net worth][[11]](#footnote-11);
7. [are not under any non-performance of a contract within last [*five (5)*] years of the Bid Submission Date][[12]](#footnote-12); and
8. [have not failed to sign a contract with any procuring authority following award][[13]](#footnote-13).

We have also attached proof of our registration from the relevant statutory authority.

*All capitalized terms unless defined herein shall bear the meaning as ascribed thereto in the RFP.*

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Deponent**

[Verified on oath at \_\_\_\_\_\_\_\_\_\_\_\_\_\_ on this \_\_\_\_day of \_\_\_\_\_\_\_\_\_\_, 20\_\_\_ that the contents of the above Affidavit are true and correct to the best of my knowledge and belief.][[14]](#footnote-14)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Deponent**

Yours sincerely,

Name and Title of Signatory: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of Bidder / Consortium Member: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address of Bidder / Consortium Member: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Witness 1:** | **Witness 2:** |
| ……………………………………… | ……………………………………… |
| Name: | Name: |
| CNIC / Passport Number: | CNIC / Passport Number: |
| Address: | Address: |

#### **Bidding Form T4 – Basic Information Form**

*To be submitted by all Bidders. In case of a Consortium, each Consortium Member must fill in this form.*

**Basic Information Form (Company Profile)**

|  |  |  |
| --- | --- | --- |
| 1. | Name of Entity:  (In case of Consortium, legal name of each Consortium Member | |
| 2. | Nature of Business:  (Whether the entity is a corporation, partnership, trust *etc.*) | |
| 3. | Head office address: | |
| 4. | Telephone:  Fax Number:  E-mail address: | |
| 5. | Place of Incorporation / Registration:  Year of Incorporation / Registration: | |
| 6. | Bidder’s authorized representative:  Telephone:  Fax numbers:  E-mail address: | |
| 7. | Nationality of owners | |
| Name: | Country: |

**Bidding Form T5 – Historical Non-Performance and Pending Litigation**

|  |  |  |  |
| --- | --- | --- | --- |
| Non-Performing Contracts | | | |
| * **Contract non-performance did not occur** within the last **five (5)** years prior to the bid submission Date based on all information on fully settled disputes or litigation **(Affidavit to be provided)** * **Contract non-performance during the stipulated period.** | | | |
| **Year** | **Outcome as**  **Percent of**  **Total Assets** | **Details** | **Total Contract Amount (current value, PKR)[[15]](#footnote-15)** |
|  |  | Contract Identification:  Name of Employer:  Address of Employer:  Matter in dispute: |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Pending Litigation | | | |
| * **No pending litigation** (A fully settled dispute or litigation is one that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder / Consortium Member have been exhausted) **(Affidavit to be provided)** * **Pending litigation** (All pending litigation shall in total not represent more than [**50%]** of the Bidder’s / Consortium Member’s net worth and shall be treated as resolved against the Bidder / Consortium Member) | | | |
| **Year** | **Outcome as**  **Percent of**  **Total Assets** | **Details** | **Total Contract Amount (PKR)** |
|  |  | Contract Identification:  Name of Employer:  Address of Employer:  Matter in dispute: |  |
|  |  |  |  |

**Bidding Form T6 – Form of Bid Security**

**BANK GUARANTEE**

Guarantee No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Executed on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Expiry date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of Guarantor (Bank) with address:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[Name of Bidder with address:] \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Guaranteed Amount (express in words and figures):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of Bid \_\_\_\_\_\_\_\_\_\_\_\_\_\_

The above premised, we (the “**Guarantor**”) hereby undertake irrevocably and unconditionally on demand to pay to [insert name of the Implementing Agency] (the “**Implementing Agency**”), without any notice, reference or recourse to the Bidder or to any other entity or without any recourse or reference to any document, agreement, instrument or deed, any sum or sums (or any part thereof) equivalent in aggregate up to but not exceeding a maximum amount of:

[●] [●]/- ([●][●])

(the “**Guaranteed Amount**”)

at sight and immediately upon the receipt of the Implementing Agency’s first written demand (the “**Demand**”) at the Guarantor’s offices located at [●] or through SWIFT instructions transmitted by the Implementing Agency’s bank (i.e. [●]), on behalf of the Implementing Agency, to the Guarantor, or through fax sent by the Implementing Agency at the Guarantor’s fax number i.e., [●], such Demand stating:

* + - * 1. that the Bidder is in breach of its obligations towards the Implementing Agency; and
        2. the total amounts demanded.

A Demand shall only be honoured by us: (i) in the case of a written Demand, if it is made by and bears the signature of an authorised officer or other representative of the Implementing Agency; or (ii) in the case of a Demand transmitted through SWIFT, if it is transmitted through authenticated SWIFT instructions by the Implementing Agency’s bank (i.e. [●]), on behalf of the Implementing Agency; or (iii) in the case of a Demand made through fax, it is made by and bears the signature of an authorised officer or other representative of the Implementing Agency.

We, the Guarantor, shall unconditionally honour a Demand hereunder made in compliance with this Bank Guarantee at sight and immediately on the date of receipt of your Demand, as stated earlier, and shall transfer the amount specified in the Demand to the bank account, as notified in the Demand, in immediately available and freely transferable funds in the currency of this Bank Guarantee, free and clear of and without any set-off or deduction for or on account of any present or future taxes, levies, imposts, duties, charges, fees, deductions or withholdings of any nature whatsoever and by whomsoever imposed.

Such demand must be received by us on or before the [●] (the “**Expiry Date**”), when this Bank Guarantee shall expire and shall be returned to us.

Upon expiry, this Bank Guarantee shall be returned to the Bidder without undue delay. Multiple Demands may be made by the Implementing Agency under this Bank Guarantee, but our aggregate liability will be restricted up to the Guaranteed Amount.

We hereby agree that any amendment, renewal, extension, modification, compromise, release or discharge by mutual agreement by the Implementing Agency, the Bidder or any other entity of any document, agreement, instrument or deed shall not in any way impair or affect our liabilities hereunder and maybe undertaken without notice to us and without the necessity for any additional endorsement, consent or guarantee by us.

This Bank Guarantee for its validity period shall not be affected in any manner by any change in our constitution or of the Bidder’s constitution or of their successors and assignees and this Bank Guarantee shall be legally valid, enforceable and binding on each of their successors and permitted assignees.

All references to any contract, agreement, deed or other instruments or documents are by way of reference only and shall not affect our obligations to make payment under the terms of this Bank Guarantee.

If one or more of the provisions of this Bank Guarantee are held or found to be invalid, illegal, or unenforceable for any reason whatsoever, in any respect, any such invalidity, illegality, or unenforceability of any provision shall not affect the validity of the remaining provisions of this Bank Guarantee.

We hereby declare and confirm that under our constitution and applicable laws and regulations, we have the necessary power and authority, and all necessary authorizations, approvals and consents thereunder to enter into, execute, deliver and perform the obligations we have undertaken under this Bank Guarantee, which obligations are valid and legally binding on and enforceable against us under the laws of Pakistan and under the laws of the jurisdiction where this Bank Guarantee is issued. Further, that the signatory(ies) to this Bank Guarantee is / are our duly authorized officer(s) to execute this Bank Guarantee.

This Bank Guarantee and all rights and obligations arising from this Bank Guarantee shall be governed and construed in all respects in accordance with the laws of Pakistan. The courts in Pakistan shall have exclusive jurisdiction in respect of any dispute relating to any matter contained herein.

[The issuance of this Bank Guarantee is permitted according to the laws of Pakistan and the laws of the jurisdiction where this Bank Guarantee is issued.]

This Bank Guarantee is subject to the Uniform Rules for Demand Guarantee, ICC Publication No.758.

Name: …………………………………….

Designation: ……………………………...

* 1. **Financial Proposal Bidding Forms**

**Bidding Form F1 – Letter of Financial Proposal**

**[Date]**

**To:** **[*Insert name of the Implementing Agency*]**

[*Insert Address and Email details*]

**Re:** [*insert name of the project*] project (the **“Project”**).

Dear [Sir/Madam],

Reference the Request for Proposals document issued on [⚫], by [insert name of the Implementing Agency] (the “**Implementing Agency**”), (the “**RFP**”) in relation to the Project.

We, [*Name of the Bidder*] hereby submit our Financial Proposal in conformity with the requirements of the RFP.

*All capitalized terms unless defined herein shall bear the meaning as ascribed thereto in the RFP.*

We, agree, confirm, undertake and declare that:

1. We have examined and have no reservations to the RFP, including Addenda No(s) / Corrigenda No(s).................................................
2. We, [including all Consortium Members,] fully and completely understand and accept the terms of the RFP and hereby undertake to comply with the requirements specified therein.
3. We offer to perform and undertake the works and services in respect of the Project in conformity with the RFP, including the Concession Documents, without any omission, reservation and deviation; and we accept and undertake to comply with all requirements in the RFP including the appendices / annexures attached to the RFP.
4. We, including all Consortium Members and the proposed contractors, as per the requirements of the RFP, respectively:
   * + 1. have nationalities of Eligible Countries;
       2. do not have any conflict of interest; and
       3. have not been declared ineligible/blacklisted by any of our employers, by any Federal or Provincial governmental or non-governmental department / agency in Pakistan, as at the Bid Submission Date.
5. Our Bid consisting of the Technical Proposal and the Financial Proposal shall be valid for a period of [one hundred twenty days (120)][[16]](#footnote-16) days from the date fixed for the Bid Submission Date in accordance with the RFP, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
6. We understand that all the volumes, appendices / annexures attached to the RFP are integral part of the RFP.
7. We have reviewed and accepted the form of the Concession Agreement along with the Appendices attached thereto (attached as Volume III (*Concession Agreement and Appendices*) to the RFP) and undertake to execute the same within the time period stipulated in Notification of Award.
8. We acknowledge that the Implementing Agency will be relying on the information provided in our Bid and the documents accompanying them to determine the Successful Bidder. We certify that all information provided in our Bid is true and correct and that nothing has been omitted which renders such information misleading.
9. We certify that in the last five (5) years, we (including the proposed contractors) have neither failed to perform on any contract, as evidenced by imposition of a penalty by any arbitral or judicial authority or a judicial pronouncement or arbitration award, nor have been expelled from any project or contract by any public authority, nor have had any contract terminated by any public authority for breach by us or, if we are a Consortium, by any of our Consortium Members and the proposed contractors.
10. We understand that this Bid, together with your written acceptance thereof included in your Notification of Award, shall constitute a binding contract between us, until the Concession Agreement (attached as Volume III (*Concession* *Agreement and Appendices*) to the RFP) is executed.
11. We are not participating, as a Bidder in more than one Bid in this Bidding Process in accordance with the requirements of the RFP.
12. We understand that the Implementing Agency may cancel the Bidding Process at any time and that the Implementing Agency is not bound either to accept any Bid that it may receive, without incurring any liability to the Bidders.
13. We agree to permit the Implementing Agency and any persons, representatives or auditors appointed and authorized by the Implementing Agency to inspect and audit our accounts, records and other documents relating to our Bid.
14. All the information submitted along with our Bid, including the enclosed forms and documents, is accurate in all respects.
15. We accept the right of the Implementing Agency to: (i) request additional information reasonably required to assess the Bid; (ii) amend the procedures and requirements or make clarifications thereof; and (iii) extend or amend the timelines as stipulated in the RFP.
16. All information, representations and other matters of fact communicated (whether in writing or otherwise) to the Implementing Agency by us or on our behalf, in connection with or arising out of the Bid are true, complete and accurate in all respects.
17. We hereby declare that all the information and statements made in this Bid are true and accept that any misrepresentation contained in it shall lead to our disqualification, forfeiture of the Bid Security and / or our blacklisting by the Implementing Agency.
18. We, [including all Consortium Members,] have made our own investigations and research and have satisfied ourselves in respect of all matters (whether actual or contingent) relating to the Bid and the Project.
19. We undertake, if our Bid is accepted, to furnish the Construction Performance Security as per the requirements of the RFP.
20. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a Bid for the Project.
21. We understand that the RFP has been issued by the Implementing Agency for the Project; and we undertake and confirm that if our Bid is accepted, we (to be incorporated by us, in case the Project is awarded to us), as applicable, shall execute the Concession Agreement (including other Concession Documents) (attached as Volume III (*Concession Agreement and Appendices*) to the RFP and all other instruments as may be required to be executed in relation to the Project as per the requirements of the RFP.

Name

In the capacity of

Signed

…………………………………….. (Seal)…

Duly authorized to sign the Bid for and on behalf of: (*Insert* *Name of the Bidder/names of all Consortium Members*)

Date

|  |  |
| --- | --- |
| **Witness # 1:** | **Witness # 2:** |
| Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| CNIC/Passport No.:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | CNIC/Passport No.:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Bidding Form F2 – Financial Proposal Standard Form**

1. For CAPEX details, please fill in the Financial Proposal in Annexure E
2. For OPEX details, please fill in the Financial Proposal in Annexure F
3. Guidance for financial proposal in Annexure G

**Part 3**

**Bidding Documentary Requirements**

Bidding Documentary Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Document** | **Requirements[[17]](#footnote-17)** | |
| 1. | Letter of Technical Proposal and Letter of Financial Proposal | **Local Entity** | **Foreign Entity** |
| To be dated, signed by the authorized representative and witnessed. | To be dated, signed by the authorized representative and witnessed. |
| 2. | Form of Bid Security | To be dated, signed by an authorized representative and duly stamped (PKR [*relevant applicable amount to be inserted*]/-). | ***Note:*** *Where the Bid Security is issued by a foreign bank outside Pakistan, such Bid Security shall be counter-guaranteed / confirmed by a scheduled bank in Pakistan (having the Minimum Credit Rating at all times, acceptable to the Implementing Agency).*  Counter-guarantee to be dated, signed by an authorized representative and duly stamped (PKR [*relevant applicable amount to be inserted*]/-). |
| 3. | Power of Attorney | To be dated; witnessed; notarized; duly stamped (PKR [*relevant applicable amount to be inserted*]/-); signed by an authorized representative; and in the language as required under the Instructions to Bidders. | To be in the English language and in compliance with the requirements under the RFP. To be dated; witnessed; signed by an authorized representative; notarized by the notary public in the country where it is issued and attested by the Pakistan Embassy / Consulate in the relevant country; and adequately adhesive stamped when brought into Pakistan with a stamp duty of PKR [*relevant applicable amount to be inserted*]/- and attested by Ministry of Foreign Affairs in Pakistan. |
| 6. | Affidavit | To be dated; signed by the authorized signatory; witnessed; duly stamped (PKR [*relevant applicable amount to be inserted*]/-); and in the format as required under the RFP. The Affidavit to be attested by oath commissioner. | To be in the English language and in compliance with the requirements under the RFP. To be dated; witnessed; signed by an authorized representative; notarized by the notary public in the country where it is issued and attested by the Pakistan Embassy / Consulate in the relevant country; and adequately adhesive stamped when brought into Pakistan with a stamp duty of PKR [*relevant applicable amount to be inserted*]/- and attested by Ministry of Foreign Affairs in Pakistan. |

**Part 4**

**Annexures**

Annexure A – Basic Eligibility Criteria[[18]](#footnote-18)

### A Technical Proposal received from Bidder, shall only be considered if all the following information / components have been provided and the requirements herein are satisfied:

*In case any document / information furnished is in a language other than English, it will need to be accompanied by an English translation (**duly notarized by Notary Public and attested by Pakistan Embassy / Consulate in the country of origin, and once brought into Pakistan, to be attested / stamped by the Ministry of Foreign Affairs, Pakistan). In case of any discrepancy, the English translation shall prevail.*

**Basic Eligibility Criteria for Bidders and Contractor:**

A Bid received from a Bidder, shall only be considered if all the following components of the Basic Eligibility Criteria are satisfied:

***Eligibility Criteria for Bidders***

* **Registration**

The Bidder or if the Bidder is a Consortium (each partner in the consortium) has to be a registered firm / company / NGO / NPO / partnership firm.

The Bidder, in case of a Consortium all Consortium Members, and the proposed contractor must possess valid registration certificate from income tax authority (i.e., the NTN certificate) and relevant sales tax authority, if applicable.

The Bidder shall provide copies of the relevant registrations/certificate(s), valid NTN and tax returns filed for last three years to be attached and relevant sales tax certificate, if applicable.)

(Foreign entities if participating in the Bidding Process should submit tax certificate and tax returns filed for last (03) years of their country duly attested by Pakistani Embassy / Consulate / in their country).

* **Geographical presence**

The bidder must have geographical presence in Pakistan over the past 10 years. Evidence of geographical presence needs to be provided

* **Affidavit for government owned legal entities**

In case if the Bidder, or any Consortium Member or a proposed contractor is a government owned legal enterprise or institution, such Bidder, any Consortium Member or proposed contractor (as applicable) must establish that it is legally and financially autonomous and operating under commercial law.

(Bidders, or any Consortium Member, or a proposed contractor who are government owned legal enterprise or institution shall submit an Affidavit confirming that they are legally and financially autonomous and operating under commercial law).

Relevant Form: **Bidding Form T3 (*Form of Affidavit*)**

* **No conflict of interest**

The Bidder, and any Consortium Member, and a proposed contractor shall not have any Conflict of Interest.

**Conflict of Interest** means:

* where the Bidder, any Consortium Member or a proposed contractor, provides, or could provide, or could be perceived as providing biased professional advice to the Implementing Agency to obtain an undue benefit for himself or those affiliated with him;
* receiving or giving any remuneration directly or indirectly in connection with the Project except as provided in the RFP;
* any engagement in consulting or other procurement activities of a Bidder, any Consortium Member or a proposed contractor, that conflicts with his role or relationship with the Implementing Agency under the Project;
* where an official of the Implementing Agency engaged in the procurement process has a financial or economic interest in the outcome of the process of procurement, in a direct or an indirect manner.

(Bidders (in case of a consortium, each Consortium Member) and a proposed contractor, shall submit an Affidavit for no-conflict)

Relevant Form: **Bidding Form T3 (*Form of Affidavit*)**

* **Non- blacklisting**

The Bidder, any Consortium Member and a proposed contractor shall not be blacklisted.

**Blacklisting** means barring a Bidder, any Consortium Member or a proposed contractor, from participating in any procurement proceedings by the Government of Balochistan or any governmental entity including the Implementing Agency.

(Bidders (in case of a consortium, each Consortium Member) and a proposed contractor shall submit an Affidavit for non-blacklisting)

Relevant Form: **Bidding Form T3 (*Form of Affidavit*)**

* **History of Non- Performing Contracts and Litigation**

Any non-performance of a contract by the Bidder (in case of Consortium, including each Consortium Member) and a proposed contractor should not have occurred in the last [*five (5) years*] prior to Bid Submission Date based on all information on fully settled disputes or litigation. All pending litigation against the Bidder, any Consortium Member and a proposed contractor shall in total not represent more than [*fifty percent (50%)*] of the respective net worth, nor shall there be any litigation that prevents or materially impedes the Bidder, any Consortium Member a proposed contractor from its obligations in respect of the Project and the terms of the Concession Agreement.

(The Bidders (in case of Consortium, each Consortium Member) and a proposed contractor shall provide details of the litigation or the Bidder (in case of Consortium, each Consortium Member) and a proposed contractor shall submit an Affidavit in case of no litigation on [*PKR relevant applicable amount to be inserted*] *(Pakistani Rupees* [*relevant applicable amount to be inserted*] *only)*] stamp paper attested by Notary Public. Foreign Bidders’ Affidavit should be attested by Pakistani Consulate / Pakistan High Commission of their country).

Relevant Forms: **Bidding Form T5 (*Historical Non-Performance And Pending Litigation*) and Bidding Form T3 (*Form of Affidavit*)**

* **Failure to Sign Contracts**

The Bidder (in case of Consortium, each Consortium Member) and a proposed contractor shall not have failed to sign a contract in the last five (5) years.

(The Bidders (in case of Consortium, each Consortium Member) and a proposed contractor shall provide details of such failure to sign contracts or the Bidder (in case of Consortium, each Consortium Member) and a proposed contractor shall submit an Affidavit in case if not applicable on [*PKR* [*relevant applicable amount to be inserted*] */- (Pakistani Rupees [relevant applicable amount to be inserted] only)*] stamp paper attested by Notary Public. Foreign Bidders’ Affidavit should be attested by Pakistani Consulate / Pakistan High Commission of their country).

Relevant Form: **Bidding Form T5 (*Historical Non-Performance And Pending Litigation*) and Bidding Form T3 (*Form of Affidavit*)**

* **Financial Situation / Historical Financial Performance**

Net Worth

The Bidder, or if the Bidder is a Consortium, collectively shall have shall have a net worth of at least **PKR 20,000,000/- (Pak Rupees Twenty Million Only)** as presented in the most recent audited financial statements. Details should be provided as per following:

Financial Year End [*insert the date and year*]

**Bidder (or if the Bidder is a Consortium, collective net worth)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Years** | **Value of Total Assets** | **Total Liabilities** | **Net Worth** |
| [*insert the Year*] | [*insert the amount in PKR*] | [*insert the amount in PKR*] | [*insert the amount in PKR*] |

**Average Annual Turnover**

The Bidder, or if the Bidder is a Consortium, collectively shall have shall have an average annual turnover of **PKR 40,000,000/- (Pak Rupees Forty Million Only)** over the last three (3) years audited financial statements. Details should be provided as per following:

Financial Year End [*insert the date and year*]

**Bidder (or if the Bidder is a Consortium, collective turnover)**

|  |  |  |
| --- | --- | --- |
| **Years** | **Turn Over** | **Average Turn Over** |
| [*insert the Year*] | [*insert the amount in PKR*] | - |
| [*insert the Year*] | [*insert the amount in PKR*] | [*insert the Average amount in PKR*] |
| [*insert the Year*] | [*insert the amount in PKR*] | [*insert the Average amount in PKR*] |

Annexure B – Evaluation Criteria

* + 1. **Technical Evaluation Criteria**

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Criteria[[19]](#footnote-19)** | **Weightage/ Marks** |
|  | Financial Soundness | 20 points |
|  | Experience of Management | 40 Points |
|  | Methodology and Work Plan | 20 Points |
|  | Key Professionals | 20 Points |
|  | **Total** | **100 Points** |
|  |  |  |

For technical qualification, a Bidder must score at least *seventy (70)* or more marks

**Five additional marks will be awarded to the USP submitter**.

Evaluation of bids will be based on Quality cost-based selection method. The weightage to the technical and financial proposals are 70: 30.

**a. Financial Soundness of Bidder (in case of Consortium Bid, collectively): (20 points)**

|  |  |  |
| --- | --- | --- |
| i. | If Average Annual Turnover over the last three years is Rs.40 Million  (less than 10 million will score no points)  (maximum 10 points) | 5 points + 1 point for each increase of Rs.10 million |
| ii. | If Net Worth is greater than 20 million in the most recent audited financial statements  (less than 10 million will score no points)  (maximum 10 points) | 5 points + 1 point for each increase of Rs. 10 million |

**b. Experience of Management of Educational Institutions (40-Points)**

|  |  |  |
| --- | --- | --- |
| i. | General Experience of management and operations of at least 10-Years in Balochistan  (maximum 5 points) | 03 points for 10 years + 1 point for each additional year |
| ii. | Specific experience of management of educational institutions of at least 5 –Years  (maximum 25 points) | 10 points for 5 years + 5 point for each additional year |
| Iii. | Specific experience of management of TVET institutions of at least 5 –Years  (maximum 10 points) | 05 points for 5 years + 1 point for each additional year |

**Proposed Methodology and Work-Plan: (20-Points)**

|  |  |  |
| --- | --- | --- |
| i. | Understanding of local context | 02 point |
| ii. | Detailed coverage of methodology and work plan for the Installation Works | 02 points |
| iii. | Strategy to improve governance, access and quality of Education | 03 points |
| iv. | Detailed administrative and coordinating mechanism | 03 points |
| v. | Assessment strategy | 02 points |
| vi. | Strategy for teachers’ development | 02 points |
| vii. | Sustainability plan for the project | 03 points |
| viii. | Work plan for first five years (Gantt Chart, supported with narrative) | 03 points |

**Key professional staff qualifications and competence for the assignment: (20- Points)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No. | | **Core Team: (Dedicated, skilled human resource proposed for the project)** | | **Points** | | |
| a) | Project Director | | **Qualification & Experience** | | **Points** | [08] |
| Qualification  Master in Relevant Field | | | | | 04 Points | |
| Experience  - Post qualification experience in project management or senior level management for 10 Years or more | | | | | 04 points | |
| b) | Education Expert | | **Qualification & Experience** | | **Points** | [06] |
| Qualification  Master in Relevant Field | | | | | 03 Points | |
| Experience  Post qualification experience in operational management of educational institutions more than 5 Years | | | | | 03 Points | |
| c) | Curriculum Expert | | **Qualification & Experience** | | **Points** | [06] |
| Qualification  Master in relevant Field | | | | | 03 Points | |
| Experience  Post qualification experience in development or review of curriculum experience more than 5 years | | | | | 03 Points | |
| **Total points for criteria:** | | | | | **(15)** | |

* + 1. **Financial Evaluation Criteria**

1. For CAPEX details, please fill in the Financial Proposal in Annexure E
2. For OPEX details, please fill in the Financial Proposal in Annexure F
3. **TO FILL ANNEXURE ‘E’ AND ANNEXURE ‘F’, KINDLY REFER TO AND COMPLETE ANNEXURE ‘K’.**

Annexure C – Form of Performance Security

***[****To be inserted – See Appendix in the Concession Agreement****]***

Annexure D – Requirements for Consortium Undertaking

The legally binding and enforceable Consortium undertaking signed by each Consortium Member and shall include the following:

1. Specify the designated Lead Member, nominated by the Consortium, as its representative and the role of each Consortium Member.
2. Each Consortium Member shall authorise the Lead Member to sign and submit the Bid on its behalf and participate in the Bidding Process.
3. Specify that the Consortium Members are jointly and severally liable in respect of their obligations in relation to the Project.

**“ANNEXURE E” CAPITAL COST**

**CAPEX DETAILS**

|  |  |  |
| --- | --- | --- |
|  |  |  |
| **S.NO.** | **TRADE** | **TOTAL COST** |
| 1 | Plumbing Trade- Machinery, Equipment and Tools | - |
| 2 | Solar Trade- Machinery, Equipment and Tools | - |
| 3 | Livestock farm manager Trade- Machinery, Equipment and Tools | - |
| 4 | Horticulture Trade- Machinery, Equipment and Tools | - |
| 5 | Agriculture Trade- Machinery, Equipment and Tools | - |
| 6 | Construction Trade- Machinery, Equipment and Tools | - |
| 7 | Mining Trade- Machinery, Equipment and Tools | - |
| 8 | Equipment & Furniture for Bungalows and Quarters- Kharan | - |
| **TOTAL:** | | **-** |

**TO FILL ANNEXURE ‘E’ AND ANNEXURE ‘F’, KINDLY REFER TO AND COMPLETE ANNEXURE ‘K’.**

**“ANNEXURE F” OPERATIONAL COST**

**OPEX DETAILS**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SUMMARY BUDGET** | | | | | | | | |
| **ORGANIZATION:** *{xxx}* | | | | | | | | |
| **PROJECT: OPERATION AND MANAGEMENT OF TECHNICAL TRAINING CENTRES FOR MALE & FEMALE AT DISTRICT KHARAN BALOCHISTAN** | | | | | | | | |
|  | | | | | | | |  |
| **CATEGORY** | **DESCRIPTION** | **YEAR-1** | **YEAR-2** | **YEAR-3** | **YEAR-4** | **YEAR-5** | **TOTAL** | **%\*** |
| **A** | Capital Cost |  | - | - | - | - | **-** |  |
|  | **TOTAL 1 ==> (Sub Total A)** | **-** | **-** | **-** | **-** | **-** | **-** |  |
| **B** | O&M Cost (excluding Management Fee) |  |  |  |  |  | **-** |  |
| **C** | Contingency Cost |  |  |  |  |  | **-** |  |
| **D** | Management fee |  | - | - | - | - | **-** |  |
|  | **TOTAL 2=> (Sub Total B+C+D)** | **-** | **-** | **-** | **-** | **-** | **-** |  |
|  | **Total amount of the Proposed Budget before the incidence of Tax TOTAL - 3 = [Total A+B+C+D]** | **-** | **-** | **-** | **-** | **-** | **-** |  |
| **E** | *Amount of BRA Tax (on total proposed budget* ***@ 6% on Total 2*** |  |  |  |  |  | **-** |  |
| **F** | Stamp Duty 0.35% | - | - | - | - | - | **-** |  |
|  | **Total amount of the Proposed Budget (i.e. the Bid Price) after the incidence of all applicable Taxes except Income Tax GRAND TOTAL-4 = TOTAL-3 + (Sub-Total E+F)** | **-** | **-** | **-** | **-** | **-** | **-** |  |
|  | **Number of Students** | **420** | **420** | **840** | **1,320** | **1,320** |  |  |

**Average Cost per Student per month =**

*(Divide Grand Total by Total Number of Students (i.e. 4,320 students in 5 years))*

**TO FILL ANNEXURE ‘E’ AND ANNEXURE ‘F’, KINDLY REFER TO AND COMPLETE ANNEXURE ‘K’.**

**“ANNEXURE G”- GUIDANCE FOR FINANCIAL PROPOSAL**

Following are the guidelines for estimating and preparing the financial model for the Bidder(s):

1. The Bidder(s) shall estimate the capital cost of those items not provided by the GoB during the Installation Period as per this RFP. [This cost shall be paid by the GoB in advance at the start of the Installation Period against the submission of Advance Payment Security.]
2. The Bidder(s) shall estimate the costs of operation and maintenance (‘O&M’) to achieve the KPIs, during the O&M Period, as per this RFP. The O&M Cost will paid on quarterly/bi-annual basis.
3. The Bidder(s) shall quote the management fee that it intends to receive from the GoB, and such management fee shall form part of the cost of O&M.
4. While estimating the costs of operation and maintenance, the Bidder shall take into account the annual inflation at the rate of 10% for salary and 7% for other General Expenses.
5. The Implementing Agnecy (PPP Authority) shall pay for the Capital Cost and Installation Cost as mentioned in annexure \_\_\_\_\_\_\_\_\_\_\_\_ to the Concessioniare before the Inception Period.
6. The Implementing Agnecy (PPP Authority) shall pay for the Operational & Management (O&M) Cost to the Concessionaire on the basis of cost per student/trainee per month, worked out / proposed in the financial bid, for the entire duration of the contract.
7. The Authority reserves the right to withhold 10% of the O&M Cost of each quarter/bi-annual period, as the case may be, on account of non-compliance of the legitimate concerns raised by the Authority in writing, until remedial action has been taken to the satisfaction of the Implementing Agnecy (PPP Authority) within thirty (30) days of the notice given by the Authority to the Concessionaire.
8. The O&M Cost of first three or six months of the O&M Period will be released by GoB to the Concessionaire in advance, however for the subsequent payments following procedure will be followed:
   * 1. 50% of the O&M Cost will be paid in advance at the start of relevant bi-annual; and
     2. The remaining 50% of the O&M Cost will be paid upon receipt of certificate from the Independent Auditor.

**Volume II – Project Scope**

The proposed theory of change unfolds through a proactive approach and time-tested methodology with a futuristic deployment scenario for preparing a local workforce.

**Key Strategic Considerations:**

* To manage and operate Technical Training Centre (Male & Female) at District Kharan, with best practices.
* To equip the youth with the market related skills in the identified trades, compatible to the requirements of labor market.
* To follow the guidelines of NAVTTC in adherence to the NVQF, CBT&A and other obligatory skill education policies etc., while producing qualitative graduates from the Institute.
* To promote the benefits of skill education by setting exemplary success in terms of unconditional employment generation for the youth of the area.
* To facilitate and perform collaborations with international institutes for placing the trainees on dual education system.
* To create industry linkages through-out the country to facilitate the exposure and hand-on-learning ventures for the trainees.

**Institutional Focus:**

* Industry Collaboration and Partnership
* Strong partnership with technology leaders and global players of national and international connections.
* Total Development of Students/trainees, through:
* Student Enterprise Education
* Student Leadership Development
* Life Skills Learning and Development by way of:
* Blended Learning and E-Learning
* On-job Training and Field Tours

**The TTC-KHARAN has the following four core components:**

* Component 1: Community Engagement
* Component 2: Training and Skill development
* Component 3: Collaborations and Certifications
* Component 4: Job Placement and Industry Linkages

1. **Inception Phase**

During the Inception Period, the scope of work of the IP shall constitute the following works. Since TTC Kharan is newly established facility, hence requires only minimal rehabilitation cost:

1. Ensure the proper installation of equipment and tools provided to the concessionaire by the department as given in **annexure H**.
2. Procure and install the equipment, furniture fixture and others as listed in **annexure I**.
3. Ensure hiring of staff as required in **annexure J**
4. Commence enrollment drive
5. Providing access control system for staff (used for the purpose of attendance maintenance and Access of multiple electronic doors)
6. Providing campus management information system.
7. Arranging subscription of international research websites for research purpose.
8. Providing and maintaining appropriate comprehensive insurance for all the work in progress
9. Formation of the steering committee
10. Any other area deemed necessary to ensure optimum efficiency.
11. **Operations & Maintenance Period**

During the O&M Period, the scope of work of Manager shall constitute the following works:

1. Maintaining the TTC-Kharan(s) including hostel and campus building in the same condition in which the TTC-Kharan is immediately post Installation Period
2. Cleanliness shall at all times be maintained as per standard operating procedures to be built as per KPIs
3. Providing and maintaining appropriate comprehensive insurance at all times
4. Hiring and utilizing the teaching and non-teaching staff to meet KPIs
5. Keeping the TTC-Kharan(s) safe and secure at all times.
6. Paying and keep paid up all utility bills at all times, keeping in view the efficient utilization of the utilities.
7. Arranging transport facility for teachers/trainers and students/trainees
8. Generally maintaining the sports equipment, utilities, landscaping, software’s, training resources, etc.
9. Facilitating the statutory and other audit process in respect of books of accounts and technical details as per the Management Contract
10. Generally taking all the steps to achieve the qualitative and quantitative KPIs relating to the O&M Period
11. Providing and maintaining appropriate comprehensive insurance policies as follows:
12. Damages to the TTC-Kharan and O&M Works
13. Comprehensive Third Party Liability
14. Cash-in-Transit
15. Workmen compensation insurance as required under the Applicable Laws
16. Force Majeure Events
17. Introduce innovative approaches through technology use for the students and faculty.
18. Students Certifications
19. Job employment of graduates
20. Any other area deemed necessary to ensure optimum efficiency.

***ANNEXURE “H”***

**Details of equipment and tools provided to Concessioniare by the department for installation during the inception phase.**

* + - 1. **LIST OF MACHINERY EQUIPMENT’S & TOOLS OF WELDING TRADE FOR TTC MALE**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Name of Item** | **Required Specifications (Equivalent or Above )** | **Qty** |
| 1 | Flashback Arrestor | Working medium: Acetylene / Oxygen (Optional) Working pressure: Medium pressure (MPa) Rated flow: 15m3/h Working hole diameter: M14 Dimensions: M16\*1.5 Weight: 74g (approx.)  High quality Acetylene/Oxygen Check Valve. Built-in check valve prevents the reverse flow of gas. Meet the requirements of welding process, no influence on the flame temperature, gas flow, etc. Solid brass construction, rugged and corrosion resistant. The connection is standard RH(right hand) threads for Oxygen, and standard LH(left hand) threads for Acetylene. | 8 |
| 2 | Acetylene and Oxygen Hose | Linde or equivalent or above acetylene, 8 mm x 5M 3/8 LH. (Meter) | 50 |
| 3 | Gas Welding and Cutting Torch Set: | Heavy/Medium Duty Acetylene Outfit cuts up to 3/4" (19.1 mm) or 6" (152.4mm) with optional tips and welds up to 1/8" (3.2 mm) or 3" (76.2 mm) this system also includes an RM-grade hose 25' x 1/4" (7.6M x 6.4 mm) Acetylene Outfit cuts up to 3/4" (19.1 mm) or 6" (152.4mm) this system also includes an RM-grade hose 25' x 1/4" (7.6M x 6.4 mm), striker and soft-sided goggles. | 6 |
| 4 | ANM and PNM Nozzel set | Cutting Nozzle Set, (LINDE or equivalent) ANM, nozzle, size 3-6 mm. ANM, nozzle, size 5-12 mm. ANM, nozzle, size 10-75 mm. PNM, nozzle, size 3-6 mm. PNM, nozzle, size 5-12 mm. PNM, nozzle, size 10-75 mm. | 10 |
| 5 | Ractify ARC Welding Transformer | Rated output current(A) : 315Input Voltage Frequench (HZ) : 50/60Power Voltage : 3Ph, 380VRated Duty Cycle : 35%Rated Input Capacity : 20.5 (KVA)Adjusting Stage : 7Protective Grade of Housing : IP21SCurrent Range (A) : 120-315Insulation Grade : (F) No Load Voltage (V) : 55-68Usable Electrode (mm) : 3.2-5 | 4 |
| 6 | DC inverter plasma cutter | Power Voltage (V) : 230 Rated Input Capacity (KVA) : 4.8 Input Voltage Frequency (Hz) : 50/60 No load Voltage (V) : 230 Current Range (A) : 20-40 Rated Output Voltage (V) : 96 Duty Cycle (%) : 60 Efficiency (%) : 85 Insulation Class : (F)  Protection Class : IP21 Max Cutting Thickness (mm) : 12 | 2 |
| 7 | AC/DC Inverter | HF With IGBT Technology Power Voltage: 3 phase 380 Rated Input Capacity (KVA): 14.3 Input Voltage frequency (Hz): 50/60  No Load Voltage (V) : 60 Out put current range (A) : 15-400 Duty Cycle (%) : 60 Effeciency (%) : 85 Insulation Class : F Protection Class : IP 21  Weight (KG) : 28 | 2 |
| 8 | Industrial Bench Grinder | Industrial Bench Grinder-250 mm -- IBG Voltage. 380V-50Hz; 2850 min-1, 1500W Motor: S2=30 min; 2850-1 Wheel Size. 250 x 40 x 32 mm Protection grade. IP20 Packing Size. 580x365x345mm NW/GW. 33x35Kg | 4 |
| 9 | Multi Function MIG/MAG | Multi Function Welder, IGBT soft switching.Power Voltage (V) : 3Phase , 380Frequency (Hz) : 50Rated Welding Current (A) : 350No Load Voltage (V) : 55Current range (A) : 60-350Rated Iput Capacity (KVA) : 16Rated Duty Cycle (%) : 60Usable wire dia (mm) : 0.8 to 1.2Weight G/N (Kg) : 78/70 | 2 |
| 10 | Spot Welding Machine Professional | Water cooled. Input Voltage (V) : 1phase , 220 Rated input power (KVA) : 25 Input Voltage frequency (Hz) : 50/60 Rated Input Capacity (KVA) : 25 Adjusting Series : 7 Rated Duty Cycle (%) : 20 Arm Stretch Length (mm) : 200 Welding Thickness (mm) : 1+1-4+4 Electroder Pressure (KG) : 155 Weight G/N (Kg) : 95/93 | 4 |
| 11 | Drill Machine | Motor : 500Watt 230V/50Hz Drilling Capacity in Steel : 16mm (ST.37) Continuous drilling capacity steel : 12mm Spincle Seat : MT2 Spindle Sleave Stroke : 65mm Throat : 152mm Spindle Speeds : 500 to 2520 rpm No of steps : 5 steps. Table size Length x weidth : 235x220 mm T slot size : 12mm Drilling Table Inclnable : 45 degree coloumn diamater : 60mm | 4 |
| 12 | Foot Shears Brake | Cut Thickness : 1.2mm Length of Knif :1270mm Cut Length : 1250mm Weight : 300Kg Dimention (mm) : 1600x750x1100 | 1 |
| 13 | Grinding Wheel Dresser | Grinding Wheel Dresser. Disc cutter type, complete with six spare sets of cutting discs. Dia. Of cutting discs 30mm Width of cutting discs 12mm Length 280mm | 4 |
| 14 | Angle Grinder Portable | Input Power : 850WattVoltage : 220-240 V 50/60HzNo load speed : 11000 rpmDisk diameter : 100mm Spindle Thread : M10 with one piece auxiliary handle. | 4 |
| 15 | Chisel And Punch Set | Chisel and Punch Set. (12Pc) stanely or equivalent Powdeer coated , hardened, quenched, and tempered of 12 pieces consisting of: 2pcs center punch. 6pcs pin punch 3pcs cold chiesel 1 pices sold punch. | 10 |
| 16 | Combination Sqaure Set | Magnetic Lock conbination Square.Heavy duty zinch body, Stainless steel, Blade length 300mm, Width 25mm | 8 |
| 17 | Tool Storage Cabinet | With 7 pcs drawer Overall size : (680x458x802)mm Overall with caster (680x458x945)mm Thickness of cabined : 0.6 to 0.8mm Thickness of Draws : 0.6mm 1pcs 570x410x48mm drawer 3pcs 570x410x74.5mm drawer 2pcs 570x410x100.5mm drawer 1pcs 570x410x153.5mm | 3 |
| 18 | File Set | File Set Stanely or equivalent File set includes 8" Flate steel file 8" Round File 8" Half round file 8" tri-angle  8" Square  With handle | 20 |
| 19 | Combination Wrench Set | Open and close Combination wrench set 12 pcs, staneley or equivalent or above (6-32)mm | 6 |
| 20 | Electric Impact Drill | Electric Impact Drill -13 MM.Heavy duty type, double insulation switch for choice of impact or rotary action.Drilling Capacity in steel 13mmSpecifications:Two speed (full load) 0-3000 rpm1 phase 680wattComplete with chuck key and secondary handle, | 4 |
| 21 | Gas Welders Goggles | Flod-up welding glass outer frame and ordinary or safely glass inner frame. Made of plastic with vantilation holdes. Adjustable headband. | 20 |
| 22 | Welder Apron | Leather; Chrome tanned; with adjustable neckband and back strings. | 20 |
| 23 | Figure Punch Set | Size of Characters 5 mm. | 4 |
| 24 | Letter Punch Set | Size of Characters 5 mm Size of Shank 8 x 70 mm | 4 |
| 25 | Acetylene Gas Cylinder | Clearly marked and certified to be suitable for acetylene. Must be tested with certificate | 4 |
| 26 | Oxygen Gas Cylinder | LINDE or equivalent of approx. Clearly marked and certified to be suitable for oxygen. must be provided with third party test pressure certificate. Colour black. | 4 |
| 27 | Single Unit Fume Extrector | Welding fume extractor with Single inlet & 1set filter cartridge, air flow is 1500m3/h, 380V/50HZ, 1.5KW blower. Filter cleaning type:  622x841x1680mm | 1 |
| 28 | Fix Die Set | 1/2" to 1" | 4 |
| 29 | Pipe cutter | Ratchet Pipe dia set 3-32mm | 4 |
| 30 | Bevel Protecter | stanely or eqv,, 6 inch T type , stainless steel blade, matric 180degree swiveled, | 4 |
| 31 | Centre Punch | Stanely or equivalent 1/4 in X 4 in Center Punch Hardened, quenched and tempered, Powder-coated finish for easy visibility | 10 |
| 32 | Line Scriber. | Pak made | 20 |
| 33 | Combination Plier | 8" | 20 |
| 34 | cabinet | Staneley or equivalent4-3/8" Jaw Capacity Quick ViseProduct SpecsJaw Width (in) 3-1/4" inJaw Width (mm) 83 mm | 4 |
| 35 | Pipe Wrench | Pipe Wrench 10", 12", 14", 18"(Set) stanely or equivalent | 8 |
| 36 | Pipe Clips | Taiwan or imported | 20 |
| 37 | Steel Wire Brush.Stadnard | stanely or equivalent, Strong wire bristles, wood handle | 20 |
| 38 | Hammer 1/2 LBS | Forged high-carbon steel head stanely or equviulent | 20 |
| 39 | Oil Cane | 1/2 Ltr | 20 |
| 40 | Measuring Tape 6 feet | Branded, stanely or equivalent | 20 |
| 41 | Hacksaw Frames.with blades | Staneley or equivalent , Blades should be branded POLAND or equivalent | 20 |
| 42 | Thread Gauge. | Imported | 4 |
| 43 | Anvils 50 Lbs | Pak made | 2 |
| 44 | Bench Drill Machine | Hitachi or equivalent, 220 W, 1/2 hp | 4 |
| 45 | Power Hackwas Machine | Power Hackwas machine protection cover provided for V belt tested according to ISO standard. with 2HP motor. Cutting capacity. Round Bar : 180mm Square bar : 160x160mm flate : 180mm Cutting speed : 100 storke per min Stroke : 160mm dimention of saw blade : 450x32x1.6x10mm Coolant Pump Weight : 484Kg approx | 1 |
| 46 | Blow lamps | Pak made | 3 |
| 47 | Bick Iron | Pak made | 2 |
| 48 | Anvil stake. | Pak made | 2 |
| 49 | Tool Box | stanely or equivalentProduct SpecsCapacity (gal) 7.1 galColor BlackHeight (in) 9.8 inHeight (mm) 248.92 mmOverall Length (in) 24 inOverall Length (mm) 609.6 mmWeight (kg) 3.35 kgWeight (lbs) 7.4 lbsWidth (in) 9.6 inWidth (mm) 243.84 mm | 4 |
| 50 | Hacksaw | Hacksaw, adjustable type4, length of blade 300 mm. | 20 |
| 51 | Round File | round file, 250 mm, secound cut; complete with handle. | 20 |
| 52 | Flat File | falt file, 250 mm, secound cut, double cut, complete handle. Stanely or equivalent | 20 |
| 53 | Half Round File | half round file, 250 mm double cut, bastard. Stanely or equivalent | 20 |
| 54 | Traingalar File | Traingalar file, 250 mm, secound cut; complete with handle.Stanely or equivalent | 20 |
| 55 | Safety Goggles | safety goggles set, with 2 spare lens, must be UV protected Linde or equivalent | 20 |
| 56 | Screw Driver | stanely or equivalent 6-Piece Screwdriver Set Product Specs Piece Count 6.0 Includes Standard 3/16" x 4" Standard 1/4" x 4" Standard 5/16" x 6"  1PT x 3"  2PT x 4"  3PT x 6" | 20 |
| 57 | Welding Gauge | Welding guage, for measuring throats of fillet welds, 12 blades from 3 to 12 mm. branded | 5 |
| 58 | Steel Rule | steel rule, with metric and inch graduations stainless steel with rust resistant finish, length 300 mm. | 20 |
| 59 | Try Square | stanely or equivalent Blade Length (mm) 203 mm Graduation 1/16 Material Aluminum/Plastic Style English | 20 |
| 60 | Spring Divider | spring divider, with quic-acting nut, length 200 mm. Stanely or equivalent | 20 |
| 61 | Adjustable Wrench Set | set 3, forged tempered steel, length 100 mm; 200 mm; 300; Stanely or equivalent. | 20 |
| 62 | Tip Cleaner Set | comprising 12 reamers and file in aluminium case. | 20 |
| 63 | ARC Welding Table | All steel  Height 32", with 30x30", grill 1-1/2", material, frame angle iron 1-1/2"x1/8" sheet 16swg (upto bottom in 45degree) | 1 |
| 64 | Gas Welding Table | All steel alongwith fire bricks, Height 32" , weidth 36", length 60" to 1/2" sheet 4x3" step bar 1-1/2x3/8", frame angle iron. 1-1/2"x3/8". (Pak made allowed) | 2 |
| 65 | Electrod Holder | Branded, Brass with Alkey Key | 20 |
| 66 | Welding golves pairs | Branded, electric shock proof | 20 |
| 67 | Welding helmet | with spare glass 2 pair each set) (Shadow no 10) | 20 |
| 68 | Welding Shield | with spare glass 2 pair each set) | 20 |
| 69 | Arc Welding Cable | (Meters) Bridge stone or equivalent, Copper+rubber (No pvc Allowded) | 350 |
| 70 | Trainees lockers | 42”x70”x18” (22 SWG) 8 compartment lockable with 2 shelves in each compartmet | 2 |
| 71 | Steel Almirah | 84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 2 |
| 72 | Chalk Board | 1800 mm x 1000 mm dark green moveable, on wheeled scaffold swivel type for use on both side, with chalk tray. | 1 |
| 73 | Trainees stool | Standard Size 5 leg hydraulic mobile stool (adjustable and moveable) with aluminum base and top fabric seat. | 20 |
| 74 | Storage cabinet | Storage cabinet (20 SWG) 42”x30”x45 High 11 drawers lockable. | 2 |

* + - 1. ***LIST OF MACHINERY EQUIPMENT’S & TOOLS OF MOTORCYCLE TRADE FOR TTC MALE***

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Item Name** | **Required Specifications (Equivalent or Above)** | **Qty** |
| 1 | PETROL ENGINE | 70cc for teaching, diagnosis and fault finding | 2 |
| 2 | PETROL ENGINE | 100cc for teaching, diagnosis and fault finding | 2 |
| 3 | PETROL ENGINE | 125cc for teaching, diagnosis and fault finding | 2 |
| 4 | CYLINDER COMPRESSION TESTER. | Quickly checks condition of valves, rings, pistons and gaskets. Large 2.5" diameter dial is graduated from 0 to 300 psi. Rubber cone seats in all spark plug goles. Supplied with spare valve and rubber cone. | 6 |
| 5 | PEDESTAL GRINDER - 300MM. | Pedestal grinder with wheels, and pedestal, wheel diameter 300 mm. 380 V/50 Hz/3 ph, 1450 rom. 2- grinding wheels 300 x 40 x 30 mm. 2- adjustable grinding supports. 2- Wheel guards. 2- Adjustable eye shields Electric motor 1. 50 kw SUPPER LEMA 300- F/GRIT 60 grinding wheel, aluminum oxide, fine type, 300 x 40 x 30 mm | 3 |
| 6 | CYLINDER RIDGE REMOVER SET | For removing ridges from worn cylinder bores to cover range: 2 11/16" to 5 5/16" | 3 |
| 7 | AIR COMPRESSOR | Self- contained compressed air system consisting of compressor Pump, motor. | 2 |
| 8 | DIE STOCK SET -1/4 TO ¾ | Article SC/43, HSS taps in sets of sizes. 1/4" - 5/6" - 3/8" - 7/16" - 5/8" and 3/4" BSF one each size of dies supplied in wooden box complete with strokes and wrenches. | 4 |
| 9 | FEELER STRIP SET. | For measuring clearance between the piston and cylinder bore strips, made of steel, hardened and ground. Set of 8 pieces. Length 300 mm, width 13 mm and blade thickness 0.03 -0.04 - 0.05 - 0.06 - 0.08 - 0.09 - 0.1 mm | 6 |
| 10 | BATTERY - ACID METER (HYDROMETER). | Standard type for testing electrolyte density in lead accumulators. Complete with user's instructions. | 6 |
| 11 | BENCH VICE | Bench vice, heavy, made of modular ductile iron with forged steel jaws. Spindle is of reinforced iron, with trapezium thread. Zinced finished.Fixed and swivel base.Size of jaws width 127 mm.Opening 125 mm.Complete with: one pair of fibber jaw liners. | 6 |
| 12 | ELECTRIC DRILL PORTABLE, 8 MM. | Double insulated variable speed, pistol grip impact resistant plastic body. Drilling capacity in steel 10 mm. speeds ( no load) 300 - 1050 rpm. Power 475 watts. Complete with drill chuck and key; 2 metros of cable with Draplug 5 A, 3-pin round plug to suit. | 6 |
| 13 | BATTERY CHARGER, ELECTRON | Stationery type, suitable for slow charging of batteries connected in series, with built-in control for different battery load and charging rat, dual-scale ammeter, overload and polarity protection, ventilated cabinet, supplied with a set battery. Charging voltage 6V - 48 V. Charging Capacity 6 Volt batteries. 12 pcs. 12 Volt batteries 8 pcs. 24 Volt batteries 4 pcs. | 3 |
| 14 | SOCKET SETS: 1/2 INCH DRIVE. | High quality, chrome vanadium, Chrome plated: 3/4 inch square drive Complete with: '- reversible ratchet '- universal handle  '- sliding T- handle '- extension bars '- universal joint Supplied in metal box. Type and sizes: 3/8 to 1 1/4 inch, AF, 18 pcs. 10 to 32 mm metric, 21 pcs. 3/16 to 5/8 inch, with worth. | 3 |
| 15 | SOCKET SETS, 1/2 INCH DRIVE. | High quality, chrome vanadium, 1/2 square drive. Complete with:  -reversible ratchet handle - sliding T-bar brace. - swivel handle. - 14 mm plug socket | 3 |
| 16 | VICE GRIP PLIERS -30 MM. | Forged alloy steel jaws pressed steel body, rust resistance finish, standard jaws, self-locking with release lever. Approx. capacity 30 mm. Approx. Length 240 mm. | 6 |
| 17 | WATER PUMP PLIERS. | Dropped forged alloy steel jaws pressed steel body, rust resistance finish, standard jaws, self-locking with release lever.Approx. capacity 40 mm.Approx. Length 240 mm. | 6 |
| 18 | WATER PUMP PLIERS. 240 MM. | Chrome vanadium, chrome plated with pipe grip. Serrled jaws and slip joint with curved interlocking channels. Capacity 40 mm, Length 250 mm | 6 |
| 19 | BALL PIN HAMMER SET. | Weight without handle 140 g. And 450 g with varnished ash handle | 6 |
| 20 | SOFT HAMMER. | With interchangeable plastic faces of dia. 32 mm, with ashwood handle. Weight with handle 360 g. Total length 280 mm. | 6 |
| 21 | FEELER GAUGE SET, METRIC. | Made from steel, hardened and ground, tapered blades, etched thickness on each blade. Approx. Size and types: Type Blade thickness blade length Metric 0.05 to 1 mm 150 mm | 6 |
| 22 | FELLER GAUGE SETS | Set of precision blades, hardened and tempered, in steel case. Type: Thickness: Length: Inch 0.0015 - 0.025 4" Metric 0.05 - 1 mm 100 mm | 6 |
| 23 | HACKSAW. | Adjustable type, shaped handle, tubular metal frame; adjustable, one saw blade supplied. Length of blade 250 - 300 mm. | 6 |
| 24 | TORQUE WRENCH - DIRECT READING. | With 1/2 inch square drive, suitable for both right and left hand threads: with direct reading scale. Capacity 0-343 MM. | 4 |
| 25 | PISTON RING COMPRESSORS. | Set of 3 piston ring compressors; capacity 40 - 75 mm; 57 - 125 mm; 90 - 175 mm. | 6 |
| 26 | PULLER SET | For gear wheels, three reversible legs. Max. Spread Max. Reach 150 mm 150 mm 250 mm 220 mm 500 mm 540 mm | 6 |
| 27 | CIRCLIP PLIERS SET. | Set of 4, chrome vanadium steel, with changeable jaws. Straight jaws: one for internal and one for external circlips. Bend jaws; one for internal and one for external circlips. Length 170 to 180 mm. | 6 |
| 28 | Trainees lockers | 42”x70”x18” (22 SWG) 8 compartment lockable with 2 shelves in each compartment. | 2 |
| 29 | Steel Almira | 84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 2 |
| 30 | Chalk Board | 1800 mm x 1000 mm dark green moveable, on wheeled scaffold swivel type for use on both side, with chalk tray. | 1 |
| 31 | Trainees stool. | Standard Size 5 leg hydraulic mobile stool (adjustable and moveable) with aluminum base and top fabric seat. | 20 |
| 32 | Storage cabinet | Storage cabinet (20 SWG) 42”x30”x45 High 11 drawers lockable. | 4 |

* + - 1. ***LIST OF MACHINERY EQUIPMENT’S & TOOLS OF REFREGIRATION & AIR CONDITIONING TRADE FOR TTC MALE KHARAN***

|  |  |  |
| --- | --- | --- |
| **S.NO** | **Item Description** | **Qty** |
| 1 | **Simple Refrigerator Trainer** Specifications Fundamentals of refrigeration in a simplified model. Typical compression refrigeration system with piston compressor, thermostatic expansion valve, evaporator and condenser (each in the shape of a pipe coil). 2 manometers with pressure scale for the refrigerant show the values of the refrigerant on the high and low pressure sides. 2 water-filled tanks with temperature sensor to demonstrate the cooling and heating effect. Pressure switch to protect the compressor. Sight glass to monitor the aggregate state of the refrigerant. Refrigerant R134a, CFC-free. | 1 |
| 2 | **Absorption Refrigeration Trainer**  Specifications Operation of an absorption refrigeration system. Main system components: evaporator, absorber, boiler with bubble pump, condenser. Ammonia-water solution as working medium, hydrogen as auxiliary gas. Boiler to separate ammonia. Bubble pump for transportation in the circuit. Adjustable electrical heater at the evaporator serves as cooling load. Boiler is alternatively heated by electrical heater or gas burner.  Piezoelectric igniter for gas operation. Digital displays for temperature and power. | 1 |
| 3 | **Vapor Compression Refrigeration Cycle Rig** Specifications  Investigation of a refrigeration system with different expansion elements. Refrigeration circuit consisting of a hermetic compressor, condenser, evaporator and expansion element. Finned tube heat exchangers as condenser and evaporator to observe the phase transitions of the refrigerant (Sight Glass). Expansion valve and capillary tubes of different lengths as expansion elements. Receiver for under filling/overfilling the system with refrigerant. Sensors record pressure and temperature. Compressor equipped with two pressure switches. Software for data acquisition via USB under Windows XPor higher (Optional). Refrigerant R134a,CFC-free  (USA/UK/Germany) | 1 |
| 4 | PLUMB AND SPIRIT LEVEL: Alinium: Box section, length 300MM viasl set in magnifying persex. | 5 |
| 5 | VICE GRIP PLIER 300MM.Forged alloy setl jawa, perssed steel body: rust resistant finish, standard jawa, self lockingwith release lever.Approx capacity 300 MMApprox Length 240 MM | 3 |
| 6 | PINCH OFF PLIERS. For temperory closing of capper pipes from 6to 16 mm dia. | 3 |
| 7 | COMPASS SAW SET. Tungsten alloy steel blade. Blade length 300 MM  Complete with interchangeable blades for metal and wood cutting. | 1 |
| 8 | MINIMUM SAW. For metal cuting. Length 150mm depth of bow 50 mm complete with 12 saw blades. | 1 |
| 9 | STOCK AND DIE SET Carbon steel in sizes M2,3,4,5,6,8,10,12,14,16,18 and 20supplied in metal case complete with die stocks 13/16, 1" and 1 1/2". | 5 |
| 10 | STOCK AND DIE SET Set of 12 UNF circular split dies, sizes from 1/8 inch upwards.  Complete with tap wrench stocks and suppplied in case. | 5 |
| 11 | TUBE CUTTER 28 mm (TC-274) Suitable for cutting copper: brass aluminium and thin walled steel tubes with deburring tool of fldig type supplied with 4 spare cutter whells. (USA/Belgium/Germany) | 6 |
| 12 | FLARING TOOL KIT. For soft tubing only cooper aluminium brass. Makes flare with double thick double strength walls. Also make single flare and oversize flare Sizes: 1/4", 5/16", 3/8", 1/2", 5/8" and 3/4". (Belgium/Germany/USA) | 6 |
| 13 | SWAGING TOOLS SETPunches:SP-93-04 : 1/4"SP-93-05: 5/16"SP-93-06: 3/8"SP-93-08: 1/2"SP-93-10: 5/8:SP-93-12: 3/4"(UK/USA/Belgium/Germany) | 6 |
| 14 | BENDING SPRINGS EXTERNAL Special Spring steel Nickel finished. End Bell for quick tube removal (45) Sizes: 1/4", 5/16", 3/8", 1/2", 5/8", 3/4"  (UK/USA/Belgium/Germany) | 20 |
| 15 | NOTCHER DOOR GAS KIT Klenk  (USA/Belgium/Germany) | 2 |
| 16 | SCREW PITCH GUAGE SET Steel blades hardened and ground with folding in steel case Set of 3 Matric 60 deg 24 Blades Without 55 deg 28 Blades. | 10 |
| 17 | FIN COMB SET  FC-351 To fit all sizes 8" to 15" (USA/Belgium/UK) | 6 |
| 18 | SOCKET SET SET  Refrigeration services type.contents 25 itme capcity 3/16 to 1/2 inch complete with  -Square valve stem sockets  -Packing gland nut sockets  -Oval packing land unt sockets. -Square drive sockets across flats  -Square drive ratchet  -Flexible exensions  suppliedi metal box | 8 |
| 19 | PIN PUNCH SET Drifts No. 1673-0103 in wooden rack  Dia 3,4,5,6,7 and 8 mm Length 150mm | 6 |
| 20 | ADJUSTABLE PIPE WRENCH Heavy duty made of drop forged steel with adjusting nut.Dia of pipe up to 2 Inch Length 12 Inch | 10 |
| 21 | FLARED NUT SPANNER SET. One end has 3/8" and 5/16" square reversible ratchets, other end has 1/4" and 3/16" square reversible ratchets. Max torque 49Nm. RW-127 (USA/UK/Belgium) | 6 |
| 22 | PIPE REMER  Reams copper, aluminium nd brass tubing. Reams both inside and outside edges of tube with 3 hollow ground cutters. Reams both clocjwise and counter clockwise. Fluted body is shaped to fit comfortably in the palm of your hand. Tough metal allowy die cast body. Hardened steel cutter blades. Sizes: 1/8", 1 5/8"., OD (3-41 mm) RIO-2018 (USA/Belgium/Germany) | 10 |
| 23 | PIPE BENDING TOOLS SET Copper tube benders leaver type. Sizes: 1/4", 5/16", 3/8", 1/2", 5/8", 3/4" | 6 |
| 24 | SNIPS Polished blades open end handles right length 250mm | 10 |
| 25 | RATCH-CUT TUBE CUTTERS. Uniquely designed for fast accurate pipe cutting especially in confined nearly inaccessible locations. Suitable for use on mild or stainless steel , copper or thinwall PVC and CPVC. Cuts form 1/8", to 3/8" (3 to 10 mm) RTC-127 (USA/Belgium/UK) | 6 |
| 26 | RATCHET TYPE DIE STOCK SET. Article 1235 for electrical conduit 9-11-13.5-16:21:29- 36mm | 2 |
| 27 | SCREW DRIVER SET.Round nickel plated steel blade with plastic insulated handle. Head screws.Size No. 1 blade length 80mm Size No. 2 blade length 100mmSize No. 4 blade length 200mm | 12 |
| 28 | ALLEN KEY SET 2 TO 10 MM NO 25102 set of 9 hexagonal allen keys from 2 to 10 mm chrome vanadium steel supplied in plastic wallet. | 10 |
| 29 | ALLEN KEY SET 3/64 TO 1/4 INCH AF  NO 25102 set of 9 hexagonal allen keys from 1/6 to 1/4INCH chrome vanadium steel supplied in plastic wallet. | 10 |
| 30 | WATER PUNP PLIERS  Dropped froged steel. Chrome p;aed with pipe grip, serrated jaws slip joint with curved interlokin channels  Approx Capacity 40 mm approx length 240 mm | 6 |
| 31 | SOCKET SPANNER SET  Matric chrome vandaium 16 hexagonal sockets with handle and madium long shaft. | 5 |
| 32 | OPEN ENDED SPANNER SET (MATRIC) boulbe ended chrome banadium steel thin jawa jaw angle 15 deg. Oval shank set of 8 spanner. Jaw width 4X5" 4X5: 6X7 8X9 8X10: 8/11 AND 12X13mm | 5 |
| 33 | INSPECTION MIRROR KIT. Oval Telescoping Pocket Mirror. 25x50mm . Overall length 205mm, extend to 510mm Original all angle ball joint mirrors with brushed finish stainless steel mirror backs. Fast accurate visual inspection of hidden areas with an almost limited no of portions. Double ball joint links swivel mirrors for viewing to 360 degree,  Recpaceable copper backed clearview mirrors.  (USA/UK/Belgium) | 10 |
| 34 | BENCH VICE NO. 5 Bench vice heavy duty made of modulat ductile iron with forged steel jaws. Spindle is of reinforced iron with trapezium Zinced finish Fized and  Size of jaws width 127 mm opening 125 mm completed with one pair | 6 |
| 35 | CRCLIP PLIERS.Intermal type for use with circlips 8-25 mm sttaightnose. | 5 |
| 36 | CRICLIP PLIERS. Length 135 mm Weight 80 g for outside rings. | 5 |
| 37 | TWIST DRILL SET  HSS twist drill set DIN 338 straogjt sjprt sjaml seroes. Right hand cutting, in set of 25 pieces by 0.5 mm in metal boxex | 4 |
| 38 | HAND DRILL. Breast type enclosed gears. Two speed model:Adjustable crank supporting handle self centering chuck capacity. | 5 |
| 39 | NEEDLE FILE SET. Set of 12 file 160mm long palkege containes 12 different shapes and cuts in plastic waller. | 10 |
| 40 | HAMMER- 300G Forged and tempered steel head, ash handle. Weight 300g | 10 |
| 41 | RUBBER MALLET. Solid rubber with polishashweed handle face dia 55mm. Weight 300 g. | 10 |
| 42 | VERNIER CALIPER 0.-150MM With metric and inch graduations for insde-outside and depth masuring- knife edge jaws measuring faces hardened and ground- rust resistant finish.rust resistant finish. Suppplied in fitted case.  Length 0-150mm | 10 |
| 43 | MEASURING TAPE- 2M With metric and inch granduations- flexible steel blade with rust resistant finish plastic case, flat base.  Length 2mm Blasé width 13mm | 10 |
| 44 | WIRE (BOLT) CUTTER. For hand steel wires. Maz wire dia 8mm total length 470 mm Weight 1.6 Kg | 5 |
| 45 | PINCERS. Light patterns, japanned, hold polished head polishing shoulders.  Length 160mm | 10 |
| 46 | FIGURE PUNCH SET.NO. 01-2833 Size of 5mm | 5 |
| 47 | REVITTING HAMMER 500G Forged and tempered steel head with ash handle.   Weight 500g | 5 |
| 48 | BALL PEIN HAMMER 500G Forged and tempered steel hand polished face and pein with as handle .  Weight 500g | 5 |
| 49 | HAND VICE Forged steel prismatic jaws Length 160mm Width of jawa 50mm Capacity 35mm | 5 |
| 50 | SOLDER IRON KIT WITH STAND. Ergonmically designed, for all electronic fine works rated power 25W warm-up time 2 min:supply cable 2m long with set of 3 exchangeable per tinned copped bits: overall length (iron+bit) approx . 230.complete with iron holder. | 10 |
| 51 | SOLDERING IRON. Electric,with insulated plastic handle and interchangeable angle bit for general use: supplywith approx. 1.5m 3-core main caple and tow pare bits. Power 300 w complete with plug (2 pin round) | 5 |
| 52 | SAFETY GOGGLES CLEAR LENES.  Confirm to safty standards, with replaceable lenese and ventilation slots, complete with tow spare lenses ref. | 10 |
| 53 | BENCH DRILLING MACHINE-13MM Airtcle 5B13/11 Capacity in steel 13mm Drill Depth 70 mm Distance column spindle 200mm Table size 200X200mm speed range 450-2175 rpm  Drill chuck 13mm | 5 |
| 54 | ELECTRIC DRILL PORTABLE 8MMDouble insulated veriable speed, pistol grip inpact resistant plastic bod.Specification:Drilling car speed (not load 300-1050 rpmpower 475Complete with drill chuck and key 2 meters of cable with durapling 5 | 5 |
| 55 | BENCH GRINDER Industrial Bench Grinder-250mm -- IBG Voltage. 380V-50Hz; 2850min-1, 1500W Motor: S2=30min; 2850-1 Wheel Size. 250x32x32mm Protection grade. IP20 Packing Size. 580x365x345mm NW/GW. 33x35Kg | 6 |
| 56 | GRINDER PEDESTAL | 6 |
| 57 | SURFACE PLATE 600x600x100  Surface accuracy 0.006/100 Rigidity and lasting accuracy are ensured by adequate top and side thickness and ribbed construction. The surfaces are free from pinholes. Weight: 78Kg Code:2021-010 | 2 |
| 58 | AIR COMPRESSOR SET  Self contained portable. | 2 |
| 59 | VACCUM PUMP MK-040-DS Voltage : 220V/50Hz Free air displacement : 40L/min , 1.44CFM Ultimate Vaccum : 15micron, 0.020mBar Motor : 0.19Kw, 1/4HP. Speed: 1440rpm Oil Capacity : 480ml (USA/Belgium/UK) | 4 |
| 60 | CHARGING Cylinder 2200 gram cylinder for R12, R22, R502No leakate welded stainless steel design, less fragile during transport, sight glass protection and impact resistant.Easy operation, double valve for liquid, and vapour charging, Self regulating electrical heating element, 60Watt.Easy change of regrigerant scale.(Belgium/USA/UK) | 2 |
| 61 | TESTING AND CHARGING MANIFOLD. Complete with R12: R.22 and R502  Presssure temperature conversion scales on both guages face: spuuplied with 3 colours coded flexable chargining lines. Guage scaled in metric and imperial units. | 6 |
| 62 | CHARGING HOSE SET. Includes red, blue yellow chagring hoses. | 2 |
| 63 | CHARGING UNIT Blue-C Charging Station for all CFC, HCFC & HFC Refrigerants. Multi functional frame allows different assembly versions ( 2 valves or 4 valve manifolds). Easy operation. Equiped with weighing scale. Manifold with diaphragm type valves for deep vacuum service. Equipped with 80mm Pulse free gauges with zero calibration screw. Supplied with bottle of mineral vacuum pump oil type ITE 205-P or ester oil type ITE 500-P. 3-heavy duty charging hoses with ball valve (L-150 cm) 3HDCS Blue-C(060-150-4/247) (USA/Belgium/UK) | 2 |
| 64 | FLUSHING PUMP Liquid pump suitable for all refregerant in liquid phase. Rapid transfer of Liquid. Positive displacement and volumatic gear pump. Compatable for use with R410A. Flow rate with 20cP fluid viscosity, 3 to 4 Liter/Min. Maximum intel pressure: 15bar. Viscosity range 1-60 cP. Weight of Pump only 8.60Kg. (Germany/UK/Gelgium) | 1 |
| 65 | CAPILLARY TUBE CLEANER For cleanig and unblocking capliry tubes in refregeration system. Posibility to clean indivual free section of caplri tubes. The cleaning operation is done by pushing oil under high pressure into the caplri tube, Maximum pressure 170bar. Suitable for different type of capliary tubes. Weight 109 Kg.ITE-1003.(Germany/Belgium/USA) | 4 |
| 66 | SOLDERING UNIT. Large Welding Kit with 5 liter (empty) oxygen cylinder nd 5 liter propane cylinder, weight 16Kg. Complete unit with refillable (empty) propane cylinder ande oxygen cylinder, propane pressure regulator and oxygen pressure regulator, pressure gauges, check valve, handle with one LP lance. hoses. Fitted on one frame. WKL-5 (UK/USA/Belgium) | 2 |
| 67 | REFRIGERENT LEAK DETECTORS. Suitable for any CFC, HCFC, HFC, or blends. Supplied in a resisant ABS casing, Power supply lead acid battery including 220V adapter. Reference leak equal to 12g/yr HFC. Power Supply: 10V DC to 16V DC recharge circuit buildt in (Std 12V). Power option: 220V AC Adapter (Included) 12V DC battery clamp adapter, Automatic cigarette lighter adapter. Battery Life 1.5 Hour. H10PM. (UK/Germany/Belgium) | 2 |
| 68 | AUTOMATIC HALOGEN LEAK DETECTOR.Ultimate sensitivity Less than 3g (0.1 oz)/year for all halogen based refrigerants. Sensitivity less than 14g (1.5 OZ) year for R12, R22 and R134a.Sensing tip life . Approx . 20 hours.Operating temperature 0 to +52 degree.Battery life approx . 30 hours normal use.Response time : instantaneous.Reset time : one second.Warm-up time : approximately 2 seconds.ITE-Xtra.(UK/USA/Germany/Belgium) | 2 |
| 69 | CLIP-ON VOLT-AMO-OHM METER. Havy duty type: uses standard battries: Renges: 150V : 500V: 6A 15A: 30A:60A  o to 2000 Ohm(25 ohmmid-scale)  Includes necessary test cords" carrying case & operation manual | 2 |
| 70 | SLING HYGROMETER. Approx: Specifications: -Scale -40 deg Cto + 15deg C -dial 100 MM complete wit hcapillar | 2 |
| 71 | SENSOR DIAL THERMOETER  Approx specifications: -Scale-40 deg C to + 15deg.C -dial 100mm Complete with capillary sensor 1.5m. | 10 |
| 72 | ELECTRONIC THERMOMETER TYPE-K Thermocouple Thermometer Digital-358 Solid state 4 station temperature teste ldeal for superheat and heat pump tempreature measurement. Electronicalibration sddjustment. Dual temperature rang: 50 deg.  (Korea/Japan/USA) | 1 |
| 73 | MULTIMETER.Specifications:-DC milivolts: 0 -100: 300:1000-DC Volt: 0-3,10,30,100: 300:1000-AC Volt: 0 -100: 1000-Ohms: 0-5 ohm in renges -DC mirco A: 0-100 micros, 0-1 mA: and upto 10 A in 6 range-AC mA: 01-mA: 1-10micros, 0-1A: 0-10 Ainput resistance DC/AC : 1.5/22.5-instructions Complete with:-Service manual. | 2 |
| 74 | Microprocessor Digital Thermometer. Two-K Type Test Range : -50 to 1300 Degree. Operating Range: 0 to 40 degree Auto power shut off. Data Hold. Tow K type. Different Temperture measurement. Power. 9V battery. LCD Display. Power Button, C,F,K Selection button, Hold Button, MAX/MIN/AVG Selection Button. T1, T2 Selection Button. 6802-II | 1 |
| 75 | THERMO-HYGRO RECORDER Temperature Range: -20 to + 60 degree. (-4F to 140F) Humidity Range: 2% to 98% RH. Operating Temperature: (0 to 50 degree) Complete with probe and carrying case. Sampling Time:  For Temperature measurement 10 seconds For Humidity measurement: 10 Seconds Memory record: 10 Seconds0.03 ITE (Belgium/UK/Germany) | 1 |
| 76 | OHM METER  Battery powered insultion resistance tester with triple range. Complete with carrying case batteries, test | 6 |
| 77 | COMBINATION PRESSURE SWITCH with manual re set  equipped with single contacts. | 6 |
| 78 | DEFROST TIMER24 hours. | 6 |
| 79 | SOLID CORE FILTER DRIER, CD 032 6mm (1.4 inch) connection. | 6 |
| 80 | SOLID CORE FILTER DRIER, CD 053 10mm (3/8 inch) connection. | 5 |
| 81 | REPLACEABLE CORE FILTER DRIER, K487 22mm (7/8 inch) solder connection Capacity in R12 at 2 PSI, PD =22 cores not included. | 5 |
| 82 | FILTER DRIER -CAPPILARY ASSEMBLY Suitable for low back pressure system; R12. 6mm (1/4 inch) flare connections. | 5 |
| 83 | SIGHT GLASS with moisture indicator, 10mm (3/8 inch) male flare connections. | 5 |
| 84 | SIGHT GLASS. With moisture indicator, 12mm (1/2 inch) male flare connections | 5 |
| 85 | SIGHT GLASS with moisture indicator, 16mm (5/8 inch) male flare connections. | 5 |
| 86 | THERMOSTATIC EXPANSION VALVE. TED/1/112 internal body 263206. Evaporating temperature range:-40 to +10deg. C.Phial temperature 60 deg. X maximum | 5 |
| 87 | SCREWDRIVER, Vanadium steel blade with flared tip and hammer-proof plastic handle. Width of tip: 6mm length of blade: 30 mm | 5 |
| 88 | SCREWDRIVER,  chrome vanadium steel, nickle plated, chubby type with flared tip and plastic handle. Width of tip: 6mm. Length of blade: 30mm. | 5 |
| 89 | SCREWDRIVER PHILIPS No. 2  Chrome vanadium steel, nickel plated size No. 2. Length of blade 150mm | 10 |
| 90 | SCREWDRIVER PHILIPS No. 3  Chrome vanadium steel, Nickel plated.  Size No. 2. Length of blade 150mm | 10 |
| 91 | SCREWDRIVER PHILIPS No. 4 Chrome vadadium steel, nickel plated with philips head No. 4 and plastic handle.Length of blade 200mm | 10 |
| 92 | SCREWDRIVER TESTING,  for voltage testing, flat nose, plastic handle, insulated blade with neon light, flared tip Testing Voltage 100-500 V Width of Tip 4 mm. Length of blade 190mm. | 10 |
| 93 | RING SPANNER SET - Set of double ended ring spanners from 1/4 to 1 1/4 inch AF Chrome vanadium steel, Chrome plated, standard length, offset type and 12pint rings | 6 |
| 94 | Consisting of : Screwdriver set, Chrome vanadium blades, sizes; 3x60mm; 3x80mm; 4x125mm; 5x150mm. | 5 |
| 95 | Hacksaw, adjustable type for 250 and 300mm blades | 5 |
| 96 | Centre Punch; dia of shank 10 long 100mm | 5 |
| 97 | Scriber, double ended, 250mm long | 5 |
| 98 | Try square, workshop grade, blades hardened and tempered and precion ground. Size 150 x 100mm | 5 |
| 99 | Steel rule, metrical and inch graduation | 5 |
| 100 | File set; 10 pieces, with plastic handles, 200 mm long flat second cut and smooth, round cut and smooth, square second cut and smooth pillar second cut and smooth. | 5 |
| 101 | Soldering Iron, with insulated plastic handle and interchangeable angle bit for general use, power 75 W. | 5 |
| 102 | Tweezers with blunt serrated points, 150mm | 5 |
| 103 | Tweezers with blunt serrated points, 150mm | 5 |
| 104 | Tool box, for storing trainee hand tools. | 10 |
| 105 | Combination pilers, with side cutter, pipe grip, wire cutter, serrated jaws, length 120mm | 5 |
| 106 | Diagonal side cutter; for cutting hard wire length 120mm. | 5 |
| 107 | wire strippers, with return spring and adjusting screw to fit the required wire dia. | 10 |
| 108 | Flat nose pliers , with rectangular section jaws and smooth gripping surface, plastic insulated handles, 120 mm long | 10 |
| 109 | Round nose pillers, with slim long round jaws length 120mm | 10 |
| 110 | Screwdriver mains voltage tester, for voltage testing, flat nose, plastic handle, insulated blade, with neon light. Testing voltage 100-500 V, width of tip 4mm. Length of blade 100mm. | 10 |
| 111 | Triming Knife, overall length 150mm, cutting length 60mm. | 10 |
| 112 | Workshop Scissors with sharp points for insulation paper, length 150mm. | 10 |
| 113 | hand drill, 3-jaw all steel chuck, capacity 6 mm. | 10 |
| 114 | Bemch brush, flat back, coco fibber, 300mm length. | 10 |
| 115 | Paint brush, britsle capped, flat type, width 25mm | 10 |
| 116 | Spanner set, imperial double-ended type, chrome-vanadium, set comprising 16 spanners from 1/4" to 1/2" AF. | 12 |
| 117 | Spring divider, with hardened points, length of legs 150mm | 10 |
| 118 | Screwdriver set, chrome vanadium blades, phillips-head screws, size No. 0;1;2;3 and 4. | 10 |
| 119 | Trainees lockers: 42”x70”x18” (22 SWG) 8 compartment lockable with 2 shelves in each compartment. | 2 |
| 120 | Steel Almirah:  84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 2 |
| 121 | Chalk Board: 1800 mm x 1000 mm dark green moveable, on wheeled scaffold swivel type for use on both side, with chalk tray. | 1 |
| 122 | Trainees Stool: Standard Size 5 leg hydraulic mobile stool (adjustable and moveable) with aluminum base and top fabric seat. | 20 |
| 123 | Storage Cabinet: (20 SWG) 42”x30”x45 High 11 drawers lockable. | 4 |

* + - 1. ***LIST OF AUTO MECHANIC TRADE FOR TECHNICAL TRAINING CENTRE MALE***

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| **S. No** | **Item Description** | **Qty** |
| 1 | Torque Wrech( WretchedType) B4- DIRECT READING. With 1/2 inch square drive, suitable for both right and left hand threads: with direct reading scale. Capacity 0-343 MM. | 4 |
| 2 | Oil Filter Wrench Professional Swivel Handle Oil Filter Wrench | 5 |
| 3 | Screw DriverFlat (4,6,8,12 inch) | 5 |
| 4 | Screw Driver Philips (4,6,8,12 inch) | 5 |
| 5 | Circlip (external & internal) | 5 |
| 6 | Different Pliers ( Nose, Flat, Combination, Side Cutter | 6 |
| 7 | Brake Spring Plier (10') | 5 |
| 8 | File Set (6 Piece set) (Flat, Round, Trangular, Square, Half Round | 5 |
| 9 | Hummer Cross Peen (1000 Gram) | 5 |
| 10 | Rubber Hammer ( Medium) | 5 |
| 11 | Wooden Hammer (Medium) | 5 |
| 12 | Plastic Hammer ( Medium) | 5 |
| 13 | Hand Hacksaw(30cm) | 10 |
| 14 | Steel Foot Rule (12 inch) | 10 |
| 15 | Try Square (12 inch) | 10 |
| 16 | Measuring Tape (6feet) | 10 |
| 17 | Hollow Punch Set (Gasket Punch) 1 mm to 12 mm) | 10 |
| 18 | Center Punch Set of all sizes: 1.5mm (1/16 in), 2mm (5/64 in), 2.5mm (3/32 in), 3mm (1/8 in) and 4mm (5/32 in). | 5 |
| 19 | Valve Compressor (C-Type) Large Size | 5 |
| 20 | Bearing Puller Set inside & outside (4"-6") | 10 |
| 21 | V.Block (Standard) | 5 |
| 22 | Hydraulic Floor Jack (3 Ton) | 4 |
| 23 | Hydraulic Trolley Jack (3 Ton) | 4 |
| 24 | Safety Stand set (Small, Medium, Large) | 4 |
| 25 | Service Creeper Heavy duty steel frame Foam padded back & headrest 6 x 60mm 360 degree swivel caster wheels | 4 |
| 26 | Bench Vice (8") | 12 |
| 27 | Parts Service Tray G.I Sheet (2x4 ft), 18 swg | 12 |
| 28 | Parts Tray ( Containers) | 12 |
| 29 | Vernier Caliper (1/20 mm & .001 mm) (150 mm) | 10 |
| 30 | Outside Micromber Set (0-25, 25-50, 50-75 mm) | 5 |
| 31 | Dial indicator ( Cylinder Bore Measuring) | 5 |
| 32 | Feeler Gauge (10 Leaves (mm)). | 10 |
| 33 | Tire Pressure Gauge Easy-to-read 2 in. dial gauge10 in. flexible hoseBrass air chuckPush button resets to zero | 5 |
| 34 | Digital Tachometer( for Diesel Pulls) | 4 |
| 35 | Digital Multi-meter 3-3 / 4 digits 4000 count ■0.7% best accuracy ■Capacitance measurement ＊ Not suitable for measurement of condensers with large leak current. ■Frequency measurement (AC sine wave only) ■Data hold / Range hold ■Relative value ■Auto power off (30min.) (cancelable) ■Low power ohm (input voltage 0.4V) at continuity range ■Solid & protective body cover that can also be used as a tilt stand ■Chip holder behind the body cover Display : numeral display 4000 Sampling rate : 2 times / sec. AC frequency bandwidth : 40〜400Hz | 6 |
| 36 | Bench Grinder (Garage Stand) IBG Voltage. 380V-50Hz; 2850min-1, 1500W Motor: S2=30min; 2850-1 Wheel Size. 250x32x32mm Protection grade. IP20 Packing Size. 580x365x345mm NW/GW. 33x35Kg 2-adjustable grinding supports. 2-wheel guard 2-Adjustable eye shield | 4 |
| 37 | Drill Machine ( Pedestal Type)( Pedestal Type)Drilling Capacity 25mm.Sleeve diameter 52mm.Sleeve travel 80mm.Distance spindle-column 190mm.Spindle Taper MT3Spindle speeds 210-2220rpmNumber of steps 12 speedTable Size (LxW) 300x300mmTslot size 15mmDistance spindle table (max) 780mmWorking surface stand (LxW)500x300mmDistance spindle stand (Max) 1220mmMotor 550WSize (LxWxH) 1215x475x275mm | 4 |
| 38 | Portable Power Drill Machine Power Wood Steel Concrete Boring Impact Drill Portable Electric Manual Hand Drilling Machine | 4 |
| 39 | Lube Oil Can (Pressure Type) | 10 |
| 40 | Hammering Screw Driver Set Industrial alloy steel, Meet DIN standard.More than 10,000 times of striking | 10 |
| 41 | Scraper (Traingular & flat Type) | 5 |
| 42 | Cleaning Bruch (Wire Type) | 20 |
| 43 | Magnet Rod (Pick up Tool) | 5 |
| 44 | Compression Gauge | 3 |
| 45 | Diesel Timing Gun Diesel Digital Timing Tester, Timing Light for automotive engine ignition timing | 2 |
| 46 | Radiator Pressure Cap Tester | 3 |
| 47 | Wheel Spanner (Cross Type) | 5 |
| 48 | Flaring Tools and Pipe Bander Kit Pipe Bander leaver type set Size. (1/2",", 1/4", 5/16", 3/8"). | 4 |
| 49 | Flat Chisel (150 , 250 mm) | 8 |
| 50 | Cross Cut Chisel (150-250 mm) | 8 |
| 51 | Line Sciber For marking on Metal equipments. | 8 |
| 52 | Twist Drill (Parallel shank, 0.5 mm to 18 mm) | 4 |
| 53 | Hand Shear ( Medium size) | 5 |
| 54 | Air Comprressor (Regular Garrage Size) | 2 |
| 55 | Suchtion Leakage Gauge | 3 |
| 56 | Fuel Flow MeterActual flow (l/h)- Consumption in “normal” mode (l)- Consumption in “tampering” mode (l)- Engine operating time (h)- Engine “idling” time (h)- Engine “optimal” time (h)- Engine “overload” time (h)- Interference time (h) | 2 |
| 57 | Injection Compartator or Calibrator. (Pak) | 2 |
| 58 | Piston Ring Mounting Plier Special steel Nickel-plated For removing and mounting piston rings | 2 |
| 59 | Piston Ring Groove Cleaner Includes Piston Compressors, A Ring Expander, Ring Groove Cleaner & Offset Phillips/Slotted Screwdrivers. One 50–100mm Capacity Ring Expander. Three Piston Compressors. | 2 |
| 60 | Nozzle test Machine (Manual) (Pak) | 1 |
| 61 | Zeroing Calibration Indicator (Pak) | 1 |
| 62 | Injector Concentricity Tester (Pak) | 1 |
| 63 | Injector Leakage Tester (Pak) | 1 |
| 64 | Phasing and Calibration Machine (Pak) | 1 |
| 65 | Injector Pressure Tester | 3 |
| 66 | Ridge Reamer For removing ridges from worn cylinder bors to cover range: 2 11/16" to 5 5/16" 68.3-134.9mm Lisle 36500 | 4 |
| 67 | Diesel Engine Analyze | 2 |
| 68 | Petrol Engine Analyze | 2 |
| 69 | **Diesel engine Trainer Composition Diesel engine assembly, combined instruments, 3-element catalytic converter, silencer, fuel operating rod, fuel tank, storage battery, movable wheel bench. Functions** 1. Can demonstrate diesel engine fundamental and control process. 2. Can be used for basic diesel engine operation training (drain, fuel pump timing).3. With schematic board, combined instruments to show engine working status.4. Can set various vehicle faults. 5. Teaching and testing function can be switched between each other flexibly.6. With movable wheel bench, by high-temperature plastic spraying treatment, for color fastness for 5 years.  **Main technical parameters** Dimension:1900×1100×1000mm Power supply: 12V DC accumulator Weight: 180±20kg Oil tank capacity: 25L Working temperature:- 40~50 | 1 |
| 70 | Diesel Engine 2400-cc or above till 2700-cc or above Complete with stand, Reditor New, Starting Switches, Gear Box, Fuel Tank 45lt, Air Cleaner, Battery 120amp, Ignition Board Starting Swatch mater complete Cancer, Cylincer (Toyota or eqvivilant Reconditioned Kabuli) | 1 |
| 71 | Petrol Engine EFI with Automatic Gare transmission,1000cc or above till 1300cc Complete with stand, Radiator New, Starting Switches, Gear Box, Fuel Tank 35lt, Air Cleaner, Battery 60amp, Ignition Board Starting Swatch mater complete Cancer, Cylinder (Suzuki or equivalent ) | 1 |
| 72 | Ignifition Tiimg Gun | 2 |
| 73 | Model of 4 Stroke Petrol Engine Power generating principle of 4-stroke engine such as lubricating fuel, ignition system, etc. and operation of piston crank cam and valve and components function can be understood with cross sectioned part. AC 220V, DC12V transformer and led light operating during the combustion stroke with micro switch. | 1 |
| 74 | Petrol Engine 800 cc (Suzuki or Equivilant) | 1 |
| 75 | Univeral Coil spring CompressorPermits valve spring and valve stem oil seals to bereplaced without the need to remove the cylinderhead when used in conjunction with VS 1601compressed air adaptor.Reversible jaw adaptor and automatic cam actionlock to per-set spring tension.Suitable for use on a wide range of OHV, OHC andCVH engines. | 2 |
| 76 | Engine Vacuum Gauge Capacity : 0-760mm Hg Gauge size : 53mm YES-AMR-32 (Korea) | 2 |
| 77 | Hydro Meter Density: 0.000 – 3.000 g/cm3 Sample Temperature: \*0 – 80 °C (32 – 176 °F) Viscosity: 0 – 1,000 mPa | 4 |
| 78 | Battery Cell Tester Aeromometer Maximum 200A/H Specific gravity range 1,140-1,280 Dimension : 325x220x225mm YES-AMR-32 | 1 |
| 79 | Batteries 12 V, 136 AH | 2 |
| 80 | Tool Box ( Empty)  Trolly Type ( Standard) | 10 |
| 81 | Double Open end Spanner (6- 32 mm) | 20 |
| 82 | Open end ring spanner (6-32 mm) | 20 |
| 83 | Double end offset ring spanner (6-32 mm) | 8 |
| 84 | Socket set (6-42 mm) | 20 |
| 85 | Adjustable Wrench Set (4" to 10") | 20 |
| 86 | Allen Key Set (2 mm to 18 mm) | 4 |
| 87 | Model of Self | 1 |
| 88 | **Model of Generator** A training operating principle cross-sectioned generator. Education of internal structure such as rotor, stator, regulator. YESA-2710 or equivilant) | 1 |
| 89 | **Model of Gear Box**4 Forward speeds reverse casing.Torque converter, Oil pump.Stationary plate clutch.Rotary plate clutch.Planetary gear train.Hydraulic circuit valve.Centrifugal regulator.YESA-2202 | 1 |
| 90 | **Model of Clutch** By pressing the foot control and turning the hand wheel, connected to the disc, the clutch operation will become immediately obvious. Weights and dimensions 50x40x50cm , 15Kg YESA-2103 | 1 |
| 91 | **Front Suspension Assembly** Structure Educational Model. An educational equipment of suspension system installed to a 1600 cc passenger car's front section. Macpherson strut, control arm, wheel, steering, frame. Manual rotation by decelerator, powder coated, 4-wheel stand G-260603 | 1 |
| 92 | **Automatic Transmission Training Bench. Composition**  Automatic transmission assembly, variable-frequency motor, combined instruments, movable wheel bench and so on  **Functions**  1. Transmission used in this training bench is driven by frequency conversion motor can control the shifting of gears. 2. The lock control and forced speed drop control can be demonstrated on the trainer.3. Equipped with OBD-II diagnosis seat. 4. Can inspect the computer encoding/ reading data flow and system. 5. Equipped with detection panel for testing on signal parameters from computer; with instruments, to indicate gears, and at the same time can observe the speed stage shifting control process according to the changes in speed.6. With automatic transmission, braking system, accelerator step panel. 7. Plastic coated which can guarantee color fastness for 5 years. **Main technical parameters**  Dimension: 1250×800×1800(mm) Weight: 150±20kg Power supply: 220VAC, 50HZ Working temperature: -40~50 | 1 |
| 93 | **ABS system Trainer Composition.** ABS system accessories, speed regulation motor, movable wheel bench and so on. **Functions.** 1. Made of real ABS system accessories. 2. Driven by speed regulation motor, can simulate actual working status. 3. With schematic board, combined instruments, terminals, diagnosis ports. 4. Can carry out faults codes and data flow detection. 5. Can simulate vehicle brake process, do synchronous ABS system parameters sampling. 6. Can simulate, in various working conditions, ABS system control rules. 7. Can carry out ABS system electric elements detect and brake circuit analysis. 8. Simulate real vehicle brake status and oil circuit status, and ABS system effect on vehicle driving. 9. ABS system faults setting can carry out faults setting and elimination. 10. with movable wheel bench, by high-temperature plastic spraying treatment, for color fastness for 5 years. **Main technical parameters.**  Dimension: 1800×2000×1800mm Weight: 250±20kg, Power supply: 380VAC 50HZ, Working temperature:- 40~50 | 1 |
| 94 | **Air bag system Trainer. Composition.** Initial air bag, electric unit and movable wheel bench. **Functions.** 1. Integrated electric system circuit and schematic. 2. Circuit terminals, diagnosis seat and faults setting switches, for circuit detection, data testing, faults setting, faults codes reading, data flow detection and so on. 3.When air bag is open, it will recover automatically, can be used repeatedly. **Main technical parameters.** Dimension: 1200×600×1800mm, Weight: 50±10kg, Power supply: 12V DC accumulator, Working temperature:- 40~50 | 1 |
| 95 | **Braking system demonstrator, Composition.** Front disc brake assembly, brake disc, rear drum brake assembly, panel, brake pump assembly, pressure meters.  **Functions:** With universal from-disc & rear-drum brake system, to show brake system structure, easy to disassemble and demonstrate; through operation, for students to learn and understand the whole brake system working process. **Main technical parameters.** Dimension: 500×800×1000mm, Weight: 50±10kg Oil tank capacity: 1.5L, Working temperature:- 40~50 | 1 |
| 96 | **PETROL ENGINE,** 70cc, 100cc, 125cc,(Three Engine Set) for teaching diagnosis and fault finding (Yamaha/Honda or Equivilant) | 1 |
| 97 | **CYLINDER COMPRESSION TESTER.** Quickly checks condition of valves, rings, pistions and gaskets. Large 2.5" diameter dail is graduated from 0 to 300 psi. Rubber cone seats in all spark plung goles. Supplied with spare valve and rubber cone. | 1 |
| 98 | **Industrial Grinder.** Voltage. 380-400V-50Hz; 2850min-1, Power: 1500W/1.5Kw Motor: S2=30min ; 2850-1 Speed: 2850min Wheel Size. 250x40x32mm Protection grade. IP20 Packing Size. 580x365x345mm NW/GW. 33x35Kg 2-adjustable grinding supports. 2-wheel guards. 2-adjustable eye shields. With Steel Stand OPTI: SM250 | 1 |
| 99 | **CYLINDER RIDGE REMOVER SET** For removing ridges from worn cylinder bors to cover range: 2 11/16" to 5 5/16" 36500 Lisle | 1 |
| 100 | **AIR COMPRESSOR SET.** Self- contained compressed air aystem consisting of compressor Pump, motor. | 1 |
| 101 | **DIE STOCK SET -1/4 TO 3/4**Article SC/43, HSS taps in sets of sizes.1/4" - 5/6" - 3/8" - 7/16" - 5/8" and 3/4" BSF one each size of dies supplied in wooden box complete with strokes and wrenches. | 2 |
| 102 | **FEELER STRIP SET.** For measuring clearance between the piston and cylinder bore strips, made of steel, hardened and ground. Set of 8 pieces. Length 300 mm, width 13 mm and blade thickness 0.03 -0.04 - 0.05 - 0.06 - 0.08 - 0.09 - 0.1 mm | 2 |
| 103 | **BATTERY - ACID METER ( HYDROMETER)** Standard type for testing electrolyte density in lead accumulators. Complete with user's instructions. | 5 |
| 104 | **ELECTRIC DRILL PORTABLE, 8 MM.** Double insulated variable speed, pistol grip impact resistant plastic body. Specification: Drilling capacity in steel 10 mm. speeds ( no load) 300 - 1050 rpm. Power 475 watts.  Complete with drill chuck and key; 2 metros of cable with Draplug 5 A, 3-pin round plug to suit. | 2 |
| 105 | **BATTERY CHARGER, ELECTRON.** For Charging 6V-12V, lead-acid batteries Single phas portable with wheels charging and starting lead acid batteries with 6V to 12V starting various cars, vans and light trucks.  Automatic thermistor protection. Choice of normal charge. quick charge and quick start Timer for quick charge. Power Voltage (V) : 230 Frequency (Hz) : 50/60 AC Power input (W) : 700 Charge Voltage and current (V/A) : 6V/35A- 12V/35A. Capacity (Ah) : 20-350 Start Current (A) : 200 N.W : 15/16 Dimention (mm) : 380x310x570 | 2 |
| 106 | **SOCKET SETS: 1/2 INCH DRIVE.** High quality, chrome vanadium, Chrome plated: 3/4 inch square drive, Complete with: '- reversible ratchet, '- universal handle '- sliding T- handle, '- extension bars, '- universal joint, Supplied in metal box. Type and sizes: 3/8 to 1 1/4 inch, AF, 18 pcs. 10 to 32 mm metric, 21 pcs. 3/16 to 5/8 inch, with worth, 7 pcs. And 20.8 mm for spark plugs. | 3 |
| 107 | **SOCKET SETS, 1/2 INCH DRIVE.** High quality, chrome vanadium, 1/2 square drive. Complete with '- reversible ratchet handle '- silding T-bar brace. '- swivel handle. '- 14 mm plug socket '- extension joint, '- 47 sockets | 3 |
| 108 | **VICE GRIP PLIERS -30 MM.** Forged alloy steel jaws pressed steel body, rust resistance finish,standard jaws, self-locking with release lever, Approx. capecity 30 mm. Approx. Length 240 mm. | 3 |
| 109 | **WATER PUMP PLIERS.** Dropped forged steel. chrome plated with pipe grip, serrated jaws, slip joint with curced, interlocking channels, Approx. capecity 40 mm. Approx. Length 240 mm. | 3 |
| 110 | **BALL PIN HAMMER SET.** 181. Weight without handle 140 g. And 450 g. with vernished ash handle | 5 |
| 111 | **SOFT HAMMER.** With interchangeable plastic faces of dia. 32 mm, with ashwood handle. Weight with handle 360 g. Total length 280 mm. | 5 |
| 112 | **FEELER GAUGE SET, METRIC.** Made from steel, hardened and ground, tapered blades, etched  thickness on each blade. Approx. Size and types: Type Blade thickness blade length Metric 0.05 to 1 mm 150 mm | 5 |
| 113 | **FELLER GAUGE SETS** Set of precision blades, hardened and tempered, in steel case.  Type: Thickness: Length: Inch 0.0015 - 0.025 4" Metric 0.05 - 1 mm 100 mm | 5 |
| 114 | **HACKSAW.** Adjustable type, shaped handle, tubular metal frame; adjustable, one saw blade supplied. Length of blade 250 - 300 mm. | 5 |
| 115 | **PISTON RING COMPRESSORS,** Set of 3 piston ring compressors; capacity 40 - 75 mm; 57 - 125 mm; 90 - 175 mm. | 2 |
| 116 | **PULLER SET**  For gear wheels, three reversible legs. Max. spread Max. Reach 150 mm 150 mm 250 mm 220 mm 500 mm 540 mm | 2 |
| 117 | **CIRCLIP PLIERS SET**  Set of 4, chrome vanadium steel, with changeable jaws.  Straight jaws: one for internal and one for external circlips. Bend jaws; one for internal and one for external circlips. Bend jaws; one for internal and one for external circlips. Length 170 to 180 mm. | 5 |
| 118 | Work Bench 2 ½’ x 8’ Steel square pipe 2” frame top 2” shesheem wood with 6 lockable drivers channel tape reverse & forward. | 6 |
| 119 | Trainees lockers: 42”x70”x18” (22 SWG) 8 compartment lockable with 2 shelves in each compartment. | 2 |
| 120 | Steel Almirah:  84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 2 |
| 121 | Chalk Board: 1800 mm x 1000 mm dark green moveable, on wheeled scaffold swivel type for use on both side, with chalk tray. | 1 |
| 122 | Trainees Stool: Standard Size 5 leg hydraulic mobile stool (adjustable and moveable) with aluminum base and top fabric seat. | 20 |
| 123 | Storage Cabinet: (20 SWG) 42”x30”x45 High 11 drawers lockable. | 4 |

* + - 1. ***LIST OF MACHINERY EQUIPMENT’S & TOOLS OF WOOD WORK TRADE FOR TTC MALE KHARAN***

|  |  |  |
| --- | --- | --- |
| **S.No** | **Item Description** | **Qty** |
| 1 | CIRCULAR SAW. Heavy duty machine with strong steel structure fitted with on/off started switch and saw blade cover. Circular saw blade maximum diameter. 250mm.  Circular saw blade maximum angle steeting 45degree. | 1 |
| 2 | **JIG Saw.** Portable for wood works**.** | 2 |
| 3 | **Precision Mitre Saw 550mm.** Ideal for cutting various angles for picture frames and architraves.etc. Feature. Pre-set angle stops at 90, 45, 36, 30, 22.5, 15 degree.  Adjustable depth and length stops. Diecast table with integral graduations. Replaceable blade. Material vice clamp for short workpieces. Specifications. Maximum cutting with clamped at 45 degree 105mm. Maximum cutting width clamped at 90 degree 130mm. Maximum cutting width unclamped at 90 degree 160mm. Maximum cutting height 100mm. Blade size (LxW) 550x45mm (14TPI) Table length 395mm. Back fence height 40mm, **DRAPER .UK.** | 5 |
| 4 | **TRAMMEL SET USA.** UCP-23095, No. 524 Polished steel flat rule with guide way graduated in mm/inches. Adjustable hardened points.  Trammels accurately transfer measurements scribe arcs and lay out circles when used with most scales and yardsticks. | 5 |
| 5 | **CROSS CUT SAW.**Hardend teeth fine polished cross-cut Plastic handel.Length of saw: 450mmNo of teeth Universal.15-884 | 20 |
| 6 | **RATCHET BRACES.** Standard Taper shank. Round shank bits from 1/8" to 1/2" and bits with No.1 Morse taper shank. Sweep: 8", 10", 12", 14". | 20 |
| 7 | **BRACES BITS IN SETS.** Sets of 13 can be supplied in anuy of the following types: Set 220 Sloid centre brace bits. Set 240 Jennings' Pattern Brace Bits. Set 232 Solid Nose Brace Bits. The Set of 13 comprises should be of the following sizes: 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 15/16", 7/8", 15/16", 1" | 20 |
| 8 | **TENON SAW.** Tooth points hardened universal teeth polished blade, teeth filed and set blade with supporting rib Plastic handle. Length of saw. 300mm No of teeth. 13 15-884 | 20 |
| 9 | **RIP SAW.** Hardend teeth fine polished cross-set , plastic handle. Length of blade 230mm. No of teeth: 12TPI. 15-509 | 20 |
| 10 | **KEY HOLE SAW.** With changeable blade, locking screw blade length 150mm 15-275 | 20 |
| 11 | **COPING SAW.** Rotary links for setting blade at desired angle, tension of blade by rotating the handle. Bright galvanized frame, with handle. Blade length: 160mm Frame depth: 150mm 15-104 | 20 |
| 12 | **SPOKE SHAVE PLANE.**With cap and single cutter Overall length : 250mmWidth of cutter : 50mm12-151 | 20 |
| 13 | **BLOCK PLANE.** Wheel and screw for loosiening and adjusting cutter metallic body. Over all length : 160mm Width of cutter : 41mm 12-220 | 20 |
| 14 | **SMOOTHING PLANE.** With smooth sole, single iron, handle and knob, fine fihish cutting and quality tool steel blade, cast body. 12-003 | 20 |
| 15 | **JACK PLANE.** Cast iron, high quality grade, fastened by means of can lever locking device. Screw and lever for fine adjustment of depth of cut and lateral movement,  Width of cutter: 50mm Over all length: 300mm 12-005 | 5 |
| 16 | **CIRCULAR PLANE.** Flexible adjustble sole for concave and convex surface iron fastened by means of cam lever locking device. Knurled screw screw and lever for fine depth of cut and lateral adjustments  A reproduction of Stanley's discontinued 113 with distinctive toothed side gearings. The steel sole adjusts concave to convex and is dovetailed into its cast iron body. Excellent for boat and chair building. 1-3/4" wide blade and 10-1/8" overall length. Made in Germany. | 4 |
| 17 | **RABBET PLANE:** For plaining in inaccessible places such s corners etc adjustable mouth Width of cutter : 28mm Over all length : 100mm 12-078 | 4 |
| 18 | **FIRMUR CHISEL.**Set of 04 firmer chisels, bevel edge.Width: 8mm, 12mm, 18mm, 25mm.Over all length: 250mmSet of 4 pices.16-27316-27616-27916-282 | 10 |
| 19 | **MORTISE CHISEL.** Hard and ground steel. Width: 6mm, 8mm, 10mm. Over all length with handle: 300mm Set of 3 pices. | 10 |
| 20 | **TURNING CHISEL.** Hard steel cutting blade. 16-120 | 20 |
| 21 | **BALL PEEN HAMMER.** Round face and wooden handle. Weight with handle: 450grams 54-191 | 20 |
| 22 | **CLAW HAMMER.** Round face and octagonal neck, nickel, plastic handle with perforaed rubber handle grip. Weight with handle: 450gram 51-082 | 20 |
| 23 | **WOODEN MALLET.** Wooden mallet with high class finish. | 20 |
| 24 | **RUBBER MALLET.** Hard rubber mallet with wooden handle high class finish. Length of handle approx: 300mm 57-528 | 20 |
| 25 | **MARKING GAUGE.** With point all steel, double scribing bar graduated in mm. Length of graduation: 100mm Length of Bar: 150mm | 20 |
| 26 | **BAR CLAMP.** Made from T-section, back stop is positioned by means a pin throuh holes in the bar, Jaw opening : 1000mm Dimention of Jaw: 50x50 Pak | 10 |
| 27 | **COMBINATION SET:**With protractor head, center head, square head, lockable to steel/grooved rule which is graduated in mm on both sides sprit level.Blade length: 300mm46-143 | 4 |
| 28 | **TRY SQUARE.** Cast stock  Blade length 200mm 46-532 | 20 |
| 29 | **FLEXIBLE MEASURING TAPE.** Both edge graduated in mm and inches spring wound in plastic case lockable. Length: 5mm 30-696 | 20 |
| 30 | **GLASS FIBER TAPE.** Washable chemical resistant. Unbreakable tape, graduated in mm/inches Length : 15mtr. 34-260 | 20 |
| 31 | **WOOD WORKING VICE.** Quick action clamping over entire opening range. Jaw width : 175mm Jaw height : 60mm Jaw opening : 165mm UK/Germany/Japan | 10 |
| 32 | **GIMLET.** With feed screw, single spiral,  Diamater: 10mm Overall length : 600mm Pak. | 10 |
| 33 | **SOLID CENTER AUGER BIT.** With combination shank for use with bit brace. Diameter: 6, 8, 10, 12mm Shank diameter: 6.5mm Pak. | 10 |
| 34 | **DRILL BRACES.** 04 Jaws with with 08 tooth ratchet. Nylon bearing head, and nickel plated sweep : 250mm | 10 |
| 35 | **WOOD WORKING TABLE:** Diamensions. 6" x 4" x  Pak. | 6 |
| 36 | **CARPENTER PINCER.** | 10 |
| 37 | **"G" CLAMPS.** | 10 |
| 38 | **WOODEN FOLDING RULES** with circumstances scale 24" Long | 10 |
| 39 | **JOINERS' TRY SQUARES** | 10 |
| 40 | **BEVEL.** | 10 |
| 41 | Work Bench 2 ½’ x 8’ Steel square pipe 2” frame top 2” shesheem wood with 6 lockable drivers channel tape reverse & forward. | 6 |
| 42 | Trainees lockers: 42”x70”x18” (22 SWG) 8 compartment lockable with 2 shelves in each compartment. | 2 |
| 43 | Steel Almirah:  84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 2 |
| 44 | Chalk Board: 1800 mm x 1000 mm dark green moveable, on wheeled scaffold swivel type for use on both side, with chalk tray. | 1 |
| 45 | Trainees Stool: Standard Size 5 leg hydraulic mobile stool (adjustable and moveable) with aluminum base and top fabric seat. | 20 |
| 46 | Storage Cabinet: (20 SWG) 42”x30”x45 High 11 drawers lockable. | 4 |

* + - 1. ***Mobile Repairing Trade-Machinery, Equipment and Tools***

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Item Description** | **Qty** |
| 1 | **Surface mount device rework station**  Fits for soldering and desoldering SOIC, CHIP, QFP, PLCC, BGA or other temperature-sensitive components. Suitable for heating shrink, drying, lacquer removal, viscidity removal, ice-out, pre-heating and glue soldering. With short circuit, open circuit, over-temp and over-load protection. Voltage: 110/220V ,50/60Hz AC. USD 60 | 5 |
| 2 | Micro Scope: Microsocpe with adjustable pcb stand  20x-40x Stereo Microscope for repairing Mobile Phone with Top and Bottom LED Light  Eye lens: 10X Total Zoom:20x-40x | 2 |
| 3 | GSM test set | 2 |
| 4 | Universal antenna coupler with complete base station | 2 |
| 5 | Power supply digital | 5 |
| 6 | Storage box | 20 |
| 7 | Universal battery tester | 5 |
| 8 | Grounding station (EST / SMD) | 5 |
| 9 | Soldering Iron 75Watts | 10 |
| 10 | Tool kits (for mobile repacking) | 10 |
| 11 | RF Signal generator 2000 MHZ | 2 |
| 12 | Digital / Analog, Multi meter | 10 |
| 13 | 20MHz Digital Oscilloscope (LCD) | 2 |
| 14 | Authenticator / Nokia software downloader | 10 |
| 15 | Magnified Inspection Glass With Light | 2 |
| 16 | Hot air gun | 2 |
| 17 | Basic Electronic Trainer Analog / Electronic Trainer is an Electronics teaching system. It is designed to provide all the basic tools necessary to conduct experiments related to Electronics Technology. It is also ideally suited for developing, debugging, integrating and testing systems. Features: Bread Board Based Power Supplies Included Basic Measuring Instruments Included Flexibility to Perform Custom Experiments Standard Function Generator Included Protection Circuits Included. | 3 |
| Technical Features:Function Generator:Duty cycle: 50%Frequency range: up to 100KHz in five stepsOutput: Sine, Square, Triangle and TTLVariable Frequency ControlVariable Gain ControlFIX Supply DC: +5V DC, +12V DC, -12V DCVARIABLE SUPPLY DC: 0 ~ +25V DC, 0 ~ -25V DCFIX Supply AC: 2V-0-2V, 12V-0-12V, 15V-0-15V3 ½-Digit Digital Voltmeter/AmmeterDC Voltage Range: 200mV, 2V, 20V, 200VDC Current Range: 2A, Fuse ProtectedAudio Amplifier: With volume ControlSolderless Breadboard:2 Terminal Strips, Tie-point 16804 Distribution Strips, Tie-point 400Speaker: 0.5W with amplifierAccessories: 2mm patch cords, Power Cord, User Manual |
| Experiments included: Application of Ohm’s Law Series DC Circuit Parallel DC Circuit Diode Characteristics Characteristics and Applications of Zener Diode Diode in a DC Circuit Half Wave Rectifier Circuit Full Wave Rectifier Circuits with Center Taped Bridge Rectifier Circuits Voltage Doubler Circuit Characteristics of Light Emitting Diodes Characteristics of Bipolar Junction Transistor Characteristics of Field-Effect Transistor (FET) Characteristics of Unijunction Transistor (UJT) Characteristics of Programmable Unijunction Transistors (PUT) |
| 18 | Digital Electronic Trainer IT-300 Digital Logic Training System is a comprehensive and self-contained system suitable for students engaged in digital logic experiments. All necessary equipments for digital logic experiments such as power supply, clock generator, switches and displays are installed on the main unit. Breadboard allows students to experiment with essential topics in the field of digital logic. It is a time and cost saving device for both students and researchers interested in developing and testing circuit prototypes.Features:Bread Board BasedPower Supplies IncludedBasic Measuring Instruments IncludedFlexibility to Perform Custom ExperimentsOutput Devices like LEDs and 7-Segment IncludedInput Devices like Push Switches, Toggle Switches IncludedPassive Components IncludedProtection Circuits Included | 3 |
| Technical Features: DC Power Supply: +5V, +15V, -15V Clock Generator: 1Hz – 64Hz Logic Switch: 8-bit switch with complimentary TTL outputs Push Switch: 2 independent switches, each with Q, Q’ output State Monitors: 8 independent LEDs to indicate high and low logic state Potentiometers: Carbon Track, 1K and 10K 7-Segment Display: Four 7-segment LED displays with BCD to 7-segment decoder/driver Logic Probe: “LO” and “HI” LED display low and high state respectively Solderless Breadboard: 2 Terminal Strips, Tie-point 1280 4 Distribution Strips, Tie-point 400 Accessories: 2mm patch cords, Power Cord, User Manual |
| Experiments Included:AND Gate OperationOR Gate OperationNOT Gate OperationNAND Gate OperationNOR Gate OperationXOR Gate OperationConstruction of XOR Gate from NAND GateHalf Adder OperationFull Adder OperationHalf Subtractor OperationFull Subtractor Operation7-Segment Display OperationDecoder OperationBCD to 7-Segment DisplayMultiplexer OperationUsing Multiplexer and Demultiplexer/DecoderMultiplexing 7-Segment DisplaysComparator OperationD Latch and Flip Flop OperationLatching BCD Data for Displaying 7-Segment DisplayRe-circulating DataJ-K Flip Flop Operation |
| 19 | Cellular Mobile Telephone Trainer IT-702 provides the full understanding of mobile phone hardware. This trainer is a working model of a mobile phone. The software provided with this trainer allows the student to study and control IT-702 mobile phone trainer. This trainer allows student to understand the working of different sections of a mobile phone. Custom software provided with the train helps the student to control the features of mobile phone through PC.  Features: Power Supply Included Required Circuits Tested Each Section Clearly Marked for Input and Output Built-in Amplifier Built-in Protection Circuit Built-in SIM Interface Built-In Speaker with Amplifier Each Section Clearly Marked for Easy Understanding | 3 |
| Technical Features:Cellular System: EGSM/GSM 800/1800/1900 Auto SelectedOutput Power: 25dBm ±5dBChannel spacing: 200 KHzAntenna: Omni directional with Magnetic BaseDisplay: 128 × 64 pixels Graphical LCDSIM Interface: Supports 3V & 1.8V SIM CardsBattery: 1200mAH Li-onKeypad: 4X4 Matrix Keypad with 5-Way Joy Stick and DecoderPC Interface: USB – UART @ 57600 BaudVibrator: 1Hz Pulse with DriverSpeaker: 8 Ohm @ 0.5WAudio Amplifier: 3.1W Fully DifferentialCharging: On-Board Charging interfaceSoftware: Menu DrivenAccessories: Power cord, Experiment Manual, Mono Head Phone with Microphone, GSM Antenna, Software CD, 2mm patch Cord, USB Cable |
| Experiments included:Introduction to Trainer SectionsIntroduction to Menu Driven SoftwareStudy of Power Supply SectionStudy of SIM Card Interface SectionStudy of Microphone & Speaker SectionStudy of Vibrator SectionStudy of Charging SectionStudy of Frequency Signals during Call ProcessIntroduction to PC SoftwareExploring SMS Options of Trainer using PC SoftwareExploring Phone Book Options of Trainer using PC SoftwareExploring Special Features of Trainer using PC Software |
| 20 | Screw Drivers torx 0.25,0.5,0.75,1 | 10 |
| 21 | Philips Screw Drivers 00,0,1 | 10 |
| 22 | Flat Screw Drivers 0 to 3.5 | 10 |
| 23 | Running Mobile Sets of different types | 20 |
| 24 | Mobile Training Kit | 2 |
| 25 | Work Bench 2 ½’ x 8’ Steel square pipe 2” frame top 2” shesheem wood with 6 lockable drivers channel tape reverse & forward. | 6 |
| 26 | Trainees lockers: 42”x70”x18” (22 SWG) 8 compartment lockable with 2 shelves in each compartment. | 2 |
| 27 | Steel Almirah:  84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 2 |
| 28 | Chalk Board: 1800 mm x 1000 mm dark green moveable, on wheeled scaffold swivel type for use on both side, with chalk tray. | 1 |
| 29 | Trainees Stool: Standard Size 5 leg hydraulic mobile stool (adjustable and moveable) with aluminum base and top fabric seat. | 20 |
| 30 | Storage Cabinet: (20 SWG) 42”x30”x45 High 11 drawers lockable. | 4 |

* + - 1. ***Motor Winding Trade-Machinery, Equipment and Tools***

|  |  |  |
| --- | --- | --- |
| **S.No** | **Item Description** | **QTY** |
| **1** | **2** | **3** |
| 1 | Single phase motor 225Volts , 1/2HP | 6 |
| 2 | Three Phase Motor 380Volts 50Hz, 2HP | 6 |
| 3 | **Screwdriver/Equivalent.**  With insulated transparent shaft and splitproof plastic handle;chrome vanadium blade.Length of blade: 60mm Width of tip: 2.3 mm | 12 |
| 4 | **Cushion Grip Plier Set.** Cushion Grip 10 pieces set-Magnetic tip. Flared:  3mm x 75mm 5mm x 100mm 6.5mm x 45mm 6.5mm x 150mm 8mm x 150mm Phillips: PH0 x 60mm PH #1 x 75mm PH #2 x 45mm PH # 2 x 100mm PH 3 3 x 150mm. | 12 |
| 5 | **Bench Vice Light Duty.  STANLEY Fat Max** Light Duty Bench Vice 4" , 100mm  Codel: 1-83-065 | 4 |
| 6 | **Screwdriver.** With insulated transparent shaft and splitproof plastic handle; chrome vanadium blade. Length of blade: 75mm Width of tip: 3 mm | 12 |
| 7 | **Screwdriver insulated.** Chrome vanadium steel, nickel Plated, Parallel tip with plastic insulated blade and plastic handle. Width of tip: 7 mm Length of blade: 100 mm | 12 |
| 8 | **Screwdriver**. | 12 |
| Chrome vanadium steel, plastic handle. |
| Width of tip: 5 mm |
| Length of blade: 125 mm |
| 9 | **Screwdriver.** | 12 |
| Chrome vanadium steel, nickel plated, with flared tip and plastic handle |
| Width of tip: 8 mm |
| Length of blade: 150 mm |
| 10 | **Screwdriver.** | 12 |
| Chrome vanadium steel, nickel plated, with flared tip and plastic handle |
| Width of tip: 12 mm |
| Length of blade: 250 mm |
| 11 | **Combination Pliers.** | 15 |
| Common Pattern. Bright head, blue chquered 5000 V insulated |
| Handles. Length 160mm |
| 12 | **Diagonal Cutting Pliers Germany/Equivalent** | 15 |
| Suitable for cutting hard wire; PVC insulated handles |
| Length: 170mm |
| 13 | **Flat Nose Pliers.** | 15 |
|  |
| Long flat nose pliers, smooth handles, lay-injoint |
| Length: 160mm |
| 14 | **Round Nose Pliers** | 15 |
| Bolster 606 1/3R, polished, blue checkered insulation. |
| Length: 160mm |
| 15 | **Wire Stripping Pliers,** | 15 |
| Standard wire and stripping pliers, with return and adjusting screw to fit the required wire, diameter up to max. 4 mm |
| Length: 160mm |
| 16 | **Water Pump Pliers,** | 15 |
| Drooped forged steel, |
| Chrome plated with pipe grip, serrated, slip point with curved interlocking channels. |
| Approx. capacity 40mm |
| Approx. length 240mm |
| 17 | **Adjustable Wrench,** | 15 |
| Chrome vanadium of forged alloy steel, standard model with 15 deg. Jaw angle. |  |
| Capacity: 25mm |  |
| Length: 205mm |  |
| 18 | **open-ended Spanners 6-32 MM. 100/12M/Equivalent** | 15 |
| Matric, double-ended type. |  |
| Chrome vanadium; set comprising 12 |  |
| spanners from 6 to 32 m; with holder |  |
| 19 | **Long Chain-Nose Pliers, 200 MM Curved.** | 15 |
| Bolster 6826/A. Telephone Pliers, Common, Pattern, Lay-in Joint, Smooth handles. |  |
| Length 200mm |  |
| 20 | **Sheet Metal Punches.** | 15 |
| For Punching bur free and accurate holes in sheet metal |  |
| No. 02-4958; 15 mm size |  |
| No. 02-4961; 20 mm size |  |
| No. 02-4963; 25 mm size |  |
| No. 02-4965; 30 mm size |  |
| No. 02-4967; 35 mm size |  |
| 21 | **Sockets Set-3/16" to 7/8". HEYKO /Equivalent** | 10 |
| Chrome-vanadium, set comprising reversible ratchet, speeder brace, joint nut spinner, sliding T-bar, universal joint, extension bars and 16 socketsfrom 3/16 to 7/8inch. In steel case. |  |
| 22 | **Dies and Taps set- M4 to M12. Germany/Equivalent** | 10 |
| Set of 6 Matric-Standard, circular split pattern, Hss, constraining: taper, second and bottoming taps, dies, die, stocks and tap wrenches. Supplied in case. |
| Sizes: M4; M5; M6; M8; M10 and M12 |
| 23 | **Chuck Type Tap Wrench Set.** | 12 |
| With long body to allow the use of standard taps for deep seated holes. |
| Set comprising 3 wrenches of overall length 105; 175 and 250mm. |
|  |
| 24 | **Die Stock Set** | 10 |
|  |
| Each set consists of one stock to take 1 5/8 dia, Dies and one guide and carbon steel die of each size except 7/8 |
| 25 | **Multimeter.** | 10 |
| 3-3 / 4 digits 4000 count |
| ■0.7% best accuracy |
| ■Capacitance measurement |
| ＊ Not suitable for measurement of condensers |
| with large leak current. |
| ■Frequency measurement (AC sine wave only) |
| ■Data hold / Range hold |
| ■Relative value |
| ■Auto power off (30min.) (cancelable) |
| ■Low power ohm (input voltage 0.4V) at continuity |
| Range |
| ■Solid & protective body cover that can also be |
| used as a tilt stand |
| 26 | **Phase-Sequence Indicator Japan/Equivalent.** | 10 |
| Complete with test leads and carrying case. |
| For voltage up to 600 V. 50 to 60 Hz. |
| 27 | **Digital AC Clamp Meter** | 10 |
| 600 A AC Digital Clamp Meter with 750V AC 200 Ohms ranges plus contivity check buzzer. Tear drop shaped jaws open to 33mm. |
| Ranges: |
| AC Current 200A….600A |
| AC Voltage 200A….750V |
| Resistance 200 Ohm (Continuity buzzer sounds at 30 Ohm/20-Ohm) |
| Power Source: One Type PP3, 6F22, 006P(equivalent) 9V manganese battery |
| Display: 3-1/2 digit liquid crystal display with max. reading of 1999. |
| Complete with test eads mod. 7059, battery and carrying case. |
| 28 | **Motor Test Bench** | 2 |
| Motor Test Bench MT 1650/7 For mounting and connecting Electrical Motors, consisting of a quality table top, 18 mm thick, covered with synthetic material. With space to place electrical motors(electrical motors not included). Two drawers for storage of connecting wires etc. Three phase variable supply in WYE coneection 0 - 240V @ 5A. Three phase fied supply from AC mains. Protected by breaker with key emergency push switch. All terminals provided through safety terminals. Metal sheet welded stucture with clear printing on front panel using silk screen. Fixed Single phase supply from mains with DC rectifier output provided by safety terminals. Variable DC rectiifed output 0 - 220V DC @ 2A provided by safety terminals. Measurement units for current and voltage to be provided for both AC and DC voltage and current measurement. Indicator lamps with short circuit protection provided. |
| 29 | **Connection Leads Switzerland/Equivalent**. | 6 |
| Set connection leads, consisting of: |
| 20 pcs. 50 cm long (red) |
| 30 pcs. 75 cm long (black) |
| 20 pcs. 100 cm long (yellow) |
| 10 pcs. 150 cm long (green) |
| 30 | **Circuit Breaker** | 6 |
| 68 mm, plus current sensitive, proof against inrush current upto 250 A. |
| 31 | **Circuit Breaker** | 12 |
| Fault current Protective switch single phase, 16A fault current 10 mA. |
| 32 | **Motor Protection Relay Germany/Equivalent** | 15 |
| Overload relay. |
| Setting range 1.6 to 2.4 A; |
| to fit magnetic contractor, bimetallic overload trip. |
| 33 | **Motor Protection Device Germany/Equivalent** | 12 |
| Overload relay. |
| to fit magnetic contractor, bimetallic overload trip. |
| setting range 2.4 to 4 A; |
| 34 | **Magnetic Contractor**. | 10 |
| For three phase motors, up to 4 KVA, 20/16 A with 3 main operating contacts: 2 normally open auxiliary contacts. And 2 normally closed auxiliary contacts. |
| Open but tropicalised construction: coil operation voltage 230V. 50 Hz |
| 35 | **Electric Impact Drill-13MM.** | 4 |
| Heavy duty type, double insulation switch for choice of impact or rotary action. Specifications: |
| Drilling Capacity in steel 13mm. |
| Two Speeds(full load) 680 & 1490 rpm |
| Motor 1 phase 475w Complete with chuck key and secondary handle, 2 meters of cable 3-core with 5A, 3-pin round Duraplug. |
| 36 | **Manual Coil Winding Machine** | 4 |
| With 1:1 drive, 6-figure reset revolution counter and ratchet. For coils up to 350mm diameter. Complete with face plate and arbor and 6-figure revolution counter. |
| 37 | **Reel Holder** | 6 |
| Tensioning and drilling stand suitable for holding up to 3 reels of copper wire up to 300mm diameter with back tension adjustment. |
| 38 | **Autotransformer** | 6 |
| Bench top use, in metal housing with scale, on/off switch fuse and 4 mm standard output terminals. |
| Input 230V AC, 50 Hz |
| Output continuously variable from 0-230 V Ac, 50Hz, 3.2A, 0-736 VA. |
| 39 | **Dial Caliper.**Millimeter (1mm) measurement can be read on the main scale.0.02mm may be read on the dial gauge.One revolution equals 2mm.With thum wheel, Bazel clamp screw, Carriage lock screw, Outsid Jaws, Internal Jaws, Depth rod, Step measurement, Bezel. 142-15 Moore & Wright England. | 10 |
| 40 | SURFACE PLATE 600x600x100 /VS-10 Surface accuracy 0.006/100 Rigidity and lasting accuracy are ensured by adequate top and side thickness and ribbed construction. The surfaces are free from pinholes. Weight: 78Kg Code:2021-010  VERTEX.  (USA/Japan/Taiwan) | 2 |
| 41 | Work Bench 2 ½’ x 8’ Steel square pipe 2” frame top 2” shesheem wood with 6 lockable drivers channel tape reverse & forward. | 6 |
| 42 | Trainees lockers: 42”x70”x18” (22 SWG) 8 compartment lockable with 2 shelves in each compartment. | 2 |
| 43 | Steel Almirah:  84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 2 |
| 44 | Chalk Board: 1800 mm x 1000 mm dark green moveable, on wheeled scaffold swivel type for use on both side, with chalk tray. | 1 |
| 45 | Trainees Stool: Standard Size 5 leg hydraulic mobile stool (adjustable and moveable) with aluminum base and top fabric seat. | 20 |
| 46 | Storage Cabinet: (20 SWG) 42”x30”x45 High 11 drawers lockable. | 4 |

* + - 1. ***Computer Trade-Machinery, Equipment and Tools***

|  |  |  |
| --- | --- | --- |
| **S.No** | **Name of Item with Required Specifications (Equivalent or Above)** | **Quantity** |
| 1 | **Desktop Computers** • 11th Generation Core i7 • 4GB RAM (1x8) 2666 MHz • Intel UHD Graphics 630 • Shared Graphics Memory • Processor 2.4-5.0 GHz • 4 Cores 8 Threads • 8MB Cache • Wifi • 1 TB Hard drive 7200 RPM SATA • DVD Drive Read & Write • Wireless Keyboard & Mouse • LCD 18.5'' | 20 |
| 2 | **Network Printer** 500MHz processor or more, 33PPM or more, 1200x1200 dpi, 128 memory or more, input tray, A4/Legal/Letter etc supported. | 1 |
| 3 | **Switches 20 port** 24 Port switch connectivity for Computers Interface 16 10/100/1000 Mbps LAN ports Wireless Standards  • IEEE 802.3u 100BASE-TX  • IEEE 802.3ab 1000BASE-T  • IEEE 802.3x Flow Control • IEEE 802.1p QoS • IEEE 802.3az Energy-Efficient Ethernet (EEE) | 1 |
| 4 | **Router Switch** 20 port | 1 |
| 5 | **Crimpling Tools** Size : 19.5 x 10.5 x 1.5 cm Suitable for Cat5 and Cat5e cable with 8P8C, 6P6C and 4P4C plugs Package Content: 1 x RJ45 RJ11 RJ12 CAT5 Network Cable Crimper Pliers Tools 1 x Cable cutter | 4 |
| 6 | **Cables Cutter (UTP)** UTP/STP Data and Telephone Cable Cutter. | 4 |
| 7 | **Cable Tester** Tests Ethernet, USB, and BNC cables and accurately test pin configuration for cable. | 4 |
| 8 | **UTP Cable Roll**CAT-6 Imported | 1 |
| 9 | **Windows 10 for Computers** with Lisence & Security Key | 20 |
| 10 | **MS Office Professional Plus 2019** with Lisence & Security Key | 20 |
| 11 | **In-Page** Latest with Lisence & Security Key | 20 |
| 12 | **DC Inverter** 2 Ton DC Inverter | 1 |
| 13 | **Computer Table** Computer table of the size 4’x3’(LxW) one key board drawer and two shelves for UPS and CPU,both side laminated board. | 20 |
| 14 | **Computer Chairs** Revolving Steel Hydrraulic base seat back cushioned. | 20 |

* + - 1. ***Electronics Trade-Machinery, Equipment and Tools***

|  |  |  |
| --- | --- | --- |
| **S. No** | **Item Description** | **Qty** |
| **1** | **2** | **3** |
| 1 | **Power Electronics Training System:** Power Electronics Training System is used to perform all the power electronics circuit experiments.  It is very useful in power electronics laboratory for performing power experiments in technical colleges and universities. This trainer familiarizes student with characteristics of power electronics devices and the applications of power devices. | 1 |
| DC supply, AC supply, Triggering circuit, |
| Pulse amplifier and Isolation transformer, |
| Pulse transformer section, |
| Single phase rectifier firing circuit, |
| SCR assembly, Load section, |
| Power component section. |
| **Features:** |
| Bread Board Based |
| Power Supplies Included |
| Flexibility to Perform Custom Experiments |
| TRIAC, SCR, IGBT, MOSFET, PUT and UJT Included |
| Resistors, Capacitors and Inductors Included |
| Control Circuits Included |
| P.T. and other Passive Components Included |
| Protection Circuits Included Technical Features: |
| Fixed DC Power Supply: +5V, -5V, +12V, -12V, +15 V, +35V, -35V |
| Fixed AC Power Supply: 18V – 0V – 18V, 0V – 15V |
| Carbon Track Potentiometer: 1M, 2X 5K |
| Diode: 4X 1N4007 |
| Capacitor: 0.33uF, 0.1uF, 1uF |
| Inductance: 10mH, 2X68mH |
| Power Devices: 5X SCR, TRIAC, DIAC, PUT, UJT, IGBT, MOSFET |
| Load Resistance Selectable: 47R/7W, 1K/1W, 1K/10W, 10K/10W, 120R/5W, 2K2/2W |
| Pulse Transformer: 2X 1:1, 1:1:1 |
| Single Phase Controlled Rectifier Firing Circuit: Firing angle control 0 º - 180 º |
| Triggering Circuit: |
| 5 Gate Signal Output |
| Frequency Range: 30Hz to 900Hz Variable |
| Amplitude: 12V |
| PWM control of G1, G2, G3 and G4 |
| Duty cycle control of “Gate” |
| Signal is 0 to 100% |
| Solderless Breadboard: |
| 2 Terminal Strips, Tie-point 1680 |
| 4 Distribution Strips, Tie-point 400 |
| Accessories: Power Cord, User Manual, Experiment Manual, 2mm-2mm Patch Cord Experiments Included: |
| Study of the V-I Characteristics of SCR |
| Study of the V-I Characteristics of UJT |
| Study of the V-I Characteristics of MOSFET |
| Study of the V-I Characteristics of IGBT |
| Study of the V-I Characteristics of DIAC |
| 2 | **Elementary Fiber Optic Trainer** | 1 |
| Fiber Optics Trainer IT-4409 is designed to demonstrate & perform communication using Fiber Optics as a medium of transmission. |
| The trainer demonstrates characteristics of Fiber Optics Transmitter & Receiver and transmission of signal obtained from different types of Modulation techniques. |
| Trainer can also be used to demonstrate Digital Communication using To Study Frequency Modulation (FM) and Demodulation |
| Features: |
| Power Supply Included |
| Required Circuits Tested |
| Each Section Clearly Marked for Input and Output |
| Each Section Works as an Independent Unit |
| Built-in Audio Generator |
| Built-In Clock Generators |
| Each Section Clearly Marked for Easy Understanding Technical Features: |
| Fiber Optic link. |
| Transmitter: Fiber Optic LED |
| Receiver: |
| Fiber Optic Photo detector |
| Modulation Techniques: FM & CVSD |
| Transmitter Driver: Analog & Digital |
| Clock: 8KHz, 16KHz, 32KHz and 64KHz |
| PLL Detector: for FM demodulation |
| AC Amplifier: with adjustable gain |
| Audio Generator: Sine wave with amplitude & frequency variable |
| Microphone Interface: for voice link |
| Low Pass Filter: 5th Order Butterworth, 3.4 KHz cut-off Frequency |
| Audio Amplifier: Monolithic with Speaker |
| Voice Link: Fiber Optic Voice link using microphone & speaker (built in) |
| Cable Type: Multimode |
| Interconnections: 2mm gold plated pins |
| Accessories: Power cord, Experiment Manual, Fiber Optic patch cable, Microphone |
| Experiments included: |
| Theory of Optical Fiber |
| Study an 820nm Fiber Optic Analog Link |
| To Study CVSD Encoding and Decoding |
| To Study CVSD Encoding and Decoding Through Microphone |
| To Study CVSD Encoding and Decoding Through Fiber Optic |
| To Study Frequency Modulation (FM) and Demodulation Through Microphone |
| To Study Frequency Modulation (FM) and Demodulation Through Fiber Optic |
| 3 | **Signal Tracer / Injector** | 2 |
| Tracer portion Gain: Max, 60dB at 1KHz. |
| Attenuation: 0-20-40-60dB.Input impedance: 100K ohms. |
| Output impedance: External speaker: 8 ohms. |
| Output: 600 ohms (unbalance). |
| Meter: VU 100μA. |
| Speaker: 2 - 1/4 inch. |
| Injector portion: |
| Frequency: Approx. 1KHz square wave form. |
| Output level: Max. 4.5Vp-p (0 - 4.5V continuously variable). |
| Standard accessories: One each of test lead with 2 alligator clips ad test lead with a test prod and an alligator clip, plus 1 piece of 9 - volt battery. |
| Power supply: 9V battery or AC adaptor. |
| Accessories: |
| Test probe x 1. |
| RCA - clip x 2. |
| PAL / B Color Bar Pattern Generator |
| China/Taiwan |
| With color pattern for testing PAL system TV color circuit. |
| With four basic pattern as dots, square-crosshatch, vertical lines and horizontal lines for testing and adjustment of TV circuit. |
| With white restars pattern is used for testing purity and white balance. |
| Battery or AC adaptor operation. |
| RF range: |
| PAL-B.D.G.H.I.K. system, IF 38 ~ 40MHz. |
| Preset IF = 38.9MHz, VLow = 55.25MHz, VHigh = 175.25MHz. |
| 4 | **PAL / B Color Bar Pattern Generator** | 2 |
| With color pattern for testing PAL system TV color circuit. |
| With four basic pattern as dots, square-crosshatch, vertical lines and horizontal lines for testing and adjustment of TV circuit. |
| With white restars pattern is used for testing purity and white balance. |
| Battery or AC adaptor operation. |
| RF range: |
| PAL-B.D.G.H.I.K. system, IF 38 ~ 40MHz. |
| Preset IF = 38.9MHz, VLow = 55.25MHz, VHigh = 175.25MHz. |
| RF output level:10mVrms. |
| Impedance: 75Ω. |
| Sync. signal: X'TAL, vertical 50.036Hz, horizontal 15.611KHz. |
| Sub-carrier freq: 4.43361875MHz ±50Hz. |
| Patterns: |
| Color, splitted into upper and lower portions. Upper half: Red, blush-green, blue, greenish-yellow, white. Lower half: four gray, black. |
| Dots 19 (V) x 15 (H) white. |
| Crosshatch 19 x 15 square, white. |
| Vertical lines 19 white. |
| Horizontal lines 15 white. |
| Restars fixed 100% brightness white. |
| Video output: Video output (BNC) 1Vp-p (open end). |
| Power requirement: Battery AA-3 x 6 or 7~10V AC adaptor. |
| 5 | High Voltage Probe with Meter | 3 |
| 6 | **AM/DSB/SSB Transmitter Trainer** | 1 |
| IT-4101 is the comprehensive training system designed to analyze the DSB/SSB techniques used for Amplitude Modulation. |
| The trainer consists of signal generator and Modulator section. |
| The trainer provides the full understanding of conventional Amplitude Modulation circuits. |
| Trainer can transmit modulated signal at certain power level so signal is received by its receiver part. |
| Features: |
| Power Supply Included |
| Required Circuits Tested |
| Each Section Clearly Marked for Input and Output |
| Each Section Works as an Independent Unit |
| Input Devices like microphone, Signal generator Included |
| Output Devices like Speaker Included |
| Technical Features: |
| Micro phone Input: Input through micro phone |
| Audio Generator: Frequency and Amplitude adjustable. |
| Modulator: Balanced Modulator for AM-DSB and AM-SSB |
| Local Oscillator: 455 KHz |
| SSB Filter: 450KHz Ceramic Bandpass Filter |
| Carrier Frequency: Adjustable 1 MHz oscillator |
| Transmitter: RF amplifier with antenna |
| Audio Amplifier: Monolithic with adjustable gain |
| Speaker: 8 Ohm |
| Interconnections: 2mm gold plated pins |
| Accessories: Experiment Manual, 2mm patch cords and Micro phone |
| Experiments included: |
| Understanding of IT-4101 |
| AM DSB-SC Modulation (455KHz) |
| AM SSB-SC Modulation |
| AM DSB-SC Modulation (1MHz) |
| Transmission of AM DSB-SC Modulated |
| 7 | **AM/DSB/SSB Receiver Trainer** | 1 |
| IT-4102 is the training system which is designed to give the student a deep understanding of recovery techniques of Amplitude Modulation signal. |
| Receiver is designed similar to that of a commercial Radio Receiver. |
| Trainer demonstrates Super heterodyne Receiver with Automatic gain control (AGC) technique to demodulate the received AM DSB signal. |
| AM SSB signal is received using product detector. |
| **Features:** |
| Power Supply Included |
| Required Circuits Tested |
| Each Section Clearly Marked for Input and Output |
| Each Section Works as an Independent Unit |
| Output Devices like Speaker Included |
| **Technical Features** |
| Type: Super Heterodyne AM Receiver |
| Frequency Range: 955 KHz to 2055 KHz |
| Antenna: Standard AM antenna |
| On Board Devices: |
| RF Amplifier |
| Mixer |
| Local Oscillator |
| Beat Frequency Oscillator |
| IF Amplifier 1 |
| IF Amplifier 2 |
| Detectors: |
| Super Heterodyne AM Receiver (DSB) |
| Product Detector (SSB) |
| Local Oscillator: 455 KHz |
| Audio Amplifier: Integrated amplifier with volume control and speaker |
| Low Pass Filter: 5th Order Butterworth with cut off at 3.4KHz |
| Speaker: 8 Ohm |
| Interconnections: 2mm gold plated pins |
| Accessories: Power cord, Experiment Manual, Set of patch cords |
| Experiments Included: |
| DE-Modulation of AM SSB-SC Modulated |
| AM DSB Demodulator |
| Audio Amplifier |
| Static Measurements |
| Dynamic Measurements |
| AM detector and AGC Stage |
| Static Measurements |
| Dynamic Measurements |
| Second AM IF Amplifier |
| Static Measurements |
| Dynamic Measurements |
| First AM IF Amplifier |
| Static Measurements |
| Dynamic Measurements |
| AM Mixer, AM Oscillator and AM Antenna |
| Static Measurements |
| Static Measurements |
| AM Alignment with Test Equipment |
| 8 | **FM Transmitter Trainer** | 1 |
| IT-4108 is designed to analyze the Techniques of Frequency Modulation using Analog signals. |
| Trainer also contains an FM transmitter with power amplifier. |
| Frequency modulators are also included to study the |
| wired Frequency modulation / demodulation techniques. |
| **Features:** |
| Power Supply Included |
| Required Circuits Tested |
| Each Section Clearly Marked for Input and Output |
| Each Section Works as an Independent Unit |
| Input Devices like microphone, Audio Generator Included |
| Output Devices like Speaker Included |
| **Technical Features:** |
| Audio Generator: Frequency and Amplitude adjustable. |
| Micro phone Input: Input through micro phone |
| FM Modulator Types: |
| Reactance Modulator |
| Varactor Modulator |
| Carrier Frequency: 455 KHz |
| FM Transmitter: Monolithic Based with ON/OFF Control |
| Frequency: 88 – 108MHz selectable |
| Power Amplifier: Built In |
| Antenna: FM Telescopic Type |
| Transmit Range: 10 feet |
| Audio Amplifier: Monolithic Type |
| Speaker: 8 Ohm with ON/OFF Control |
| Interconnections: 2 mm gold plated pins |
| Accessories: Power cord, Experiment Manual, Set of 2mm patch cords |
| **Experiments included:** |
| Main characteristics of an FM transmission system |
| Study of Modulator Types, Reactance and Varactor |
| Study of Detuned resonant demodulator |
| Study of Quadrature demodulator |
| Study of Phase Locked Loop demodulator |
| Study of Foster-Seeley FM demodulator |
| Study the operation of Ratio Detector |
| Study of FM Transmitter Circuit |
| 9 | **FM Receiver Trainer** | 1 |
| IT-4109 is designed to analyze the Techniques of Frequency De-Modulation using Analog signals. |
| Trainer also contains an FM Radio Receiver with AFC. |
| Frequency demodulators are also included to study the wired Frequency modulation / demodulation techniques. |
| Features: |
| Power Supply Included |
| Required Circuits Tested |
| Each Section Clearly Marked for Input and Output |
| Each Section Works as an Independent Unit |
| Input Devices like Antenna and RF Amplifier Included |
| Output Devices like Speaker and Low Pass Filter Included |
| Complete FM Radio (88MHz – 108MHz) Receiver Included |
| FM Demodulation Techniques Explored |
| Technical Features: |
| FM Demodulator Types: |
| Detuned Resonant |
| Quadrature Detector |
| Foster -Seeley |
| Ratio – Detector |
| Phase Locked Loop |
| FM Radio |
| Carrier Frequency: 455 KHz |
| Low Pass Filter: 5th Order Butterworth @ 3.4 KHz |
| Amplifier: AC Amplifier with adjustable gain |
| Audio Amplifier: Monolithic Type |
| Speaker: 8 Ohm with ON/OFF Control |
| FM Radio |
| Sensitivity: <150mV |
| FM Tuning Range: 88 – 108MHz |
| FM IF: 10.7MHz |
| Detector: Ratio Detector |
| IF Amplifier 1: First FM IF Amplifier |
| IF Amplifier 2: Second FM IF Amplifier |
| Oscillator: FM Oscillator with mixer |
| Amplifier: FM RF Amplifier with AFC Stage |
| Antenna: FM Telescopic Antenna |
| Gang: AM/FM Gang for Tuning |
| Interconnections: 2 mm gold plated pins |
| Accessories: Power cord, Experiment Manual, Set of 2mm patch cords |
| Experiments included: |
| Main characteristics of an FM transmission system |
| Detuned resonant demodulator |
| Quadrature demodulator |
| Phase Locked Loop demodulator |
| Foster-Seeley Demodulator |
| FM Radio Ratio Detector |
| Static Measurements |
| Dynamic Measurements |
| Ratio Detector Alignment |
| Second FM IF Amplifier |
| First FM IF Amplifier |
| FM RF Amplifier, Mixer, Oscillator, And AFC Stage |
| FM Mixer Static Measurements |
| FM Mixer Dynamic Measurements |
| FM Oscillator Static Measurements |
| FM AFC |
| FM RF Amplifier Measurement |
| FM Final Alignment |
| 10 | **AM & FM Superhetredyne Radio Trainer** Transistor based AM/FM Radio Trainer Complete with, experiment manual, accessories and connecting leads USA/UK/Germany | 1 |
| 11 | **20” Colour TV Trainer**  Malaysia/Singapore/Germany with explicit test points. Complete with, experiment manual, accessories and connecting leads | 1 |
| 12 | Colour TV 17" or above | 4 |
| 13 | **Basic Electronics Trainer** | 3 |
| **FIX Supply DC:** |
| +12V, +5V and -12V |
| **Variable Supply DC:** |
| 0 – 25V and 0 – -25V variable DC |
| **FIX AC Supply** |
| Trainer contains centre-tapped step down transformer |
| **Function Generator:** |
| Fully functional function generator is available on the trainer. This equipment can generate sine, triangle, square and TTL waveforms up to 100KHz(±10%). Frequency can be varied in five different steps. |
| Frequency can be adjusted at a certain frequency range using frequency potentiometer. Amplitude of the output waveform can be varied using amplitude potentiometer. |
| **Output impedance:** 50 ohm. |
| **Voltmeter DC LED Type** |
| **Ampere meter DC LED Type** |
| **Experiments Included:** |
| Using Test Equipment |
| Resistor Colour Coding |
| The Ohm’s Law |
| Series DC Circuits |
| Parallel DC Circuits |
| Combination DC Circuits |
| Power In DC Circuit |
| Voltage Divider Circuits |
| Kirchhoff’s Voltage Law (KVL) |
| Kirchhoff’s Current Law (KCL) |
| Superposition Theorems |
| Thevenin’s Theorems |
| Maximum Power Transfer |
| DC Wheatstone Bridge |
| Transformer |
| Series RL, RC & RLC Circuit |
| Parallel RL, RC & RLC Circuit |
| Series/Parallel Resonance Circuit |
| Passive Low Pass Filter |
| Passive High Pass Filter |
| Passive Band Pass Filter |
| PN Junction Diode |
| Zener/LED Diodes |
| Half/Full wave Rectification |
| Diode As Voltage Multiplier |
| NPN/PNP Transistor Characteristics |
| NPN/PNP Transistor Amplifier |
| JFET Characteristics |
| JFET Amplifier |
| 14 | SCREWDRIVERS | 10 |
| Chrome vanadium steel; nickel plated with flared tip and plastic handle. |
| 8300/Extra size No.3; 4A; 5A; 6B. |
| 8320/Extra size No.0; 1; 2; 3;. |
| Length of blade: 60; 75; 80; 100; 125; 150 mm. |
| 15 | SCREW GRIPPING TOOL SET. | 10 |
| Code No. 04805; 10, 15, 20, 25 |
| Article RS 609 - 130, 146, 152. |
| Shafts are completely insulated with intergral finfer grips. Screws. Are held by their heads via a spring loaded sleeve-trap, and are posiitively located against the shaft tip ready for positioning and driving. |
| 16 | SCREWGRIPPING SCREWDRIVERS. | 10 |
| Article RS 609 - 130, 146, 152. |
| Shafts are completely insulated with intergral finger grips. Screws are held by their heads via a spring loaded sleeve-trap, and are positively located against the shaft tip ready for positioning and driving. |
| 17 | PRECISION SCREWDRIVER SET. | 10 |
| Article RS 619-503. |
| Set of 7 'slimine' screwdrivers, suited for electronics engineer. |
| 18 | SCREWDRIVER SET, PHILIPS, OFF-SET. BLOSTA. | 10 |
| Set of 2 off-set screwdrivers, chrome vanadium steel, nickel |  |
| plated, with the flowing Phillips head; |  |
| 1861 size No. 8, cross No. 1 + 2. |  |
| 1861 size No. 9, cross No. 3 + 4. |  |
| 19 | JEWELER'S SCREWDRIVERS SET. | 10 |
| Set of 6 pieces in plastic wallet, nicked plared steel with hexagon head. |
| Dia. Of blades 3.5; 5.5; 6.5; 7.5; 8.5 mm. |
| 20 | ALLEN KEY SET 2 TO 10 MM. | 10 |
| No. 25102. Set of 10 hexagonal allen keys from 2 to 10 mm; |
| chrome vanadium steel. Supplied in plastic wallet. |
| 21 | ALLEN KEY 3/64 TO 1/4 INCH AF. | 10 |
| No. 25102. Set of 09 hexagonal allen keys from 1/16 to 1/4 inch |
| AF; chrome vanadium steel. Supplied in plastic wallet. |
| 22 | ADJUSTABLE WRENCH, IREGA LT -08. | 10 |
| Chrome vanadium of forged alloy steel, standred model with 15 |
| deg. |
| Jaw angle. |
| Capacity; 25mm |
| Length; 025 mm. |
| 23 | UTILITY PLIERS - 150 MM No. 3 - 201. | 10 |
| Small size; high quality slip joint, with standard jaws and pipe |
| grip |
| Made from hardened chrome vanadium steel. |
| Max. jaw opening 20 mm, five position selection. Overall length 150 mm |
| 24 | BOX SPANNIER SET, | 10 |
| Chrome vanadium, hexagonal sockets with plastic handle and medium long shaft |
| size 3, 3.5, 4, 4.5 5, 5.5, 6, 7, 8mm |
| 25 | BOX SPANNIER SET, | 10 |
| Round shank, chrome-vanadium steel, hexagonal sockets plastic handle, set of 6 spanners. |
| size BA, 0. 2, 4, 6, 8 and 10.5, 6, 7, 8 mm. |
| 26 | INSPECTION MIRROR. | 10 |
| Adjustable length 180-530 mm |
| Dia 30 mm. |
| 27 | G-CLAMP SWIVEL VICE. | 10 |
| Specifications; |
| - 360 deg. C swivel vice |
| - jaw width about 100 mm. |
| - jaw opening about 105 mm. |
| 28 | CIRCLIP PLIERS. No | 10 |
| Internal type, for use with circlips 8-25 mm; straight nose. |
| 29 | CIRCLIP PLIERS. BLOSTA 11407/CV | 10 |
| Length 135 mm Wieght 80.g. For outside rings. |
| 30 | ADJUSTABLE DC POWER SUPPLY EA 3003 SE. | 5 |
| For laboratory experiments and for different projects; utilizing semiconductors and integated circuits. |
| 30V/2.5A constant voltage type with output current limiter, short-circuit protection, built-in voltmeter. |
| Output voltage 0 - 30V. |
| Continously adjustable positive or negative load current; up to 2.5A current limiting adjustable 0-2.5A, ripple wave < 1mV eft Voltage regulations with 100% mains and 10% load variation 2.5 mV max |
| Complete with operation manual. |
| 31 | LOW VOLTAGE POWER SUPPLY XKB- | 5 |
| Delivening 1 V D.C ( full wave rectified ) and 1 and 2 V A.C at current capabiliyt of 8 A for D.C and A.C operation; complete with mains cable and service manual. |
| 32 | SET OF DRILLS, 0.8 -6.5 MM HSS. | 10 |
| Article SD. 0.8-65. Hss twist drill DIN 338, for electronic work- shopactivities, |
| consisting of; |
| dia: 0.8 - 1.0 - 1.2 - 1.4 - 1.6 - 1.8 - 2.0 mm each 10 pcs. |
| Dia: 2.1 - 2.3 - 2.5 - 2.6 - 3.0 - 3.2 - 3.3 - 3.5 - 3.7 - 4.0 4.1- 4.2 - 4.5 - 4.8 - 5.0 - 5.1 - 5.5 - 6.0 - 6.5 mm each 5 pcs. |
| 33 | HAND COUNTERSINK, 10 MM. | 10 |
| Hand operated with plastic handle countersink suitable for wood and plastic materials; diameter approx. 12 mm. |
| 34 | HAND DRILL; 10 MM. | 10 |
| Breast type, enclosed gears, two-speed modle; adjustable crank, supporting handle, sef-centering chuck. |
| Capacity: 10 mm. |
| 35 | HSS DIE SET, | 10 |
| ISO metric split from set vonsisting of the following: |
| M2 - M2.5 - M3 - M3.5 - M4.0 - M5. |
| 36 | NEEDLE SET. | 10 |
| of six file ( hand, square, warding, half-round three-square and round) in plastic wallet. |
| length: 140 mm. |
| 37 | FILECARD BRUCH. | 10 |
| With wooden handle. |
| Length: 255 mm. |
| 38 | TINMEN'S SNIPS. | 10 |
| Straight blade type, with open end handles, hardened steel, polished blades. |
| Length: 275 mm. |
| 39 | HAMMER - 300 G. | 10 |
| Forged and tempered steel head, ash handle. |
| Weight 300g. |
| 40 | RUBBER MALLET - 300 G, | 10 |
| Solid rubber, with polished ashwood handle. |
| Face dia. 55 mm. Weight 300 g. |
| 41 | CORDLESS SOLDERING IRON | 5 |
| Soldering heat in approx. 5 sec. And maintained for 15 min.; with rechargeable batteries inside soldering iron; complete with charging unit/stand; longlife soldering bit. |
| Supplied with 2 pin round as standard. |
| 42 | SOLDERING IRON - | 5 |
| Electric ; with insulated plastic handle and interchangeable angle bit for general use; supplied with approx. 1.5 m 3-core main cable and two spare bits. Power 100 W. Complete with plug (2 pin round. |
| 43 | INSTANT SOLDERING GUN | 5 |
| For fast heat application and soldering; should reach maximum tip temperature (abour 350 deg.C) in about 3 seconds. 100 watts. |
| Complete with: |
| - indicating lamps |
| - tips and solder paste |
| 44 | MAGNETIC PICK-UP. | 10 |
| For picking up magnetic components and hardware from areas of difficult access; made from flexible tubing, with plastic transparent handle. |
| Max. attractive power up 3000 g. |
| Magnet dia. 17 mm, length all over 530 mm, weight 270 g. |
| 45 | HAND HELD PIN VICE. | 10 |
| 130 x 20 mm. |
| 46 | ELECTRONIC PLIERS SET | 10 |
| Single joint, compact pliers, nominal length 130 mm, set of 6 pliers containing: |
| - diagonal cutting pliers |
| - flat nose, long jaws with diagonal cutter pliers |
| - flat nose, long jaws, smooth gripping surface pliers |
| - snip nose, long curved jaws pliers |
| - snip nose, off-set jaws pliers |
| - round nose, long jaws pliers |
| Complete with zipper wallet nickel plated. |
| 47 | PIN PUNCH SET. | 10 |
| Drifts, No. 1673-0103. In wooden rack. |
| Dia. 3, 4, 6, 7 and 8 mm. |
| Length 150 mm. |
| 48 | TRIMMING TOOLKIT, FOR ALIGNMENT PROCEDURE. | 8 |
| Article FEC 310 - 50095. |
| Kit contains: 3 nylon holders, |
| 2 extension holders, |
| 2 tuner adjusting tools. |
| 6 spare bits and 23 different |
| interchangeable tips. with adjustable mirror and twezzers. |
| 49 | VARIABEL TEMPERATURE SOLDERING IRON. | 5 |
| A high quality, solid-state, thermostatically controlled soldering iron. |
| Approx. Specifications: |
| - heating element about 50 W |
| - adjustable temperature range from 200 deg. To 400 deg. C. |
| - visual indication of on/off state. |
| 50 | ILLUMINATED INSPECTION GLASS. | 5 |
| Battery operations, with two 1.5 V batteries, mount made of white shock-resistant plastic, handle madestainless steel, bulb 2.5 V, 0.25 A. Aspherical lens 60 mm dia. And 5x magnification. |
| 51 | **BANCH DRILL PRESS.** | 5 |
| Article metabo T6, No. 8525-0108 |  |
| Capacity 0 - 6.5 mm. |  |
| Electric speed control, high precision. |  |
| 52 | **ELECTRIC HAND DRILL; 10 MM.** | 10 |
| With continous speed control, forward and reverse rotation. |
| Maximum drilling capacity 10 mm. |
| Drilling and hammer action. |
| Complete with: |
| - Chuck key |
| - Duraplug 3 - pin round, 5-amp |
| - Instruction manual. |
| 53 | **I.C. INSERTER & EXTRACTORS.** | 10 |
| Article RS-423-829, 922. |
| Two tools designed to simplify the insertion and extraction of D.I.L. packages (up to 16-way) |
| 54 | **ELECTRIC BLOWER,** | 10 |
| Two speed blower; with the choice of high or low setting for cleaning electronic equipment. AC motor permanently sealed; with free-service ball beaming; grounded three wire cord including section cleaner attachment. |
| Approx. 400 W motor. |
| 55 | **HEAT GUN,** | 5 |
| Lightweight, capable of delivering an airflow at nozzle about 400 deg.c, with 3-way control switch 'Cold air - off - Hot air' with four nozzle adapters to suit a wide range of application in repair and servicing of electronic equipment, nominal power consumption 250 W in heat-proof plastic housing. |
| 56 | **OSCILLOSCOPE** | 5 |
| 10 MHz compact-oscilloscope |
| 1 Channel, max. 2 mV/div. Sensitivity |
| Timebase: 0.2 s/div. To 0.2 micro S/div., Buit-in Compnent tester. |
| VERTICAL DEFLECTION |
| Bandwidth: DC to 10 MHz (-3dB) |
| AC to 15 MHz (-6dB) |
| Risetime: approx. 35 nsec. |
| Overshoot max. 1% |
| Deflection coefficient: 12 calibrated steps, |
| 5 mV/div to 20 V/div in 1-2-5 |
| sequence, variable control |
| 1:2.5 to at least 2 mV/div |
| with full bandwidth. Accuracy in calibrated position: |
| +/-3% |
| Input impedance: 1 Mohm-30 pF |
| input coupling: DC-AC-GND |
| input voltage: max. 400 V (DC + peak AC) |
| HORIZONTAL DEFLECTION |
| Time coefficient: 18 calibrated steps, |
| 0.5 microS/div to 0.2 s/div in 1-2-5 sequire, variable |
| control 1:2, 5 to at least 0.2 microS/div, |
| Accuracy in calibrated position |
| '+/-5%. Normal lengs of sweep line -- approx. 7 div. |
| Bandwidth X-Ampl.: 2Hz to approx. 850 kHz |
| Deflection coeffieient: approx. 0.65 V/div |
| inout: BNC connector |
| X - Y phase shift: less |
| than 3 deg up to 70 kHz |
| TRIGGER SYSTEM |
| Automatic or normal with manual level control |
| Bandwidth: 2 Hz up to at least 30 MHz |
| Slope: positive or negative |
| Threshold: internal 5 mm, external 0.4 V. |
| Line voltage: 110, 125, 220, 240, V AC. |
| Line frequency range: 50 to 60 Hz |
| Accessories supplied: 10:1 Probe, line cord, Operators Manual . |
| 57 | **FREQUENCY GENERATOR AG 1000** | 5 |
| 10 Hz - 1 MHz type; low |
| distortion sine/square operation made from general use in electronic lab. |
| Specifications: |
| frequency response: |
| 10 Hz to 1 MHz in steps with calibrated continous control accuracy: +/-3% |
| sine and square wave from output voltages: min. 10 Vpp/600 Ohm attenuator: Odb; -20 dB; 40 dB |
| distortion: min 2% |
| Complete with: |
| - operation manual |
| 58 | **RF SERVICE SIGNAL GENERATOR SG 1000** | 5 |
| Circuits and tuners in AM; FM and TV receivers. |
| Approx. Specifications: |
| Frequency range: 100 kHz to 100 MHz |
| Frequency accuracy: 1.5% |
| Output voltage: 0.1 V r.m.s. |
| Modulation - AM, internal 1 kHz, external 50 Hz to 20 kHz. |
| Crystal oscillator |
| Complete with accessories |
| and user's manual. |
| 59 | **BATTERY CHARER** | 5 |
| For changing standard 6 V and 12 V lead-acid batteries; with built-in current meter and voltage switch. |
| Complete with connection leads and clips. |
| 60 | **VARIABLE RESISTANCE BOX. POTENTIOMETER.** | 5 |
| UNILAB 011. 123; 216 |
| With multi position switch to slect resistances; ventilated case; total Power rating 100 W. Resistance range up to kOhm with fuse and 4 mm connecting sockets. |
| 61 | **VARIABLE RESISTANCE** | 5 |
| With multi position switch to select resistances from 100 Ohm to 470 Kohm in 12 steps. Power rating between 0.5 W and 1.0 W per step. Accuracy 10% 4 mm connecting sockets. |
| 62 | CAPACITANCE | 5 |
| The position switch selects the following values: |
| 220, 470, pF; 2.2, 4.7, 10, 22, 47, 100, 220, 470 nF; |
| 1 micro F. |
| Maximum working voltages 250 V DC. |
| 63 | SOLDER BREADBOARD ExCU 16 | 10 |
| For individual student projects and preexiting soldering technique on pcb's: made from reliable laminate copper clad board with standard size 90 x 67 mm; with copper strips and hole spacing 2.54 X 2.54 mm; hole dia m. 1.0 mm. |
| 64 | POCKET CALCULATOR, DC830. | 10 |
| 8-Digit; standard functions colck, dialy alarm, schedule alarm, battery operated. |
| Completed with spare battery. |
| 65 | STEREO HEADPHONES TECHNIQUES | 10 |
| Dpecification: |
| Type: Enclosed dynamic headphones |
| Units: 40 mm diameter dome type |
| Frequency response: 8 -- 30.000 Hz |
| Impedance: 45 Ohm at 1 kHz |
| rated input: 100 mW |
| Maximum input: 500 mW |
| Sensitive: 105 dB |
| Plug: dia. 3.5 mm mini stereo plug. |
| 66 | MEGAPHONE FANON | 10 |
| Rated power 10 W. |
| Built-in microphone; |
| battery operated; service manual. |
| 67 | SOLDERLESS BREADBOARD. | 10 |
| For individual student projects. Breadboard |
| module contains for rows of sockets; |
| two outer raws of two-by 48 pins and two inner raws of eight-by 64-pins |
| Socket spacing for any dual-line package IC and any discrete device and passive component with lead dia. Max. 0.03. In., molded plastic, with base plate and power distribution strips, 4mm socket terminals for external supply voltages. |
| 68 | DIGITAL TRANSISTOR TESTER | 5 |
| Measure rich DC parameters of maniford semiconductors, e.g. diode, transistor, controlled silicon, FET. |
| Measure capacitor, varistor, DC voltage signal source |
| Measure 78 and 79 three terminal voltage regulator |
| Data hold, low battery warning |
| Complete with carry case and six 1.5V AA batteries |
| DY294 |
| V(BR) 1000V |
| VCC(Set) 800mA 0 - 6V |
| LCD Display |
| 69 | REVETING HAMMER - 200 G. | 5 |
| Forged and tempered steel head, ash handle. |
| Weight 200 g. |
| 70 | CABLE KNIFE. | 5 |
| pocket knife for cables and lead, fixed type, with wooden handle. |
| Total length 185 mm. Weight 40 g. |
| 71 | HAND DRILL. | 5 |
| 3-jaw all steel chuck, |
| Capacity 6 mm: |
| Length 220 mm. |
| 72 | SOLDERING IRON KIT WITH STAND | 2 |
| Ergonomically designed, for all electronic fine works; rated power 25W: warm-up time < up time < 2 min.: supply |
| cable 2 m long; with set of 3 exchangeable pre-tinned copper bits; Overall length ( iron + bit) |
| approx. 230 mm; Complete With iron holder. |
| 73 | DESOLDERING TOOL | 5 |
| Pump action desoldering tool used in conjunction with soldering iron to remove hot solder; with exchangeable teflon tip; one-hand operation; |
| Nominal length 200 mm; |
| Complete with 3 spare taps. |
| 74 | HACKSAW. | 5 |
| Adjustable type, shaped handle, tubular metal frame; adjustable, |
| one saw blade supplied. |
| Length of blade 250-300 mm. |
| 75 | ROUND HEAD CENTRE PUNCH. | 5 |
| No.21-6211. Body length x diameter x size; |
| 6 x 9/16 x 3/8 in. |
| 76 | ENGINEER'S SCRIBER. | 5 |
| 03/14, Insize Code, 7230 , Engineer's double ended. |
| 77 | ENGINEER'S SQUARE, | 2 |
| Workshop grade; blades hardened and tempered and precision ground. |
| size: 150 x 100 mm. SHEFFIELD , BS-939, DIN-875, No-400 MOORE and WRIGHT, ENGLAND |
|  | **ELECTRONICS TOOLKIT** |  |
|  | consisting of: |  |
| 78 | Tweezer set, four pieces, comprising straight point, reversed action and flat nose tweezers for precising work and electronic component handling. Stainless steel 150 mm length. | 10 |
| 79 | Toolbox, for storing trainee hand tools. | 10 |
| 80 | Combination pliers, with side cutter, pipe grip, wire cutter, serrated jaws, length 120 mm. | 10 |
| 81 | Diagonal side cutters; for cutting hard wire, length 120 mm. | 10 |
| 82 | Wire strippers, with retum spring and adjusting screw to fit the required wire dia. | 10 |
| 83 | Flat nose pliers, with rectanglar section jaws and smooth gripping surface, plastic insulated handles, 120 mm long. | 10 |
| 84 | Snipe nose pliers, with slim long jaws of half round section and smooth gripping surfaces, length 120 mm. | 10 |
| 85 | Snipe nose " radio " pliers, with slim long jaws of half round section, serrrated gripping surfaces, plastic insulated handles, length 120 mm. | 10 |
| 86 | Hooked snipe nose pliers, with off-set tips, length 120 mm. | 10 |
| 87 | Round nose pliers, with slim long round jaws, length 120 mm. | 10 |
| 88 | Clamp / seizers; precision surgical type for firmly gripping wire etc., during solering retrieving small parts and heat sinking with straight jaws, length 150 mm. | 10 |
| 89 | Heat sink, to protect transistors and other temperature sensitive devices from excessive heat when soldering. | 10 |
| 90 | Screwdriver voltage tester, for voltage testing, flat nose, plastic handle, insulated blade with neon light, flared tip. Testing voltage 100 - 500 V, width of tip 4 mm, length of blade 100 mm. | 10 |
| 91 | Inspection mirror, magnifying, electrically fully insulated, mirror dia. 20 mm, overall length 180 mm. | 10 |
| 92 | Mafnifying glass, cirular 63 mm lens set in metal frame with plastic handle, for inspection use. Magnification x3, overall length 140 mm. | 10 |
| 93 | Trimming knife, overall length 150 mm, cutting length 60mm. | 10 |
| 94 | Workshop scissors, with sharp points for in-sulation paper, length 150 mm. | 10 |
| 95 | Trimming kit, assortment of trimming and tunningtools for I.F. and R.F. alignment. | 10 |
| 96 | Screwdriver kit, chrome vanadium blades, size; 3 x 60 mm; 3 x 80 mm; 4 x 125 mm; 5 x 150 mm. | 10 |
| 97 | Steel rule, metrical and inch graduations. | 10 |
| 98 | File set; 10 piecess, 200 mm long with handles. Flat second cut and smooth, round second cut and smooth, square secound cut and smooth, plier second cut and smooth. | 10 |
| 99 | Test leads, pair 48" test leads, banana plug at one end and standard probe tip at other, 2 replacement probe tips. | 10 |
| 100 | Test prods ( included in test leads). | 10 |
| 101 | IC test clips. For reduction a risk of accidental shoring during measurements. Comprising three test clips to attach easily on to standard (I D.I.L. packages up to 16, 28 or 40 pins. All contact surfaces gold plated. | 10 |
| 102 | IC inserter and extractor tool. General purpose, to simplify the insertion and extraction of D.I.L packages. 2 pce. Set. Inserter for 14 and 16 way pins. Extractor for 8 to 24 way pins. | 10 |
| 103 | Jeweler's screwdriver set, consisting of 6 parallel tip sizes 0.8 to 3.8 mm and 4 cross point tip screwdrivers. | 10 |
| 104 | Tuning screwdriver set, 3 all purpose trimming tools, plastic body. | 5 |
| 105 | Magnetic pick-up, for picking up magnetic components and hardware from areas of difficult access, made from flexiable tubing maximum overall reach 600 mm. | 5 |
| 106 | LED TV 32" Branded | 2 |
| 107 | DVD Player | 2 |
| 108 | LD (Laser Disk) Any Modle | 2 |
| 109 | Combination Pliers (Insulated 160 mm) Imported | 2 |
| 110 | Teaching Aid Transperencies Workshop / Class Room Imported | 1 |
| 111 | Analog Oscilloscope 60MHz | 2 |
| 112 | Signal Tracer / Injector | 2 |
| Tracer portion Gain: Max, 60dB at 1KHz. |
| Attenuation: 0-20-40-60dB.Input impedance: 100K ohms. |
| Output impedance: External speaker: 8 ohms. |
| Output: 600 ohms (unbalance). |
| Meter: VU 100μA. |
| Speaker: 2 - 1/4 inch. |
| Injector portion: |
| Frequency: Approx. 1KHz square wave form. |
| Output level: Max. 4.5Vp-p (0 - 4.5V continuously variable). |
| Standard accessories: One each of test lead with 2 alligator clips ad test lead with a test prod and an alligator clip, plus 1 piece of 9 - volt battery. |
| Power supply: 9V battery or AC adaptor. |
| Accessories: |
| Test probe x 1. |
| RCA - clip x 2. |
| PAL / B Color Bar Pattern Generator |
| China/Taiwan |
| With color pattern for testing PAL system TV color circuit. |
| With four basic pattern as dots, square-crosshatch, vertical lines and horizontal lines for testing and adjustment of TV circuit. |
| With white restars pattern is used for testing purity and white balance. |
| Battery or AC adaptor operation. |
| RF range: |
| PAL-B.D.G.H.I.K. system, IF 38 ~ 40MHz. |
| Preset IF = 38.9MHz, VLow = 55.25MHz, VHigh = 175.25MHz. |
| RF output level:10mVrms. Impedance: 75Ω. |
| Sync. signal: X'TAL, vertical 50.036Hz, horizontal 15.611KHz. |
| Sub-carrier freq: 4.43361875MHz ±50Hz.Patterns: |
| Color, splitted into upper and lower portions. Upper half: |
| Red, blush-green, blue, greenish-yellow, white. Lower half: |
| four gray, black. Dots 19 (V) x 15 (H) white. |
| Crosshatch 19 x 15 square, white.Vertical lines 19 white. |
| Horizontal lines 15 white. Restars fixed 100% brightness white. |
| Video output: Video output (BNC) 1Vp-p (open end). |
| Power requirement: Battery AA-3 x 6 or 7~10V AC adaptor. |
| 113 | **PAL / B Color Bar Pattern Generator** | 2 |
| With color pattern for testing PAL system TV color circuit. |
| With four basic pattern as dots, square-crosshatch, vertical lines and horizontal lines for testing and adjustment of TV circuit. |
| With white restars pattern is used for testing purity and white balance. |
| Battery or AC adaptor operation. |
| RF range: |
| PAL-B.D.G.H.I.K. system, IF 38 ~ 40MHz. |
| Preset IF = 38.9MHz, VLow = 55.25MHz, VHigh = 175.25MHz. |
| RF output level:10mVrms. |
| Impedance: 75Ω. |
| Sync. signal: X'TAL, vertical 50.036Hz, horizontal 15.611KHz. |
| Sub-carrier freq: 4.43361875MHz ±50Hz. |
| Patterns: |
| Color, splitted into upper and lower portions. Upper half: Red, blush-green, blue, greenish-yellow, white. Lower half: four gray, black. |
| Dots 19 (V) x 15 (H) white. |
| Crosshatch 19 x 15 square, white. |
| Vertical lines 19 white. |
| Horizontal lines 15 white. |
| Restars fixed 100% brightness white. |
| Video output: Video output (BNC) 1Vp-p (open end). |
| Power requirement: Battery AA-3 x 6 or 7~10V AC adaptor. |
| 114 | High Voltage Probe with Meter | 3 |
|  | Work Bench 2 ½’ x 8’ Steel square pipe 2” frame top 2” shesheem wood with 6 lockable drivers channel tape reverse & forward. | 6 |
| 115 | Trainees lockers: 42”x70”x18” (22 SWG) 8 compartment lockable with 2 shelves in each compartment. | 2 |
| 116 | Steel Almirah:  84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 2 |
| 117 | Chalk Board: 1800 mm x 1000 mm dark green moveable, on wheeled scaffold swivel type for use on both side, with chalk tray. | 1 |
| 118 | Trainees Stool: Standard Size 5 leg hydraulic mobile stool (adjustable and moveable) with aluminum base and top fabric seat. | 20 |
| 119 | Storage Cabinet: (20 SWG) 42”x30”x45 High 11 drawers lockable. | 4 |

* + - 1. ***Electrical Wiring Trade-Machinery, Equipment and Tools***

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Item** | **Description** | **Qty** |
| 1 | 4-Place Workstation Vertical Bench for Wiring Exercises in Electrical Installations | The bench includes the following power supplies on each side (two workplaces), but not limited to: • 1 Three-phase line 230 or 400 V and single-phase 230 V – 16 A with high sensitivity T.M.C.B., safety terminals, emergency pushbutton with mechanical hold-out, min voltage release device • 1 Single-phase line 12-24 Vac – 4 A (extra low safety voltage) protected against short-circuits and overloads with fuses and T.M.C.B • 1 Single-phase line 12-24 Vac – 4 A (extra low safety voltage) protected against short-circuits and overloads with fuses and T.M.C.B • 1 Circuit tester with optical/acoustic signaling (it uses extra low voltage) | 1 |
| 2 | Wooden Panel | 18-mm thick. Framed in 20/10-mm angular steel. The panel is provided with hinges for a quick insertion into the bench. Designed for domestic and special electrical installations with surface-wiring technique. | 2 |
| 3 | Panel with Flush-Mounted Junction Boxes | 15/10-mm painted steel sheet. Complete with 12 flush-mounted rectangular junction boxes, inner dimensions: 100x57x45 mm, which are interconnected by plastic tubes. The panel is provided with hinges for quick insertion into the bench. Mainly used for domestic installations and intra-mural techniques. | 2 |
| 4 | Panel for Experiment | The panel has a particular structure and permits the fixing of the experiment modules to the modular system for electrical installations The panel can hold 15 single modules and is provided with hinges for a quick insertion into the bench. | 2 |
| 5 | Kit for Light and Signaling Installations | Lighting Installations • Lamp controlled from one point • Group of lamps controlled by two switches • Group of lamps controlled by 3 points by means of sequence relay • Control of fluorescent lamp • Lighting of a filing room from three points • Lighting controlled by electronic touch-sensitive switches from 2 points • Buzzer controlled from one point • Signaling between offices in a multi-story building with two corridors per story • Installation of three-interphone systems and porter | 1 |
| 6 | Kit for Industrial Installation | • Control of an electromagnetic contactor from one point • Pulse control of an electromagnetic switch • Remote forward/reverse control with mechanical locking • Remote pole-changing of a single-winding motor (Dahlander) • Remote Control of a lift (A) and (B) • Starter with rotor resistances • Switching on of a sequential advertising sign • Starter with rotor resistances. Exclusion with step variation • Emergency/reserve power supply | 1 |
| 7 | Motors and Transformers Test Bench | • Main power supply, with electromagnetic main start control, main key switch, high sensitivity T.M.C.B., emergency cut-out pushbutton with mechanical holding circuit, signaling lamp• Variable single-phase line 0-270 Vac – 8A switchable to DC 0-220 Vdc – 8A with electromagnetic control, coarse and line voltage regulation, digital measurement instrument for the main electrical parameters (voltage, current, active, reactive and apparent power, power factor, frequency) of the AC line, voltmeter and digital ammeter for DC line, T.M.C.B. against short-circuits and overloads, safety terminals• Digital multimeter• Linear adjustment of the output test voltage from 0 to 3000V• Regulated power supply line – 12 Vdc – 15 A | 1 |
| 8 | Lux meter digital. | Digital TES1330 | 10 |
| 9 | Energy Analyzer - Micro VIP3 | Electrical energy analyzer for three phase unbalanced/balanced system Volt (Va, Vb,Vc, or VII, V12, V13 Volt, Ampere, PF cos dia KW, KVA, Kvar, Hz, plus peak measurement delta freeze. Current RMS (100/mA),Voltage RmS (0.1/1V) and resistance Accuracy: Current RMS (2.00%), Voltage RMS | 1 |
| 10 | Megger | I KV, 500 V, 250 V, & 100V 0 to 2000/5000/10,000/20,000 M. Ohms Resistance range 0-5000 Ohms Voltage range 0-600 V | 4 |
| 11 | Clamp Meter | General purpose | 10 |
| 12 | Voltmeter (Analogue) | 0 to 50 VDC 0 to 10 VDC mv range 1,2,3 for AC | 10 |
| 13 | Ammeter (Analogue) | 1 - 0 to 50 VDC, 2 - 0 to 10mA DC, 3 - 0 to 100mA DC | 10 |
| 14 | Galvanometer. | General purpose | 1 |
| 15 | Portable Frequency Meter | The meter must be having a range of 300 to 500 Hz for +/- 0.5% accuracy, power consumption120V, range insulation resistance more than 100 m at 500 V DC between electric circuit and case | 1 |
| 16 | Digital AC Clamp on Meter | Current RMS (350A) Voltage RMS (400/600V) Current RMS (100/mA),Voltage RmS (0.1/1V) and resistance Accuracy: Current RMS (2.00%), Voltage RMS (1.20%), Resistance 2.1 | 2 |
| 17 | Digital Insulation Earth Tester | The tester having power supply 2 x 9 V batteries, earth ground 20 ohm range at 0;01 ohm resolution. Circulation test at 20 M ohms with 10 K ohm resolution. Measuring voltage 500 VDC. | 1 |
| 18 | Tachometer | Tachometer having three ranges 400-2000-10, 9000 with lack arrangement and attachments for different shorts. | 6 |
| 19 | Indicator Phase Sequence | Voltage range: 0-400 | 2 |
| 20 | Advanced Electrician Trainer (Imported) | Advanced Reparation & Maintenance Electrician Training and Examination Bench is composed of training unit hanging board 1, 2, 4, and 5; four intelligent lathe training and examination hanging board, intelligent training and test unit, PLC hanging board and FX2N-48MR Programmable Controller, transducer module ( Mitsubishi FR-S520-0.4kW).  Technical Parameters:  Input Power Supply: AC 380V  Regulated power: <1.5 KVA | 1 |
| 21 | Electrician Circuit Trainer.(Imported) | The circuit having complete direct current circuit, alternating current circuit, electromagnetic, circuit, three phase alternating current, three phase machine and steering circuit 30 items and so on. After extend by line interface unit board, accomplish exchange technique, electric drag auto regulation system and so on, it can also do by oneself plait experiments circuit for development.Power supply 380V ACCapacity 1KVA | 3 |
| 22 | Screw driver | All sets measuring (4”, 6”, 8”, 10",12") | 30 |
| 23 | Neon phase tester | Best Imported Quality | 20 |
| 24 | Insulated plier with side cutter | 200mm X 150mm | 20 |
| 25 | Insulated long nose plier with side cutter | Best Imported Quality | 20 |
| 26 | Insulated wire cutter | 150mm | 20 |
| 27 | High insulated rubber hand gloves | For 11000 Volts | 20 |
| 28 | Electret ion Knife | Best Imported Quality | 20 |
| 29 | Chisel (Set) | Best Imported Quality | 20 |
| 30 | Cross pin hammer | 250Gram Best Imported Quality | 20 |
| 31 | Hack saws frame fixed 12” | Best Imported Quality (China made allowed) | 20 |
| 32 | Electric soldering iron | Best Imported Quality | 20 |
| 33 | Bradawl 8” Plastic Handle | Best Imported Quality (China made allowed) | 20 |
| 34 | Measuring tap 3mtr | Best Imported Quality (China made allowed) | 20 |
| 35 | Steel foot rule 300mm | Best Imported Quality (China made allowed) | 20 |
| 36 | File (flat) 250X1, 250X2 (Set) | Best Imported Quality | 20 |
| 37 | Files (Triangular) 150X | Best Imported Quality | 20 |
| 38 | Files (Half Round) 250 | Best Imported Quality | 20 |
| 39 | Files (Round) 250X1 | Best Imported Quality | 20 |
| 40 | Files (Raps cut) 150, 250 (Set) | Best Imported Quality | 12 |
| 41 | Bench Vice 5” with Anvil. | Best Imported Quality (Pak & China made allowed) | 20 |
| 42 | Tri Square 150X100mm | Best Imported Quality (China made allowed) | 20 |
| 43 | Vernier Caliper 150mm | Best Imported Quality | 20 |
| 44 | Centre Punch 125X13 mm | Best Imported Quality | 12 |
| 45 | Cross Pin Hammer 500gm with wooden handle. | Best Imported Quality | 20 |
| 46 | Scriber Single Ended Knurled Handle 150X175mm | Best Imported Quality | 12 |
| 47 | Rubber hammer 50mm (2”) | Best Imported Quality | 12 |
| 48 | Vice clamps 5” X 1” | Best Imported Quality | 12 |
| 49 | Insulation Remover 150mm | Best Imported Quality | 12 |
| 50 | Bearing Puller 6” | Best Imported Quality | 12 |
| 51 | Firmer Chisels 8”X3/4” | Best Imported Quality | 12 |
| 52 | Wooden saw 300mm | Best Imported Quality | 12 |
| 53 | Voltmeter (Panel type 4” X 4”) | Best Imported Quality | 12 |
| 54 | Ammeter (Panel type 4” X 4”) | Best Imported Quality | 12 |
| 55 | Multi meter Digital, | 3-3 / 4 digits 4000 count, 0.7% best accuracy, Capacitance measurement, Frequency measurement (AC sine wave only), Data hold / Range hold, Relative value, Auto power off (30min.) (cancelable), Low power ohm (input voltage 0.4V) at continuity range, Solid & protective body cover that can also be used as a tilt stand, Chip holder behind the body cover, Basic Features : Display : numeral display 4000, Sampling rate : 3 times / sec., AC frequency bandwidth :, 45～500Hz (4V range), 45～1KHz (40V range and above), Safety :, IEC61010-1 (EN61010-1) 2001-02, CAT.III 600V Max. Optional Accessories : Clip adapter : CL-11, TL-8IC | 10 |
| 56 | Tong Tester | 0-300Amp , 0-100Volts, 10Kohm (set) | 2 |
| 57 | Scissor 6” | Best Imported Quality | 12 |
| 58 | Hand Electric drill machine with hammering | (0-13mm) 220-230Volts 640Watt, 50/60Hz 2.9 Amp | 6 |
| 59 | Pillar drill machine with motor (13mm) | Best Imported Quality | 2 |
| 60 | Bench drill machine with motor (13mm) | Best Imported Quality | 2 |
| 61 | Jigsaw machine portable LG 220V 50/60Hz, 420W , 1.9 Amp | Best Imported Quality | 2 |
| 62 | Single phase energy meter 225V/10-25Amp | Best Imported Quality | 5 |
| 63 | Three phase Energy meter 30Amp | Best Imported Quality | 5 |
| 64 | Dust brush/File brush | Best Imported Quality | 25 |
| 65 | Magnetic Contractors 1 | 0A, 50Hz | 20 |
| 66 | Single phase motor | 225Volts , 1/2HP | 2 |
| 67 | Three Phase Motor | 380Volts 50Hz, 2HP | 2 |
| 68 | Push Button Single Way Opener/Closer with housing | (Momentary Contact Switch) Imported. | 12 |
| 69 | Push Button Two Way | Best Imported Quality | 10 |
| 70 | Push Button Three Way Opener/Closer with housing. | (Momentary Contact Switch) Imported | 12 |
| 71 | Drum Switch | ON/OFF 10-30 Amp, 50Hz, 380/440 Volts (Imported) | 5 |
| 72 | Drum Switch | REV/FOR 10-30 Amp, 50Hz, 380/440 Volts (Imported) | 5 |
| 73 | Drum Switch | STAR/DELTA 10-30 Amp, 50Hz, 380/440 Volts (Imported) | 5 |
| 74 | Overload Relay | (0.5-3.0) Amp | 2 |
| 75 | Motor Protection switch Three Phase. | 11- 20Amp, 380/440 Volts | 8 |
| 76 | Electric Iron | 220V, 1000Watts | 5 |
| 77 | Ceiling Fan. | 36”, 220Volts, 50Hz, | 5 |
| 78 | Toaster. | 220Volts/240Volts, 50Hz, 650W | 2 |
| 79 | Sandwich maker | 220Volts/240Volts, 50Hz, 650W | 2 |
| 80 | Juicer Blender Machine. | 220Volts/240Volts, 50Hz, 350W | 2 |
| 81 | Washing Machine | (Plastic Body ), 220V, 50Hz | 4 |
| 82 | Basic Electricity Training Kit | component patching panel with work table set of plug-in RCL components to study and practice D.C and AC circuits and physical phenomena: with accessory set and 2 manuals V 0101 and C0102 | 4 |
| 83 | Motor Test Bench | For mounting and connecting ELBAG electrical motors, consisting of a quality table top, 30 mm thick, covered with synthetic material friction resistant and insensitive to script chess. With quick span bed for ELBAG electrical motors. One double door and one single door undeletable unit with two removable shelves each, for storage of the complete set of ELBAG electrical motors, regulating starters and magnetic particle brake unit. One mounting frame (AR 1270 E) for repaid setting of ELBAG apparatus etc; as well as one bench supply. (Pak made allowed) | 3 |
| 84 | Electric Work Bench | 2 ½’ x 8’ Steel square pipe 2” frame top 2” shesheem wood with 6 lockable drivers channel tape reverse & forward. | 6 |
| 85 | Trainees lockers | 42”x70”x18” (22 SWG) 8 compartment lockable with 2 shelves in each compartmet | 2 |
| 86 | Steel Almirah | 84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 2 |
| 87 | Chalk Board | 1800 mm x 1000 mm dark green moveable, on wheeled scaffold swivel type for use on both side, with chalk tray. | 1 |
| 88 | Trainees stool | Standard Size 5 leg hydraulic mobile stool (adjustable and moveable) with aluminum base and top fabric seat. | 20 |
| 89 | Storage cabinet | Storage cabinet (20 SWG) 42”x30”x45 High 11 drawers lockable. | 2 |

* + - 1. ***Beautician Trade-Machinery, Equipments and Tools***
      2. ***Dress Designing / Making Trade-Machinery, Equipments and Tools***
      3. ***Hand Embroidery (Balochi Karahi) Trade-Machinery, Equipments and Tools***
      4. ***Machine Embroidery Trade-Machinery, Equipments and Tools***
      5. ***Computer Trade-Machinery, Equipments and Tools (Male & Female)***

***FOR ITEMS 11 TO 15, ONLY EQUIPMENT INSTALLATION IS REQUIRED.***

* + - 1. ***LIST OF OFFICE EQUIPMENT’S & FURNITURE FIXTURE FOR TTC (FEMALE) KHARAN***

| **S#** | **Category of items** | **Quantity** | |
| --- | --- | --- | --- |
| **Available** | **Required** |
|  | "Desktop Computers  • 11th Generation Core i7  • 4GB RAM (1x8) 2666 MHz  • Intel UHD Graphics 630  • Shared Graphics Memory  • Processor 2.4-5.0 GHz  • 4 Cores 8 Threads  • 8MB Cache  • Wifi  • 1 TB Hard drive 7200 RPM SATA  • DVD Drive Read & Write  • Wireless Keyboard & Mouse  • LCD 18.5''" 10 | 10 | - |
|  | Network Printer  500 MHz processor or more, 30 PPM or more, 1200 x1200 dpi, 128 memory or more, input tray, A4/Legal/Letter etc supported. | 1 | - |
|  | "Laserjet Printer  500 MHz processor or more, 30PPM or more, 1200x1200 dpi, all ports, 20K or more duty cycle, 128 memory or more, input tray, A4/Legal/Letter etc supported." | 4 | - |
|  | "Multimedia Projector  3500 Lumens, DLP, 4000 Hrs Lamp Life, HDMI Input, SVGA (600 X 600) Resolution." | 1 | - |
|  | "Electric Motorized Dropdown HD Multimedia Projector Screen  8 x 6 (WxL) automatic electric motorized dropdown HD multimedia projector screen with acessories." | 1 | - |
|  | "Photocopier  • Sharp 6031N or equivilant with ARDF  • Print, Copy, Scan, 31 CPM,0, Zoom Range 25-400, USB, RADF, Deuplex/Network Printer, Paper Capacity: Std 1100 Max 2100 Sheet, Duplex Printing, ,Standard Network Scan to Email and FTP,  • Color Scanning." | 1 | - |
|  | "Biometric Attendance Device with Security Box: ZKIFACE-800 or Equivivilant  Fingerprint Sensor Optical Fingerprint Sensor Camera High Resolution Infrared Camera Display 4.3 TFT Touch Screen Face Capacity 1,200 (1:N) Fingerprint Capacity 2000 ID Card Capacity 10,000 Logs Capacity 100,000" | 1 | - |
|  | "Windows 10 for Computers  with Lisence & Security Key" | 10 | - |
|  | "MS Office Professional Plus  with Lisence & Security Key" | 10 | - |
|  | Electric Water Cooler (40 gaallon) Stainless steel | 3 | - |
|  | Electric Extension Board (Standard) | 20 | - |
|  | "Office Table for Principal  Table size 8x4 made of tactile sheet, 3  drawers with locks on one side and drawer  and cabinet on other side. side racks with  keyboard tray . Top glass." | 1 | - |
|  | "Office Table for Chief Instructor  Table size 6x3 made of tactile sheet, 3  drawers with locks on one side and drawer  and cabinet on other side. side racks with  keyboard tray . Top glass." | 1 | - |
|  | "Office Table for Instructors  Table size 4x3 made of tactile sheet, 3  drawers with locks. " | 5 | - |
|  | "Office Table for Staff  Table size 4x3 made of tactile sheet, 3  drawers with locks. " | 8 | - |
|  | Confrence Table (wooden) 20 Seater | 1 | - |
|  | Confrence Room Executive Revolving Chairs | 20 | - |
|  | Confrence Room Complete Audio System | 1 | - |
|  | Steel almirah 84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 4 | - |
|  | File Rack 3x1½x3 ft (LXBXH) Made from high density Lamination Board with solid Sheesham Laquer Polish Finish to Fixed three shelf side and front bookcase with pedestals. | 7 | - |
|  | Wooden Almirah 4x6 Size wooden almirah supreme quality sheesham wooden two doors, half doors covered with Glass, Five shelve, best quality lock and best quality French Polish. | 4 | - |
|  | Computer Table Computer table of the size 3x2.5x2.5 1 keyboard drawer and 2 shelves for UPS and CPU both side laminated board | 10 | - |
|  | Computer Chairs Revoloving steel hydrolic base seat back cushioned | 10 | - |
|  | Revoling Chairs Steel Hydraulic/Flexable base seat back sport undereable Arms | 10 | - |
|  | Visitor Chairs Medium back with sheesham wood arms seat and back & bottom cushioned in best quailty Feam with durable leatherite/imported fabric | 40 | - |
|  | Sofa Set With Centre Table, made of seasoned sheesham wood (3 pcs.) (5 seater) of the size length 5’. 3” back height 26” / width 24” / thickness of seat 10” length of the single seat 22” of sleep well H.D. Foam thickness 4” covered with leather foam banyan foam. | 2 | - |
|  | Garden Bench Wooden with Steel Support | 8 | - |
|  | Rostrum Sheesham wood, 4x2 Standard Size | 1 | - |

* + - 1. ***LIST OF OFFICE EQUIPMENT’S & FURNITURE FIXTURE FOR TTC (MALE) KHARAN***

| **S#** | **Category of items** | **Quantity** | |
| --- | --- | --- | --- |
| **Available** | **Required** |
|  | CIRCULAR SAW. Heavy duty machine with strong steel structure fitted with on/off started switch and saw blade cover. Circular saw blade maximum diameter. 250mm.  Circular saw blade maximum angle steeting 45degree. | 1 | - |
|  | **JIG Saw.** Portable for wood works**.** | 2 | - |
|  | **Precision Mitre Saw 550mm.** Ideal for cutting various angles for picture frames and architraves.etc. Feature. Pre-set angle stops at 90, 45, 36, 30, 22.5, 15 degree.  Adjustable depth and length stops. Diecast table with integral graduations. Replaceable blade. Material vice clamp for short workpieces. Specifications. Maximum cutting with clamped at 45 degree 105mm. Maximum cutting width clamped at 90 degree 130mm. Maximum cutting width unclamped at 90 degree 160mm. Maximum cutting height 100mm. Blade size (LxW) 550x45mm (14TPI) Table length 395mm. Back fence height 40mm, **DRAPER .UK.** | 5 | - |
|  | **TRAMMEL SET USA.** UCP-23095, No. 524 Polished steel flat rule with guide way graduated in mm/inches. Adjustable hardened points.  Trammels accurately transfer measurements scribe arcs and lay out circles when used with most scales and yardsticks. | 5 | - |
|  | **CROSS CUT SAW.**Hardend teeth fine polished cross-cut Plastic handel.Length of saw: 450mmNo of teeth Universal.15-884 | 20 | - |
|  | **RATCHET BRACES.** Standard Taper shank. Round shank bits from 1/8" to 1/2" and bits with No.1 Morse taper shank. Sweep: 8", 10", 12", 14". | 20 | - |
|  | **BRACES BITS IN SETS.** Sets of 13 can be supplied in anuy of the following types: Set 220 Sloid centre brace bits. Set 240 Jennings' Pattern Brace Bits. Set 232 Solid Nose Brace Bits. The Set of 13 comprises should be of the following sizes: 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 15/16", 7/8", 15/16", 1" | 20 | - |
|  | **TENON SAW.** Tooth points hardened universal teeth polished blade, teeth filed and set blade with supporting rib Plastic handle. Length of saw. 300mm No of teeth. 13 15-884 | 20 | - |
|  | **RIP SAW.** Hardend teeth fine polished cross-set , plastic handle. Length of blade 230mm. No of teeth: 12TPI. 15-509 | 20 | - |
|  | **KEY HOLE SAW.** With changeable blade, locking screw blade length 150mm 15-275 | 20 | - |
|  | **COPING SAW.** Rotary links for setting blade at desired angle, tension of blade by rotating the handle. Bright galvanized frame, with handle. Blade length: 160mm Frame depth: 150mm 15-104 | 20 | - |
|  | **SPOKE SHAVE PLANE.** With cap and single cutter  Overall length : 250mm Width of cutter : 50mm 12-151 | 20 | - |
|  | **BLOCK PLANE.** Wheel and screw for loosiening and adjusting cutter metallic body. Over all length : 160mm Width of cutter : 41mm 12-220 | 20 | - |
|  | **SMOOTHING PLANE.** With smooth sole, single iron, handle and knob, fine fihish cutting and quality tool steel blade, cast body. 12-003 | 20 | - |
|  | **JACK PLANE.** Cast iron, high quality grade, fastened by means of can lever locking device. Screw and lever for fine adjustment of depth of cut and lateral movement,  Width of cutter: 50mm Over all length: 300mm 12-005 | 5 | - |
|  | **CIRCULAR PLANE.** Flexible adjustble sole for concave and convex surface iron fastened by means of cam lever locking device. Knurled screw screw and lever for fine depth of cut and lateral adjustments  A reproduction of Stanley's discontinued 113 with distinctive toothed side gearings. The steel sole adjusts concave to convex and is dovetailed into its cast iron body. Excellent for boat and chair building. 1-3/4" wide blade and 10-1/8" overall length. Made in Germany. | 4 | - |
|  | **RABBET PLANE:** For plaining in inaccessible places such s corners etc adjustable mouth Width of cutter : 28mm Over all length : 100mm 12-078 | 4 | - |
|  | **FIRMUR CHISEL.** Set of 04 firmer chisels, bevel edge. Width: 8mm, 12mm, 18mm, 25mm. Over all length: 250mm Set of 4 pices. 16-273 16-276 16-279 16-282 | 10 | - |
|  | **MORTISE CHISEL.** Hard and ground steel. Width: 6mm, 8mm, 10mm. Over all length with handle: 300mm Set of 3 pices. | 10 | - |
|  | **TURNING CHISEL.** Hard steel cutting blade. 16-120 | 20 | - |
|  | **BALL PEEN HAMMER.** Round face and wooden handle. Weight with handle: 450grams 54-191 | 20 | - |
|  | **CLAW HAMMER.** Round face and octagonal neck, nickel, plastic handle with perforaed rubber handle grip. Weight with handle: 450gram 51-082 | 20 | - |
|  | **WOODEN MALLET.** Wooden mallet with high class finish. | 20 | - |
|  | **RUBBER MALLET.** Hard rubber mallet with wooden handle high class finish. Length of handle approx: 300mm 57-528 | 20 | - |
|  | **MARKING GAUGE.** With point all steel, double scribing bar graduated in mm. Length of graduation: 100mm Length of Bar: 150mm | 20 | - |
|  | **BAR CLAMP.** Made from T-section, back stop is positioned by means a pin throuh holes in the bar, Jaw opening : 1000mm Dimention of Jaw: 50x50 Pak | 10 | - |
|  | **COMBINATION SET:** With protractor head, center head, square head, lockable to steel/grooved rule which is graduated in mm on both sides sprit level. Blade length: 300mm 46-143 | 4 | - |
|  | **TRY SQUARE.** Cast stock  Blade length 200mm 46-532 | 20 | - |
|  | **FLEXIBLE MEASURING TAPE.** Both edge graduated in mm and inches spring wound in plastic case lockable. Length: 5mm 30-696 | 20 | - |
|  | **GLASS FIBER TAPE.** Washable chemical resistant. Unbreakable tape, graduated in mm/inches Length : 15mtr. 34-260 | 20 | - |
|  | **WOOD WORKING VICE.** Quick action clamping over entire opening range. Jaw width : 175mm Jaw height : 60mm Jaw opening : 165mm UK/Germany/Japan | 10 | - |
|  | **GIMLET.** With feed screw, single spiral,  Diamater: 10mm Overall length : 600mm Pak. | 10 | - |
|  | **SOLID CENTER AUGER BIT.** With combination shank for use with bit brace. Diameter: 6, 8, 10, 12mm Shank diameter: 6.5mm Pak. | 10 | - |
|  | **DRILL BRACES.** 04 Jaws with with 08 tooth ratchet. Nylon bearing head, and nickel plated sweep : 250mm | 10 | - |
|  | **WOOD WORKING TABLE:** Diamensions. 6" x 4" x  Pak. | 6 | - |
|  | **CARPENTER PINCER.** | 10 | - |
|  | **"G" CLAMPS.** | 10 | - |
|  | **WOODEN FOLDING RULES** with circumstances scale 24" Long | 10 | - |
|  | **JOINERS' TRY SQUARES** | 10 | - |
|  | **BEVEL.** | 10 | - |
|  | Work Bench 2 ½’ x 8’ Steel square pipe 2” frame top 2” shesheem wood with 6 lockable drivers channel tape reverse & forward. | 6 | - |
|  | Trainees lockers: 42”x70”x18” (22 SWG) 8 compartment lockable with 2 shelves in each compartment. | 2 | - |
|  | Steel Almirah:  84”x42”x18” (22SWG) with two lockable doors 6 shelves drawer lockers. | 2 | - |
|  | Chalk Board: 1800 mm x 1000 mm dark green moveable, on wheeled scaffold swivel type for use on both side, with chalk tray. | 1 | - |
|  | Trainees Stool: Standard Size 5 leg hydraulic mobile stool (adjustable and moveable) with aluminum base and top fabric seat. | 20 | - |
|  | Storage Cabinet: (20 SWG) 42”x30”x45 High 11 drawers lockable. | 4 | - |

***ANNEXURE “I”***

**Details of the equipment, furniture fixture and others to be procured and installed by the Concessionaire during the inception phase.**

* + - 1. **Plumbing Trade- Machinery, Equipment’s and Tools**

| **S#** | **Category of items** | **Specifications** | **Quantity**  **Required** |
| --- | --- | --- | --- |
|  | Plumbing Tower |  | 1 |
|  | Cutting, Reaming & Threding Machine | 1/2" to 2" | 1 |
|  | Pipe Bending Machine | Manual & Hydrualic | 3 |
|  | Water Pressure Test Pump | 1 HP | 2 |
|  | Wet & Dry Pressure Test Kit | 250 psi | 2 |
|  | Fusion Machine for PPRC | Good Quality | 5 |
|  | Drill Machine Rotaty hammer | 1/4 to 2 inch | 2 |
|  | Thread Die Ratchet | 1/2" to 1-1/4" | 2 |
|  | Thread Die Fixed | 1/2" to 1-1/4" | 2 |
|  | Pipe Cutter | 1/2" to 1-1/4" | 2 |
|  | Electric Drain Cleaner | 1/2" to 2" | 2 |
|  | Pipe Reamer | 1/2" | 2 |
|  | Pipe Reamer | 3/4" | 2 |
|  | Pipe Reamer | 1" | 2 |
|  | Pipe Reamer | 1-1/4" | 2 |
|  | Pipe Reamer | 1-1/2" | 2 |
|  | Pipe Reamer | 2" | 2 |
|  | Angle Grinder | 4" | 2 |
|  | Angle Grinder | 7" | 4 |
|  | Air Blower | 650 Watts | 2 |
|  | Hand Drill Machine | 750 Watts | 6 |
|  | Bench Voice | 4" Forged with Envil | 8 |
|  | Round File | 10" Basterd | 12 |
|  | Half Round File | 10" Basterd | 12 |
|  | Water Pump Plier | 10" | 12 |
|  | Electric Extension Lead | 15 Meter | 2 |
|  | Plumbing Auger | 25 Ft | 6 |
|  | Plumbing Snake | 25 Ft | 2 |
|  | Pipe Voice | 2" | 6 |
|  | Pipe Voice (Tablemate) | 1/2" to 2" | 2 |
|  | Repairing Kit for PPRC | 24 Pcs | 6 |
|  | Adjustable Wrench | 6" | 6 |
|  | Adjustable Wrench | 12" | 6 |
|  | Open End Spanner Set | 8 Pcs Inches | 2 |
|  | Open End Spanner Set | 8 Pcs Milimeter | 2 |
|  | Pipe Wrench | 6" | 2 |
|  | Pipe Wrench | 12" | 6 |
|  | Pipe Wrench | 14" | 6 |
|  | Pipe Wrench | 18" | 2 |
|  | Chain wrench | 20" | 2 |
|  | Strap wrench | 90 Newton Torque | 2 |
|  | Wash Basin Wrench | 11 inches 3/8 - 1 1/4 diameter | 2 |
|  | T Wrench | 10 mm | 6 |
|  | T Wrench | 11 mm | 6 |
|  | T Wrench | 12 mm | 6 |
|  | Hexagonal Key Set | Inches | 2 |
|  | Hexagonal Key Set | MM | 2 |
|  | Screw Driver Flat | 4" | 7 |
|  | Screw Driver Flat | 8" | 7 |
|  | Screw Driver Philips | 4" | 7 |
|  | Screw Driver Philips | 8" | 7 |
|  | Measuring Tape | 5 M | 30 |
|  | Hacksaw Frame | 15 inches | 12 |
|  | Flat File | 12" Smooth | 2 |
|  | Flat File | 12" Smooth | 8 |
|  | Spirit Level | 1 Feet | 6 |
|  | Spirit Level | 2 Feet | 6 |
|  | Try Square | 8" | 25 |
|  | Combination Try Square | 12" | 3 |
|  | Try square (Miter) | 24" | 7 |
|  | Hammer Riveting | 2 Lbs | 10 |
|  | Hammer Planishing | 2 Lbs | 10 |
|  | Mashing Hammer | 2.5 Lbs | 12 |
|  | Chisel | 12" | 12 |
|  | Chalk liner | 100 ft | 8 |
|  | Combination Plier | 8" | 7 |
|  | Plumb bob | 250 gms | 7 |
|  | Drill Bit Set | Masonery | 8 |
|  | Drill Bit Set | HSS | 3 |
|  | Nose Plier | 8" | 7 |
|  | Water Pump Plier | 12" | 7 |
|  | Heat Gun | 10" Gun | 8 |
|  | Level Pipe Rubber | 30 Feet | 3 |
|  | Laser Levler | 1/16 accuracy | 1 |
|  | Lock Plier (Grip) | 8" | 6 |
|  | Pen hammer | 100 Grams | 6 |
|  | Concrete Holesaw | 1-1/4" | 2 |
|  | Concrete Holesaw | 2" | 2 |
|  | Concrete Holesaw | 3" | 2 |
|  | Hand Trowel | 350 gms 4.5 inches | 6 |
|  | Mallet | 200 gms rubber | 12 |
|  | Steel rule | 12 Inches | 12 |
|  | Tool Boxes | 500x210x175 mm | 12 |
|  | Vernier Caliper | 8" | 7 |
|  | Scriber | 8" | 7 |
|  | Odd Leg Caliper | 8" | 7 |
|  | Outside Caliper | 8' | 7 |
|  | Inside Caliper | 8" | 7 |
|  | Bevel Protector (Two Leg/Strip) | 12" | 8 |
|  | Center Punch | 6" | 7 |
|  | Showel | 225x120x430 mm | 2 |
|  | Monkey plier | 10 inches | 4 |
|  | Micro meter | 0 - 1" | 2 |
|  | Micro meter | 0 - 25" | 2 |
|  | Trianguler file basterd | 10" Basterd | 12 |
|  | Rasp file | 10" RASP Cut | 12 |
|  | Marking & Mortize gauge 10'' | 10" | 12 |
|  | Folding rule 4' | 4' | 2 |
|  | Rip saw | 12 inches | 12 |
|  | Cross cut saw | 36 inches | 12 |
|  | Flat chisel 3/4'' | 3/4" | 12 |
|  | Mortize chisel 1/2'' | 1/2" | 12 |
|  | Claw hammer 1lb | 1 Lbs | 6 |
|  | Pincer 8'' | 8" | 4 |
|  | Adze | 2 1⁄4″ cutting edge | 2 |
|  | Nose Paler | 6" | 6 |
|  | Needle File Set | 12 pices | 2 |
|  | Goggles | ANSI z87 | 30 |
|  | Safty helmat/cap plastic | 4-Point Snap Lock Suspension | 30 |
|  | Water Heater | Electric 10 Gallon | 1 |

* + - 1. **Solar Trade- Machinery, Equipment’s and Tools**

| **S#** | **Category of items** | **Specifications** | **Quantity**  **Required** |
| --- | --- | --- | --- |
|  | IGBT chopper inverter trainer | Labvolt model No 8857-1 | 1 |
|  | AC/DC training system | Labvolt model No 3351 | 1 |
|  | Exploratory Electronics Training System | Labvolt model No 555-A0 | 1 |
|  | solar power training system | Labvolt model No 8010-2 | 1 |
|  | lead acid batteries training system | Labvolt model No 8010-4 | 1 |
|  | Multimedia Projector | Hitachi CP-X2542WN LCD Projector, 4:3 | 1 |
|  | Desktop Computer | Processor: Core i5,RAM 8GB,Hard Disk 3TB,Display 20 inch, Window 10,Office 2019 | 1 |
|  | Digital Oscilloscope | Tektronix TDS 3000 | 1 |
|  | Digital Oscilloscope | Tektronix TBS 2000 | 1 |
|  | Synchronizing meter /smart energy meter | For Grid Tied | 2 |
|  | DC Power Supply | Tektronix keithly 2268 | 1 |
|  | Phase Sequence Meter | kyoritsu kew 8031F | 2 |
|  | Function Generator | Tektronix AFG 1000 | 2 |
|  | Clamp On meter | kyoritsu 2432 | 4 |
|  | Clamp on meter | Uni-T ut203 | 2 |
|  | DC volt Meter Digital | 0 to 250 VDC 10Amp panel type Small Size | 4 |
|  | DC ampere Meter Digital | 100 amp with CT(current Transformer) | 2 |
|  | AC volt Meter Digital | 0 to 50 Amp 0 to 600 VAC panel type Small | 4 |
|  | AC ampere Meter Digital | 0 to 50 Amp 0 to 600 VAC panel type Small | 4 |
|  | Digital multi meter | Tecpel 8062 | 4 |
|  | Analog multi meter | Sunwa | 4 |
|  | megger meter/insulation tester | Analog | 1 |
|  | megger meter/insulation tester | digital MIT 300 | 1 |
|  | Earth Tester | Digital | 1 |
|  | Micro meter | Digital | 4 |
|  | Vernier Caliper | Digital | 4 |
|  | Watt Ampere meter For Solar | thermodin System 130 amps | 2 |
|  | Tachometer | Digital | 2 |
|  | Tachometer | Analog | 2 |
|  | Frequency Meter | AC 80-300V/30-70HZ 3 in1 LCD Time Voltage | 2 |
|  | Hydro meter | Analog | 4 |
|  | Variable AC power Supply | Super world 1KVA | 1 |
|  | Battery tester | Original Launch BST-460 6V & 12V Battery | 1 |
|  | battery level indicator | DC 3.5-30V Mini LED Battery level voltage monitor meter indicator | 2 |
|  | Watt meter | EU Plug-In Electricity Power Energy Meter Monitor Analyzer KWh Watt Volt Amps | 4 |
|  | Hour Meter | digital 220v | 4 |
|  | Hour Meter | digital 12v | 1 |
|  | Energy meter | Digital single phase | 2 |
|  | Lux meter | Digital Light, Meter,Tester200,000 LUX,FC Photo Camera | 2 |
|  | Inductive and Capacitive meter | digital Hp-4070L | 2 |
|  | Temperature gun | Non-Contact IR Infrared Digital Temperature Temp Thermometer Laser Point Gun | 2 |
|  | Temperature controller | With thermocouple | 2 |
|  | Digital Camera | Sony Cyber-shot DSC-H300 35x Optical Zoom Digital Camera - Black | 1 |
|  | digital angle Finder | Sprit Level type | 2 |
|  | Stud Finder | Zircon | 2 |
|  | Charge Controller | PWM 15 amp | 1 |
|  | Charge Controller | PWM 40 amp | 1 |
|  | Charge Controller | MPPT 20 amp | 1 |
|  | Charge Controller | MPPT 50 amp | 1 |
|  | Solar Hybrid Inverter On/Off Grid | MPPT 10 kW 3 phase | 1 |
|  | Solar Hybrid Inverter | MPPT 5 KVA | 1 |
|  | solar Hybrid Inverter | MPPT 3 KVA | 1 |
|  | solar Hybrid Inverter | PWM 3 KVA | 1 |
|  | Inverter | 1500 watt sine wave | 1 |
|  | Inverter | 1000 watt sine wave | 1 |
|  | Submersible Solar pumps | 3hp And 5hp 3phase | 1 |
|  | VFD | 5 HP 3 phase for solar pump | 1 |
|  | Inverter | 500 watt Sine wave | 2 |
|  | DRY Batteries | 200amp 12 v | 1 |
|  | DRY Batteries | 12amp 12 v | 1 |
|  | DRY Batteries | 100amp 12 v | 1 |
|  | DRY cell | 2V 200amp | 1 |
|  | Solar panel | polycrystalline 250 watt YINGLI solar | 1 |
|  | Solar panel | polycrystalline 150 watt | 1 |
|  | Solar panel | polycrystalline 100 watt | 1 |
|  | Solar panel | monocrystalline 100 watt | 1 |
|  | Solar panel | Thin film 50 watt | 1 |
|  | Solar panel | monocrystalline 50 watt | 1 |
|  | Solar panel | monocrystalline 20 watt | 1 |
|  | Solar panel | monocrystalline 10 watt | 1 |
|  | Solar panel | Polycrystalline & Monocrystalline 5 watt | 5 |
|  | Solar Photovoltaic Cells | 3 watt | 1 |
|  | Battery Charger | 20 ampere Transformer Less | 1 |
|  | DC power Supply | 12 to 24 volt Omron | 1 |
|  | DC solar Pump | 24VDC 400 watt China | 1 |
|  | Solar panel Stands | For 250 watt | 1 |
|  | Infrared camera | Flir instruments | 1 |
|  | Solar power meter | Tes-1333r solar power meter | 1 |
|  | Irradiance meter | TN-2340 | 1 |
|  | 3 phase inverter for solar water pump | 5KVA | 1 |
|  | 3 phase inverter for solar water pump | 7KVA | 1 |
|  | Solar installation tester | SEAWARD PV150 | 1 |
|  | Solmetric pv analyzer | PVA 1000 PV analyzer kit | 1 |
|  | Welding plant With holder and lead | 300 Amp | 1 |
|  | Combination plier | 180 mm | 5 |
|  | Long nose Plier | 180 mm | 5 |
|  | Cable Cutter | 8" | 5 |
|  | Cable Cutter | 12" | 5 |
|  | Cable Cutter | 18" | 5 |
|  | Claw Hammer | 1 pound | 5 |
|  | Hammer | Cross pin 200g | 5 |
|  | Screw Driver Set | Flat head | 5 |
|  | Mini Screw Driver Set | Flat Head | 5 |
|  | Screw Driver Set (metal head type) | Flat head & Philips head | 5 |
|  | Hammer | 1 kg | 5 |
|  | Cable Knife/paper cutter | Good Quality | 5 |
|  | Wire Striper/insulation remover | 10-22 AWG (2.6 to 0.60 mm) Copper Wire, 2 to 3 mm Diameter Fiber Jackets | 5 |
|  | Soldering Iron with Stand | 60W , 80W, 120W | 5 |
|  | Sucker | For Soldering Iron | 5 |
|  | Tool box | 18" | 5 |
|  | Bench vice | 6" | 5 |
|  | Angle Grinder | 5" | 5 |
|  | Mini Drill machine | 6 mm shank | 5 |
|  | Drill Machine Rotary Hammer | Reverse Forward 13mm | 5 |
|  | Cordless Drill machine | 18V | 5 |
|  | Extension board | multi Sockets With 10 Meters Wire | 5 |
|  | Chisel | 8" | 5 |
|  | Chisel | 12" | 5 |
|  | Torpedo level / spirit level | Different size | 5 |
|  | Compass | Metal | 5 |
|  | Adjustable Wrench | 8" | 5 |
|  | Adjustable Wrench | 12" | 5 |
|  | Richet Set | 72 Pcs | 5 |
|  | Spanner Set | 12 pcs | 5 |
|  | Torque wrench with deep sockets | Small 12" | 5 |
|  | Pipe wrench | 16" | 5 |
|  | Thimble press | 16mm to 240mm | 5 |
|  | Electric blower | 220 v 600 watts 15000 rpm | 5 |
|  | Heat gun | Max air flow of 7.1 CFM | 5 |
|  | Measuring Tape | 3m | 5 |
|  | Measuring Tape | 5m | 5 |
|  | Measuring Tape | 50m | 5 |
|  | Hack Saw With blades | 15 inches | 5 |
|  | File set | Small 12" | 5 |
|  | File set | Large | 5 |
|  | L-key Set | 26pc Long Allen Wrench Set and Star Key Set – Includes Metric and Standard SAE Long Arm Ball End Hex Key Wrench | 5 |
|  | Fish Tape | 100ft | 5 |
|  | wood saw | 9 sizes | 5 |
|  | Hole Saw for panel | 25mm- 70 mm | 2 |
|  | wooden bit set | 8 pices with 12 inches extension | 5 |
|  | Twist drill bit set | HSS 0.5mm to 16 mm | 5 |
|  | Tap and Die Set | 32 pices | 5 |
|  | Hand Tin Scissors | 18" | 5 |
|  | Pipe vice with Stands | 4" | 5 |
|  | Scissor | 8" for fabric | 5 |
|  | Gas Cutting torchSet | Victor USA | 5 |
|  | Magnetic wristband for holding bits and parts | 4 x 3.81 x 0.18 inches, 100% Oxford Nylon Fabric | 5 |
|  | Hot Melt Glue Gun 20W | 20 watt with 50 glue Sticks | 5 |
|  | First AID Box | Good Quality | 1 |
|  | Fire Extinguisher Cylinder | Co2- 5 Kg | 2 |
|  | Fire Blanket | Fire Resistant | 2 |
|  | Fire Bucket | Metal | 4 |
|  | Safety Gloves | Leather | 5 |
|  | Safety Gloves | Rubber for 1000 volt | 5 |
|  | safety googles | White | 5 |
|  | Safety Helmet | Yellow | 25 |
|  | Safety Helmet | White | 5 |
|  | Safety mask | kn 95 | 5 |
|  | Safety Belt | Full body harness | 5 |
|  | Stools | 18 inches | 25 |
|  | Working Tables | 4 x 6 Feet | 4 |
|  | White Board | 4 x 8 Feet | 2 |
|  | Cupboards | 2 x 4 x 6 Feet | 4 |
|  | Shelves | 2 x 6 x 6 Feet | 4 |
|  | Fans | 80 watt | 6 |
|  | Student Chairs | Height. 31” Width 24” Depth 28” Frame. Steel Seat. Plastic Writing Pad. Steel & Plastic | 25 |
|  | Ear Protector | NRR 30 db | 25 |

* + - 1. **LIVE STOCK & DAIRY- Machinery, Equipment’s and Tools**

| **S#** | **Category of items** | **Specifications** | **Quantity**  **Required** |
| --- | --- | --- | --- |
|  | Milking Machine models | Food grade rubber hoses with double or single cluster teat cup shell and inflation liner, Dry Graphite Vane Pump with 220V 50hz Motor, 40 Ltr or 30 Ltr Stainless Steel milk tote with a 240 cc claw lid | 5 |
|  | Housing Lay out Model | Standardised | 5 |
|  | Experimental Cows | Good Quality Breed | 10 |
|  | First Aid Tools Kits | Standardised | 2 |
|  | Tractors | 4WD is a 55hp, 4 Cylinder quality tractor, with Hydrostatic Power Steering | 1 |
|  | Moldboard plough | Number of Furrow 3, Max. Depth 25 cms, Working Width 90 cms, Weight 355 Kg Tractor Compatibility 50 Plus HP | 2 |
|  | Disc plough | cut width from 500-550 mm to 1150-1200 mm. 291 Kg to 475 Kg. | 2 |
|  | Rotavator | Tillage width (cm/inch) 100/39 Multispeed gearbox. No of blades 24/24/36. No of flanges 4/4/6 weight Kg Approx. 400 | 2 |
|  | Trolley | Standard Length & Width | 1 |
|  | Fertilizer spreader | Standard | 1 |
|  | Mower/Fodder Cutter | 3 Hp motor 2 blades | 1 |
|  | Hay Rake | Right-Hand Hay Rake, 4 Wheels, 3-Point hitch, Frame construction: Steel, Length: 13-19/20 feet, Working width: 8-1/5 feet - 9-21/25 feet Transport width: 4-3/5 feet, Weight: 385 lbs. | 1 |
|  | Balers | 5 Hp | 1 |
|  | Silage Machine | Locally Manufactured Good Quality | 1 |
|  | Combine harvester for Silage | Locally Manufactured Good Quality | 1 |
|  | Sickles (Dranti) | Standardised | 20 |
|  | Wheel barrow Shovels | Tray Material. Galvanised Metal Max Load Capacity KG . 150. Net Weight . 11. Tray Thickness. 0.7mm. Water Capacity Litres .85. Handle Height .555mm. Handle Width .550mm. Tray Length .840mm. Tray Width .620mm. Tray Height .270mm. Wheel Info .3.5" x 8 | 5 |
|  | Welding Plant | Rated Input Voltage (V). 3P AC 380V 50/60Hz.TIG , MMA. Output Current (A) 10~230 20~210 Rated Duty Cycle (%) 60 No-load Voltage (V) 65 Down Slope (S) 0-5 Reblowing (S) 1-10±0.5 Power Factor (cosø) 0.93 Insulation Class F Protection Class IP21S Efficiency (%) 85 Net Weight (kg) 14.6 | 1 |
|  | Generator | RATO GENERATOR, 1.5 KVA PETROL AND GAS, SELF START BATTERY AND GAS KIT | 1 |
|  | Electrical Maintenance Kit | Standard Tools | 1 |
|  | Mechanical Tool Kit | Standard Tools | 1 |
|  | Drenching Gun | 60 ml | 5 |
|  | Vaccinator gun | Vaccine Injector Livestock, Multidose Automatic Adjustable Dose Gun Syringe 30ML | 5 |
|  | Uniform/Dungarees | Cotton | 25 |
|  | De-horner | 1″ I.D. Hole 17 Inches long | 5 |
|  | Hoof trimmer | Length 8 inch, Blade 2.5 inch, Blade Type Serrated | 5 |
|  | Rope set | Locally Manufactured Good Quality | 5 |
|  | Weighing scale | 1000 KG Locally Manufactured | 5 |
|  | Spray machine | 20 Litre Capacity | 5 |
|  | Milk cane | 30 Litre White Good Quality | 5 |
|  | Milk sampler | Height: Approx. 22cm / 8.7in Weight: Approx. 170g / 6 oz  Stainless Steel + Polyester | 5 |
|  | Milk Chiller | 30 Gallons 220 V | 1 |
|  | Electrical fence |  | 1 |
|  | Wrapping machine | Wraps approximately 20 loads per hour - 12 RPM variable speed turntable. Two wrap modes - Select spiral up and down or spiral up only. Convenient photo eye - Allows operator to walk away. Adjusts from 20% to 150% stretch. | 1 |
|  | Milk Buckets | Stainless Steel 15 Litre Capacity | 5 |
|  | Water troughs | 50 Galon Good Quality Fibre  52"L x 28"W x 13"H | 1 |
|  | Water pump | 1/2 hp | 1 |
|  | Cleaning brushes | Locally Manufactured Good Quality | 25 |
|  | Cow Calendar | Standardised | 5 |
|  | Weighing bridge | 10 -15 Ton | 1 |
|  | Ultra sound machines | 6-inch LED display. Scanning Mode:Convex array/linear array Electronic Focus:4-segment electronic focus. Measurement:Distance, circumference, area, obstetrics | 1 |
|  | Dystokia kit | Standardised 23 pieces | 1 |
|  | Sampling bottles | Good Quality Plastic | 10 |
|  | Vaccine Kits | Exterior Measurement: 27 in. x 17 in. 17 in. Weight: 28 pounds | 5 |
|  | Measuring tape | 30 Meter | 5 |
|  | Sprinklers | Connection Type 1/2 in MNPT Flow Rate 90 gph. Height 3.8 in | 10 |
|  | Cow rest mats | Locally Manufactured Good Quality | 5 |
|  | Manure spreader | Locally Manufactured Good Quality | 1 |
|  | Computer | Core i5 11th Generation | 10 |
|  | Calf feeding buckets | Locally Manufactured Good Quality | 5 |
|  | Cattle Crush | height 200 cm, width 115 cm, length 255 cm | 1 |
|  | Specialized Cooling Fans | Locally Manufactured Good Quality | 1 |
|  | Surgical Kit | 5-1/2 in. thumb forceps, 5-1/2 in. tissue forceps, 6 in. Mayo-Hegar needle holder, 5 in. Halstead mosquito, 4-1/2 in. straight iris scissors, scalpel handle, 5-1/2 in. straight operating scissors, 5-1/2 in. Littauer stitch, 5-1/2 in. Lister bandage scissors, and 10 Sharpex surgical blades. | 1 |
|  | CMT Kits | 4-cup test paddle, squeeze bottle reagent dispenser , directions, and bottle of CMT concentrate | 5 |
|  | Milk Testing Kits | Quantitation range 0.4 - 10 ppm milk protein Limit of detection 0.05 ppm milk protein Limit of quantitation 0.4 ppm milk protein | 5 |
|  | Freezers | 18 Cubic Feet | 1 |
|  | Castrator | 16 inches | 5 |
|  | Bathing Tub | Locally Manufactured Good Quality | 2 |

* + - 1. **Horticulture Trade- Machinery, Equipment’s and Tools**

| **S#** | **Category of items** | **Specifications** | **Quantity**  **Required** |
| --- | --- | --- | --- |
|  | Spades | High Quality Metal | 25 |
|  | Khurpa | High Quality Metal | 25 |
|  | Chua Ramba | High Quality Metal | 25 |
|  | Spring bok Lawn Rake | High Quality Metal | 5 |
|  | Watering Cane | High Quality | 10 |
|  | Budding Knives | High Quality Metal | 25 |
|  | Battery Operated Horticulture Power Saw | Chain speed: 26.3 ft./sec. Run time: Up to 25 min. Guide bar length: 4 in. | 2 |
|  | Cordless AK System Grass Trimmer | POWER SOURCE: Battery WEIGHT: 7.1 lbs. WEIGHT (w/ AK 20): 9.8 lbs. CUTTING WIDTH: 13.8 in. BATTERY SYSTEM: AK Series RUN TIME (w/ AK 20): Up to 25 min. | 2 |
|  | Hose pipe (50 ft.) | Pastic | 10 |
|  | Garden Trowel | High Quality Metal | 25 |
|  | Garden Sovel | High Quality Metal | 5 |
|  | Hedge Shears | High Quality Metal | 10 |
|  | Round Mouth Shovel | High Quality Metal | 5 |
|  | Grafting Kit | High Quality Metal | 5 |
|  | Sack Barrow | 600 Lbs with pneumatic wheels | 2 |
|  | Mesh Steel Garden Cart | High Quality Metal | 2 |
|  | Wolf Yard Broom | High Quality Metal | 5 |
|  | weeding Brush | High Quality Metal | 5 |
|  | Standard Wheel Barrow | 600 Lbs with pneumatic wheels | 2 |
|  | Hand Showel | High Quality Metal | 5 |
|  | Hydraulic Hand Pallet Truck 1150 x 525mm | High Quality Metal | 2 |
|  | BROADCAST SPREADERS | High Quality Metal | 2 |
|  | Lawn Edger Iron | High Quality Metal | 5 |
|  | Fencing Plier | High Quality Metal | 5 |
|  | Wire cutters | High Quality Metal | 5 |
|  | Boundary Fence Strainers | High Quality Metal | 2 |
|  | Steel Fence Trainer Clamp | High Quality Metal | 2 |
|  | Insulated Wire Strainer | High Quality Metal | 2 |
|  | Tightening Handle for Strainer | High Quality Metal | 2 |
|  | Rubber Maul c/w Shaft 6 kg | High Quality Metal | 5 |
|  | Bulldog Premier Wavy Hedge Shear | High Quality Metal | 5 |
|  | Edging Knife | High Quality Metal | 5 |
|  | Long Handled Border Edging Shear | High Quality Metal | 5 |
|  | Hand Digging Trowel | High Quality Metal | 5 |
|  | Cultivator Fork | Aluminum Handle Material, 60" Handle Length, Width of Tines 6", Length of Tines 4 1 | 5 |
|  | Hand Weeding Fork | Weight- 10oz, Length- 16.5", Width-1" | 5 |
|  | Border Spade | Length: 39 inches. Blade: 5.5 x 9 inches. Approx. Weight: 3 lbs 9 oz. | 5 |
|  | 3 Pronge Cultivator | Weight: 2.5 lbs Length: 63" Width: 3" | 5 |
|  | Long Handled Bulb Planter | High Quality Metal 10 cm deep | 5 |
|  | Digging Fork | Overall Length = 42" Tines = 7" wide, 10" long Weight = 4 pounds Forged steel head Fiberglass handle | 5 |
|  | Leaf Graber | High Quality Standard Size | 5 |
|  | Reverseable Lawn Leveller | 36″ wide tool for quick leveling and ease of use 72″ handle with 2 piece screw in design to make for easy storage | 2 |
|  | 6 inch Dutch Hoe | High Quality Metal | 5 |
|  | Draw Hoe | High Quality Metal | 5 |
|  | Element Draw Hoe | High Quality Metal | 5 |
|  | Warren Hoe | High Quality Metal | 5 |
|  | Newtown Bill Hook | High Quality Metal | 5 |
|  | Single Edge Slasher | High Quality Metal | 5 |
|  | Leather cut resistant gloves | High Quality | 25 |
|  | Rubber Sack 400 gauge | High Quality | 5 |
|  | Dog Waste Poop Scoop | High Quality | 5 |
|  | Litterpicker Trigger Type | High Quality | 5 |
|  | Splitting Axe | High Quality Metal | 5 |
|  | Fiberglass Land Measuring Tape | 100 meter | 5 |
|  | Stainless Steel Soil Sampler | High Quality Metal | 10 |
|  | Steel Tape | 30 meter | 25 |
|  | Weather Center | Records frequency: every 5 minutes Temperature (indoor): Ranges from: 0°C to 50°C / 32°F to 112°F Accuracy: ± 0.3°C / ± 0.54°F Temperature (outdoor): Ranges from: -40°C to 65°C / -40°F to 150°F Accuracy: ± 0.3°C / ± 0.54°F Humidity (indoor and outdoor): Ranges from: 0 to 100% Accuracy: ± 3% | 2 |
|  | Soil Compaction Tester | Penetration depth: up to 24″ in 3″ increments Green testing range (0-200 psi): good growing conditions Yellow testing range (200-300 psi): fair growing conditions Red testing range (300 psi and above): poor growing conditions Two tips included: 1/2″ tip for firm soil, 3/4″ tip for soft soil | 2 |
|  | Rain Gauge with Stand | 18 inches | 5 |
|  | Comfort Grip bypass secateurs | Brand Kings County Tools Style Long Reach Pruner Blade Material Aluminum Blade Type Bypass Cutting Width 1 Inches | 5 |
|  | Ratcher Anvil Loopers | Ratchet cutting action 2" cutting capacity Telescopic tubular steel handles extend length to 37" Cushion grips | 5 |
|  | Curved Saw Head for Extendable Tree Pruner | High Quality | 5 |
|  | Professional Shears | High Quality | 5 |
|  | Pruning Shears Classic | High Quality | 2 |
|  | 16 Tooth Wooden Leaf/Mulch Rake | High Quality | 2 |
|  | Termac Scraper | High Quality | 2 |
|  | Plastic Leaf Grabber | High Quality | 5 |
|  | 210 mm Folding Pruning Saw | High Quality 210 mm | 5 |
|  | Hacksaw 300 mm | High Quality 300 mm | 5 |
|  | Bow Saw for dry wood | High Quality | 5 |
|  | Extendable High Pruning Pole Saw | High Quality | 5 |
|  | 8 Ltr Elyte 8 Pump Sprayer | 8 Liter | 5 |
|  | Measuring Jug 1 Litre | Glass 1 Litre | 5 |
|  | Hand Held Pump Action Pressure sprayer | 2 Litre | 5 |
|  | Heavy Duty Post Hole Digger | 1500 watt 6 inches diameter | 2 |
|  | Wrecking Bar | HEAD WIDTH 1 [IN] 1 HEAD WIDTH 2 [IN] 1-1/4 OVERALL LENGTH [IN] 24 WEIGHT [LBS] 3.70 | 5 |
|  | Submeersible Dirty Water Pump 2 inch Bore | 1 hp | 2 |
|  | Large Through Flow Hose Reel Trolley | Hose I.D. 1" Hose O.D. 1.375" Hose Length: 100' Pressure: 300 psi Inlet: 1" NPT(F) Reel Outlet: 1" NPT(M) Max Temperature 210 °F | 2 |
|  | Mulch Mover including Battery & Charger | Cutting Width 20 inches | 2 |
|  | Earth Auger Bit 150 mm dia | 150 mm diameter | 2 |
|  | hedge Trimmer double sided | 25cc 4 stroke 28" | 2 |
|  | Cold Water Presure Washer | PSI: 2400 GPM: 2.4 Displacement/ Engine: 196cc Honda GX200 OHV Pump: Mi-T-M Unloader: Mi-T-M, Adjustable Pressure Lance: 36 inches | 1 |

* + - 1. **Agriculture Trade- Machinery, Equipment’s and Tools**

| **S#** | **Category of items** | **Specifications** | **Quantity**  **Required** |
| --- | --- | --- | --- |
|  | Tractor | 4WD is a 55hp, 4 Cylinder quality tractor, with Hydrostatic Power Steering | 1 |
|  | Moldboard plough | Number of Furrow 3, Max. Depth 25 cms, Working Width 90 cms, Weight 355 Kg Tractor Compatibility 50 Plus HP | 2 |
|  | Disc plough | cut width from 500-550 mm to 1150-1200 mm. 291 Kg to 475 Kg. | 2 |
|  | Subsoiler | Number of Tines 1. Hitch Type 3 Point , CAT ll Overall Length 740 mm  Overall Width 960 mm  Overall Height 1400 mm  Suitable Tractor Rating 50 HP & Above, Maximum Working Depth up to 558 mm | 2 |
|  | Chisel plough | Working Depth 250-450mm, Length 175 mm | 2 |
|  | Ditcher | Power: 6 HP Plough Depth: 3 - 4 Inchs | 2 |
|  | Tine cultivator | Material Mild Steel Power 20-30 HP Size 3.5 x 2 Feet Shape Triangular | 2 |
|  | Harrow (general purpose) | Number of Disc: 12 to 24 Disc Material: Iron Disc Diameter (mm): 560 , 610 Width of Cut (mm): 1220 to 2650 | 2 |
|  | Disc Harrow | Disc diameter 0.58 m. Max Disc Spacing 0.125 m. Working width 0.03m. Disc thickness 0.01 m. Frame Height 0.75 m. | 2 |
|  | Spike tooth harrow | Machine Weight. 2,100 lbs. Tongue Weight. Folded for Transport 432 lbs. Hitch. Pull type with clevis. Working Width. 23'- 7" Overall Working Width. 23' - 9" Overall Working Length. 23' - 0" | 2 |
|  | Ridgers | Average Fuel Consumption 1.5 to 2 ltrs / hr, Depth of Furrow (adjustable) 250 to 300 mm (10 - 12 inches) max. Width of Furrow (adjustable) 375 to 450 mm (15 - 18 inches) max | 2 |
|  | Rotavator | Tillage width (cm/inch) 100/39 Multispeed gearbox. No of blades 24/24/36. No of flanges 4/4/6 weight Kg Approx. 400 | 2 |
|  | Multimedia Projector | Hitachi CP-X2542WN LCD Projector, 4:3 | 1 |
|  | Desktop Computer | Processor: Core i5,RAM 8GB,Hard Disk 3TB,Display 20 inch, Window 10,Office 2019 | 1 |
|  | Printer | Wireless 4-in-1 (Print | Copy | Scan | Fax) Integrated Ink Tanks - Up to 6,000 pages BW / 14,000 pages Color using new set of inks! | 1 |
|  | Application Software | Windows | 1 |
|  | Internet router | TP-Link AX5400 Tri-Band WiFi 6 Router (Archer AX75) | 1 |
|  | First AID Box | Good Quality | 1 |
|  | Fire Extinguisher Cylinder | Good Quality | 1 |
|  | Fire Blanket | Co2- 5 Kg | 2 |
|  | Fire Bucket | Fire Resistant | 2 |
|  | Safety Gloves | Leather | 5 |
|  | safety googles | Rubber for 1000 volt | 5 |
|  | Safety Helmet | White | 5 |
|  | Safety Helmet | Yellow | 25 |
|  | Safety mask | White | 5 |
|  | Safety Belt | kn 95 | 5 |
|  | Stools | Full body harness | 5 |
|  | Working Tables | 18 inches | 25 |
|  | White Board | 4 x 6 Feet | 4 |
|  | Cupboards | 4 x 8 Feet | 2 |
|  | Shelves | 2 x 4 x 6 Feet | 4 |
|  | Fans | 2 x 6 x 6 Feet | 4 |
|  | Student Chairs | 80 watt | 6 |
|  | Ear Protector | Height. 31” Width 24” Depth 28” Frame. Steel Seat. Plastic Writing Pad. Steel & Plastic | 25 |
|  | Face Shields. | NRR 30 db | 25 |
|  | Stretcher | Stretcher 2 Fold. Model YXH-1F1B Product Size: 208\*55\*13cm (L\*W\*H) Folded Size: 104\*17\*9cm (L\*W\*H) | 2 |
|  | T-Square | T Square Aluminium With Cover 24" | 5 |
|  | Set Square | 45Cm (3345) Transparent | 5 |
|  | Measuring tapes | 10 meter | 5 |
|  | Calculator | Casio Scientific Calculator FX991EX | 5 |
|  | Set of Adjustable Wrench | 4-Piece Adjustable Wrench Set, CR-V Steel, Crescent Wrenches Set(6-inch, 8-inch, 10-inch, 12-inch) | 5 |
|  | Spanners (Open end, Ring) | 12pcs Flex-head Ratcheting Wrench Set 8-19mm Metric Professional Chrome Vanadium Steel Ratchet Wrenches CrV Gear Spanner Set | 5 |
|  | Pipe wrench | 3-Piece Heavy Duty Aluminum Straight Pipe Wrench Set, 10", 14", 18", Adjustable Plumbing Wrench Set, Drop Forged, Exceed GGG | 5 |
|  | L-key sets | 26pc Long Allen Wrench Set and Star Key Set – Includes Metric and Standard SAE Long Arm Ball End Hex Key Wrench | 5 |
|  | Nose pliers | 8-in. Long Nose Pliers, Chrome | 5 |
|  | Grip pliers | Locking Pliers Set(5/7/10 inch Curved Jaw Pliers,6.5/9 inch Long | 5 |
|  | Straight peen Hammer | Cross peen Hammer. Sheet Metal Worker’s Hammer, Polished face and pein 50, 100, 150, 200, 250 grams | 5 |
|  | Short nose tong | Jaw Width 3/4" (19.05mm) | 5 |
|  | Flat Chisel | 12 inches | 5 |
|  | Scrapper of different shapes | 4 types | 20 |
|  | scriber | 225MM Engineers Scriber Double Ended Marking Scribe Angled & Straight | 3 |
|  | Diamond hand file set |  |  |
|  | Riffle hand file set | (1) 8" Mill Bastard File, (1) 6" Round File, (1) 6" Slim Taper File (1) 8" 4-in-1 File, (1) Interchangeable Handle | 5 |
|  | Needle hand file set | 0.4×16cm | 5 |
|  | Round hand file | 6 inches | 5 |
|  | Half round hand file | 6 inches | 5 |
|  | Triangular hand file | 10 pieces | 5 |
|  | Square hand file | 8 inches | 5 |
|  | Flat hand file | 8 inches | 5 |
|  | Drawing board | 2 x 3 feet | 5 |
|  | Marking punch | Letters A-Z Good Quality | 2 |
|  | Marking punch | Numbers 0-9 Good Quality | 2 |
|  | Tri square | 24 x 16 inches | 5 |
|  | Drill Machine Rotary Hammer | ENEACRO 1-1/4 Inch SDS-Plus 13 Amp Heavy Duty Rotary Hammer Reverse Forward 13mm | 5 |
|  | Twist drill Bit Set | BECOLLO 5/32 Inch Cobalt Drill Bit Set | 3 |
|  | counter boring Machine | 12.5 mm (0.49") ID 120 mm (4.72") OD | 5 |
|  | Reamer | RIDGID 29993 227S Stainless Steel Pipe Reamer Tool, 1/2-inch to 2-inch Inner/Outer | 5 |
|  | tap & die set | Set in SAE and Metric, Hex Threading Dies for Internal & External Threads, 86 Pieces | 5 |
|  | Surface Grinding Machine | Concrete Ground Grinding Polishing Machine 1100W Heavy Duty 1.5HP | 1 |
|  | Steel Rules | 18 inches | 25 |
|  | Vernier Caliper | Mitutoyo 500-195-30 Advanced Onsite Sensor Absolute Scale Digital Caliper, 0-4" Range, Stainless Steel | 2 |
|  | Thread gauges | Metric & Imperial & US Screw Gauge SAE Whitworth 55 Degree & Metric 60 Degree | 5 |
|  | Screw pitch gauges | 51Pcs America SAE Type + 58 Pcs Metric & America SAE Type | 5 |
|  | Fillet gauges | 7piece Fillet Weld Set Gage Rl Gauge Depth Gauges Welding Inspection Test Ulnar Metric & Inch | 5 |
|  | Feeler gauges | 32 Blades Steel Feeler Gauge Dual Marked Metric and Imperial | 5 |
|  | Impact screwdriver | Drive Size 1/4". Air Consumption 3.2 l/s / 6.78 cfm. (Actual), 4.16 l/s / 8.81 cfm (Free Speed). Air Inlet 1/4" Handle Type Straight Length 185 mm / 7.28" Min. Hose Size 10 mm / 3/8" Sound Pressure 89 db(A) Sound Power Db 100 db(A) Working Torque Range Nm 8 - 21 Nm / 5.93 - 15.5 ft.lbs Free Speed 10000 rpm | 2 |
|  | Allen Key | Sizes: 1.0,1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 6.0, 8.0, 10.0, 12.0, 14.0 mm | 5 |
|  | Box Spanner | Sizes: 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 23, 24, 25, 26, 27, 28, 30, and 32 mm. Accessories: Ratchet 5” extension. 10” extension Sliding T bar, Universal joint speed handle Flexible handle metal box | 5 |
|  | Tongue and groove plier | 12 inches | 5 |
|  | Grip vice |  | 6 |
|  | Micrometer | esolution 0.001mm/0.00005″ Button function: on/off, set, mm/inch, LR44 battery, automatic power off, Carbide measuring faces, Friction thimble | 5 |
|  | Divider |  | 6 |
|  | D protecter |  | 6 |
|  | Digital Balance | Precision 0.0001g Lab Micro Electronic Balance 300 Kg | 2 |
|  | Center Punch | 6" | 5 |
|  | Rivet Gun | Accepts rivets: 2.4 mm, 3.2 mm, 4.0 mm, and 4.8 mm. With nozzles and spanners. With nozzles and spanners | 2 |
|  | Hammer and Anvil | 10cm x 9cm x 6.8cm/3.94" x 3.54" x 2.68" | 5 |
|  | Ring compressor |  | 5 |
|  | Ring Expander | otal Length: 170mm/6.7in Handle Length: 80mm/3.1in Maximum Opening: 40mm/1.6in | 5 |
|  | Bearing Puller | Working Depth: 93mm Jaw Thickness: 1.5mm Applicable bearing dimension: 30-90mm Diameter Made from Chrome Vanadium Steel | 2 |
|  | Measuring tape | Size: Length 30 m, measuring tape power lock type. 13 mm wide, yellow, kink-proof unbreakable fiber glass tape measure, metric scale on one side (meter and centimeter), EC type approval, accuracy class II, with plastic end hook, in closed round capsule of impact-resistant plastic, with crank | 5 |
|  | Welding Plant | Rated Input Voltage (V) 3P AC 380V 50/60Hz TIG MMA Output Current (A) 10~230 20~210 Rated Duty Cycle (%) 60 No-load Voltage (V) 65 Down Slope (S) 0-5 Reblowing (S) 1-10±0.5 Power Factor (cosø) 0.93 Insulation Class F Protection Class IP21S Efficiency (%) 85 Net Weight (kg) 14.6 | 2 |
|  | Lath machine | wing Over Cross Slide 13.6" (345mm). Bed Length 40"-80" (1016-2032mm). Speed Variable 0-400 RPM. Front Chuck Type 3 Jaw Self Centering. Rear Chuck Type 3 Jaw Self Centering Spindle Bore 10" (250mm) Tailstock 5MT Tailstock Stroke 5.9" (150mm) 2.95" Dia75mm) Steady Rest 2.36" - 10.00" (60-250mm) Tool Post Aloris DA Heavy Duty Tool Holder Aloris DA-2S Dead Center Dial #5 MT Horsepower 15 hp Power Requirements 230V 3 phase | 1 |
|  | Hydraulic pump | 10,000 PSI Quick Power Air Hydraulic Foot Pump 1/2 Gal Reservoir | 1 |
|  | Pneumatic pump | Max Pressure 125 PSI / 8.6 bar / 860 kPa Materials. Anodized Aluminum Brass Seal Materials Buna-N Delrin Outlet Port. Male Quick-test Male Quick-test with cap and chain Pressure Media. Air Min Operating Temperature 0 °F / -18 °C Max Operating Temperature 130 °F / 54 °C Fine Adjustment Resolution 0.01 PSI / 0.07 mbar / 0.00 kPa. Media Compatibility. Air Inert Gas. Natural Gas. Country of origin. USA Width 8 in / 21 cm. Height 3.4 in / 87 mm Weight 1.60 lbs / 725 grams | 2 |
|  | Hacksaw | 18 inches | 5 |
|  | Tube cutter | Tube diameters 3-25 mm | 5 |
|  | Flaring tools | 45 Degree Flaring and Swaging Tool Set in metric sizes of outside diameter 6,8, 10, 12, 15, 16 mm | 5 |
|  | Power cutter | Product Dimensions ‎17.1"L x 8"W x 5.5"H Voltage ‎220 Volts Amperage. ‎3.4 Amps Warranty Type ‎Manufacturer and Seller Combination. Number of Teeth ‎6 | 2 |
|  | Tube bender | Triple header tube benders all tubes with outer diameter. ¼”, 5/16”, 3/8”. | 2 |
|  | Work bench | 4 x 8 Feet | 6 |
|  | Bench grinder | ‎8'' Bench Grinder. 220 V  Power Source ‎Corded Electric Voltage ‎120 Volt with Hex Wrench | 2 |
|  | D-type bevel protector | Digital Angle Finder with Full LCD Display & 8" Stainless Steel Blade | 2 |
|  | Bench Drilling Machine | 710W Mini Electric Bench Drilling Machine Drill Chuck 1-13mm | 2 |
|  | Machine Vice | Milled steel jaws. Enclosed screws, paint finish. Jaw width- greater than 60 mm and less than 75 mm. Fitted with handle valve. 7-1/2" / 191mm full length opening. \* Jaws plates are interchangeable with other manufacturer vises. \* 2.875" bed height within +/- 0.0005" induction hardened guide ways | 2 |
|  | Drill Sleeve and Socket | MT1 to MT2,MT2 to MT3,MT3 to MT4,3pcs Material ‎45# Steel Cutting Diameter ‎18.6 Millimeters Assembled Diameter ‎18.6 Millimeters | 2 |
|  | Bench vices | Milled steel jaws. Enclosed screws, paint finish. Jaw width- greater than 60 mm and less than 75 mm. Fitted with handle valve | 6 |
|  | Hand hacksaw | Stanley 12" Fixed Hacksaw | 5 |
|  | Metal working chisel | Heavy Duty All Purpose Cold Chisel Set - Industrial Grade Octagonal Steel Hand Tools For Carpentry, Metalwork, Woodwork & Masonry - Sizes 8", 10", 12" | 3 |
|  | Pipe vice | Multipurpose wise, replaceable pipe jaws. Pipe capacity 70 mm diameter | 5 |

* + - 1. **Construction Trade- Machinery, Equipment’s and Tools**

| **S#** | **Category of items** | **Specifications** | **Quantity**  **Required** |
| --- | --- | --- | --- |
|  | Brick Making Machine | Locally Manufactured Good Quality | 2 |
|  | Brick Molds | Locally Manufactured Good Quality Standard Sizes | 6 |
|  | Hand roller | Locally Manufactured Good Quality | 6 |
|  | Thermometer | Digital | 6 |
|  | Umbrella with stand | Locally Manufactured Good Quality | 2 |
|  | Calculator | Scientific | 6 |
|  | Scissor | 16 inches |  |
|  | Mason Trowel | Locally Manufactured Good Quality | 6 |
|  | Hammer | Forged steel rectangle head | 6 |
|  | Lump hammers | Forged steel rectangle head | 6 |
|  | Drafting Table- | Portable (Taper Type), Table size 32" x 24" | 6 |
|  | Instruments Box | Special Compass Set | 6 |
|  | Tee Square | (600 mm) Transparent | 6 |
|  | Set Square | Transparent medium size (300 mm) | 6 |
|  | Templates | Circle Square, Hexagon, Triangle (03 each) | 6 |
|  | French Curves | Good Quality, medium size | 6 |
|  | Sharpener Machine | Good Quality, medium size | 6 |
|  | Drafting Machine | Elbow type- Table size A o complete with all accessories | 6 |
|  | Ear Muff, Ear Plug | Locally Manufactured Good Quality | 25 |
|  | Safety shoes | Locally Manufactured Good Quality | 25 |
|  | Rubber shoes/ long shoes | Locally Manufactured Good Quality | 25 |
|  | Gloves | Locally Manufactured Good Quality | 25 |
|  | Safety Goggle | Locally Manufactured Good Quality | 25 |
|  | Safety Helmet | Locally Manufactured Good Quality | 25 |
|  | Respiratory protective equipment i.e. Masks | Locally Manufactured Good Quality | 25 |
|  | Life Jacket | Locally Manufactured Good Quality | 6 |
|  | High visibility jacket | Locally Manufactured Good Quality | 6 |
|  | Safety harness | Locally Manufactured Good Quality | 6 |
|  | Face shield | Locally Manufactured Good Quality | 6 |
|  | Compression testing machine | Electromechanical up to 500 kN (115,000 lbf) | 2 |
|  | Digital weighing balance | 1000 KG | 2 |
|  | Laboratory oven | Volume: 18L Temp. Range: RT+10-300℃ Temp. Resolution Ratio: 0.1℃ | 2 |
|  | Files | Standard sizes | 6 |
|  | Diamond stones | Stone Size: 8" x 3" | 6 |
|  | Water stones | 8" x 1 15/16" x 3/4" double sided | 6 |
|  | Oil stones | US Made 8" x 2" Combination Oil Stone Combination 8" x 2" Soft/Hard Arkansas Stone 8" or 12" Double Sided Paddle Strop 4.5 Oz.Norton Honing Oil 6 Oz. Bar of Chromium Oxide Green Honing Compound | 6 |
|  | Ceramic stones | Super Fine 1200 and 1600 Grits Ceramic Abrasive 2 Double-sided Stones | 6 |
|  | Boring machine | Motor: 3/4 HP, 110V, single-phase, 12A Table size: 14-1/4" W x 8-1/4" D Table travel, side to side: 6" Table travel, front to back: 4-1/8" Table travel, vertical: 2-1/8" Spindle speed: 3450 RPM Drill bit capacity: 5/8" Footprint: 22-1/4" x 31-1/2" Overall dimensions: 40-1/2" W x 22" D x 43" H Approximate shipping weight: 201 lbs. | 2 |
|  | Fastenings | Standard sizes | 6 |
|  | Sprayer |  | 2 |
|  | Circular SAW | Angle 0-50 deg. Application/Use Sheet and 2x wood cutting. Arbor Diameter 0.625 in. Bevel Capacity 0-50 deg. | 2 |
|  | Wood Turning lathe | 8" x 13" Benchtop | 6 |
|  | Sander | Orbit Diameter. 0.118 in Orbit Diameter (Metric) 3 mm Power Source Pneumatic | 6 |
|  | Respiratory protective equipment i.e. Masks |  | 6 |
|  | Computer | Core i5 11th Generation | 2 |
|  | Ladder | Locally Manufactured Good Quality | 3 |
|  | drill machine tool kit | Battery Voltage 12 V Drilling Capacity 10 mm Drilling Capacity (in Steel) 10 mm No Load Speed 0 - 1200 rpm Dimensions 25x21.6x14 cm Material Plastic Charging Time 5-7 hrs Weight 2.8 kg | 2 |
|  | Thimble puncher | 5 - 38 mm | 6 |
|  | cable knife | Locally Manufactured Good Quality | 6 |
|  | wire stripper | Locally Manufactured Good Quality | 6 |
|  | Plier | Locally Manufactured Good Quality | 6 |
|  | Wire Cutter | Locally Manufactured Good Quality | 6 |
|  | AVO meter | Voltage = 500 V AC/DC Resistance = 500 kΩ Current = 100mA | 6 |
|  | test lamp | Locally Manufactured Good Quality | 6 |
|  | Earth tester | Frequency = 820 Hz,S Range1 = 2Ω range: 0.01Ω Range 2 = 20Ω range: 0.1Ω Range 3 = 200Ω range: 1Ω Range 4 = 2kΩ range: 0.01kΩ | 6 |
|  | line tester | Locally Manufactured Good Quality | 6 |
|  | megger | Voltage Range = 50 V, 100 V, 250 V, 500 V, 1000 V Resistance range = 0.01 kΩ to 1000 kΩ | 6 |
|  | Multi meter | Voltage = 1000V DC/750V AC Frequency = 10MHz 10mF | 6 |
|  | hand hacksaw | Locally Manufactured Good Quality | 6 |
|  | Measuring tape | Locally Manufactured Good Quality | 25 |
|  | Laser gun for length) | Distance 100 meter with +/- 1 mm.accuracy | 6 |
|  | Grinding cutter | Type: Angle Grinder Variable Speed: Yes Disc(Wheel) Type: Cutting Disc Disc Diameter: 125mm | 6 |
|  | Hammer | Locally Manufactured Good Quality | 6 |
|  | Lifters, chain-pulley, jacks | Good Quality (2 each) | 6 |
|  | Sprit level | Locally Manufactured Good Quality | 6 |
|  | Wiring Boards | 3’ x 5’ Wall Mounted | 12 |
|  | Wood Chisel | 1” | 6 |
|  | Work Benches | 4’ x 6’ x 2.5’ | 6 |
|  | Single-Phase Electric Motors | Power = 1 Horse Power Voltage = 230 V Phase = Single phase Frequency = 50 Hz RPM = 1450 | 2 |
|  | Single–Phase Energy Meter | Phase = single phase Current = 80 A Voltage = 230 V Frequency = 50 Hz | 2 |
|  | 3-Phase Electric Motors | Power = 5 Horse Power Voltage = 230 V Phase = 3 phase Frequency = 50 Hz RPM = 1450 | 2 |
|  | 3-Phase Energy Meter | Phase = Three phase Current = 100 A Voltage = 230 V Frequency = 50 Hz | 2 |
|  | Clamp on Meter | Voltage = 600V DC/AC Frequency 500Hz, Current = 400A DC/AC | 6 |
|  | Cold Chisels | 10” Long | 6 |
|  | Combination Pliers | 8” | 6 |
|  | Hand-Drill Machine Electric | Two Speeds 3/4” | 6 |
|  | Fire Fighting Safety Equipment | (Fire Extinguishers and Safety Care, etc.) | 4 |
|  | Thermometer |  | 6 |
|  | Sieve set | Locally Manufactured Good Quality | 6 |
|  | sampling containers, filters and sieves | locally Manufactured Good Quality | 6 |
|  | portable colorimeters | locally Manufactured Good Quality | 6 |
|  | Beaker | locally Manufactured Good Quality | 6 |
|  | Pipette | locally Manufactured Good Quality | 6 |
|  | Erlenmeyer flasks | locally Manufactured Good Quality | 6 |
|  | Indicator solutions | locally Manufactured Good Quality | 6 |
|  | First aid kit. | locally Manufactured Good Quality | 2 |
|  | Sieve shaker | locally Manufactured Good Quality | 6 |
|  | Standard cement cube molds | locally Manufactured Good Quality | 6 |
|  | Metallic Tri-Square | locally Manufactured Good Quality | 6 |
|  | Gauging trowel | locally Manufactured Good Quality | 6 |
|  | Spirit level | locally Manufactured Good Quality | 6 |
|  | Standard sieves for Fine aggregate tests | locally Manufactured Good Quality | 6 |
|  | Steel scale | locally Manufactured Good Quality | 6 |
|  | Pycnometer | Measurement range (g/cm³). 0 g/cm3 – 3 g/cm3 Accuracy ± (g/cm³). 0.000005 g/cm3 Repeatability (g/cm³). 0.000001 g/cm3 Resolution (g/cm³). 0.000001 g/cm3 Temperature control range. 0 °C – 95 °C Temperature control. Yes Measurement scales. Density, Specific gravity, Alcohol, Acid, API, Sugar, Urea, User-defined concentration Up to 30 user-defined concentration tables (can be entered as tables or formulas). Minimum sample volume. 1.50 mL (1.5 mL) | 6 |
|  | Weighing dishes | locally Manufactured Good Quality | 6 |
|  | calibrated volume measure for density test, | locally Manufactured Good Quality | 6 |
|  | Enameled trays | locally Manufactured Good Quality | 6 |
|  | tamping rod | locally Manufactured Good Quality | 6 |
|  | Desiccators | locally Manufactured Good Quality | 6 |
|  | Brushes | locally Manufactured Good Quality | 6 |
|  | Funnels | locally Manufactured Good Quality | 6 |
|  | Vernier calipers | locally Manufactured Good Quality | 6 |
|  | Graduated glass measuring cylinders | locally Manufactured Good Quality | 6 |
|  | Stopwatch | locally Manufactured Good Quality | 6 |
|  | Slump cone Apparatus | locally Manufactured Good Quality | 6 |
|  | Straight edge | locally Manufactured Good Quality | 6 |
|  | compacting factor test apparatus | Dimensions. 320x420x1300 mm Weight (approx).45 kg | 6 |
|  | Flow table test apparatus | Base diameter of 250 mm, upper surface diameter of 170 mm and 120 mm height | 2 |
|  | Vicat apparatus | Mild steel base plate 5 inches x 5 inches. Fulcrum mould , brass , 80 mm i.d. base dia x 70 mm i.d. top dia , 40 mm height. | 2 |
|  | Vee Bee test apparatus | Top diameter 200mm, bottom diameter 100mm, and height 300mm. A standard iron rod, Tamp whose diameter is 20 mm and length is 500 mm | 2 |
|  | Le-Chatelier apparatus | Mold 0.9 kg | 2 |
|  | Le-Chatelier flask | Good Quality (2 each) | 6 |
|  | Casagrande apparatus | Dimensions. 240x230x150 mm 200x290x170 mm Weight (approx.) 2 kg 4.2 kg | 2 |
|  | Plastic limit test apparatus | Evaporating dishes - porcelain or similar mixing dishes approximately 4½ in. (114 mm) in diameter. Pulverizing apparatus - mortar and rubber covered pestle. U.S. No. 40 (0.425 mm) sieve. Spatula, about 3 in. (75 mm) long and approximately ¾ in. (19 mm) wide. Balance sensitive to 0.01 g. Watering bottle, with distilled water demineralized or tap water. | 2 |
|  | Shrinkage test apparatus | Specimen Size ≤ 140mm x 140mm Temperature Range Room temperature ~ 250°C Accuracy ±0.2°C Power Supply 110/220 V, 60/50 Hz Instrument Size 315 mm x 510 mm x 260 mm | 2 |
|  | Cylindrical metal container | Good Quality | 6 |
|  | Elongation gauge | ength Gauge (Elongation Index) ; Range, 50 to 6.3mm ; Product Dimensions, 12.75 x 2x 2.5 (324 x 51 x 64mm), WxDxH ; Estimated Shipping Weight, 3.0lb (1.36kg) .. | 2 |
|  | Flakiness gauge | Range HM-925: 63 o 6.3mm HM-924: 1 to 0.25in Product Dimensions 15 x 6 x 0.375in (381 x 152 x 9mm), WxDxH | 2 |
|  | Marshall stability test apparatus | Capacity. 50 kN Platen Speed. 50.8 mm/min. Dimensions. 400x560x1100 mm Weight (approx). 95 kg Power. 1100 W | 2 |
|  | Speedy moisture meter apparatus | Test Speed: 45 sec. to 3 min., depending on material Gauge: Moisture measurement range 0-20% Balance: Electronic; 0-7 oz (0-200g) range; battery operated Max Particle Size: 20mm | 2 |
|  | Skid Resistance /Abrasion value apparatus | Dimensions. 1100x1150x1250 mm Weight (approx.). 505 kg Power. 750 W | 2 |
|  | Specific gravity bottle | Good Quality | 2 |
|  | Mechanical sieve shaker | Good Quality | 2 |
|  | Flash and fire point test apparatus | Application range. up to 400 °C (°C/°F selectable) Power supply. 115 V/230 V, 50 Hz/60 Hz, 600 W Dimensions. 230 mm x 390 mm x 460 mm (W x D x H) Weight. 12 kg Resolution. 0.1 °C | 2 |
|  | Bitumen compactor | 86 to 215 cm (35 to 85 inches) in width and 50 to 150 cm (20 to 60 inches) in diameter. Roller weight is typically between 0.9 and 18 tonnes (1 and 20 tons) | 2 |
|  | Shovels | Quality: No excess of metal, no dents, no cracks. Rockwell hardness C (HRC): 35 minimum to 48 maximum Carbon content: 0.4% to 0.5% Manganese content: 0.5% to 0.8% Silicone content: 0.25% maximum Phosphorus and Sulphur: 0.06% maximum Dimension, full piece: 295 x 225 mm Hole diameter: front side 36 mm, back side 40 mm Weight: 1kg +/- 50g, without handle | 6 |
|  | Lab coat | Good Quality Fabric | 6 |
|  | Core cutter apparatus | Cylindrical core cutter made of steel, 127.3 mm long and 100mm internal diameter. Steel Dolley, 25 mm high with a lip | 2 |
|  | Platform scale | 2500 kg | 6 |
|  | Slump Test Apparatus | Bottom diameter : 20 cm, Top diameter : 10 cm, Height : 30 cm and the thickness of the metallic sheet for the mould should not be thinner than 1.6 mm. | 2 |
|  | Compacting Factor Apparatus | ASTM: C143 and B.S: 1882 part 2, | 2 |
|  | Wheel Barrow | Dimensions (mm), 1.100 x 640 x 700 ; Fixed wheels mm, 380 ; Swivel wheels ; Tyre, Pneumatic ; Weight Kg, 15. | 6 |
|  | Bucket | 20 Litre Good Quality | 6 |
|  | Shovels with handle | Multi-position Straight Grip; Non-conductive Fiberglass Handle / Handle Length Dim. 48" (122cm); Nearly Indestructible Handle - Rated | 6 |
|  | Mortar Pan | 30 x 30 inches Mild Steel | 6 |
|  | Metallic Tape | 30 Meter | 6 |
|  | Static Cone Penetrometer Engine Driven | 30 inch starter rod and a 60° cone with a 1.5cm2  area standard. An optional 3cm2 cone is available for softer materials; and, 30 inch extension rods | 2 |
|  | Soil auger Sampling Outfit | Split Mould, 38 mm dia x 76 mm long. Split mould, 38 mm inch dia x 88 mm inch long (in two parts. Sampling tube 38 mm dia x 150 mm long. Sampling Tube 38 mm dia x 200 mm long. Jarring link for driving the Sampling Tube. Adaptor with locking screw for fitting the sampling tube to jarring link. | 2 |
|  | Cone Penetration Test Apparatus | Cone diameter : 20 mm. Cone angle : 60 degrees. Hammer Weight : 8 Kg. Hammer freefall height : 575 mm. Upper steel shaft : 16 mm diameter. Lower steel shaft : 16 mm diameter. Length of lower shaft : 900 - 1200 mm long. | 2 |
|  | Standard Penetration Test Apparatus | Cone Penetrometer Hand Operated, Split Spoon Sampler Dynamic Static | 2 |
|  | Hooks / Anchors | Standard sizes | 2 |
|  | Slings | Stnadard Sizes Good Quality | 6 |
|  | Safety net | Good Quality | 2 |
|  | Drawing board | Wooden High Quality | 6 |
|  | Triangular scale | 30 cm Aluminium Alloy | 6 |
|  | Pipe wrench | 30 inches | 6 |
|  | Spanner | Standard sizes | 6 |
|  | Screw drivers | Standard sizes | 6 |
|  | Pipe cutters | Standard sizes | 6 |
|  | Threading die | Standard sizes | 6 |
|  | Hack Saw | threading of ½” dia, ¾” dia and1” dia pipes | 6 |
|  | Bench Vice | 6 inches | 6 |
|  | Reamers | up to 2 inches diameter | 6 |
|  | Pipe Benders, | up to 2 inches diameter | 6 |
|  | Plumbing pliers, | 6 inches | 6 |
|  | Plumbing wrenches, | 6 inches | 6 |
|  | Plumbing spanners, | 6 inches | 6 |
|  | Pressure testing kits, | Dial: 2.5″ (63mm), white aluminum dial with red and black markings Case/Ring: Steel, painted black Lens: Polycarbonate Connection: Brass hose barb (1/4”) (gear clamp included) Diaphragm Element: Phosphor bronze Movement: Engineering plastic upper and lower plate with brass pinion and sector, with zero adjustment Ambient Temperature: -40°F to 150°F (-40°C to 65°C) Accuracy ±3-2-3% ANSI/ASME Grade B | 6 |
|  | Geyser | Volume(L) – 15 Power(kW) – 2 Voltage/ Frequency(V/Hz) – 230/50 Temperature (°C) – 25-75 Rated Water Pressure(KG/cm2) – 6 & 8 | 6 |
|  | Cocking Tools |  | 6 |
|  | Pipe vice with stand, | 6 inches | 6 |
|  | Plungers, | Standard sizes | 6 |
|  | Kassi | 9 inches mild steel | 6 |
|  | Pipe testing unit complete | ASTM D1598, D1599. Hydrostatic Sustained and Quick Burst Pressure Testing for Pressure Pipe | 6 |
|  | Compactor | Compaction Depth: 30cm Excitation Frequency: 72HZ Exciting Force: 25KN Traveling Speed: 28m/min Certification: ISO/CE Working Efficiency: 400sq.m./hr Voltage: 220V Weight: 125KG | 6 |
|  | Excavator | Main System – Maximum Flow – Implement 400 L/min (200 L/min × 2 pumps) 106 gal/min (53 gal/min × 2 pumps) Maximum Pressure – Equipment – Implement. 35 000 kPa 5,075 psi Maximum Pressure – Travel 35 000 kPa 5,075 psi Maximum Pressure – Swing 25 000 kPa 3,625 psi Pilot System – Maximum Flow 17 L/min 4 gal/min Pilot System – Maximum Pressure 3900 kPa 566 psi Boom Cylinder – Bore 120 mm 5 in Boom Cylinder – Stroke 1260 mm 50 in Stick Cylinder – Bore 140 mm 6 in Stick Cylinder – Stroke 1504 mm 59 in Bucket Cylinder – Bore 120 mm 5 in Bucket Cylinder – Stroke 1104 mm 43 in | 6 |
|  | Trench digging tools | locally Manufactured Good Quality | 6 |
|  | Test bench (Complete accessories) | locally Manufactured Good Quality | 6 |

* + - 1. **Mining Trade- Machinery, Equipment’s and Tools**

| **S#** | **Category of items** | **Specifications** | **Quantity**  **Required** |
| --- | --- | --- | --- |
|  | Multimedia Projector | Hitachi CP-X2542WN LCD Projector, 4:3 | 1 |
|  | Desktop Computer | Processor: Core i5,RAM 8GB,Hard Disk 3TB,Display 20 inch, Window 10,Office 2019 | 1 |
|  | Printer | Wireless 4-in-1 (Print | Copy | Scan | Fax) Integrated Ink Tanks - Up to 6,000 pages BW / 14,000 pages Color using new set of inks! | 1 |
|  | Cameras | High Image Quality with 24.1 Megapixel CMOS (APS-C) Sensor. High-Speed Continuous Shooting of up to 7.0 fps. | 2 |
|  | Application Software | Windows | 1 |
|  | Internet router | TP-Link AX5400 Tri-Band WiFi 6 Router (Archer AX75) | 1 |
|  | Drill Machine Rotary Hammer | ENEACRO 1-1/4 Inch SDS-Plus 13 Amp Heavy Duty Rotary Hammer Reverse Forward 13mm | 5 |
|  | Cordless Drill machine | 18V | 5 |
|  | Extension board | multi Sockets With 10 Meters Wire | 5 |
|  | Twist drill Bit Set | BECOLLO 5/32 Inch Cobalt Drill Bit Set | 3 |
|  | Center drill Bits | 7 Pieces Center Drill Bits Set, M2 High Speed Steel 60-Degree Angle | 3 |
|  | counter boring Machine | 12.5 mm (0.49") ID 120 mm (4.72") OD | 5 |
|  | Reamer | RIDGID 29993 227S Stainless Steel Pipe Reamer Tool, 1/2-inch to 2-inch Inner/Outer | 5 |
|  | tap & die set | Set in SAE and Metric, Hex Threading Dies for Internal & External Threads, 86 Pieces | 5 |
|  | Surface Grinding Machine | Concrete Ground Grinding Polishing Machine 1100W Heavy Duty 1.5HP | 1 |
|  | Steel Rules | 18 inches | 25 |
|  | Vernier Caliper | Mitutoyo 500-195-30 Advanced Onsite Sensor Absolute Scale Digital Caliper, 0-4" Range, Stainless Steel | 2 |
|  | Thread gauges | Metric & Imperial & US Screw Gauge SAE Whitworth 55 Degree & Metric 60 Degree | 5 |
|  | Screw pitch gauges | 51Pcs America SAE Type + 58 Pcs Metric & America SAE Type | 5 |
|  | Fillet gauges | 7piece Fillet Weld Set Gage Rl Gauge Depth Gauges Welding Inspection Test Ulnar Metric & Inch | 5 |
|  | Feeler gauges | 32 Blades Steel Feeler Gauge Dual Marked Metric and Imperial | 5 |
|  | Set of Adjustable Wrench | 4-Piece Adjustable Wrench Set, CR-V Steel, Crescent Wrenches Set(6-inch, 8-inch, 10-inch, 12-inch) | 5 |
|  | Spanners (Open end, Ring) | 12pcs Flex-head Ratcheting Wrench Set 8-19mm Metric Professional Chrome Vanadium Steel Ratchet Wrenches CrV Gear Spanner Set | 5 |
|  | Pipe wrench | 3-Piece Heavy Duty Aluminum Straight Pipe Wrench Set, 10", 14", 18", Adjustable Plumbing Wrench Set, Drop Forged, Exceed GGG | 5 |
|  | L-key sets | 26pc Long Allen Wrench Set and Star Key Set – Includes Metric and Standard SAE Long Arm Ball End Hex Key Wrench | 5 |
|  | Nose pliers | 8-in. Long Nose Pliers, Chrome | 5 |
|  | Grip pliers | Locking Pliers Set(5/7/10 inch Curved Jaw Pliers,6.5/9 inch Long | 5 |
|  | Straight peen Hammer | 6 lb. Mason Straight Pein Hammer 16" wood handle. | 5 |
|  | Short nose tong | Jaw Width 3/4" (19.05mm) | 5 |
|  | Flat Chisel | 12 inches | 5 |
|  | Scrapper of different shapes | 4 types | 20 |
|  | scriber | 225MM Engineers Scriber Double Ended Marking Scribe Angled & Straight | 3 |
|  | Hand hacksaw | Stanley 12" Fixed Hacksaw | 5 |
|  | Diamond hand file set |  |  |
|  | Riffle hand file set | (1) 8" Mill Bastard File, (1) 6" Round File, (1) 6" Slim Taper File (1) 8" 4-in-1 File, (1) Interchangeable Handle | 5 |
|  | Needle hand file set | 0.4×16cm | 5 |
|  | Round hand file | 6 inches | 5 |
|  | Half round hand file | 6 inches | 5 |
|  | Triangular hand file | 10 pieces | 5 |
|  | Square hand file | 8 inches | 5 |
|  | Flat hand file | 8 inches | 5 |
|  | Drawing board | 2 x 3 feet | 5 |
|  | Moh’s hardness tester | Tester Industrial Mineral Identification Kit Gem Jade Jewelry 5-9 Scratch Tester | 2 |
|  | XRF handheld gun | 8.3 x 28.9 x 24.2 cm (3.25 x 11.4 x 9.5 in.)800 × 480 (WVGA) LCD with capacitive touch screen supporting gesture control IP54: dust protected and protected against water splashing from all directions | 2 |
|  | Plain table | 4 x 8 Feet | 6 |
|  | Transportation and storage machines |  |  |
|  | Digital multi meter | Tecpel 8062 | 4 |
|  | Phae Tester | Measuring Range:90-1000V | 5 |
|  | Brunton compass | Azimuth dial 0-360° | 5 |
|  | GPS | Garmin Oregon 700. | 2 |
|  | T-Square | T Square Aluminium With Cover 24" | 5 |
|  | Set Square | 45Cm (3345) Transparent | 5 |
|  | Measuring tapes | 10 meter | 5 |
|  | Calculator | Casio Scientific Calculator FX991EX | 5 |
|  | Oxygen Cylinder | 10 liter | 2 |
|  | Shovels with handle | Length:1020mm, Shovel weight:1kg, head width:220mm, head length:295mm, Material: carbon steel | 5 |
|  | Chain Hoist | Voltage: 220V-240V~50Hz, Input power: 900W, Lifting weight: 250Kgs(Single line) Lifting height: 18m(Single line), Lifting speed: 8m/min(Single line),4m/min(Double line) Upper and lower limit device | 2 |
|  | Digital Balance | Precision 0.0001g Lab Micro Electronic Balance 300 Kg | 2 |
|  | Hooks / Anchors | Block and Tackle with Anchor Hook, 25' rope | 2 |
|  | Jackhammer | Voltage: 220-240V~50/60Hz, Input power: 1700W, Impact rate: 1400bmp Impact force: 45J HEX chuck system, 16Kgs demolition breaker With 2pcs chisels | 2 |
|  | Stretcher | Stretcher 2 Fold. Model YXH-1F1B Product Size: 208\*55\*13cm (L\*W\*H) Folded Size: 104\*17\*9cm (L\*W\*H) | 2 |
|  | Viscometer | Digital Rotational Viscosity Meter Lab Viscometers 110-240V 10-100,000mPa.S Accuracy:±3.0% | 1 |
|  | Air filter restriction indicator | Air Filter Restriction Indicator 1W613M | 2 |
|  | Blasting machine and tools | Brand: SB-110, Hose Length 2500 mm, Work Pressure 60-125 PSI | 1 |
|  | Generator | RATO GENERATOR, 1.5 KVA PETROL AND GAS, SELF START BATTERY AND GAS KIT | 1 |
|  | Pumps | Voltage: 220-240V~50Hz Rated power: 750W(1.0HP) Max. head: 52m Max. flow: 50L/min Max. suction: 8m Pipe diameter: 1"x1" Copper wire motor Brass impeller | 2 |
|  | Compressor | Voltage:220-240V~50Hz Input power: 2.2kW (3HP) Tank:100L(26.4Gal) Noise:92db 3000Hr lifetime promise Belt driving system Pump lubricated with oil | 1 |
|  | Vacuum Cleaner | heavy duty 110V 220V wet or dry hepa filter electric concrete cement floor dust collector extractor industrial vacuum cleaner | 1 |
|  | pH meter | pH: 0.00 ~ 14.00pH, TDS: 0.00 ~ 19990ppm, Temperature: -50degrees ~ 70degrees (-58 Fahrenheit~ 158Fahrenheit) Resolution: pH: 0.01pH, TDS: 10ppm, Temperature: 0.1degrees (0.2Fahrenheit) | 2 |
|  | Conveyor belt and component | Roller Diameter 60 mm Material Stainless Steel | 1 |
|  | Dial Bore Gauge | Magnetic Base Holder Fine Adjustable Long Arm 0-1" Professional Gauge 0.001" | 2 |
|  | Snap Gauge set | Measuring Range: 15 mm to 160 mm, Material: Mild Steel Accuracy: 0.001 mm | 2 |
|  | Micrometer | esolution 0.001mm/0.00005″ Button function: on/off, set, mm/inch, LR44 battery, automatic power off, Carbide measuring faces, Friction thimble | 5 |
|  | Hoppers | (79" x 39" x 31") | 5 |
|  | Conveyors |  | 1 |
|  | First AID Box | Good Quality | 1 |
|  | Fire Extinguisher Cylinder | Good Quality | 1 |
|  | Fire Blanket | Co2- 5 Kg | 2 |
|  | Fire Bucket | Fire Resistant | 2 |
|  | Safety Gloves | Metal | 4 |
|  | Safety Gloves | Leather | 5 |
|  | safety googles | Rubber for 1000 volt | 5 |
|  | Safety Helmet | White | 5 |
|  | Safety Helmet | Yellow | 25 |
|  | Safety mask | White | 5 |
|  | Safety Belt | kn 95 | 5 |
|  | Stools | Full body harness | 5 |
|  | Working Tables | 18 inches | 25 |
|  | White Board | 4 x 6 Feet | 4 |
|  | Cupboards | 4 x 8 Feet | 2 |
|  | Shelves | 2 x 4 x 6 Feet | 4 |
|  | Fans | 2 x 6 x 6 Feet | 4 |
|  | Student Chairs | 80 watt | 6 |
|  | Ear Protector | Height. 31” Width 24” Depth 28” Frame. Steel Seat. Plastic Writing Pad. Steel & Plastic | 25 |
|  | Face Shields. | NRR 30 db | 25 |

**DETAILS OF FURNITURES/FIXTURES AND EQUIPMENTS**

**(TO BE PROVIDED BY THE BIDDER)**

*The details of available and proposed minimum required furniture, fixture and ancillary items in the TTC-Kharan are provided below. However, the Bidders are required to conduct their own survey and assessment as well.*

* + - 1. ***LIST OF FURNITURE FIXTURE FOR BANGLOWS- 2 BANGLOWS***

| **S#** | **Category of items** | **Quantity** | |
| --- | --- | --- | --- |
| **Available** | **Required** |
|  | Sofa set +table set) corner table | - | 2 |
|  | Dining table with 6 chairs | - | 2 |
|  | 1 double bed wooden including mattress (Diamond/Molty foam) and two chars & table set | - | 4 |
|  | Sofa set +table set) | - | 2 |
|  | LED - TCL 50 INCH C725 QLED TV | - | 2 |
|  | AC 1.5 Ton - Gree Heat and Cool 1.5 Ton Inverter AC - Latest Model - GS-18PITH11W - Pular Series | - | 8 |

* + - 1. ***LIST OF FURNITURE FIXTURE FOR QUARTERS FOR GRADE (1-4) -7 QUARTERS***

| **S#** | **Category of items** | **Quantity** | |
| --- | --- | --- | --- |
| **Available** | **Required** |
|  | Sofa set +table set)+6 chairs | - | 4 |
|  | 1 double bed wooden including mattress (Diamond/Molty foam) and two chars & table set | - | 8 |
|  | LED - TCL 50 INCH C725 QLED TV | - | 4 |
|  | AC 1.5 Ton - Gree Heat and Cool 1.5 Ton Inverter AC - Latest Model - GS-18PITH11W - Pular Series | - | 4 |

* + - 1. ***LIST OF FURNITURE FIXTURE FOR QUARTERS FOR GRADE (11-14) -4 QUARTERS***

| **S#** | **Category of items** | **Quantity** | |
| --- | --- | --- | --- |
| **Available** | **Required** |
|  | 1 double bed wooden including mattress (Diamond/Molty foam) and two chars & table set | - | 14 |

**Note:** It is mandatory for the Bidder to visit and conduct survey of the TTC-Kharan before submitting its proposal

**GENERAL SPECIFICATIONS**

| **NAME OF TASK** | **GENERAL SPECIFICATIONS** |
| --- | --- |
| Rehabilitation cost | Quality interior and exterior Wall paint, any type of Civil and electric work for refurbishment of the facility. |
| Chair for Students / Trainees | Steel plastic quality Study Chairs and Book Shelf (Vertical Pipe). |
| Chairs for teachers | High back, Fabric padded seat + arm rest, height adjustable, 360 degree rotation, durable and comfortable chairs |
| Rostrum for classes and Auditorium | Standard Wooden rostrum |
| Multimedia | 2700 lumens, wireless and portable multimedia. |
| Laptop | Intel® Core™ i7-7600U v Pro™ processor with Intel® HD Graphics 620 (2.8 GHz base frequency, up to 3.9 GHz with Intel® Turbo Boost Technology, 4 MB caches, 2 cores), 1 TB SATA (5400 rpm), 2GB Graphics Graphic Card, 17 inches |
| Computers | Intel core i7 7700 processor with 4 GB Ram, having 1 Gb graphics card and 1 TB SATA Hard Drive, along with UPS Backup for each computer. Required for staff and computer labs. |
| Science lab | Includes all the Instrument, gadgets and chemicals required to perform multiple experiments |
| Solar Power | At least 100 KVA of solar power generation is suggested, along with 20 KVA of storage capacity in dry batteries |
| Fire extinguishers | |  |  |  | | --- | --- | --- | | **S.NO** | **ITEM DESCRIPTION** | **QUANTITY** | | 1 | Fire Extinguishers 6kg carbon dioxide Naffco (for different blocks) |  | | 2 | Fire Extinguishers 6kg dry chemical powder Naffco (for different blocks) |  | | 3 | Automatic Fire Extinguisher Multi 6 Kg.  (For Kitchen) |  | | 4 | Naffco Fire Extinguisher CO2 25 Kg Trolley |  | | 5 | Fire Blanket (for different blocks) |  | |
| Sports equipment | Equipment’s and gadgets required for Basketball and Badminton for Facility |
| Play ground | Landscaping, Grassing and fixing of light pools for night visibility must be necessary |
| Water dispensers and refrigerators | Large size Water coolers and large size Refrigerators required for cafeteria and for staff |
| Communication system | Setup of telephone connection, high speed internet connection with long range routers are necessary for the facility |
| Walk through gates | Electronic walk-through gates and manual barriers are necessary for facility |
| Software | Campus Management Information System (CMIS), Standard Library management software and Guard Petrol System |
| Subscription | Subscription of International journals access websites for research purpose. |
| Vehicles | 01 Car/Jeep (1,000 cc) for the Project Director/Team Lead  01 Car (800 cc) for senior faculty members  01 Pickup (1,000 cc) for administrative use  02 Motorbikes (70 cc) for office use. |
| Geyser’s | One Geyser’s 50 Gallon is required for Academic Block and Hostels |

***ANNEXURE “J”***

***Hiring of Staff***

**Project Staff**

The detail of available and minimum required teaching and non-teaching staff is provided below:

| **S. No.** | **Designation/ Post** | **Proposed** | **Sanctioned Position(s)** | **Working in the TTC-Kharan** | **To be filled by Authority** | **Required from Bidder** | **Qualification & Experience for Position required from Bidder** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Manager TTC-Kharan Operations / Principal |  | 1 |  |  |  | Graduate/ Post graduate (Preferably engineering graduate) with 12 to 15 years’ exp.  Having experience of supervising educational system. |
|  | Chief Instructor (Male) (Academic Coordinator) |  | 1 |  |  |  | Minimum Qualification: Graduate/Post graduate  At least 10 years of professional experience in the relevant industry.  Advance courses and other professional development certification /diploma in the relevant field.  MS. Office IT / Excel /word/power point  Good spoken and written English Language |
|  | Senior Instructor (Female) (Academic Coordinator) |  | 1 |  |  |  | Minimum Qualification: Graduate/Post graduate  At least 10 years of professional experience in the relevant industry.  Advance courses and other professional development certification /diploma in the relevant field.  MS. Office IT / Excel /word/power point  Good spoken and written English Language |
|  | Student Relationship Officer (Male) |  | 1 |  |  |  | Education : Graduate/Post graduate  Specialized knowledge : Public relations and Industrial Linkages  Skills Technical , computer with command on Excel  Abilities to work as independent officer of an organization  Other characteristics such as personal characteristics  Experience 3 year experience in the similar profession |
|  | Manager Industrial Linkage and coordinator |  | 1 |  |  |  | Education: Master’s in Business Administration/ Marketing or a equivalent degree for HEC recognized university  Experience: 4-6 years of relevant experience vocational training sector.  Age Bracket: 25-35 |
|  | Assistant Computer Operator |  | 1 |  |  |  | Education: Bachelor’s degree from reputable university  Experience: 2 - 3 years of proven data entry work experience  Age Bracket: 25 – 35 |
|  | Admn Officer (Male) |  | 1 |  |  |  | Education : BBA/ BCOM/ MBA  Specialized knowledge : Public Administration  Skills Book keeping and computer skills  Abilities can work as independent officer of an organization  Other characteristics such as personal characteristics  Experience 3 year experience in the similar profession |
|  | Admn Officer (Female) |  | 1 |  |  |  | Education : BBA/ BCOM/ MBA  Specialized knowledge : Public Administration  Skills Book keeping and computer skills  Abilities can work as independent officer of an organization  Other characteristics such as personal characteristics  Experience 3 year experience in the similar profession |
|  | Finance Officer |  | 1 |  |  |  | Education: CA Inter/ CAF/ACCA/MBA-Finance  Experience: 3-8 years of relevant industry. |
|  | Information Technology Administrator |  | 1 |  |  |  | Minimum Qualification: Graduate/Post graduate in the relevant field  At least 5-10 years of professional experience in the relevant industry.  Advance courses and other professional development certification /diploma in the relevant field.  MS. Office IT / Excel /word/power point  Good spoken and written English Language |
|  | Instructor |  | 22 |  |  |  | Minimum Qualification: Bachelors  Certification in the relevant trade  At least 5 years of professional experience in the relevant industry.  Advance courses and other professional development certification /diploma in the relevant trade.  MS. Office IT / Excel /word/power point  Good spoken and written English Language |
|  | Assistant Instructor |  | 22 |  |  |  | Minimum Qualification: Bachelors  Well Trained in the specified field  At least 1 - 2 years of professional experience in the relevant industry.  MS. Office IT / Excel /word/power point  Good spoken and written English Language Skills |
|  | Driver |  | 2 |  |  |  | Matriculation/Middle Level Education.  Minimum of one year driving experience within 50-mile radius.  Have good eye sight  Reliable and punctual with a dedicated professionalism to job and duties  Valid driver’s license and clean driving record  Physically able to reach, stretch, bend, and sit for long periods of time during daily routine  Must possess a positive and professional attitude |
|  | Security guard-Armed |  | 2 |  |  |  | Matriculation / F.A. / Intermediate  Retired army person, Experience in provider relations and recruitment.  Lifting, Surveillance Skills, Deals with Uncertainty, Judgment, Objectivity, Dependability, Emotional Control, Integrity, Safety Management, Professionalism, Reporting Skills.  Minimum 1 year experience in relative field |
|  | Security guard-Un Armed |  | 2 |  |  |  | Matriculation / F.A. / Intermediate  Experience in provider relations and recruitment.  Lifting, Surveillance Skills, Deals with Uncertainty, Judgment, Objectivity, Dependability, Emotional Control, Integrity, Safety Management, Professionalism, Reporting Skills.  Minimum 1 year experience in relative field |
|  | Lady searchers |  | 1 |  |  |  | Matriculation / F.A. / Intermediate  Experience in provider relations and recruitment.  Lifting, Surveillance Skills, Deals with Uncertainty, Judgment, Objectivity, Dependability, Emotional Control, Integrity, Safety Management, Professionalism, Reporting Skills.  Minimum 1 year experience in relative field |
|  | Gardener |  | 1 |  |  |  | Primary Level Education.  At least 1 year experience in relevant field |
|  | Office Boy |  | 3 |  |  |  | Primary Level Education.  Knowledge of office and management techniques.  Knowledge of customer service methods and concepts.  Good interaction abilities and professional personal display.  Should be sincere, sincere, and trustworthy. |
|  | Cleaner |  | 3 |  |  |  | Middle pass (preferred)  1 Years of Experience in relative field |
|  | Technicians |  | 1 |  |  |  | Middle pass (preferred)-2 year experience in relevant filed  Ability to perform a variety of general maintenance duties which include electrical, mechanical, carpentry, and construction in the maintenance and repair of college facilities and equipment. |

**Note:** The Bidder may visit and conduct survey of the TTC-Kharan before submitting their proposal.

**ANNEXURE ‘K’**

**ATTACHED AS EXCEL SHEET (ANNEXURE K.xlsx)**

**Volume III – Concession Agreement and Appendices**

***DRAFT OF THE MANAGEMENT CONTRACT***

1. The technical specifications for the Project, as finalised by the technical advisor, shall be provided in Volume 2 of the RFP. [↑](#footnote-ref-1)
2. The Bid Security amount should be finalised in consultation with the financial advisor. [↑](#footnote-ref-2)
3. The ratings should be finalised in consultation with the financial advisor. [↑](#footnote-ref-3)
4. *Ibid.* [↑](#footnote-ref-4)
5. For each project, it should be considered whether a maximum number of proposed contractors are to be specified in the bidding documents which a bidder may proposed. [↑](#footnote-ref-5)
6. To be confirmed by the financial advisor. [↑](#footnote-ref-6)
7. Information provided in the Data Sheet to be confirmed. [↑](#footnote-ref-7)
8. [↑](#footnote-ref-8)
9. [↑](#footnote-ref-9)
10. [↑](#footnote-ref-10)
11. [↑](#footnote-ref-11)
12. [↑](#footnote-ref-12)
13. [↑](#footnote-ref-13)
14. In case affidavit is executed outside Pakistan, verification by oath commissioner shall not be required. [↑](#footnote-ref-14)
15. In case of USD amount, exchange rate to be specified. [↑](#footnote-ref-15)
16. Period of bid validity to be inserted / confirmed. [↑](#footnote-ref-16)
17. Under the Laws of Pakistan (Qanun-e-Shahdat Order, 1984), the minimum witnessing requirement mandates the presence of either two males, or one male and two females to witness, for all instances of witnessing in financial matters. [↑](#footnote-ref-17)
18. Financial and Technical Teams to review and confirm the Basic Eligibility Criteria. [↑](#footnote-ref-18)
19. Relevant criteria to be inserted. [↑](#footnote-ref-19)