

Office of the Director
Directorate of Technical Education, Vocational and Industrial Training
Himachal Pradesh, Sunder Nagar

Invitation for Bids No.: 001/2020

Date: 22/06/2020

Loan/Grant No. and Title: Loan No.: 3573-IND/ Himachal Pradesh Skill Development Project.

Deadline for submission of bids: **24/07/2020** upto 12:30PM

Contract Package (NCB) No. and Title: Supply of the **Machinery & equipment's** for Industrial Training Institutes to enhance Technical and Vocational Skills among the youth of Himachal Pradesh under following packages/lots :

Package No.	Title
HPSPD-DOTE/01	Automobile and related equipment's: Lot-2.1: Engine & engine parts Lot-2.2: Chassis
HPSPD-DOTE/02-R2	Information Technology and related equipment's: Lot-4.1: CAD software Lot-4.2: MS office & Antivirus Software Lot-4.3: Designing software
HPSPD-DOTE/03	Electrical and Electronics related equipment's: Lot-2.1: AC & refrigeration items Lot-2.2: Audio-visual & communication devices Lot-2.3: Electronics items Lot-3.1: Metering & Measuring Devices Lot-3.2: Electrical Lab equipments
HPSPD-DOTE/04	Mechanical and related equipment's: Lot-2.1: Test equipment & hand operated moulding machines Lot-2.2: Microprocessor/ PLC controller based machines Lot-2.3: Extruding Machines Lot-2.4: Automatic forming & moulding machines Lot-2.5: Stretch Blow moulding machine

1. India has received a loan from the Asian Development Bank (ADB) towards the cost of "Himachal Pradesh Skill Development Project" and it intends to apply part of the proceeds of this financing to the payment under the Contract Package named above. Bidding is open to Bidders from eligible source countries of ADB.
2. The "Directorate of Technical Education, Vocational and Industrial Training, Himachal Pradesh", represented by the Director ("The Purchaser") invites sealed bids from eligible Bidders for the supply of various equipment's for Industrial Training Institutes.
3. **National Competitive Bidding** will be conducted in accordance with ADB's Single-stage: Two-envelope bidding procedure and is open to all Bidders from eligible countries as described in the Bidding Document.
4. Only eligible Bidders with the following key qualifications should participate in this bidding:

Package No.	Lot. No.	Contractual experience: Successful completion as main supplier within the last three (3) years, of at least One (1) contract with nature, and complexity similar to the scope of supply described in Section 6 (Schedule of Supply). The contract value of Lot is indicated below:	Average Annual Turnover: Minimum average annual turnover as indicated below calculated as total payments received by the Bidder for contracts completed or under execution over the last three (3) years. The Average Annual Turnover of the Lot is indicated below:
HPSDP-DOTE/01	Lot-2.1	INR 470.00 Lakhs	INR 1174.00 Lakhs
	Lot-2.2	INR 350.00 Lakhs	INR 874.00 Lakhs
HPSDP-DOTE/02-R2	Lot-4.1	INR 27.00 Lakhs	INR 68.00 Lakhs
	Lot-4.2	INR 12.00 Lakhs	INR 31.00 Lakhs
	Lot-4.3	INR 5.00 Lakhs	INR 13.00 Lakhs
HPSDP-DOTE/03	Lot-2.1	INR 32.00 Lakhs	INR 81.00 Lakhs
	Lot-2.2	INR 75.00 Lakhs	INR 187.00 Lakhs
	Lot-2.3	INR 55.00 Lakhs	INR 136.00 Lakhs
	Lot-3.1	INR 55.00 Lakhs	INR 138.00 Lakhs
	Lot-3.2	INR 109.00 Lakhs	INR 272.00 Lakhs
HPSDP-DOTE/04	Lot-2.1	INR 32.00 Lakhs	INR 80.00 Lakhs
	Lot-2.2	INR 84.00 Lakhs	INR 210.00 Lakhs
	Lot-2.3	INR 70.00 Lakhs	INR 174.00 Lakhs
	Lot-2.4	INR 20.00 Lakhs	INR 50.00 Lakhs
	Lot-2.5	INR 8.00 Lakhs	INR 20.00 Lakhs

However, for complete eligibility and qualification requirements, respective bid document should be referred.

5. To obtain further information and inspect the bidding documents, Bidders should contact:

Attention: **The Director,**

Directorate of Technical Education, Vocational and Industrial Training

Circular Road, Lalit Chowk, Sunder Nagar, District: Mandi, Himachal Pradesh

ZIP code: 175018 ; Country: India.

Telephone & Fax: 01907-266120; 266722, E-mail address: techedu-hp@nic.in

6. To purchase the bidding documents in English language, eligible Bidders should write or visit at the office of the Purchaser at address stated above and pay **a non-refundable fee of INR 10,000 for each bidding document** in the form of **Bank Demand Draft**.

In case of written request, the document will be sent by post and no liability will be accepted, for loss or late delivery.

The bidders who wish to receive the bidding document by post/courier shall have to pay **for each bidding document** an additional amount of INR 3,000/- for delivery within India or USD 250 for delivery outside India. The method of payment will be through bank demand draft payable at Sundernagar, Himachal Pradesh, India.

The eligible bidders may otherwise download the bidding document for English language from the website: <http://techedu.hp.gov.in/>, such bidders shall be required to submit **INR 10,000** with their bid **for each bidding document** in the form of **Bank demand draft** in the name of the Director Technical Education, HP, Sundernagar towards cost of bidding document.

7. Deliver your bid

- to the address above
- On or before the deadline: **24/07/2020 at 12:30 PM.**
- together with a Bid Security as described in the Bidding Document.

8. Bids will be opened on **24/07/2020 at 12:30 PM** in the presence of Bidders' representatives who choose to attend.

9. The Purchaser will not be responsible for any cost or expenses incurred by the bidder in connection with the preparation or delivery of bids.

-sd-
Director

Himachal Pradesh Skill Development Project

Loan No: 3573-IND

Procurement of Goods

Single-Stage: Two-Envelope Bidding Procedure

Bidding Document for Procurement of

Supply of **Electrical and Electronics related equipment's** for Industrial Training Institutes to enhance Technical and Vocational Skills among the youth of Himachal Pradesh (**HPSDP-DOTE/03**)

Lot-2.1: AC & refrigeration items

Lot-2.2: Audio-visual & communication devices

Lot-2.3: Electronics items

Lot-3.1: Metering & Measuring Devices

Lot-3.2: Electrical Lab equipment's

Volume 1 (Technical Bid)

Issued on: 22nd June 2020

Invitation for Bids No.: 001/2020

NCB No: HPSDP-DOTE/03

Purchaser: Directorate of Technical Education, Vocational and Industrial Training, Himachal Pradesh represented by The Director.

Country: India

Preface

This Bidding Document for Procurement of Goods has been prepared by "*Directorate of Technical Education, Vocational and Industrial Training, Himachal Pradesh*" and is based on the Standard Bidding Document for the Procurement of Goods issued by the Asian Development Bank, dated *December 2015*.

This document reflects the structure and the provisions of the Master Procurement Document for the Procurement of Goods, except where specific considerations within the Asian Development Bank have required a change.

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Section 1 - Instructions to Bidders

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A. General

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| 1. Scope of Bid | <p>1.1 In connection with the Invitation for Bids (IFB) indicated in the Bid Data Sheet (BDS), the Purchaser, as indicated in the BDS, issues this Bidding Document for the supply of Goods and Related Services incidental thereto as specified in Section 6 (Schedule of Supply). The name, identification, and number of lots of the international competitive bidding (ICB) are provided in the BDS.</p> <p>1.2 Throughout this Bidding Document,</p> <ul style="list-style-type: none"> (a) the term “in writing” means communicated in written form and delivered against receipt; (b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and (c) “day” means calendar day. |
| 2. Source of Funds | <p>2.1 The Borrower or Recipient (hereinafter called “Borrower”) indicated in the BDS has applied for or received financing (hereinafter called “funds”) from the Asian Development Bank (hereinafter called “ADB”) toward the cost of the project named in the BDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.</p> <p>2.2 Payments by ADB will be made only at the request of the Borrower and upon approval by ADB in accordance with the terms and conditions of the Financing Agreement between the Borrower and ADB (hereinafter called the Financing Agreement), and will be subject in all respects to the terms and conditions of that Financing Agreement. No party other than the Borrower shall derive any rights from the Financing Agreement or have any claim to the funds.</p> |
| 3. Fraud and Corruption | <p>3.1 ADB’s Anticorruption Policy requires Borrowers (including beneficiaries of ADB-financed activity), as well as Bidders, Suppliers, and Contractors under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB</p> <ul style="list-style-type: none"> (a) defines, for the purposes of this provision, the terms set forth below as follows: <ul style="list-style-type: none"> (i) “corrupt practice” means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party; (ii) “fraudulent practice” means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation; (iii) “coercive practice” means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the |

- actions of a party;
- (iv) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;
 - (v) "obstructive practice" means (a) deliberately destroying, falsifying, altering, or concealing of evidence material to an ADB investigation; (b) making false statements to investigators in order to materially impede an ADB investigation; (c) failing to comply with requests to provide information, documents or records in connection with an Office of Anticorruption and Integrity (OAI) investigation; (d) threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or (e) materially impeding ADB's contractual rights of audit or access to information; and
 - (vi) "integrity violation" is any act which violates ADB's Anticorruption Policy, including (i) to (v) above and the following: abuse, conflict of interest, violations of ADB sanctions, retaliation against whistleblowers or witnesses, and other violations of ADB's Anticorruption Policy, including failure to adhere to the highest ethical standard.
- (b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract;
 - (c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation;
 - (d) will impose remedial actions on a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate¹ in ADB-financed, administered, or supported activities or to benefit from an ADB-financed, administered, or supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations; and
 - (e) will have the right to require that a provision be included in bidding documents and in contracts financed by ADB, requiring Bidders, suppliers and contractors to permit ADB or its

¹ Whether as a Contractor, Subcontractor, Consultant, Manufacturer or Supplier, or Service Provider; or in any other capacity (different names are used depending on the particular Bidding Document).

representative to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by ADB.

- 3.2 Furthermore, Bidders shall be aware of the provision stated in Subclause 3.2 and Subclause 35.1 (c) of the General Conditions of Contract.

4. Eligible Bidders

- 4.1 A Bidder may be a natural person, private entity, or government-owned enterprise subject to ITB Sub-Clause 4.5-or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a joint venture. In the case of a joint venture,
- (a) all parties to the Joint Venture shall be jointly and severally liable; and
 - (b) the Joint Venture shall nominate a representative who shall have the authority to conduct all businesses for and on behalf of any and all the parties of the Joint Venture during the bidding process and, in the event the Joint Venture is awarded the Contract, during contract execution.
- 4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of an eligible country, in accordance with Section 5 (Eligible Countries). A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, or incorporated, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract, including related services.
- 4.3 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if any of, including but not limited to, the following apply:
- (a) they have controlling shareholders in common; or
 - (b) they receive or have received any direct or indirect subsidy from any of them; or
 - (c) they have the same legal representative for purposes of this Bid; or
 - (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to material information about or improperly influence the Bid of another Bidder, or influence the decisions of the Purchaser regarding this bidding process; or
 - (e) a Bidder participates in more than one bid in this bidding process, either individually or as a partner in a joint venture, except for alternative offers permitted under ITB 13. This will result in the disqualification of all Bids in which it is involved. However, subject to any finding of a conflict of interest in terms

of ITB 4.3 (a)–(d) above, this does not limit the participation of a Bidder as a subcontractor in another bid or of a firm as a subcontractor in more than one Bid; or

- (f) a Bidder or any affiliated entity, participated as a consultant in the preparation of the design or technical specifications of the goods and services that are the subject of the Bid; or
- (g) a Bidder was affiliated with a firm or entity that has been hired (or is proposed to be hired) by the Purchaser or Borrower as Project Manager for the contract.

4.4 A firm shall not be eligible to participate in any procurement activities under an ADB-financed, administered, or supported project while under temporary suspension or debarment by ADB pursuant to its Anticorruption Policy (see ITB 3), whether such debarment was directly imposed by ADB, or enforced by ADB pursuant to the Agreement for Mutual Enforcement of Debarment Decisions. A bid from a temporary suspended or debarred firm will be rejected.

4.5 Government-owned enterprises in the Purchaser's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not a dependent agency of the Purchaser.

4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.

4.7 Firms shall be excluded if by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country or any payments to persons or entities in that country.

5. Eligible Goods and Related Services

5.1 All Goods and Related Services to be supplied under the Contract and financed by ADB, shall have their country of origin in eligible source countries as defined in ITB 4.2, and all expenditures under the Contract will be limited to such Goods and Related Services.

5.2 For purposes of this clause, the term "goods" includes commodities, raw material, machinery, equipment, and industrial plants; and "related services" includes services such as insurance, transportation, installation, commissioning, training, and initial maintenance.

5.3 The term "country of origin" means the country where the goods have been mined, grown, cultivated, produced, manufactured, or processed; or through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its imported components.

5.4 The nationality of the firm that produces, assembles, distributes, or sells the goods shall not determine their origin.

B. Contents of Bidding Document

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| 6. | Sections of the Bidding Document | 6.1 | <p>The Bidding Document consist of Parts I, II, and III, which include all the sections indicated below, and should be read in conjunction with any addenda issued in accordance with ITB Clause 8.</p> <p>PART I Bidding Procedures</p> <ul style="list-style-type: none"> • Section 1 Instructions to Bidders (ITB) • Section 2 Bid Data Sheet (BDS) • Section 3 Evaluation and Qualification Criteria (EQC) • Section 4 Bidding Forms (BDF) • Section 5 Eligible Countries (ELC) <p>PART II Supply Requirements</p> <ul style="list-style-type: none"> • Section 6 Schedule of Supply (SS) <p>PART III Contract</p> <ul style="list-style-type: none"> • Section 7 General Conditions of Contract (GCC) • Section 8 Special Conditions of Contract (SCC) • Section 9 Contract Forms (COF) |
| | | 6.2 | <p>The Invitation for Bids (IFB) issued by the Purchaser is not part of the Bidding Document.</p> |
| | | 6.3 | <p>The Purchaser is not responsible for the completeness of the Bidding Document and its addenda, if they were not obtained directly from the source stated by the Purchaser in the IFB.</p> |
| | | 6.4 | <p>The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document, may result in the rejection of the Bid.</p> |
| 7. | Clarification of Bidding Document | 7.1 | <p>A prospective Bidder requiring any clarification on the Bidding Document shall contact the Purchaser in writing at the Purchaser's address indicated in the BDS. The Purchaser will respond in writing to any request for clarification, provided that such request is received no later than 21 days prior to the deadline for submission of Bids. The Purchaser shall forward copies of its response to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Purchaser deem it necessary to amend the Bidding Document as a result of a clarification, it shall do so following the procedure under ITB 8 and ITB 24.2.</p> |
| 8. | Amendment of Bidding | 8.1 | <p>At any time prior to the deadline for submission of the Bids, the Purchaser may amend the Bidding Document by issuing addenda.</p> |

Document

- 8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document directly from the Purchaser in accordance with ITB 6.3.
- 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of the Bids, pursuant to ITB 24.2

C. Preparation of Bids

- 9. Cost of Bidding** 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Purchaser shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- 10. Language of Bid** 10.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.
- 11. Documents Comprising the Bid** 11.1 The Bid shall comprise two envelopes submitted simultaneously, one containing the Technical Bid and the other the Price Bid, both envelopes enclosed together in an outer single envelope.
- 11.2 The Technical Bid submitted by the Bidder shall comprise the following:
- (a) Technical Bid Submission Sheet;
 - (b) Bid Security or Bid-Securing Declaration, in accordance with ITB 21;
 - (c) alternative Technical Bid, if permissible, in accordance with ITB 13;
 - (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 22;
 - (e) documentary evidence in accordance with ITB 16, establishing the Bidder's eligibility to bid;
 - (f) documentary evidence in accordance with ITB 17, that the Goods and Related Services to be supplied by the Bidder are of eligible origin;
 - (g) documentary evidence in accordance with ITB 18 and ITB 32, that the Goods and Related Services conform to the Bidding Document;

- (h) documentary evidence in accordance with ITB 19, establishing the Bidder's qualifications to perform the contract if its Bid is accepted; and
 - (i) any other document required in the BDS.
- 11.3 The Price Bid submitted by the Bidder shall comprise the following:
 - (a) Price Bid Submission Sheet and the applicable Price Schedules, in accordance with ITB 12, ITB 14, and ITB 15;
 - (b) alternative Price Bid corresponding to the alternative Technical Bid, if permissible, in accordance with ITB 13; and
 - (c) any other document required in the BDS.
- 12. Bid Submission Sheets and Price Schedules**
 - 12.1 The Bidder shall submit the Technical Bid Submission Sheet and the Price Bid Submission Sheet using the form furnished in Section 4 (Bidding Forms). These forms must be completed without any alterations to their format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.
 - 12.2 The Bidder shall submit, as part of the Price Bid, the Price Schedules for Goods and Related Services, according to their origin as appropriate, using the forms furnished in Section 4 (Bidding Forms) and as required in the BDS.
- 13. Alternative Bids**
 - 13.1 Unless otherwise indicated in the BDS, alternative Bids shall not be considered.
- 14. Bid Prices and Discounts**
 - 14.1 The prices and discounts quoted by the Bidder in the Price Bid Submission Sheet and in the Price Schedules shall conform to the requirements specified below.
 - 14.2 All items in the Schedule of Supply must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Items not listed in the Price Schedule shall be assumed not to be included in the Bid, and provided that the Bid is substantially responsive, the corresponding adjustment shall be applied in accordance with ITB 33.3.
 - 14.3 The price to be quoted in the Price Bid Submission Sheet shall be the total price of the Bid excluding any discounts offered. Absence of the total bid price in the Price Bid Submission Sheet may result in the rejection of the Bid.
 - 14.4 The Bidder shall quote discounts and the methodology for their application in the Price Bid Submission Sheet.
 - 14.5 The terms EXW, CIF, CIP, and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce, at the date of the Invitation for Bids or as specified in the BDS.
 - 14.6 Prices proposed in the Price Schedule Forms for Goods and Related Services, shall be disaggregated, when appropriate, as indicated in

this sub-clause. This disaggregation shall be solely for the purpose of facilitating the comparison of Bids by the Purchaser. This shall not in any way limit the Purchaser's right to contract on any of the terms offered

- (a) for Goods offered from within the Purchaser's country:
 - (i) the price of the goods quoted EXW (ex works, ex factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of goods quoted ex works or ex factory, or on the previously imported goods of foreign origin quoted ex warehouse, ex showroom, or off-the-shelf;
 - (ii) sales tax and all other taxes applicable in the Purchaser's country and payable on the Goods if the Contract is awarded to the Bidder; and
 - (iii) the total price for the item.
- (b) for Goods offered from outside the Purchaser's country:
 - (i) the price of the goods quoted CIF (named port of destination), or CIP (border point), or CIP (named place of destination), in the Purchaser's country, as specified in the BDS;
 - (ii) the price of the goods quoted FOB port of shipment (or FCA, as the case may be), if specified in the BDS; and
 - (iii) the total price for the item.
- (c) for Related Services whenever such are specified in the Schedule of Supply:
 - (i) the local currency cost component of each item comprising the Related Services; and
 - (ii) the foreign currency cost component of each item comprising the Related Services, inclusive of all customs duties, sales and other similar taxes applicable in the Purchaser's country, payable on the Related Services, if the Contract is awarded to the Bidder.

14.7 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, unless otherwise specified in the BDS. A Bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected, pursuant to ITB 32. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, but a Bid submitted with no indexes identified in the Tables of Adjustment Data, price adjustment shall be treated as zero for the purpose of price adjustment during the performance of the contract.

14.8 If so indicated in ITB 1.1, Bids are being invited for individual contracts (lots) or for any combination of contracts (packages). Unless otherwise indicated in the BDS, prices quoted shall correspond to 100% of the items specified for each lot and to 100%

of the quantities specified for each item of a lot. Bidders wishing to offer any price discount for the award of more than one Contract shall specify in their Price Bids the price discount applicable to each package, or alternatively, to individual Contracts within the package. Price discounts shall be submitted in accordance with ITB 14.4, provided the Price Bids for all lots are submitted and opened at the same time.

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| 15. Currencies of Bid | 15.1 | <p>Bid prices shall be quoted in the following currencies:</p> <ul style="list-style-type: none"> (a) Bidders may express their bid price in any fully convertible currency. If a Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly but shall use no more than three currencies in addition to the currency of the Purchaser's country. (b) If some of the expenditures for the Related Services are to be incurred in the borrowing country, such expenditures should be expressed in the Bid and will be payable in the Purchaser's currency. |
| 16. Documents Establishing the Eligibility of the Bidder | 16.1 | <p>To establish their eligibility in accordance with ITB 4, Bidders shall</p> <ul style="list-style-type: none"> (a) complete the eligibility declarations in the Bid Submission Sheet, included in Section 4 (Bidding Forms); and (b) if the Bidder is an existing or intended Joint Venture in accordance with ITB 4.1, submit a copy of the Joint Venture Agreement, or a letter of intent to enter into such an Agreement. The respective document shall be signed by all legally authorized signatories of all the parties to the existing or intended Joint Venture, as appropriate. |
| 17. Documents Establishing the Eligibility of Goods and Related Services | 17.1 | <p>To establish the eligibility of the Goods and Related Services, in accordance with ITB 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms included in Section 4 (Bidding Forms).</p> |
| 18. Documents Establishing the Conformity of the Goods and Related Services to the Bidding Document | 18.1 | <p>To establish the conformity of the Goods and Related Services to the Bidding Document, the Bidder shall furnish as part of its Technical Bid documentary evidence that the Goods and Related Services conform to the requirements specified in Section 6 (Schedule of Supply).</p> |
| | 18.2 | <p>The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item-by-item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to those requirements, and if applicable, a statement of deviations and exceptions to the provisions of Section 6 (Schedule of Supply).</p> |

- 18.3 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in Section 6 (Schedule of Supply), are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in Section 6 (Schedule of Supply).
- 19. Documents Establishing the Qualifications of the Bidder**
- 19.1 To establish its qualifications to perform the Contract, the Bidder shall submit as part of its Technical Proposal the evidence indicated for each qualification criteria specified in Section 3 (Evaluation and Qualification Criteria).
- 19.2 If so required in the BDS, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization using the form included in Section 4 (Bidding Forms) to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in the Purchaser's country.
- 19.3 If so required in the BDS, a Bidder that does not conduct business within the Purchaser's country shall submit evidence that it will be represented by an agent in the country equipped and able to carry out the Supplier's maintenance, repair, and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications.
- 20. Period of Validity of Bids**
- 20.1 Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Purchaser. A Bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.
- 20.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 21, it shall also be extended 28 days beyond the deadline of the extended bid validity period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid.
- 21. Bid Security/ Bid-Securing Declaration**
- 21.1 Unless otherwise specified in the BDS, the Bidder shall furnish as part of its Bid, in original form, either a Bid-Securing Declaration or a bid security as specified in the BDS. In the case of a bid security, the amount and currency shall be as specified in the BDS.
- 21.2 If a Bid-Securing Declaration is required pursuant to ITB 21.1, it shall use the form included in Section 4 (Bidding Forms). The Purchaser will declare a Bidder ineligible to be awarded a Contract for a specified period of time, as indicated in the BDS, if a Bid-Securing Declaration is executed.
- 21.3 If a bid security is specified pursuant to ITB 21.1, the bid security

shall be, at the Bidder's option, in any of the following forms:

- (a) an unconditional bank guarantee,
- (b) an irrevocable letter of credit, or
- (c) a cashier's or certified check,

all from a reputable source from an eligible country as described in Section 5 (Eligible Countries). In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section 4 (Bidding Forms), or another form acceptable to the Purchaser. The form must include the complete name of the Bidder. The bid security shall be valid for 28 days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 20.2.

- 21.4 Unless otherwise specified in the BDS, any bid not accompanied by a substantially compliant bid security or Bid-Securing Declaration, if one is required in accordance with ITB 21.1, shall be rejected by the Purchaser as nonresponsive.
- 21.5 If a bid security is specified pursuant to ITB 21.1, the bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's furnishing of the performance security pursuant to ITB 46.
- 21.6 If a bid security is specified pursuant to ITB 21.1, the bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract Agreement and furnished the required performance security.
- 21.7 The bid security may be forfeited or the Bid-Securing Declaration executed,
 - (a) if a Bidder withdraws its bid during the period of bid validity as specified by the Bidder on the Technical Bid Submission Sheet, except as provided in ITB 20.2; or
 - (b) if the successful Bidder fails to
 - (i) sign the Contract Agreement in accordance with ITB 45;
 - (ii) furnish a performance security in accordance with ITB 46; or
 - (iii) accept the arithmetical corrections of its bid in accordance with ITB 36.
- 21.8 The bid security or the Bid-Securing Declaration of a Joint Venture shall be in the name of the Joint Venture that submits the bid. If the Joint Venture has not been legally constituted at the time of bidding, the bid security or the Bid-Securing Declaration shall be in the names of all future partners as named in the letter of intent mentioned in ITB 4.1.

22. Format and Signing of Bid

- 22.1 The Bidder shall prepare one original set of the Technical Bid and one original set of the Price Bid as described in ITB 11 and clearly mark each "ORIGINAL - TECHNICAL BID" and "ORIGINAL - PRICE BID". In addition, the Bidder shall submit copies of the Technical Bid and the Price Bid, in the number specified in the BDS and clearly mark them "COPY NO... - TECHNICAL BID" and "COPY NO.... - PRICE BID". In the event of any discrepancy between the original and the copies, the original shall prevail.
- 22.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid, except for unamended printed literature, shall be signed or initialled by the person signing the Bid. If a Bidder submits a deficient authorization, the Bid shall not be rejected in the first instance. The Purchaser shall request the Bidder to submit an acceptable authorization within the number of days as specified in the BDS. Failure to provide an acceptable authorization within the prescribed period of receiving such a request shall cause the rejection of the Bid.
- 22.3 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialled by the person signing the bid.

D. Submission and Opening of Bids**23. Sealing and Marking of Bids**

- 23.1 Bidders may submit their bids by mail or by hand. When so specified in the BDS, Bidders shall have the option of submitting their bids electronically. Procedures for submission, sealing and marking are as follows:
- (a) Bidders submitting Bids by mail or by hand shall enclose the original of the Technical Bid, the original of the Price Bid, and each copy of the Technical Bid and each copy of the Price Bid, including alternative Bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL - TECHNICAL BID", "ORIGINAL - PRICE BID" and "COPY NO... - TECHNICAL BID" and "COPY NO.... - PRICE BID", as appropriate. These envelopes containing the original and the copies shall then be enclosed in one single envelope. The rest of the procedure shall be in accordance with ITB 23.2 to ITB 23.6.
 - (b) Bidders submitting Bids electronically shall follow the electronic bid submission procedures specified in the BDS.

- 23.2 The inner and outer envelopes shall
- (a) bear the name and address of the Bidder;
 - (b) be addressed to the Purchaser in accordance with ITB 24.1; and
 - (c) bear the specific identification of this bidding process indicated in the BDS.
- 23.3 The outer envelopes and the inner envelopes containing the Technical Bids shall bear a warning not to open before the time and date for the opening of Technical Bids, in accordance with ITB 27.1.
- 23.4 The inner envelopes containing the Price Bids shall bear a warning not to open until advised by the Purchaser in accordance with ITB 27.2.
- 23.5 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the Bid.
- 23.6 Alternative Bids, if permissible in accordance with ITB 13, shall be prepared, sealed, marked, and delivered in accordance with the provisions of ITB 22 and ITB 23, with the inner envelopes marked in addition "ALTERNATIVE NO...." as appropriate
- 24. Deadline for Submission of Bids**
- 24.1 Bids must be received by the Purchaser at the address and no later than the date and time indicated in the BDS.
- 24.2 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Document in accordance with ITB 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
- 25. Late Bids**
- 25.1 The Purchaser shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 24. Any Bid received by the Purchaser after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.
- 26. Withdrawal, Substitution, and Modification of Bids**
- 26.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 22.2 (except that withdrawal notices do not require copies). The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be
- (a) prepared and submitted in accordance with ITB 22 and ITB 23 (except that withdrawal notices do not require copies), and in addition, the respective inner and outer envelopes shall be clearly marked "Withdrawal," "Substitution," "Modification;" and

- (b) received by the Purchaser prior to the deadline prescribed for submission of bids, in accordance with ITB 24.

26.2 Bids requested to be withdrawn in accordance with ITB 26.1 shall be returned unopened to the Bidders.

26.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Technical Bid Submission Sheet or any extension thereof.

27. Bid Opening

27.1 The Purchaser shall open the Technical Bids in public at the address, on the date, and time specified in the BDS in the presence of Bidder's designated representatives and anyone who choose to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 23.1, shall be as specified in the BDS.

27.2 The Price Bids will remain unopened and will be held in custody of the Purchaser until the time of opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Purchaser. If the Technical Bid and the Price Bid are submitted together in one envelope, the Purchaser may reject the Bid. Alternatively, the Price Bid may be immediately resealed for later evaluation.

27.3 First, envelopes marked "WITHDRAWAL" shall be opened, read out, and recorded, and the envelope containing the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out and recorded at bid opening.

27.4 Next, outer envelopes marked "SUBSTITUTION" shall be opened. The inner envelopes containing the Substitution Technical Bid and/or Substitution Price Bid shall be exchanged for the corresponding envelopes being substituted, which are to be returned to the Bidder unopened. Only the Substitution Technical Bid, if any, shall be opened, read out, and recorded. Substitution Price Bid will remain unopened in accordance with ITB 27.2. No envelope shall be substituted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out and recorded at bid opening.

27.5 Next, outer envelopes marked "MODIFICATION" shall be opened. No Technical Bid and/or Price Bid shall be modified unless the corresponding modification notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Bids. Only the Technical Bids, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Price Bids, both Original as well as Modification, will remain unopened in accordance with ITB 27.2.

27.6 All other envelopes holding the Technical Bids shall be opened one

at a time, and the following read out and recorded

- (a) the name of the Bidder;
- (b) whether there is a modification or substitution;
- (c) the presence of a bid security or a Bid-Securing Declaration, if required; and
- (d) any other details as the Purchaser may consider appropriate.

Only Technical Bids and alternative Technical Bids read out and recorded at bid opening shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Technical Bid Submission Sheet are to be initialed by at least three representatives of the Purchaser attending the bid opening. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with ITB 25.1.

- 27.7 The Purchaser shall prepare a record of the opening of Technical Bids that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, modification, or alternative offer; and the presence or absence of a bid security or a Bid-Securing Declaration, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.
- 27.8 At the end of the evaluation of the Technical Bids, the Purchaser will invite bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend the opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Purchaser. Bidders shall be given reasonable notice of the opening of Price Bids.
- 27.9 The Purchaser will notify Bidders in writing who have been rejected on the grounds of being substantially nonresponsive to the requirements of the Bidding Document and return their Price Bids unopened.
- 27.10 The Purchaser shall conduct the opening of Price Bids of all Bidders who submitted substantially responsive Technical Bids, in the presence of Bidders' representatives who choose to attend at the address, on the date, and time specified by the Purchaser. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.
- 27.11 All envelopes containing Price Bids shall be opened one at a time and the following read out and recorded
 - (a) the name of the Bidder;
 - (b) whether there is a modification or substitution;
 - (c) the Bid Prices, including any discounts and alternative offers;

and

- (d) any other details as the Purchaser may consider appropriate.

Only Price Bids, discounts, and alternative offers read out and recorded during the opening of Price Bids shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Price Bid Submission Sheet and Price Schedules are to be initialed by at least three representatives of the Employer attending bid the opening. No Bid shall be rejected at the opening of Price Bids.

- 27.12 The Purchaser shall prepare a record of the opening of Price Bids that shall include, as a minimum: the name of the Bidder, the Bid Price (per lot if applicable), any discounts, and alternative offers. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted bids on time, and posted online when electronic bidding is permitted.

E. Evaluation and Comparison of Bids

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| 28. Confidentiality | <p>28.1 Information relating to the examination, evaluation, comparison, and qualification of Bids, and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on the Contract award is communicated to all Bidders.</p> <p>28.2 Any attempt by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and postqualification of the Bids or Contract award decisions may result in the rejection of its Bid.</p> <p>28.3 Notwithstanding ITB 28.2, from the time of opening the Technical Bids to the time of Contract award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.</p> |
| 29. Clarification of Bids | <p>29.1 To assist in the examination, evaluation, comparison and post-qualification of the Bids, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder with regard to its Bid and that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing. No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the evaluation of the Price Bids, in accordance with ITB 36.</p> <p>29.2 If a Bidder does not provide clarifications on its Bid by the date and time set in the Purchaser's request for clarification, its bid may be rejected.</p> |

- 30. Deviations, Reservations, and Omissions**
- 30.1 During the evaluation of Bids, the following definitions apply:
- (a) "Deviation" is a departure from the requirements specified in the Bidding Document;
 - (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and
 - (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.
- 31. Examination of Technical Bids**
- 31.1 The Purchaser shall examine the Technical Bid to confirm that all documents and technical documentation requested in ITB 11.4 have been provided, and to determine the completeness of each document submitted.
- 31.2 The Purchaser shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer shall be rejected:
- (a) Technical Bid Submission Sheet in accordance with ITB 12.1;
 - (b) written confirmation of authorization to commit the Bidder;
 - (c) bid security or Bid-Securing Declaration, if applicable; and
 - (d) Manufacturer's Authorization, if applicable.
- 32. Responsiveness of Technical Bid**
- 32.1 The Purchaser's determination of a Technical Bid's responsiveness is to be based on the contents of the Technical Bid itself, as defined in ITB 11.
- 32.2 A substantially responsive Technical Bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,
- (a) If accepted, would
 - (i) affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in Section 6 (Schedule of Supply); or
 - (ii) limits in any substantial way, inconsistent with the Bidding Document, the Purchaser's rights or the Bidder's obligations under the Contract; or
 - (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Technical Bids.
- 32.3 The Purchaser shall examine the technical aspects of the Bid in particular, to confirm that all requirements of Section 6 (Schedule of Supply) have been met without any material deviation, reservation, or omission.
- 32.4 If a Technical Bid is not substantially responsive to the Bidding Document, it shall be rejected by the Purchaser and may not

subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.

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| 33. Nonmaterial Nonconformities | 33.1 | Provided that a Technical Bid is substantially responsive, the Purchaser may waive nonconformities in the Bid that does not constitute a material deviation, reservation, or omission. |
| | 33.2 | Provided that a Technical Bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the Price Bid of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid. |
| | 33.3 | Provided that a Technical Bid is substantially responsive, the Purchaser shall rectify quantifiable nonmaterial nonconformities or omissions. To this effect, the Bid Price shall be adjusted during evaluation of Price Bids, for comparison purposes only, to reflect the price of the missing or non-conforming item or component. The adjustment shall be made using the method indicated in Section 3 (Evaluation and Qualification Criteria). |
| 34. Qualification of the Bidder | 34.1 | The Purchaser shall determine to its satisfaction during the evaluation of Technical Bids whether Bidders meets the qualifying criteria specified in Section 3 (Evaluation and Qualification Criteria). |
| | 34.2 | The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 19. |
| | 34.3 | An affirmative determination shall be a prerequisite for the opening and evaluation of a Bidder's Price Bid. A negative determination shall result into the disqualification of the Bid, in which event the Purchaser shall return the unopened Price Bid to the Bidder. |
| 35. Examination of Price Bids | 35.1 | Following the opening of Price Bids, the Purchaser shall examine the Price Bids to confirm that all documents and financial documentation requested in ITB 11.5 have been provided, and to determine the completeness of each document submitted. |
| | 35.2 | The Purchaser shall confirm that the following documents and information have been provided in the Price Bid. If any of these documents or information is missing, the offer shall be rejected: <ul style="list-style-type: none"> (a) Price Bid Submission Sheet in accordance with ITB 12.1; and (b) Price Schedules, in accordance with ITB 12, ITB 14, and ITB 15. |
| 36. Correction of Arithmetical Errors | 36.1 | During the evaluation of Price Bids, the Purchaser shall correct arithmetical errors on the following basis: <ul style="list-style-type: none"> (a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, |

- the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected.
- (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.
 - (c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.
- 36.2 If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be disqualified and its bid security may be forfeited, or its Bid-Securing Declaration executed.
- 37. Conversion to Single Currency**
- 37.1 For evaluation and comparison of Price Bids, the Purchaser shall convert all bid prices expressed in the amounts in various currencies into a single currency, using the selling exchange rates established by the source and on the date specified in the BDS.
- 38. Margin of Preference**
- 38.1 Unless otherwise specified in the BDS, a margin of preference shall not apply.
- 39. Evaluation of Price Bids**
- 39.1 The Purchaser shall use the criteria and methodologies indicated in this clause. No other criteria or methodology shall be permitted.
- 39.2 To evaluate a Price Bid, the Purchaser shall consider the following:
- (a) the bid price as quoted in accordance with ITB 14;
 - (b) price adjustment for correction of arithmetic errors in accordance with ITB 36.1;
 - (c) price adjustment due to discounts offered in accordance with ITB 14.4;
 - (d) price adjustment due to application of the evaluation criteria specified in Section 3 (Evaluation and Qualification Criteria). These criteria may include factors related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services which shall be expressed to the extent practicable in monetary terms to facilitate comparison of bids unless otherwise specified in Section 3; and
 - (e) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 37.
- 39.3 The Purchaser's evaluation of a bid will exclude and not take into account,
- (a) in the case of Goods offered from within the Purchaser's country, all sales tax and all other taxes, applicable in the Purchaser's country and payable on the Goods if the Contract

is awarded to the Bidder;

- (b) in the case of Goods offered from outside the Purchaser's country, all customs duties, sales tax, and other taxes, applicable in the Purchaser's country and payable on the Goods if the Contract is awarded to the Bidder; and
- (c) any allowance for price adjustment during the period of performance of the Contract, if provided in the Bid.

39.4 If this Bidding Document allows Bidders to quote separate prices for different lots (contracts), and the award to a single Bidder of multiple lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Price Bid Submission Sheet, is as specified in Section 3 (Evaluation and Qualification Criteria).

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| 40. Comparison of Bids | 40.1 | The Purchaser shall compare all substantially responsive Bids to determine the lowest evaluated bid, in accordance with ITB 39. |
| 41. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids | 41.1 | The Purchaser reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time prior to Contract award, without thereby incurring any liability to the Bidders. In case of annulment, all Bids submitted and specifically, bid securities, shall be promptly returned to the Bidders. |

F. Award of Contract

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| 42. Award Criteria | 42.1 | The Purchaser shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated Bid and is substantially responsive to the Bidding Document, provided further that the Bidder has remained qualified to perform the Contract satisfactorily. |
| | 42.2 | A Bid shall be rejected if the qualification criteria as specified in Section 3 (Evaluation and Qualification Criteria) are no longer met by the Bidder whose offer has been determined to be the lowest evaluated Bid. In this event the Purchaser shall proceed to the next lowest evaluated Bid to make a similar reassessment of that Bidder's capabilities to perform satisfactorily. |
| 43. Purchaser's Right to Vary Quantities at Time of Award | 43.1 | At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section 6 (Schedule of Supply), provided this does not exceed the percentages indicated in the BDS, and without any change in the unit prices or other terms and conditions of the Bid and the Bidding Document. |
| 44. Notification of Award | 44.1 | Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted. |
| | 44.2 | At the same time, the Purchaser shall also notify all other Bidders of the results of the bidding. The Purchaser will publish in an English language newspaper or well-known freely accessible website the |

results identifying the Bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of Bidders whose Bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. After publication of the award, unsuccessful Bidders may request in writing to the Purchaser for a debriefing seeking explanations on the grounds on which their Bids were not selected. The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after publication of contract award, requests a debriefing.

44.3 Until a formal Contract is prepared and executed, the notification of award shall constitute a binding Contract.

45. Signing of Contract

45.1 Promptly after notification, the Purchaser shall send to the successful Bidder the Agreement.

45.2 Within 28 days of receipt of the Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.

46. Performance Security

46.1 Within 28 days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the Performance Security in accordance with the GCC, using for that purpose the Performance Security Form included in Section 9 (Contract Forms), or another form acceptable to the Purchaser.

46.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security or execution of the Bid-Securing Declaration. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.

Section 2- Bid Data Sheet

A. General								
ITB 1.1	The number of the Invitation for Bids (IFB) is: 001/2020							
ITB 1.1	The Purchaser is: Directorate of Technical Education, Vocational and Industrial Training, Himachal Pradesh represented by The Director.							
ITB 1.1	<p>The name of the National competitive bidding (NCB) is: <i>Supply of Electrical and Electronics related equipment's for Industrial Training Institutes to enhance Technical and Vocational Skills among the youth of Himachal Pradesh;</i></p> <p>The identification number of the NCB is: HPSDP-DOTE/03</p> <p>Bids are being invited for individual contracts (Lots). Bidders can bid either one or more than one Lot and has to submit the Bid Security accordingly as specified against each Lot.</p> <p>The number and identification of Packages and Lots comprising this NCB is:</p> <p>HPSDP-DOTE/03 comprising of 5 lots:</p> <p>Lot-2.1: AC & refrigeration items</p> <p>Lot-2.2: Audio-visual & communication devices</p> <p>Lot-2.3: Electronics items</p> <p>Lot-3.1: Metering & Measuring Devices</p> <p>Lot-3.2: Electrical Lab equipment's</p> <table><tr><th>S.no</th><th>Package No.</th><th>Lot</th></tr><tr><td>1</td><td>HPSDP-DOTE/03 Supply of Electrical and Electronics related equipment's.</td><td>Lot-2.1: AC & refrigeration items Lot-2.2: Audio-visual & communication devices Lot-2.3: Electronics items Lot-3.1: Metering & Measuring Devices Lot-3.2: Electrical Lab equipment's</td></tr></table>		S.no	Package No.	Lot	1	HPSDP-DOTE/03 Supply of Electrical and Electronics related equipment's.	Lot-2.1: AC & refrigeration items Lot-2.2: Audio-visual & communication devices Lot-2.3: Electronics items Lot-3.1: Metering & Measuring Devices Lot-3.2: Electrical Lab equipment's
S.no	Package No.	Lot						
1	HPSDP-DOTE/03 Supply of Electrical and Electronics related equipment's.	Lot-2.1: AC & refrigeration items Lot-2.2: Audio-visual & communication devices Lot-2.3: Electronics items Lot-3.1: Metering & Measuring Devices Lot-3.2: Electrical Lab equipment's						
ITB 2.1	The Borrower is: India							
ITB 2.1	<p>The name of the Project is: Himachal Pradesh Skill Development Project.</p> <p>Loan No: 3573-IND</p>							

B. Contents of Bidding Document	
ITB 7.1	<p>For <u>clarification purposes</u> only, the Purchaser's address is: Attention: The Director, Technical Education, Vocational and Industrial Training Circular Road, City: Sunder Nagar, District: Mandi Himachal Pradesh, ZIP code: 175018, Country: India Telephone & Fax: 01907-266120; 266722 E-mail address: techedu-hp@nic.in</p> <p>A pre-bid meeting shall be held on 3rd July 2020 at 11:30 AM in the following location: Conference Hall 1st Floor, Directorate of Technical Education, Vocational and Industrial Training Circular Road, City: Sunder Nagar, District: Mandi, Himachal Pradesh, ZIP code: 175018, Country: India Telephone& Fax: 01907-266120; 266722 E-mail address: techedu-hp@nic.in</p> <p>Notwithstanding the provisions of ITB 7.1, the Employer shall only upload the Clarifications on the bidding document on the freely accessible website : http://techedu.hp.gov.in/ instead of forwarding the copies to the bidders. Bidders are requested to keep themselves updated by regular checking.</p>
ITB 8.2	<p>The subclause 8.2 in its entirety stands replaced with: "Any addendum issued shall be a part of the bidding document. The addendum shall only be uploaded on the freely accessible website: http://techedu.hp.gov.in/ instead of forwarding the copies to the bidders. Bidders are requested to keep themselves updated by regular checking.</p>

C. Preparation of Bids	
ITB 10.1	The language of the Bid is: English
ITB 11.2 (i)	<p>The Bidder shall submit with its Technical Bid, the following additional documents:</p> <ol style="list-style-type: none"> 1. Printed catalogues, if any, with detailed technical information of the offered goods/equipment. 2. The bidder or each member of Joint Venture/ Intended Joint Venture as the case may be, shall submit their PAN No. (Permanent Account Number) issued by the Department of Income Tax, Government of India with the photocopy of the PAN card. <p>Should the bidder or each/any member of Joint Venture/ Intended Joint Venture have not been issued with such PAN No., the same shall be submitted before signing the Contract.</p> <ol style="list-style-type: none"> 3. Evidence of Enlistment of competent authority in Appropriate Class valid at the time of tender. 4. Sales tax/GST registration certificate. 5. If the bid or the Joint Venture Agreement/ Intent to enter into Joint Venture as the case may be, is signed by a person who is retired or relieved from the Government organization as a Gazetted or Non-Gazetted Officer within a period of two years preceding the deadline for the Bid submission, the bidder shall also submit a permission obtained from the organization last served by such person, allowing the person to do so.
ITB 11.3 (c)	The Bidder shall submit with its Price Bid the following additional documents: <i>Nil</i>
ITB 12.2	The units and rates in figures entered into the Price Schedules should be type written or if written by hand, must be in print form. Price Schedules not presented accordingly may be considered non-responsive.
ITB 13.1	Alternative Bids <u>shall not be</u> permitted
ITB 14.5	The Incoterms edition is: 2010

ITB 14.6 (b) (i)	For Goods offered from outside the Purchaser's country, the Bidder shall quote prices using the following Incoterms: CIP (Sundernagar Distt Mandi Himachal Pradesh, INDIA)
ITB 14.6 (b) (ii)	In addition to the above, the Bidder shall quote prices for Goods offered from outside the Purchaser's country using the following Incoterms: Not Applicable
ITB 14.7	The prices quoted by the Bidder shall be: <i>fixed during the Bidder's performance of the Contract and not subject to variation on any account.</i>
ITB 14.8	Prices quoted for each lot shall correspond at least to <u>100 %</u> of the items specified for each lot. Prices quoted for each item of a lot shall correspond at least to <u>100 %</u> of the quantities specified for this item of a lot.
ITB 15.1(a)	The text "Bidders may express their bid price in any fully convertible currency. If a Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly but shall use no more than three currencies in addition to the currency of the Purchaser's country." stands replaced with: "Bidders are required to express their bid price in Indian National Rupees (INR) only".
ITB 19.2	The Bidder shall include with its bid the Manufacturer's Authorization. <i>or</i> The Bidder shall submit documentation with its bid to substantiate that it is an authorized dealer, distributor or reseller of the goods being procured valid until the expiration of Bid validity.
ITB 19.3	The Bidder <u>shall be</u> required to include with its bid, evidence that it will be represented by an Agent in the Purchaser's country.
ITB 20.1	The bid validity period shall be <u>120</u> days.
ITB 21.1	The Bidder shall furnish a Bid Security lot wise as indicated below:

	S.no.	Lot no.	Description of lot	Bid Security
	1.	Lot-2.1	AC & refrigeration items	INR 81,000/-
	2.	Lot-2.2	Audio-visual & communication devices	INR 1,87,000/-
	3.	Lot-2.3	Electronics items	INR 1,36,000/-
	4.	Lot-3.1	Metering & Measuring Devices	INR 1,38,000/-
	5.	Lot-3.2	Electrical Lab equipment's	INR 2,73,000/-
For a bidder who participates in more than one Lot and in case the bid security amount is less, the purchaser has the right to consider the appropriate lot for evaluation.				
ITB 21.2	The ineligibility period will be: ITB 21.2 stands deleted.			
ITB 21.4	The provision in subclause 21.4 of Section-1-Instruction to bidders shall prevail.			
ITB 22.1	In addition to the original Bid, the number of copies is: <i>one</i>			
ITB 22.2	<p>The written confirmation of Authorization to sign on behalf of the Bidder shall consist of:</p> <p>A Power of Attorney (in original or duly notarized) stating the name, position held and signature of each person giving the authority, and the name, position and signature of the person authorized to sign the bid or Joint Venture Agreement/ Intent to Joint Venture as the case may be; or</p> <p>A Board resolution (original or duly notarized) in favour of the duly authorized representative of the bidder (or the member of the Joint Venture/ Intended Joint Venture) allowing him to sign the bid or Joint Venture Agreement/ Intent to Joint Venture as the case may be.</p>			
ITB 22.2	The bidder shall submit an acceptable authorization within 14 days.			

D. Submission and Opening of Bids	
ITB 23.1	Bidders <u>shall not</u> have the option of submitting their bids electronically.
ITB 23.1 (b)	If Bidders shall have the option of submitting their bids electronically, the electronic bidding submission procedures shall be: <u>Not Applicable</u>
ITB 23.2 (c)	The identification of this bidding process is: <i>HPSDP- DOTE/03</i>
ITB 24.1	For <u>bid submission purposes</u> only, the Purchaser's address is: Attention: The Director, Technical Education, Vocational and Industrial training Circular Road, City: Sunder Nagar, District: Mandi Himachal Pradesh, ZIP code: 175018 Country: India
ITB 24.1	The deadline for bid submission is: Date: 24 th July 2020 Time: 12:30 PM
ITB 27.1	The technical bid opening shall take place at: Office of the Director Directorate of Technical Education, Vocational and Industrial training Circular Road City: Sunder Nagar, District: Mandi Himachal Pradesh, ZIP code: 175018 Country: India Date: 24 th July 2020 Time: 12:30 PM
ITB 27.1	Electronic bid opening procedure shall be as follows: <u>Not Applicable</u>
ITB 27.6	The Technical Bid Submission Sheet shall be initialed by <u>Three</u> representatives of the Purchaser attending Technical

	Bid opening.
ITB 27.11	The Price Bid Submission Sheet and Price Schedules shall be initialed by <u>Three</u> representatives of the Purchaser attending Price Bid opening.
E. Evaluation and Comparison of Bids	
ITB 37.1	<p>The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: Indian National Rupees (INR)</p> <p>The source of the selling exchange rate shall be: <i>Not Applicable</i>; Bidders are required to express their bid price in Indian National Rupees (INR) only.</p> <p>The date for the selling exchange rate shall be: <i>Not Applicable</i></p>
ITB 38.1	A margin of preference <u>shall not</u> apply.
F. Award of Contract	
ITB 43.1	<p>The maximum percentage by which quantities may be increased is: 20%</p> <p>The maximum percentage by which quantities may be decreased is: 20%</p>

Section 3- Evaluation and Qualification Criteria

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1. Technical Evaluation

1.1 Technical Criteria

The Goods and Related Services offered by the bidder shall comply with specifications described in Section 6 (Schedule of Supply). The bids shall be for complete scope of work. Any bid for part scope of work or related services shall be held non-responsive and shall be rejected.

The cost of all quantifiable deviations or deficiencies from the technical requirements as specified in Section 6 (Schedule of Supply) shall be evaluated. The Purchaser will make its own assessment of the cost of these deviations or deficiencies for the purpose of ensuring fair comparison of Bids.

1.2 Margin of Preference

A Margin of Preference shall not apply.

1.3 Economic Criteria

1.3.1 Adjustment for Scope of Supply and Services

i) Local Handling and Inland Transport: Costs for inland transportation, insurance, and other incidental costs for delivery of the goods from the EXW premises, or port of entry, or border point to Project Site as defined in Section 6 (Schedule of Supply), shall be quoted in the Price Schedule for Related Services to Be Offered from Outside and Within the Purchaser's Country provided In Section 4 (Bidding Forms). These costs will be taken into account during bid evaluation. If a Bidder fails to include such costs in its Bid, then these costs will be estimated by the Purchaser on the basis of published tariffs by the rail or road transport agencies, insurance companies, or other appropriate sources, and added to EXW or CIF or CIP price.

ii) Minor Omissions and Missing Items: Pursuant to ITB 32.3, the cost of all quantifiable nonmaterial nonconformities or omissions from the contractual and commercial conditions shall be evaluated. The Purchaser will make its own assessment of the cost of any nonmaterial nonconformities and omissions for the purpose of ensuring fair comparison of Bids.

1.3.2 Adjustment for Deviations from the Terms of Payment

Deviations from the Terms of Payment as specified in Sub-Clause 16.1 of General Conditions of Contract (GCC) read with Special Conditions of Contract (SCC) are not permitted.

1.3.3 Adjustment for Deviations from the Delivery and Completion Schedule

Bid offering Delivery and Completion Schedule exceeding those specified in the Delivery and Completion Schedule in Section 6 shall be rejected.

1.3.4 Operation and Maintenance Cost

Operation and Maintenance Cost shall not have any impact on the Bid Price.

1.3.5 Spare Parts

Bidder shall supply spare parts as specified in the Schedule of Supply in Section 6.

1.3.6 Multiple Lots (Contracts)

If the Works are grouped in multiple (Lots) contracts and pursuant to ITB 39.4, the Purchaser shall evaluate and compare Bids on the basis of a contract, or a combination of contracts, or as a total of contracts in order to arrive at the least-cost combination for the Purchaser by taking into account discounts offered by Bidders in case of award of multiple contracts.

If a Bidder submits several successful (lowest evaluated substantially responsive) bids, the evaluation will also include an assessment of the Bidder's capacity to meet the aggregated qualifying requirements relating to Average annual turnover requirements for each package as specified in Section-6 list of Goods and related services.

S.no.	Package No.	Lot No.
1	HPSDP-DOTE/03 Supply of Electrical and Electronics related equipment's	Lot-2.1: AC & refrigeration items Lot-2.2: Audio-visual & communication devices Lot-2.3: Electronics items Lot-3.1: Metering & Measuring Devices Lot-3.2: Electrical Lab equipment's

2. Qualification Criteria

Bidders shall meet the qualification criteria set by the Purchaser on a pass-fail basis. Unless, specifically indicated otherwise, it is the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries or affiliates that must satisfy these criteria.

Part 1: Recommended Criteria

The following criteria are to establish the critical qualifications of the Bidder:

2.1 Eligibility

Eligibility for participation by Bidders in terms of nationality, conflict of interest, status as government-owned enterprise and sanctions either by ADB or other international development institutions.

2.2 Experience and Technical Capacity

2.2.1 Contractual Experience

One (1) contract successfully completed as main supplier within the last three (3) years. Value, nature, and complexity of these contracts should be comparable to the contract to be let.

2.3 Financial Situation

2.3.1 Historical Financial Performance

Soundness of the Bidder's financial position showing long-term profitability demonstrated through audited annual financial statements (balance sheet, income statement) for the last three (3) years.

As a minimum, the Bidder's net worth for the last three (3) year calculated as the difference between total assets and total liabilities should be positive.

2.3.2 Size of Operation (Average Annual Turnover)

Average annual turnover defined as the total payments received by the Bidder for contracts completed or under execution over the last three (3) years should not be less than

Lot-2.1: INR 81.00 Lakhs

Lot-2.2: INR 187.00 Lakhs

Lot-2.3: INR 136.00 Lakhs

Lot-3.1: INR 138.00 Lakhs

Lot-3.2: INR 272.00 Lakhs

The specific requirements for each of these criteria are provided in Part 2.

Part 2: Specific Requirements for the Criteria

The legal entity or entities comprising the Bidder, and not the Bidder's parent companies, subsidiaries, or affiliates, must satisfy the qualification criteria described below.

2.1 Eligibility

2.1.1 Eligibility

Criteria	Compliance Requirements			Documents
Requirement	Single Entity	Joint Venture		Submission Requirements
		All Partners Combined	Each Partner	

2.1.1.1 Nationality

Nationality in accordance with ITB Subclause 4.2.	must meet requirement	must meet requirement	must meet requirement	not applicable	Technical Bid Submission Sheet; Forms ELI – 1 and ELI - 2
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2.1.1.2 Conflict of Interest

No conflicts of interest in accordance with ITB Subclause 4.3.	must meet requirement	must meet requirement	must meet requirement	not applicable	Technical Bid Submission Sheet
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2.1.1.3 ADB Eligibility

Not having been declared ineligible by ADB, as described in ITB Subclause 4.4.	must meet requirement	must meet requirement	must meet requirement	not applicable	Technical Bid Submission Sheet
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2.1.1.4 Government-Owned Enterprise

Bidder required to meet conditions of ITB Subclause 4.5.	must meet requirement	must meet requirement	must meet requirement	not applicable	Technical Bid Submission Sheet; Forms ELI – 1 and ELI - 2
--	-----------------------	-----------------------	-----------------------	----------------	---

2.1.1.5 United Nations Eligibility

Not having been excluded by an act of compliance with a United Nations Security Council resolution in accordance with ITB Subclause 4.7.	must meet requirement	must meet requirement	must meet requirement	not applicable	Technical Bid Submission Sheet
--	-----------------------	-----------------------	-----------------------	----------------	--------------------------------

2.2 Experience and Technical Capacity

2.2.1 Contractual Experience

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
<p>Successful completion as main supplier within the last three (3) years, of at least One (1) contract with nature, and complexity similar to the scope of supply described in Section 6 (Schedule of Supply). The contract value lot wise is indicated below:</p> <p>a) INR 32.00 Lakhs for Lot-2.1 (AC & refrigeration items)</p> <p>b) INR 75.00 Lakhs for Lot-2.2 (Audio-visual & communication devices)</p> <p>c) INR 55.00 Lakhs for Lot-2.3 (Electronics items)</p> <p>d) INR 55.00 Lakhs for Lot-3.1 (Metering & Measuring Devices)</p> <p>e) INR 109.00 Lakhs for Lot-3.2 (Electrical Lab equipments)</p> <p>Bidder bidding for more than 1 (one) Lot has to submit the Work Experience accordingly.</p>	must meet requirement	must meet requirement	not applicable	not applicable	Form EXP - 1

- Document to be attached to substantiate the **successful completion** of work/contract for individual lot.

2.3 Financial Situation

2.3.1 Historical Financial Performance

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Submission of audited financial statements or, if not required by the law of the Bidder's country, other financial statements acceptable to the Purchaser, for the last three (3) years to demonstrate the current soundness of the Bidder's financial position. As a minimum, the Bidder's net worth for each of the last three (3) years calculated as the difference between total assets and total liabilities should be positive.	must meet requirement	not applicable	must meet requirement	not applicable	Form FIN - 1

2.3.2 Size of Operation (Average Annual Turnover)

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Minimum average annual turnover as indicated below calculated as total payments received by the Bidder for contracts completed or under execution over the last three (3) years. The Average Annual Turnover lot wise is indicated below: f) INR 81.00 Lakhs for Lot-2.1 (AC & refrigeration items) g) INR 187.00 Lakhs for Lot-2.2 (Audio-visual & communication devices) h) INR 136.00 Lakhs for Lot-2.3 (Electronics items) i) INR 138.00 Lakhs for Lot-3.1 (Metering & Measuring Devices) j) INR 272.00 Lakhs for Lot-3.2 (Electrical Lab equipment's) Bidder bidding for more than 1 (one) Lot has to submit the	must meet requirement	must meet requirement	must meet 25% of the requirement	must meet 40% of the requirement	Form FIN - 2

turnover accordingly. In case of lesser amount of turnover submitted then the lot applied, the purchaser has the right to consider the appropriate lot for evaluation.					
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Section 4- Bidding Forms

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Technical Bid Submission Sheet

-- Note --

The Bidder must accomplish the Technical Bid Submission Sheet on its letterhead clearly showing the bidder's complete name and address.

Date: _____

NCB No.: _____

Invitation for Bid No.: _____

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including the Addenda issued in accordance with Instructions to Bidders (ITB) Clause 8. _____
- (b) We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule specified in Section 6(Schedule of Supply), the following Goods and Related Services. _____
- (c) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of _____ days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (d) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries in accordance with ITB 4.2. _____.
- (e) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 4.3.
- (f) We are not participating, as a Bidder in more than one Bid in this bidding process in accordance with ITB 4.3(e), other than alternative offers in accordance with the Bidding Document.
- (g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the ADB, under the Purchaser's country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council.
- (h) [We are not a government-owned enterprise] / [We are a government-owned enterprise but meet the requirements of ITB 4.5].¹

¹

Use one of the two options as appropriate.

- (i) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

Form of Bid Security

[Insert bank's name and address of issuing branch or office]¹

Beneficiary: *[insert name and address of purchaser]*

Date:*[insert date]*

Bid Guarantee No.:*[insert number]*

We have been informed that *[insert name of the bidder]*. (hereinafter called "the Bidder") has submitted to you its bid dated *[insert date]*. (hereinafter called "the Bid") for the execution of *[insert name of contract]*. under Invitation for Bids No. *[insert IFB number]*. ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we *[insert name of bank]*. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount in figures]**[insert amount in words]*. upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Technical Bid Submission Sheet and Price Bid Submission Sheet; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity, (i) fails or refuses to execute the Contract Agreement; or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract Agreement signed by the Bidder and the Performance Security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder, or (ii) 28 days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758.

¹ All italicized text is for use in preparing this form and shall be deleted from the final document. Input of information to be completed by the bidder.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid Security for and on behalf of _____

Date _____

-- Note --

In case of a joint venture, the bid security must be in the name of all partners to the joint venture that submits the bid.

Manufacturer's Authorization

Date: *[insert date (as day, month, and year) of bid submission]*

NCB No.: *[insert number of bidding process]*

To:..... *[insert complete name of purchaser]*.....

WHEREAS

We *[insert complete name of manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having factories at *[insert full address of manufacturer's factories]*, do hereby authorize *[insert complete name of bidder]* to submit a bid the purpose of which is to provide the following goods, manufactured by us *[insert name and/or brief description of the goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions, with respect to the goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the manufacturer]*

Title: *[insert title]*

Duly authorized to sign this Authorization on behalf of: *[insert complete name of manufacturer]*

Dated on _____ day of _____, _____ *[insert date of signing]*

-- Note --

All italicized text is for use in preparing this form and shall be deleted from the final document. Input of information to be completed by the bidder.

The bidder shall require the manufacturer to fill out this form in accordance with the instructions indicated. This letter of authorization should be signed by a person with the proper authority to sign documents that are binding on the manufacturer. The bidder shall include it in its bid, if so indicated in the BDS.

Bidder's Qualification

To establish its qualifications to perform the contract in accordance with Section 3 (Evaluation and Qualification Criteria), the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

Form ELI - 1: Bidder's Information Sheet

Bidder's Information	
Bidder's legal name	
In case of Joint Venture, legal name of each partner	
Bidder's country of constitution	
Bidder's year of constitution	
Bidder's legal address in country of constitution	
Bidder's authorized representative (name, address, telephone numbers, fax numbers and e-mail address)	
<p>Attached are copies of the following documents:</p> <p><input type="checkbox"/> 1. In case of single entity, articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2</p> <p><input type="checkbox"/> 2. Authorization to represent the firm or Joint Venture named above, in accordance with ITB 22.2</p> <p><input type="checkbox"/> 3. In case of Joint Venture, letter of intent to form Joint Venture or Joint Venture agreement, in accordance with ITB 4.1</p> <p><input type="checkbox"/> 4. In case of a government-owned enterprise, any additional documents not covered under 1 above required to comply with ITB 4.5</p>	

Form ELI - 2: Joint Venture Information Sheet

Each member of the Joint Venture must fill out this form separately.

Joint Venture Information	
Bidder's legal name	
Joint Venture Partner's legal name	
Joint Venture Partner's country of constitution	
Joint Venture Partner's year of constitution	
Joint Venture Partner's legal address in country of constitution	
Joint Venture Partner's authorized representative information (name, address, telephone numbers, fax numbers and e-mail address)	
Attached are copies of the following documents: <ul style="list-style-type: none"> <input type="checkbox"/> 1. Articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2 <input type="checkbox"/> 2. Authorization to represent the firm named above, in accordance with ITB 22.2 <input type="checkbox"/> 3. In the case of government-owned enterprise, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5 	

Form EXP - 1: Contractual Experience

Fill out one (1) form per contract.

Contractual Experience		
Contract No of	Contract Identification	
Award Date	Completion Date	
Role in Contract	<input type="checkbox"/> Manufacturer <input type="checkbox"/> Supplier <input type="checkbox"/> Subcontractor	
Total Contract Amount		
If partner in a joint venture or subcontractor, specify participation of total contract amount	Percent of Total	Amount
Purchaser's name Address Telephone/Fax Number E-mail		
Description of the similarity in accordance with Criterion 2.2.1 of Section 3		
<p>Successful completion as main supplier within the last three (3) years, of at least One (1) contract with nature, and complexity similar to the scope of supply described in Section 6 (Schedule of Supply). The contract value Lot-wise is indicated below:</p> <p>a) INR 32.00 Lakhs for Lot-2.1 (AC & refrigeration items)</p> <p>b) INR 75.00 Lakhs for Lot-2.2 (Audio-visual & communication devices)</p> <p>c) INR 55.00 Lakhs for Lot-2.3 (Electronics items)</p> <p>d) INR 55.00 Lakhs for Lot-3.1 (Metering & Measuring Devices)</p> <p>e) INR 109.00 Lakhs for Lot-3.2 (Electrical Lab equipment's)</p>		

Form FIN - 1: Historical Financial Performance

Each Bidder must fill out this form.

In case of joint ventures, each Joint Venture Partner must fill out this form separately, and provide the Joint Venture Partner name below:

Joint Venture Partner: _____

Financial Data for Previous 3 Years [INR or \$ Equivalent]		
Year 1:	Year 2:	Year 3__:

Information from Balance Sheet

Total Assets (TA)			
Total Liabilities (TL)			
Net Worth = TA-TL			
Current Assets (CA)			
Current Liabilities (CL)			
Working Capital = CA - CL			

Most Recent Working Capital		To be obtained for most recent year and carried forward to FIN-3 Line 1; in case of joint ventures, to the corresponding Joint Venture Partner's FIN-3.
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Information from Income Statement

Total Revenues			
Profits Before Taxes			
Profits After Taxes			

- ☐ Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last **three (3)** years, as indicated above, complying with the following conditions:
- Unless otherwise required by Section 3 of the Bidding Documents, all such documents reflect the financial situation of the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries, or affiliates.
 - Historical financial statements must be audited by a certified accountant.
 - Historical financial statements must be complete, including all notes to the financial statements.
 - Historical financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Form FIN - 2: Size of Operation (Average Annual Turnover)

Each Bidder must fill out this form.

The information supplied should be the Annual Turnover of the Bidder or each member of a Joint Venture in terms of the amounts billed to clients for each year for work in progress or completed, converted to US Dollars at the specified exchange rate.

In case of joint ventures, each Joint Venture Partner must fill out this form separately, and provide the Joint Venture Partner name below:

Joint Venture Partner: _____

Annual Turnover Data for the Last 3 Years			
Year	Amount Currency	Exchange Rate	INR or \$ Equivalent
Average Annual Turnover (AAT)			

Section 5- Eligible Countries

This Section contains the list of eligible countries.

1. Afghanistan
2. Armenia
3. Australia
4. Austria
5. Azerbaijan
6. Bangladesh
7. Belgium
8. Bhutan
9. Brunei Darussalam
10. Cambodia
11. Canada
12. China, People's Republic of
13. Cook Islands
14. Denmark
15. Fiji
16. Finland
17. France
18. Georgia
19. Germany
20. Hong Kong, China
21. India
22. Indonesia
23. Ireland
24. Italy
25. Japan
26. Kazakhstan
27. Kiribati

28. Korea, Republic of
29. Kyrgyz Republic
30. Lao PDR
31. Luxembourg
32. Malaysia
33. Maldives
34. Marshall Islands
35. Micronesia, Federated States of
36. Mongolia
37. Myanmar
38. Nauru
39. Nepal
40. The Netherlands
41. New Zealand
42. Norway
43. Pakistan
44. Palau
45. Papua New Guinea
46. Philippines
47. Portugal
48. Samoa
49. Singapore
50. Solomon Islands
51. Spain
52. Sri Lanka
53. Sweden
54. Switzerland
55. Taipei, China
56. Tajikistan
57. Thailand
58. Timor-Leste

59. Tonga
60. Turkey
61. Turkmenistan
62. Tuvalu
63. United Kingdom
64. United States
65. Uzbekistan
66. Vanuatu
67. Viet Nam

Delivery Locations
Package: Electrical and Electronics Related Equipment's
Lot-2.1: AC & refrigeration items

S.No.	Proposed Name of Equipment/item	Govt. ITI Ghumarwin	Govt. ITI Bharari (Women)	Govt. ITI Swarghat	Govt. ITI Garnota	Govt. ITI Chhatrari	Govt. ITI Lambloo	Govt. ITI Baroh	Govt. ITI Dadasiba	Govt. ITI Daulatpur	Govt. ITI Garhjumla	Govt. ITI Nagrota Bagwan	Govt. ITI Gangath	Govt. ITI Manali at Patlikulh	Govt. ITI Mohin	Govt. ITI Thalaut	Govt. ITI Bhadrota	Govt. ITI Junga	Govt. ITI Sunni	Govt. ITI Jalog	Govt. ITI Chirgaon	Govt. ITI Nainidhar	Govt. ITI Kumarsain	Govt. ITI Maina	Govt. ITI Krishangarh	Govt. ITI Syri	Govt. ITI Pubowal	Govt. ITI Santoshgarh	Govt. ITI Tissa at Koti	Govt. ITI Sandhole	Govt. ITI Padhar	Govt. ITI Nerwa	Govt. ITI Pandoga	Quantity	Total Quantity	
1	Air Conditioner unit split 2 Ton capacity with Stabilizer	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	4	56	
		0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	2	0	0	2	0	0	0	1	0	0	12		
		0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	4		
		0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	6		
		0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	2	9		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
		0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0		8
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0		4
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0		2
2	Air conditioner split type 1.5 tons	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	10	10	
3	Deep freezer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	
4	A.C. Ceiling Fan and AC Table Fan	0	0	0	0	1	1	0	2	0	1	1	0	1	1	1	1	0	0	0	0	1	1	1	0	1	1	0	0	1	0	1	1	18	18	
5	Frost free refrigerator	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	2	
6	Washing Machine Semi Automatic	1	0	0	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	12	12	
7	Refrigerator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	
		0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
8	Air Conditioner unit split 1.5 Ton Inverter Technology	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	4	
9	Split A/C(Inverter technology)	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	4	
10	Three/four door refrigerator	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	3	

Delivery Locations
Package: Electrical and Electronics Related Equipment's
Lot-2.2: Audio-visual & communication devices

[illegible]

Delivery Locations
Package: Electrical and Electronics Related Equipment's
Lot-2.3: Electronics items

S.No.	Proposed Name of Equipment/item	Govt. ITI Ghumarwin	Govt. ITI Bharari (Women)	Govt. ITI Garmota	Govt. ITI Chhatrari	Govt. ITI Lambloo	Govt. ITI Sujapur Tihra	Govt. ITI Baroh	Govt. ITI Dadasiba	Govt. ITI Daulatpur	Govt. ITI Garhjumla	Govt. ITI Nagrota Bagwan	Govt. ITI Talwar at Lahru	Govt. ITI Gangath	Govt. ITI Manali at Patikulh	Govt. ITI Balh at Ner chowk	Govt. ITI Mohin	Govt. ITI Thalaut	Govt. ITI Bhadrota	Govt. ITI Junga	Govt. ITI Sumni	Govt. ITI Theog	Govt. ITI Jalog	Govt. ITI Dargi	Govt. ITI Chirgaon	Govt. ITI Nainidhar	Govt. ITI Kumarsain	Govt. ITI Maina	Govt. ITI Kaffota	Govt. ITI Krishangarh (Kuthar)	Govt. ITI Syri	Govt. ITI Pubawal	Govt. ITI Gagret at	Govt. ITI Santoshgarh	Govt. ITI Bharnour	Govt. ITI Tissa at Koti	Govt. ITI Sarhan	Govt. ITI Padhar	Govt. ITI Nerwa	Govt. ITI Pandoga	Quantity	
1	Calclator Desk Type	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	3		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	6			
		0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
2	Calculator Scientific (Non-programmable)	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
3	Digital Theodolite	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4	Digital weighing machine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
5	EMS machine	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
6	Total Station	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
7	Inverter with Battery	0	0	0	1	1	0	0	0	0	0	1	0	0	1	0	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	11
8	Scientific Calculator	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4
9	Location and navigational equipment set consisting of : • Hand held GPS units • Compass clinometers • Prismatic compass	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
10	Anemometers	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11	Windwatch- which incorporates a barometer, altimeter,temperature probe and anemometer in a singlehand held device. It can also measure wind-chill	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12	Spring scales	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
13	Calipers	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
14	UPS 5 KV Online with 30 Minutes back up for 20 PC	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	1	6
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
15	UPS 3 KVA with backup time minimum 30 minutes	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
		0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1	0	0	0	10		
16	UPS 2 KVA	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
		0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	
		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2		
17	UPS - 650VA	2	0	4	10	0	13	0	0	10	10	10	10	10	10	0	10	0	10	0	10	1	8	0	0	0	0	0	0	8	0	10	10	10	0	0	10	13	0	0	0	189
18	Voltage Stabilizer	0	0	0	1	0	0	0	0	1	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	10	
19	Maintenance Free Battery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	8
20	Battery storage lead acid 6V & 12 V	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5	0	10	
21	UPS - 650VA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11

32	A.C. Energy Meter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	2			
33	Clamp Meter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2			
34	Clamp Meter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	6	6				
35	Frequency Meter	0	0	0	2	0	0	0	1	1	1	0	2	0	1	1	0	2	1	0	0	0	1	0	0	0	1	1	1	0	0	1	0	0	0	2	1	20	20		
36	Glow plug tester	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6				
		0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
		0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
37	Hydrometer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	8	16	16				
38	Digital Wattmeter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4					
39	Kilo Wattmeter	0	0	0	2	2	0	0	1	2	1	0	2	0	2	0	1	1	2	0	0	1	0	0	0	1	1	1	0	0	2	0	0	0	0	2	1	27	27		
40	LCR meter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5	10	10			
41	LCR meter (Digital) Handheld	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	2			
42	Lux Meter	2	0	0	2	0	0	0	2	1	1	2	2	0	2	1	1	1	2	2	0	0	1	0	0	0	2	2	2	0	0	1	2	1	0	0	2	1	37	37	
43	Magnetic Flux	2	0	0	2	0	0	0	1	1	2	0	2	0	1	0	1	2	2	0	0	0	1	0	0	0	1	1	1	0	0	1	2	0	0	0	2	1	28	28	
44	Milli Ammeter (AC)	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	6	6			
45	Milli Ammeter (DC)	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	4			
46	Milli Voltmeter	1	0	2	2	2	0	0	2	0	1	0	2	0	2	1	0	1	1	2	0	0	1	0	0	0	1	1	1	0	0	1	2	2	0	0	2	1	33	33	
47	Analogue type Multimeter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5			
48	Digital Multimeter	0	0	0	0	5	0	5	0	0	0	5	0	0	1	0	0	5	0	0	3	5	5	0	3	0	0	0	0	0	0	0	3	0	4	0	0	44	59		
		0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5					
		0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5					
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5					
49	Ohm Meter; Portable box type	2	0	0	2	0	0	0	0	6	2	2	2	0	2	1	2	0	1	2	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2	0	30	30	
50	Ohm Meter; Series Type	2	0	0	2	0	0	0	0	6	2	2	2	0	2	1	2	0	1	2	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2	0	30	30
51	Ohm Meter; Shunt Type	2	0	0	2	0	0	0	0	6	2	2	2	0	2	1	2	0	1	2	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2	0	30	30
52	Electrode drying Oven	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2		
53	Phase Sequence Indicator	2	0	0	2	2	0	0	2	0	2	2	1	0	0	2	2	2	2	0	0	2	1	2	0	1	2	2	0	0	2	2	2	0	0	0	2	2	45	45	
54	Power Factor	0	0	0	2	2	0	0	1	0	2	2	2	0	1	2	1	2	2	2	2	0	2	0	2	0	1	2	1	0	0	2	2	2	0	0	2	2	41	41	
55	Power Meter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	2	0	6	6		
56	Power Meter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	9			
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2					
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	5					
57	Pressure gauge Digital type	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	6	6		
58	Room temperature thermometer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
59	Analog Tachometer	0	0	0	1	1	0	0	1	0	1	1	2	0	0	0	1	1	1	1	0	0	0	0	1	0	1	1	1	0	0	1	2	1	0	0	0	1	1	22	22
60	Digital Tachometer	0	0	0	1	0	0	0	0	0	1	1	1	0	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	13	13	
61	Tachometer digital, multi range	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2		
62	Thermometer Digital	1	0	0	1	0	0	0	1	0	1	1	1	0	1	1	1	1	4	0	0	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0	1	1	25	25	
63	Tong tester (clamp on multi meter)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	5		
64	Sensor thermometer (digital)	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	4	4		
65	Tong Tester	1	0	0	2	0	0	0	1	1	1	0	1	0	2	1	1	2	1	1	0	0	1	0	0	0	1	1	1	0	0	1	0	1	0	0	0	2	0	23	23
66	Voltmeter (0-1V), (0-10V), (0-30V) (table model)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	4	4	
67	Voltmeter 50V/DC	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5			
68	Voltmeter AC to 500 V	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2			
69	Voltmeter, AC/DC portable precision grade Digital Panel board type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	5			
70	Wattmeter AC/DC, 0 to 10 Kw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2			
71	Digital Wattmeter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1		
72	Conductivity meters- both low range and high range.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
73	pH meters	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
74	Temperature probes	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
75	Thermo-hygrometers	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0</																								

Delivery Locations																																									
Package: Electrical and Electronics Related Equipment's																																									
Lot-3.2: Electrical Lab equipments																																									
S.No.	Proposed Name of Equipment/Item	Govt. ITI Ghumardwin	Govt. ITI Bhairagi	Govt. ITI Sawai	Govt. ITI Garmota	Govt. ITI Chhatrari	Govt. ITI Lambloo	Govt. ITI Sujjanpur Tiha	Balainath	Govt. ITI Baran	Govt. ITI Daulatpur	Govt. ITI Garhjuma	Nagrota	Talwar at Talwar	Govt. ITI Gangathi	Manali at Manali	Govt. ITI Janga	Govt. ITI Shree Theog	Govt. ITI Jalog	Dargi	Govt. ITI Chirgaon	Govt. ITI Nainidhar	Govt. ITI Kumarsain	Govt. ITI Maina	Govt. ITI Karla	Govt. ITI Krishnagar	Govt. ITI Syri	Govt. ITI Pubawal	Govt. ITI Gagret at Gagret	Santosgarh Govt. ITI Bharnour	Govt. ITI Tissa at Koti	Govt. ITI Sandhole	Govt. ITI Padhar	Govt. ITI Arki	Govt. ITI Nerwa	Govt. ITI Pandoga	Quantity	Total Quantity			
1	0-30 V, 2 Amp, Regulated DC Power Supply	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	42	42	
2	3- Point D.C. Starter	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	10	10
3	4- Point D.C. Starter	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	1	1	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	1	0	11	11	
4	4 Point relays	0	0	0	0	0	0	2	2	0	0	2	0	0	0	2	2	0	0	2	0	2	0	0	0	0	2	0	2	2	2	0	0	0	0	0	0	0	0	30	32
		0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
5	5 Point relays	0	0	0	0	0	0	2	2	0	0	2	0	0	0	2	4	0	0	2	0	2	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0	0	32	34	
		0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
6	Electric Induction plate	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	1	1	1	0	0	1	1	0	0	0	0	0	0	0	1	0	10	10	
7	Resistance type AC starter	0	0	0	1	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	1	1	0	0	0	0	0	0	0	1	0	14	14	
8	DOL AC Starters	0	0	0	1	1	0	0	0	0	0	1	1	0	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	1	0	13	13	
9	Manual Star-Delta type AC starter	0	0	0	1	1	0	0	0	0	0	1	1	0	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	1	0	13	13	
10	Dimmer starter	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4	4		
11	DOL starter	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2		
12	Semi-Automatic Star-Delta type AC starter	0	0	0	1	1	0	0	0	0	0	1	1	0	0	1	0	0	1	0	1	0	1	1	1	0	0	1	1	1	0	0	0	0	0	0	1	0	14	14	
13	Fully Automatic Star-Delta type AC starter	0	0	0	1	1	0	0	0	0	0	1	1	0	0	1	0	0	1	0	1	0	1	1	1	0	0	1	1	1	0	0	0	0	0	0	1	0	14	14	
14	Star Delta AC Soft Staarter	0	0	0	1	1	1	0	0	0	0	1	1	0	0	1	0	0	1	0	1	0	1	1	1	0	0	1	1	1	0	0	0	0	0	0	1	1	16	16	
15	Auto Transformer starter	0	0	0	1	1	0	0	0	0	0	1	1	0	0	1	0	0	1	0	1	0	1	0	1	0	0	1	1	1	1	0	0	0	0	0	1	0	13	13	
16	Air blow gun with standard accessories	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	9	10	
		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
17	Automatic Electric Press	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2		
18	Autotransformer	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	7	7		
19	Electric Kettle	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	8	8	
20	Battery Charger	1	0	0	0	1	1	0	0	0	0	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	14	45		
		0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3			
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8			
		0	0	0	0	0	1	0	0	2	0	2	0	0	0	2	0	0	1	0	0	1	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	15		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
		0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
21	Battery charger	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
22	Battery terminal cleaner tool	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2		
23	Battery tester	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
24	BLDC motor with controller	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	4		
25	Electric Iron	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	7	7		
26	Ceiling fan coil Winding Machine	0	0	0	1	1	1	0	0	1	0	1	1	1	0	1	0	1	1	1	0	0	1	1	1	0	0	1	1	1	0	0	0	0	1	1	1	1	24	24	
27	Contactar & auxiliary contacts- 25Amps	2	0	0	0	2	0	0	2	0	2	2	2	0	2	2	2	2	2	0	2	0	1	0	0	0	2	2	1	0	0	0	1	2	0	0	0	2	36	36	
28	Contactar & auxiliary contacts- 32 Amps	0	0	0	0	2	0	0	2	0	1	0	2	0	2	0	2	2	2	0	0	0	1	0	0	0	1	0	1	0	0	0	1	2	0	0	0	2	24	24	
29	Copper bit soldering iron 0.25Kg	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8		
		0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4			
30	Core drill Machine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2			
31	Immersion Heater	0	0	0	0	1	0	0	0	1	0	1	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	10	10	
32	D.O.L Starter	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2			
33	Dc Power Supply	0	0	0	0	2	0	0	1	0	2	2	1	0	0	0	0	0	1	2	2	0	0	0	1	0	0	0	1	0	1	0	0	0	0	2	1	21	21		

[illegible]

Section 6- Schedule of supply

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1. List of Goods and Related Services

Package Name: Supply of Electrical and Electronics related equipment's for Industrial Training Institutes to enhance technical and vocational skills among the youth of Himachal Pradesh (HPSDP-DOTE/03)

The Goods and Related Services are grouped in Lots. Bidders shall have the option of submitting Bids for one, any combination, or all the lots. Lots shall not be further subdivided for the purpose of bidding. The bidder is required to supply the items as mentioned below for the respective Package and Lot(s) for which bidding.

Besides the supply of equipment, the bidder shall also carry-out required related services including unloading, installation & commissioning, after sales warranty & maintenance as well as the relevant handholding to the trainers of the ITI for proper usage and operations. The bidder shall do the necessary site preparation including electrical work, earthing, minor civil work, etc. as required for installation & commissioning of the equipment's/goods. While doing the site preparation the bidder shall ensure that aesthetics of the labs/workshops, IT Lab and the Library shall maintain /restored.

Lot No : 2.1							
Lot Name: AC & refrigeration items							
Item No	Name of Goods or Related Services	Description	Unit of Measure -ment	Quantity	Specification by the supplier (To be filled by the supplier)	Detailed information brochure attached at Page No.	Pass/Fail (By Purchaser)
1.	Air Conditioner unit split 2 Ton capacity with Stabilizer	<ul style="list-style-type: none"> Type - Split AC complete in all aspects Capacity in Tons- 2 Ton Star Rating- Min. 3 Star BEE Rating BEE Rating Year- 2019 Power Requirement AC 230 V, 50 Hz Colour -White Compressor- Rotary 	No.	56			

		<ul style="list-style-type: none"> • Dehumidification- Yes • Remote Control -Yes • Technology Used- Hybrid jet • Condenser Coil –Copper 					
2.	Air conditioner split type 1.5 tons	<ul style="list-style-type: none"> • Type -Split type AC complete in all aspects • Capacity in Tons- 1.5 Ton • Star Rating- Min. 3 Star BEE Rating • BEE Rating Year- 2019 • Power Requirement AC 230 V, 50 Hz • Colour -White • Compressor- Rotary • Dehumidification- Yes • Remote Control -Yes • Technology Used- Hybrid jet • Condenser Coil -Copper 	No.	10			
3.	Deep freezer	Deep freeze with following Specifications: <ul style="list-style-type: none"> •Capacity: 200 L •Refrigerant: 134a • Power Supply: 230V • Phase: Single Phase • Frequency: 50 Hz • Inner Cabinet: Anodised Stucco Aluminium • PUF Thickness: 65mm(min) •Compressor Type: Reciprocating •Wheels/Legs: Heavy Duty Castors 	No.	1			
4.	A.C. Ceiling Fan and AC Table Fan	A.C. Ceiling Fan: min 1200mm 68-Watt 230 V with handing arrangement and regulator AC Table Fan: Min. 68-Watt, 230 V with oscillation mechanism	No.	18			

5.	Frost free refrigerator	Frost Free refrigerator specifications: •Capacity: Min. 200 Liter •Input Power: 220-240 V AC 50 Hz • Type -Double Door Refrigerator with • Star Rating- Min. 3 Star BEE Rating • Colour -White • Compressor- Reciprocatory type • Refrigerant -R600a	No.	2			
6.	Washing Machine Semi Automatic	•Washing Machine Semi Automatic 5 Kg & above •Input voltage 100V- 240V, 50Hz •Power in 1200W / Output power 100–400W •Top loading / Front loading type •Capacity: 5 Kg or above •Induction motor •Water proof •Body type: Plastic	No.	12			
7.	Refrigerator	• Type -Double Door Refrigerator with Top Freezer Refrigerator • Capacity : Min. 165 liters • BEE Rating Year- 2019 • Power Requirement AC 230 V, 50 Hz • Color -White • Compressor- Reciprocatory type	No.	2			
8.	Air Conditioner unit split 1.5 Ton Inverter Technology	• Type - Split AC complete in all aspects • Capacity in Tons- 1.5 Ton • Star Rating- Min. 3 Star BEE Rating • BEE Rating Year- 2019 • Power Requirement AC 230 V, 50 Hz • Color -White • Compressor- Rotary	No.	4			

		<ul style="list-style-type: none"> • Dehumidification- Yes • Remote Control -Yes • Refrigerant -R-134a or R-22 • Technology Used- Hybrid jet • Condenser Coil -Copper 					
9.	Split A/C(Inverter technology)	<ul style="list-style-type: none"> • Type - Inverter Split AC complete in all aspects • Capacity in Tons- 1.5 Ton • Star Rating- Min. 3 Star BEE Rating • BEE Rating Year- 2019 • Power Requirement AC 230 V, 50 Hz • Color -White • Compressor- Rotary • Dehumidification- Yes • Remote Control -Yes • Technology Used- Hybridjet • Condenser Coil -Copper 	No.	4			
10.	Three/four door refrigerator	Three / four door refrigerator <ul style="list-style-type: none"> •Capacity: Min. 300 Liter •Input Power: 220-240 V AC 50 Hz • Type -Double Door Refrigerator with • Star Rating- Min. 3 Star BEE Rating • BEE Rating Year- 2019 • Color -White • Compressor- Reciprocatory type • Refrigerant -R600a 	No.	3			

Note: For detailed specifications please refer table 3: Technical Specifications

Lot No : 2.2							
Lot Name: Audio-visual & communication devices							
Item No	Name of Goods or Related Services	Description	Unit of Measure -ment	Quantity	Specification by the supplier (To be filled by the supplier)	Detailed information brochure attached at Page No.	Pass/Fail (By Purchaser)
1.	Car stereo	Car Stereo with following specifications: <ul style="list-style-type: none"> • Min. 15 cm Wide Screen • Audio Format: WMA/MP3/AAC/WAV • Video/Image Format: MPEG/JPEG / BMP • Operation: Touch Panel • Band: FM/AM • Disc Media: DVD-R/RW, CD-R/RW • AUX: 1 (Rear) • POWER: MOSFET 50W • Equalizer: G.EQ (5BAND) • RCA Pre-outs: 2 (Front, Rear or Subwoofer) • Audio IN RCA: 1 IN • Video IN RCA: 1 IN • Video OUT RCA for Rear Screen: 1 OUT 	No.	1			
2.	Cell phone power source with charger chords for different cell phones	Cell phone power source with charger chords for different cell phones <ul style="list-style-type: none"> *Min. capacity:20000 -mAh Li-Ion *Micro USB connectors *Min. 2 Outputs of 1 Amps and 2 Amps for phone charging *LED Charging indicator and torch 	No.	2			

3.	Credit card detection machine	Portable Credit card detection machine with printing features. With Wifi and GPRS facility along with Chip sensing feature	No.	1			
4.	Document Camera / Visualiser	Document Camera / Visualiser with Min. Specifications as: <ul style="list-style-type: none"> • Image pick-up device: 1/ 2.7 " or 1/ 3 "CMOS sensor • Effective Pixels: Min 1920 Horizontal x 1080 Vertical • Frame Rate: max. 30 fps OPTICAL <ul style="list-style-type: none"> • Zoom Optical 12, Digital 10 • Focus Auto • Shooting Area: A3 sized: 297 x 420 mm IMAGE <ul style="list-style-type: none"> • High Resolution Output : up-to 1080p • Image Adjustments: Auto Exposure, Black and White, Brightness Adjustment, Contrast Adjustment, Image • Rotation, Microscope mode CONNECTIVITY <ul style="list-style-type: none"> • Interfaces USB 1.1 Type B, VGA in, VGA out, HDMI out, built-in microphone, SD memory card 	No.	7			
5.	FAX Machines with answering facility	<ul style="list-style-type: none"> • Printing method: Laser printing on plain paper • Effective scanning width : Min. 208 mm • Effective printing width: 202 mm (A4), 208 mm (Letter / Legal) • Resolution: Standard / Fine / Photo / Super Fine / Mixed • Paper size : A4 / Letter / Legal 	No.	1			

		<ul style="list-style-type: none"> • Modem Speed: Min. 33.6 kbps • Document Memory 2.5 MB (Reception: 100 pages / Transmission: 150 pages)*2 • LCD readout 16 digits / 2 lines • Power Supply: AC 220 - 240 V, 50/60 Hz 					
6.	Hand Held GPS	<p>Hand Held GPS complete in all aspect with key specifications as:</p> <ul style="list-style-type: none"> • Display: Min. of 2.2" transfective, 65K color TFT • Water rating: IPX7 • USB interface with High-sensitivity receiver • Basemap with ability to add maps • Built-in memory: Min 3.7 GB and shall also Accepts data cards such as microSD™ card • Shall have Custom POIs (ability to add additional points of interest) • Routes: Min. 200 • Track log: Min. 10,000 points, 200 saved tracks 	No.	6			
7.	Home theatre system	<p>Home theatre system</p> <ul style="list-style-type: none"> •5.1 Channel FM Radio •Remote controlled, 100w, USB, HDMI, AUX, With blue ray/ DVD Player. Bluetooth connectivity •5 Speakers 	No.	6			

8.	LCD PROJECTOR	<p>LCD PROJECTOR with following specifications:</p> <ul style="list-style-type: none"> • Lamp Type: 190W P-VIP • Zoom Magnification and Control: 1.0x Fixed • Focus Control: Manual • Brightness: 3000 lumens (2200 Lumens Eco mode) • Contrast Ratio: 2300:1 (with lamp control) • Screen Size: Min. 70" - 120" (151 x 94cm - 258 x 162cm) • 4000h lamp life (6000h in Eco Mode) • Power Source: 100V - 240V AC, 50/60Hz • Noise Level: Normal Mode: 36dBA / Eco Mode: 29dBA • Operating Environment: 0°C to +40°C 	No.	1			
9.	LCD SCREEN	<p>40-inch LCD panel with full HD 1080p resolution (1920 x 1080 pixels)</p> <p>Five separate HD inputs (two HDMI, two HD components, one PC)</p> <p>Light Sensor adjusts picture brightness based on ambient light</p> <p>Dynamic contrast ratio: 1000:1</p>	No.	1			
10.	LCD TV (21")	<ul style="list-style-type: none"> • Superior quality 21-inch full HD LED Color Television/ PC Monitor. • PAL/ NTSC video formats Std AV/RF Inputs, PC Audio In: 1, PC D-sub: 1, RF Connectivity Input: 1, HDMI-CEC, RF Capable and USB. 	No.	11			

11.	LED TV (21")	<ul style="list-style-type: none"> • Superior quality 21-inch full HD LED Color Television/ PC Monitor. PAL/ NTSC video formats Std AV/RF Inputs, PC Audio In: 1, PC D-sub: 1, RF Connectivity Input: 1, HDMI-CEC, RF Capable and USB. 	No.	7			
12.	Mobile (GMS/CDMA).	RAM 4GB Min, Internal Storage - 64GB, Processor - Octa Core 2GHz, Latest Operating Version of Android (4G & 5G Support), IS 13252 (Part 1) / IEC 609500-1	No.	4			
13.	Photocopy machine	<p>Multifunctional Photocopy machine with following Specifications:</p> <ul style="list-style-type: none"> • Paper Input Capacity: Standard: 2 x 250-sheet paper trays, 100-sheet multi-bypass tray Maximum: 1600 Sheets • Recommended paper size: Paper tray(s): A5 - A3, Bypass tray: A6 - A3 • Paper Output Capacity: Maximum: 350 sheets <p>Copier</p> <ul style="list-style-type: none"> • Copying Process: Laser beam scanning and electro photographic printing • Multiple Copies: Up to 99 copies • Resolutions: 600 dpi • Zoom: From 50 to 200% <p>Power Input: 1 Phase 220-240 V AC 50 Hz CE Mark Product</p>	No.	1			

14.	Smart Board / Inter Active Board	Smart Board / Inter Active Board with Min. Specifications as: <ul style="list-style-type: none"> • Min. Size 78" diagonal LxH -(6x4 feet) • Whiteboard Surface: Non-Ceramic/ Ceramic High luminance nanotechnology, anti-scratch, anti-glare surface • Aspect Ratio: 4:3 • Touch accuracy: 0.1 mm • Touch response time: < 8ms • Resolution: Min. 9600 x 9600 • DPI: Min. 600 • Power supply: USB (<5V/500mA) • Operations: Temperature: 0 to 60 degree Celsius; Humidity: 0% to 95% 	No.	7			
15.	Smart phones of different make (android/Windows)	Android Smartphone: OS: Android Nougat 7.1.2 <ul style="list-style-type: none"> • 2G/3G/4G GSM Mobile Specifications:- <ul style="list-style-type: none"> • 2 GB RAM 16 GB ROM Expandable Up to 32 GB • Min. 4.5 inch Full HD+ Display • Min. 12MP + 2MP Dual Rear Camera 13MP Front Camera • 4000 mAh Li Polymer Battery • Qualcomm Snapdragon 636 Processor Windows Smartphone: OS : Windows 10 <ul style="list-style-type: none"> • 2 GB RAM 16 GB ROM Expandable Up to 128 GB • 4.7 inch HD Display • 5MP Rear Camera 5MP Front Camera • 2220 mAh Battery • Qualcomm Snapdragon 400 Processor 	No.	15			

16.	Telephone (STD & ISD facility).	Capacity: 4 Main Lines (Trunk Line/ P& T) and 32 Extensions, Internal/External Music on Holding, Operator/Auto-attendant Mode, Remote Programming, Day/Night Mode(Manual), Music & Ringing Recordable OGM(outgoing message), Music Duration 20 Seconds, Caller ID, Call Transfer, Call Forwarding Manually, Outgoing Call Transfer, Power Failure Transfer, Specific Main Line , (C.O./Trunk Line) Dialling, Three Way Conference, Do Not Disturb, Auto/Manual Dial-Out Mode, Brand: S-Tech (Manufactured By Swift Technologies) Model: STECH-CS416	No.	1			
17.	Telephone with intercom facilities	6 lines 6 SIP accounts, Up to 6-way voice conferencing, 3-way video conferencing, Dual-switched Gigabit ports and integrated WiFi (802.11b/g/n), FREE IP Video Talk account for video calling, 1 megapixel CMOS camera, 4.3 inch (480×272) capacitive touch screen	No.	1			
18.	Digital cameras	Digital cameras complete in all aspect with key specifications as: Digital camera with Min. 20 MP, Sensor type: CMOS, Data Storage as Micro SD Card with Min. 16 GB Micro SD Card. Chargeable Battery with Adapter	No.	1			

19.	LED Projector	<ul style="list-style-type: none"> o Display Type: LCD/LED/DLP o Input: Video input, Audio input, HDMI input, Computer Input, Mic input o Output: Audio output, Monitor Output, USB Output. o Resolution: 1280 X 800 o Contrast Ratio: 10000:1 o Light Output: 3000 Lumens or above o Life of Lamp: 5000 Hours (Full Usage) o Power Supply: AC 100-120/AC 220-240 V 50 Hz o Connectivity: Ethernet enable, Wireless enable, USB Compatible 	No.	54			
20.	Screen for Projector (Matte Material) antiglare	Motor: Tubular (with smooth and quieter operation) Control: Inline switches and wireless remote Material: White Anti Glare (matte material) Size: - 6x4 Ft. Viewing angle: 145 degree or higher Double layer Fabric Wall Mountable / Stand mountable Mounting stand Auto lock (motorized)	No.	20			
21.	Profile Projector	Screen Diameter: Fine grain ground glass screen with cross lines, Axis colon: vertical lens axis; Electronic Protractor: Switchable degree/decimal, 1 minute / 0. Measuring Range X/Y Axis: 201 x 150 mm Max or equivalent Range: +/- 370 degree Workpiece Height: 110 mm	No.	2			

		Resolution: 0. 001 mm					
22.	Smart LED TV 42"	<ul style="list-style-type: none"> • Screen Size (Measured Diagonally): approx. 42 inch • Display Type: LCD • DISPLAY RESOLUTION: 4K/(3840x2160) • Backlit Type: Edge LED • Backlit Dimming Type: Frame Dimming • HDR Compatibility: Yes • Audio Power Output: 10W + 10W • Operating System: Android • Storage: 16 GB • CONNECTIVITY: • Wi-Fi, • Ethernet Inputs: 01 • Built-in Chromecast or equivalent • HDMI Inputs: 4, • USB Ports: 03 • USB Drive Format Support: FAT16/FAT32/ex FAT/NTFS 	No.	5			
23.	Digital SLR Camera with Video recording capability	Technology: SLR Sensor: Full-frame CMOS Megapixels: 24.3MP minimum Autofocus: 51-point AF, 15 cross-type Screen type: 3 inch minimum, tilting capability	No.	9			

		Connectivity: Wi-Fi Power: Rechargeable Li-ion batteries Video Recording: Yes, minimum 1080p					
24.	Sound system	Form Factor: 5.1 Power Output: 1,200W Connectivity: BLUETOOTH, NFC, Wi-Fi, HDMI in/out, Ethernet, USB Keyboard Digital Amplifier: 24bit Speakers: Wireless Mica Reinforced Cellular woofer cone Speaker System: 3-way Radio: FM Playback: BLU-RAY 3D, BLU-RAY DISC, DVD Compatible: USB FILE SYSTEM (FAT32, NTFS), EXTERNAL HDD	No.	12			
25.	Interactive Board	USB Powered. 2397 sq. in. panel - 82" (2082) diagonal 1 panel. Operates as an Interactive Electronic Board with Projector & White Board modes. This unit is powered by the USB interface. Includes: Multi-touch Operation Built-in Stereo Speakers 02 USB Hub Ports Simultaneous Operation Up To 10 Points	No.	2			

Note: For detailed specifications please refer table 3: Technical Specifications

Lot No : 2.3							
Lot Name: Electronics items							
Item No	Name of Goods or Related Services	Description	Unit of Measure -ment	Quantity	Specification by the supplier (To be filled by the supplier)	Detailed information brochure attached at Page No.	Pass/Fail (By Purchaser)
1.	Calculator Desk Type	Desk Type Calculator with Min. specifications as: <ul style="list-style-type: none"> • Shall have memory • Dual power (Battery and solar) • LR44 Battery • 12 Digits Display • mini desktop Type • Upright Angled LCD Display with Angled Display • Calculation Command Sign Display • Thousand separator Digit Comma Separator 	No.	11			
2.	Calculator Scientific (Non-programmable)	Display <ul style="list-style-type: none"> • Display type: 31 * 96 FULL DOT, Natural display • Algebraic input logic: Natural V.P.A.M. with Number of characters/lines: 15/1+10/1 and Significand function: 10+2 Memory <ul style="list-style-type: none"> • Repeat function with Variable memory of 9 and Number of storable programs as Calc / Solv button Energy supply: Solar+Battery Statistics Functions: • Summations, Standard	No.	12			

		deviations for grouped and ungrouped values, Distribution functions (normal distribution and inverse normal distribution, binominal distribution, Poisson distribution), Regression analysis, Permutations (nPr) and combinatorics (nCr), Matrix calculation/vector calculation, REF/RREF function, Equation calculation, Inequality calculation Differential and integral calculus: • Numerical integral calculus, Numerical differential calculus					
3.	Digital Theodolite	Digital Theodolite Specifications: Angle Measuring System • Mode of Angle Measurement: Photoelectric Incremental Reading Min. • Detection Method: H: Both Sides • Detection Method: V: Single Side • Precision of Angle Measurement: 2" • Unit of Angle: DEG MIL GON • Display: LCD Double Side, 7 digits x 2 lines, backlight • Tilt Sensor: Automatic vertical compensation Compensator of Tilt Sensor type with $\pm 3'$ as Range of Compensation Laser Optical plummet • Magnification Ratio : 3x • Angle of View: 3° • Min. Focus: 0.5m Telescope: • Magnification: 30 x	No.	5			

		<ul style="list-style-type: none"> • Min. focus: 1 Meter • Objective aperture: 45 mm 					
4.	Digital weighing machine	Digital Weighing Machine Specifications: <ul style="list-style-type: none"> • Type: Bench Type • Weighing Capacity: 100Kg or more • Preset keys/Hot keys: 20 • Power Supply: 230V AC, 50 Hz • Operating Temperature: 0C to 45C • Display Type: 7 Segment LED • Display Digit and Size: Min. 19 digits, 10 mm height • Battery: 6V/4 AH Rechargeable • Platter MOC: SS • Interface: Inbuilt RS232 	No.	1			
5.	EMS machine	EMS (Electronic Muscle Stimulator) Machine with Min Specifications as: <ul style="list-style-type: none"> • Min Channel 12 with pads 24 output • Body: Heavy Plastic Body • Technology: Micro-computer controlled/ Processor Control /PCB Based • Operation: Manual Mode/Timer Based/Auto Mode • Power Supply: 220-240 V AC with 50 Hz 	No.	1			
6.	Total Station	Total Station complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Laser pointer: Coaxial red laser using EDM beam • Levels Graphic: 6' (Inner Circle) • Circular Level: 10'/2mm • Optical: Magnification: 3x with Minimum 	No.	7			

		focus: 0.5m from tribrach bottom					
7.	Inverter with Battery	Inverter with Battery 12 V Heavy Duty , Battery Input- 12 volt DC, Output- 220 volt AC Inverters IGBT based . It should provide a uniform output of 230V . Power Output: 1.1 KVA at an input voltage of 12 volts. WaveForm: Square Wave	No.	11			
8.	Scientific Calculator	Display • Display type: 31 * 96 FULL DOT, Natural display • Algebraic input logic: Natural V.P.A.M. with Number of characters/lines: 15/1+10/1 and Significand function: 10+2 Memory • Repeat function with Variable memory of 9 and Number of storable programs as Calc / Solv button Statistics Functions: • Summations, Standard deviations for grouped and ungrouped values, Distribution functions (normal distribution and inverse normal distribution, binominal distribution, Poisson distribution), Regression analysis, Permutations (nPr) and combinatorics (nCr), Matrix calculation/vector calculation, REF/RREF function, Equation calculation, Inequality calculation Energy supply: Solar+Battery	No.	4			

9.	Location and navigational equipment set consisting of : <ul style="list-style-type: none"> • Hand held GPS units • Compass clinometers • Prismatic compass 	Hand Held GPS complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Display: Min. of 2.2" transfective, 65K color TFT • Water rating: IPX7 • USB interface with High-sensitivity receiver • Basemap with ability to add maps • Built-in memory: Min 3.7 GB and shall also Accepts data cards such as microSD™ card • Shall have Custom POIs (ability to add additional points of interest) • Routes: Min. 200 • Track log: Min. 10,000 points, 200 saved tracks Compass clinometers complete in all aspect with key specifications as: <ul style="list-style-type: none"> • +/- 0.5° Azimuth/Bearing Accuracy • +/- 90° Inclinator • 0-45° Sine and Tangent Scales • Sapphire Jewel Bearing • Inch and Millimetre Scales • Aluminium Housing • Integrated Carrying Lanyard • Azimuth and Inclination Tripod Mounts Prismatic compass complete in all aspect with key specifications as: Prismatic Compass is made of Brass / Aluminium / Gun Metal with min. size of 125mm dia	No.	1			
10.	Anemometers	Anemometers complete in all aspect with key specifications as: <ul style="list-style-type: none"> • LCD Display • Measurement Units: Velocity: m/s, km/h, ft/min, knots, mile/hr • Temperature: °C or °F • Sampling Time: 	No.	1			

		<ul style="list-style-type: none"> o Auto: 1 to 3600 seconds o Manual: Push the data logger button once, will save data one time • Operating Humidity: Less than 85% RH • Power: 6 “AAA” alkaline or heavy-duty batteries (included), or 9V power adaptor (optional) 					
11.	Wind watch- which incorporates a barometer, altimeter, temperature probe and anemometer in a single hand held device. It can also measure wind-chill	<p>Wind watch complete in all aspect with key specifications as:</p> <p>Wind watch- which incorporates a barometer, altimeter, temperature probe and anemometer in a single hand held device. It can also measure wind-chill</p>	No.	1			
12.	Spring scales	<ul style="list-style-type: none"> • Spring scales complete in all aspect with key specifications as: Spring scales Handy 100 KG Weighing scale machine 	No.	1			
13.	Calipers	<p>Digital Calipers complete in all aspect with key specifications as:</p> <ul style="list-style-type: none"> • Resolution: 0.01mm or .0005"/0.01mm • Repeatability: 0.01mm / .0005" 	No.	1			

14.	UPS 5 KV Online with 30 Minutes back up for 20 PC	UPS Type: Online double conversion Wave form: Pure sinewave Operating Voltage range: 150 V - 240V AC, Frequency: 50 Hz +/- 3 Hz Protection: Against Over Load / Short Circuit Indication (LED) : Low i/p voltage, UPS ON, UPS OFF, Nominal Battery voltage : Up to 96 V . Battery Backup: 01 Hr (Minimum) for 20 Computers Recharge time: approximately 08 Hr's	No.	16			
15.	UPS 3 KVA with backup time minimum 30 minutes	UPS Type: Online double conversion Wave form: Pure sinewave Operating Voltage range: 150 V - 240V AC, Frequency: 50 Hz +/- 3 Hz Protection: Against Over Load / Short Circuit Indication (LED) : Low i/p voltage, UPS ON, UPS OFF, Nominal Battery voltage : Up to 48 V . Battery Backup: 01 Hr (Minimum) for 10 Computers Recharge time: approximately 08 Hr's	No.	12			
16.	UPS 2 KVA	UPS Type: Online double conversion Wave form: Pure sinewave Operating Voltage range: 150 V - 240V AC, Frequency: 50 Hz +/- 3 Hz Protection: Against Over Load / Short Circuit Indication (LED) : Low i/p voltage, UPS ON, UPS OFF, Nominal Battery voltage : Up to 24 V . Battery Backup: 01 Hr (Minimum) for 10 Computers	No.	6			

		Recharge time: approximately 08 Hr's					
17.	UPS - 650VA	UPS- 650 VA (Off Line) Wave form: Pure sinewave Operating Voltage range: 150 V - 240V AC, Frequency: 50 Hz +/- 3 Hz Battery Backup: 01 Hr (Minimum)	No.	189			
18.	Voltage Stabilizer	Voltage Stabilizer with following specifications: • Type: Automatic Voltage Stabiliser, Single Phase • Type of Control: PWM Controlled AC to AC • Rating: 600 VA • Input : 150 – 260 volts Ac, 1-phase, 2 wire, 45 - 55Hz • Output : Stabilised 240 volt AC, 10 A 50 Hz • Output Regulation: Nominal +/- 1% under 0 to 100% Load	No.	10			
19.	Maintenance Free Battery	•VRLA Maintenance Free Battery with following Specifications: •Voltage: 12 Volt •Capacity: 9 AH	No.	8			
20.	Battery storage lead acid 6V & 12 V	*Voltage :12 V •Capacity (Ah): 50 AH •Battery Type: Sealed Acid Lead Battery *Voltage :6 V •Capacity (Ah):4.5 AH •Battery Type: Sealed Acid Lead Battery	No.	10			

21.	UPS - 650VA	UPS- 650 VA (Off Line) Wave form: Pure sinewave Operating Voltage range: 150 V - 240V AC, Frequency: 50 Hz +/- 3 Hz Battery Backup: 01 Hr (Minimum)	No.	11			
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Note: For detailed specifications please refer table 3: Technical Specifications

Lot No : 3.1							
Lot Name: Metering & Measuring Devices							
Item No	Name of Goods or Related Services	Description	Unit of Measure-ment	Quantity	Specification by the supplier (To be filled by the supplier)	Detailed information brochure attached at Page No.	Pass/Fail (By Purchaser)
1.	A.C. Energy Meter	A.C. Energy Meter- induction type Single Phase, 10 A, 240 V • Conforming to IEC 62052 or IS 13779 • portable type Housed in Bakelite case	No.	29			
2.	A.C. Energy Meter	AC energy meter Three Phase, 15 A , 440 V induction portable type AC Energy Meter Housed in Bakelite case	No.	32			
3.	A.C. Voltmeter M.I. Analog	A.C. Voltmeter M.I. analog, Multi Range A.C. Voltmeter M.I. 75V - 150 V - 300 V – 600V A.C Confirming to BS 89, IEC 51 & IS 1248	No.	67			
4.	Ac Ammeter Mi, Analog	•AC Ammeter MI • Analog • 0-1 A range with Moving iron spring-mounted jewel bearing suspension	No.	40			
5.	Ac Ammeter Mi, Analog	•AC Ammeter MI • Analog • (0-5 A MI) with Moving iron spring-mounted jewel bearing suspension	No.	38			

6.	Ac Ammeter MI, Analog	<ul style="list-style-type: none"> •AC Ammeter MI •Analog •(0-25A MI) with Moving iron spring-mounted jewel bearing suspension 	No.	38			
7.	Ammeter (0-10 mA), (0-50mA), (0-100mA) (table model)	Table model Analog Ammeter with range 0-10 mA : <ul style="list-style-type: none"> • Range: Current (A): 0 – 10 m A Table model Analog Ammeter with range 0-50 mA : <ul style="list-style-type: none"> • Range: Current (A): 0 – 50 m A Table model Analog Ammeter with range 0-100mA : <ul style="list-style-type: none"> • Range: Current (A): 0 – 100 m A 	No.	4			
8.	Ammeter 300A/60A DC with external shunt	<ul style="list-style-type: none"> •Analog type portable Ammeter •Min 300 A/60 A DC with external shunt with probe Fitted in Box •Shall conform to I.S. 1248 / I.E.C. 60051 (Part 2) 	No.	32			
9.	Ammeter 300A/60A DC with external shunt	<ul style="list-style-type: none"> •Analog type portable Ammeter •Min 300 A/60 A DC with external shunt with probe Fitted in Box •Shall conform to I.S. 1248 / I.E.C. 60051 (Part 2) 	No.	4			
10.	Ammeter 300A/60A DC with external shunt	<ul style="list-style-type: none"> •Analog type portable Ammeter •Min 300 A/60 A DC with external shunt with probe Fitted in Box •Shall conform to I.S. 1248 / I.E.C. 60051 (Part 2) 	No.	4			

11.	Ammeter DC with external shunt	<ul style="list-style-type: none"> •Analog type portable Ammeter •Min 300 A/60 A DC with external shunt with probe Fitted in Box •Shall conform to I.S. 1248 / I.E.C. 60051 (Part 2) 	No.	4			
12.	Ammeter Mc Analog	<ul style="list-style-type: none"> •Ammeter MC analog - (0 - 500mA) with Moving Coil with Central Magnetic Core • Spring Mounted Jewel Bearing Suspension •It should have banana terminals with permanent marking of range and terminals • it should have knife edged pointer and anti-parallax mirror • it should be moving coil type 	No.	40			
13.	Ammeter Mc Analog	<ul style="list-style-type: none"> •Ammeter MC analog - (0-5 A- MC) with Moving Coil with Central Magnetic Core • Spring Mounted Jewel Bearing Suspension •It should have banana terminals with permanent marking of range and terminals •It should have knife edged pointer and anti parallax mirror •It should be moving coil type 	No.	40			

14.	Ammeter Mc Analog	<ul style="list-style-type: none"> •Ammeter MC analog - (0-5 A- MC) with Moving Coil with Central Magnetic Core • Spring Mounted Jewel Bearing Suspension •It should have banana terminals with permanent marking of range and terminals •It should have knife edged pointer and anti parallax mirror •It should be moving coil type 	No.	39			
15.	Ammeter, AC/DC portable precision grade Digital Panel board type	AC/DC Digital ammeter 0-30 Amps <ul style="list-style-type: none"> • 3 Digit, 7 Segment LED Display • True RMS Measurement for AC measurement • For 1Ø-2 Wire Electrical Network • IP Protection (Front): IP65 	No.	5			
16.	Analog multimeter	Analog Multimeter <ul style="list-style-type: none"> •AC Voltage (Volts) 10-1000 V •AC Voltage Accuracy $\pm 4\%$ •DC Voltage Accuracy $\pm 3\%$ •DC Current (Amp) 50μA-10 A •DC Voltage 0.1mV-1000 V •DC Current Accuracy $\pm 3\%$ •Resistance (ohm) 0.2 Ω-20 MΩ •Resistance Accuracy $\pm 3\%$ 	No.	4			
17.	Analog Multimeter	Analog Multimeter as per IS 1248 with following range: <ul style="list-style-type: none"> •AC Voltage (Volts) 10-1000 V •AC Voltage Accuracy $\pm 4\%$ •DC Voltage Accuracy $\pm 3\%$ •DC Current (Amp) 50μA-10 A •DC Voltage 0.1mV-1000 V •DC Current Accuracy $\pm 3\%$ •Resistance (ohm) 0.2 Ω-20 MΩ 	No.	26			

		•Resistance Accuracy $\pm 3\%$					
18.	Auto Transformer starter	<ul style="list-style-type: none"> •Auto Transformer starter suitable for Motor starting up to 3 HP Motors. •Shall conform to IEC 60947-4-1 •Starter enclosure to conform IP 53 	No.	2			
19.	Clamp meter	Tong Tester / Clamp Meter <ul style="list-style-type: none"> •0 – 10 amp.(Min) • Dial (aka rotary switch). • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum and average inputs are shown. Works in current, voltage and frequency modes. • Zero button (yellow): Removes dc offset from dc current measurements. Also serves as dial's shift button to select yellow functions scattered around the dial. •Shall comply to Safety standard IEC 1010 or IEC 61010 	No.	12			
20.	Compound gauge, Digital type	<ul style="list-style-type: none"> •Digital type Compound gauge diameter 63mm with recalibration set screw • scale vacuum 76mm. • Pressure 15 Kg/sq.cm 	No.	5			
21.	DC Ohmmeter	Ohm Meter Specification :- <ul style="list-style-type: none"> •Measuring min. 0-300 Ohm with mid scales at 20 Ohms Capacity with Probe Black & red Ohm meter. •Range : min. 0-300 ohm . •Accuracy : +/- 5 % of the indicating value at centre zero - Set of 2 pcs . •Shall comply to IS 1248 	No.	35			

22.	DC & AC ammeter 0-1 A(table model for lab experiments)	<ul style="list-style-type: none"> • AC Ammeter MI, analog, 0-1 A range with Moving iron spring-mounted jewel bearing suspension • DC Ammeter MC analog- (0 - 1 A MC) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension • It should have banana terminals with permanent marking of range and terminals • It should have knife edged pointer and anti parallax mirror 	No.	10			
23.	DC & AC ammeter 0-1mA(table model for lab experiments)	<ul style="list-style-type: none"> • AC Ammeter MI, analog, 0-1 mA range with Moving iron spring-mounted jewel bearing suspension • Ammeter MC analog- (0 - 1 mA MC) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension • It should have banana terminals with permanent marking of range and terminals • It should have knife edged pointer and anti parallax mirror 	No.	10			
24.	DC & AC ammeter 0-50 mA (table model for lab experiments)	<ul style="list-style-type: none"> • AC Ammeter MI, analog, 0-50 mA range with Moving iron spring-mounted jewel bearing suspension • Ammeter MC analog- (0 - 50 mA MC) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension • It should have banana terminals with permanent marking of range and terminals • It should have knife edged pointer and anti parallax mirror 	No.	10			

25.	DC & AC ammeter 0-500 mA(table model for lab experiments)	<ul style="list-style-type: none"> • AC Ammeter MI, analog, 0-500 mA range with Moving iron spring-mounted jewel bearing suspension • Ammeter MC analog- (0-500 mA MC) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension • It should have banana terminals with permanent marking of range and terminals • It should have knife edged pointer and anti parallax mirror 	No.	10			
26.	Dial thermometer remote control, armored capillary dial	Dial thermometer Specifications: <ul style="list-style-type: none"> • Range:-50 ... 50 °C • Dial size in mm: 75 mm (Min.) • Capillary length: Min. 20 m • Material • Connection: Stainless steel 316 • Stem: Stainless steel 316L • Case/ring: Stainless steel 304 or 316L • Capillary: Stainless steel 316 • Armor: Flexible, SS 304 • Window: Instrument glass, optional laminated safety glass 	No.	3			
27.	Digital LCR Meter	Digital LCR meter with following specifications: <ul style="list-style-type: none"> • RESISTANCE: 600/6k/60k/600k/6M $\Omega \pm 1.0\%$, 60M $\Omega \pm 1.5\%$ • CAPACITANCE: 6nF$\pm 2.0\%$, 60n/600n/6 Ω F$\pm 1.0\%$, 60 Ω /600Ω /6mF$\pm 1.5\%$ • INDUCTANCE: 600 Ω H$\pm 2.5\%$; 6m/60m/600mH$\pm 1.5\%$; 6H:<4H $\pm 2.8\%$ >4H $\pm 5.0\%$; 60H:<40H$\pm 3.5\%$ >40H Unspecified 	No.	6			

		•POWER: 6 (1.5V) (AAA Type)					
28.	Digital Multimeters	<p>Multimeter Digital Specifications :-</p> <ul style="list-style-type: none"> •Voltage between any Terminal and Earth Ground:1000V Min •Display: Digital: 4000 count updates 3/sec •Operating Altitude: 0 to 2000 meters <p>Specification:</p> <ul style="list-style-type: none"> •DC voltage: 200m/2V/20V/200V \pm 0.5%, 1000V \pm 0.8% •AC voltage: 2V/20V/200V \pm 0.8%, 750V \pm 1.2% •Resistance: 200/2k/20k/200k/2M? \pm 0.8%, 20M? \pm 1.0% •DC current: 200mA \pm 1.5%, 10A \pm 2.0% •AC current: 200mA \pm 1.8%, 10A \pm 3.0% •Capacitance: 20nF/200nF/2 μF/20 μF/200 μF \pm 4.0% •Temperature: -20 ° C ~ 1000 ° C •Inductance: 20mH/200mH/2H/20H \pm 3.0% •Transistor hFE: 1 ~ 1000 •Power supply: (9V) •Battery Life: Alkaline: 500 Hours •Safety Compliance: IEC 61010-1, 2000 CAT I 1000 V, CAT II 600 V, and CAT III 300 V overvoltage standards 	No.	275			
29.	Digital thermometer	<p>Digital thermometer</p> <ul style="list-style-type: none"> •Type: Graduated disc analogy •Range: -50...50 °C 	No.	1			
30.	Digital Tong Tester	<p>Tong Tester / Clamp Meter</p> <ul style="list-style-type: none"> •0 – 20 amp.(min) •Shall comply to Safety standard IEC 1010 or 	No.	2			

		IEC 61010 <ul style="list-style-type: none"> • Current-sensing jaw. • Tactile barrier (to protect fingers from shocks). • Hold button: Freezes the display reading. Reading is released when button is pushed a second time. • Dial (aka rotary switch). • Backlight button. • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum and average inputs are shown. Works in current, voltage and frequency modes. 					
31.	Digital Wattmeter	<ul style="list-style-type: none"> • Digital Wattmeter which calculate and displays power of single phase 230 V, Min. 1 KW Measurement, 50 Hz on a seven segment display. • 600 V CAT IV/1000V CAT III as per International Safety standard IEC61010-1-2010 	No.	46			
32.	A.C. Energy Meter	<ul style="list-style-type: none"> • A.C. Energy Meter- induction type • Single Phase, 5 A, 230-240 V 	No.	2			
33.	Clamp Meter	<ul style="list-style-type: none"> • Fluke Meter Tong Tester / Clamp Meter • 0 – 100 amp.(Min) • Shall comply to Safety standard IEC 1010 or IEC 61010 	No.	2			
34.	Clamp Meter	Fluke Meter Tong Tester / Clamp Meter 0 – 100 amp.(Min) <ul style="list-style-type: none"> • Hold button: Freezes the display reading. Reading is released when button is pushed a 	No.	6			

		second time. • Dial (aka rotary switch). • Backlight button. • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum and average inputs are shown. Works in current, voltage and frequency modes. • Shall comply to Safety standard IEC 1010 or IEC 61010					
35.	Frequency Meter	Frequency Meter • AC frequency meter analog with range 45 to 55hz • Installation category 300 V CAT III • IS : 1248 / IEC 51	No.	20			
36.	Glow plug tester	Glow Plug tester/analyser suitable for voltages upto 48 Volts.	No.	6			
37.	Hydrometer	Hydrometer • Range: 1.100 - 1.300 Specific Gravity at 27°C • Complete with Glass Barrel	No.	16			
38.	Digital Wattmeter	• Digital Wattmeter which calculate and displays power of single phase 230 V, Min. 1 KW Measurement, 50 Hz on a seven segment display. • 600 V CAT IV/1000V CAT III as per International Safety standard IEC61010-1-2010	No.	4			
39.	Kilo Wattmeter	• Kilo Wattmeter Analog 0-1.5-3KW, • Pressure coil rating- 240v/440v, • Current rating-5A/10A(min) Analog, • Portable type Housed in Bakelite case	No.	27			

		Conforming to IS 1248					
40.	LCR meter	Digital LCR meter with following specifications: <ul style="list-style-type: none"> • RESISTANCE: 600/6k/60k/600k/6M $\Omega \pm 1.0\%$, 60M $\Omega \pm 1.5\%$ • CAPACITANCE: 6nF$\pm 2.0\%$, 60n/600n/6 Ω F$\pm 1.0\%$, 60 Ω /600Ω /6mF$\pm 1.5\%$ • INDUCTANCE: 600 Ω H$\pm 2.5\%$; 6m/60m/600mH$\pm 1.5\%$; 6H:$<4H \pm 2.8\%$ $>4H \pm 5.0\%$; 60H:$<40H \pm 3.5\%$ $>40H$ Unspecified • POWER: 6 (1.5V) (AAA Type) 	No.	10			
41.	LCR meter (Digital) Handheld	Digital LCR meter with following specifications: <ul style="list-style-type: none"> • RESISTANCE: 600/6k/60k/600k/6M $\Omega \pm 1.0\%$, 60M $\Omega \pm 1.5\%$ • CAPACITANCE: 6nF$\pm 2.0\%$, 60n/600n/6 Ω F$\pm 1.0\%$, 60 Ω /600Ω /6mF$\pm 1.5\%$ • INDUCTANCE: 600 Ω H$\pm 2.5\%$; 6m/60m/600mH$\pm 1.5\%$; 6H:$<4H \pm 2.8\%$ $>4H \pm 5.0\%$; 60H:$<40H \pm 3.5\%$ $>40H$ Unspecified • POWER: 6 (1.5V) (AAA Type) 	No.	2			
42.	Lux Meter	Lux Meter - <ul style="list-style-type: none"> • Display -3½ digit ,LCD , • Ranges - 0-70,000 Lux .(3 ranges) , • Accuracy - + (5% rdg. +2 dgts) , • Operating Temperature - 0° to 50 °(32° to 122° F) • Operating Humidity - Less than 80% R.H. • Power Supply - min 9V battery (6F 22) , 	No.	37			
43.	Magnetic Flux	•Magnetic Flux Meter portable type Housed in Bakelite case	No.	28			

		Technical Specifications : •Range : 0-500 tesla •Accuracy : $\pm 0.5\%$ •Display : 3 ½ digit 7 seg. (DPM) •Detector : Hall probe with an imported hall element •Power : 220V, 50 Hz					
44.	Milli Ammeter (AC)	AC Ammeter MI, analog, 0-200mA range with Moving iron spring-mounted jewel bearing suspension	No.	6			
45.	Milli Ammeter (DC)	Ammeter MC analog- (0 - 500 mA MC) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension •It should have banana terminals with permanent marking of range and terminals •It should have knife edged pointer and anti parallax mirror •It should be moving coil type	No.	4			
46.	Milli Voltmeter	Milli Voltmeter •Centre - zero analog, •Milli Voltmeter centre zero 100 – 0 – 100 m volt •Confirming to BS 89, IEC 51 & IS 1248	No.	33			
47.	Analogue type Multimeter	Analog Multimeter •AC Voltage (Volts) 10-1000 V •AC Voltage Accuracy $\pm 4\%$ •DC Voltage Accuracy $\pm 3\%$ •DC Current (Amp) 50 μ A-10 A •DC Voltage 0.1mV-1000 V •DC Current Accuracy $\pm 3\%$ •Resistance (ohm) 0.2 Ω -20 M Ω •Resistance Accuracy $\pm 3\%$	No.	5			

48.	Digital Multimeter	<p>Multimeter Digital Specifications :-</p> <ul style="list-style-type: none"> •Voltage between any Terminal and Earth Ground:1000V Min •Display: Digital: 4000 count updates 3/sec •Operating Altitude: 0 to 2000 meters <p>Specification:</p> <ul style="list-style-type: none"> •DC voltage: 200m/2V/20V/200V \pm 0.5%, 1000V \pm 0.8% •AC voltage: 2V/20V/200V \pm 0.8%, 750V \pm 1.2% •Resistance: 200/2k/20k/200k/2M? \pm 0.8%, 20M? \pm 1.0% •DC current: 200mA \pm 1.5%, 10A \pm 2.0% •AC current: 200mA \pm 1.8%, 10A \pm 3.0% •Capacitance: 20nF/200nF/2 μF/20 μF/200 μF \pm 4.0% •Temperature: -20 ° C ~ 1000 ° C •Inductance: 20mH/200mH/2H/20H \pm 3.0% •Transistor hFE: 1 ~ 1000 •Power supply: (9V) •Battery Life: Alkaline: 500 Hours •Safety Compliance: IEC 61010-1, 2000 CAT I 1000 V, CAT II 600 V, and CAT III 300 V overvoltage standards 	No.	59			
49.	Ohm Meter; Portable box type	<p>Ohm Meter- Shunt Type - Specification :-</p> <ul style="list-style-type: none"> •Measuring 0-2000 Ohm Capacity with Probe Black & red Ohm meter. •Range : 0-2000 ohm . •Accuracy : +/- 5 % of the indicating value at center zero 	No.	30			

50.	Ohm Meter; Series Type	Ohm Meter- Series Type - Specification :- •Measuring 0-2000 Ohm Capacity with Probe Black & red Ohm meter. •Range : 0-2000 ohm . •Accuracy : +/- 5 % of the indicating value at center zero	No.	30			
51.	Ohm Meter; Shunt Type	Ohm Meter- Shunt Type - Specification :- •Measuring 0-2000 Ohm Capacity with Probe Black & red Ohm meter. •Range : 0-2000 ohm . •Accuracy : +/- 5 % of the indicating value at center zero	No.	30			
52.	Electrode drying Oven	Electrode drying Oven •capacity: 10 kg •Voltage : 230 volt ac •Temperature : Max:350 Deg. cel •Wattage : 1000 Watt Min	No.	2			
53.	Phase Sequence Indicator	Phase Sequence Indicator •3 Phase, 415 V , •Working Voltage: 100 - 500 Volt •Freq. : 25-60 Hz •Shall comply to Safety standard IEC 1010 or IEC 61010 or EN 61010	No.	45			
54.	Power Factor	415 V, 20 A, Three Phase portable portable type Power Factor Meter • Accuracy Class Class1.0 • Frequency 50Hz ± 5 % • System Voltage 415V AC • Mounting flush Display parameters:	No.	41			

		E.B Energy (6.3 format),Line voltages (Vr, Vy, and Vb with respect to Neutral),Line currents (Ir, Iy, and Ib),Line Frequency,Average power factor lag or lead,Active power- R ph, Y ph, B ph & summation,EB On hour					
55.	Power Meter	<ul style="list-style-type: none"> •Digital Wattmeter which calculate and displays power of single phase 230 V, Min. 1 KW Measurement, 50 Hz on a seven segment display. •600 V CAT IV/1000V CAT III as per International Safety standard IEC61010-1-2010 	No.	6			
56.	Power Meter	<ul style="list-style-type: none"> •Digital Wattmeter which calculate and displays power of single phase 230 V, Min. 1 KW Measurement, 50 Hz on a seven segment display. •600 V CAT IV/1000V CAT III as per International Safety standard IEC61010-1-2010 	No.	9			
57.	Pressure gauge Digital type	Digital type Pressure gauge with diameter 63mm with recalibration set <ul style="list-style-type: none"> • Min Pressure (PSI)0 and Max Pressure (PSI)30 • Min Temperature (° C)-20 and Max Temperature (° C)60 • Display5-digit LCD, 0.5" H • Battery Type : Two AA (included) • Battery Life2000 hours minimum 	No.	6			
58.	Room temperature thermometer	Spirit-filled glass thermometer mounted on a rust-proof aluminium plate with dual scale - 20° to 230°F x 1°F and -30 to 110 C x 1°C	No.	1			

		division.					
59.	Analog Tachometer	Tachometer - Analog type Analog Type - 10000 RPM	No.	22			
60.	Digital Tachometer	Tachometer Digital <ul style="list-style-type: none"> • Digital Photo Sensor Type - 10000 RPM (Tachometer - 5 Digit bright LED display of 10 mm height with memories of last ,highest and lowest readings , • 60 to 10000 RPM for rotational speeds, Auto - ranging ,Resolution 0.1 RPM from 60 to 1000 RPM ,1 RPM from 1000 to 50000 RPM. 6 to 1000 MPM (meters per minute) for surface speeds with resolution of 0.1 RPM • Choice of battery operation with 4 pen cells of 1.5 volts ,or mains voltage 230 + 10 % volts AC ,50/60 Hertz with the help of battery adaptor supplied • Auto power off facility. 	No.	13			
61.	Tachometer digital, multi range	Tachometer Digital <ul style="list-style-type: none"> • Digital Photo Sensor Type - 3000 RPM (Tachometer - 5 Digit bright LED display of 10 mm height with memories of last ,highest and lowest readings , 	No.	2			
62.	Thermometer Digital	<ul style="list-style-type: none"> • 0° C - 150° C Industrial-grade digital thermometer with stainless steel probe for use with all hot and cold fluids and solids, including aquariums and hydroponics, ovens, refrigerators and freezers, ventilation systems, and heating systems • Dual-reading display has -58 to +482 degree F/ -50 to +250 degree C temperature range 	No.	25			

		and 0.1 degree resolution • 2-1/2" stainless steel probe with 20" cable • Includes wallet-style case					
63.	Tong tester (clamp on multi meter)	Tong Tester / Clamp Meter • 0 – 10-30 amp.(min) with 0-500 V • Dial (aka rotary switch). • Backlight button. • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum and average inputs are shown. • Works in current, voltage and frequency modes. • Shall comply to Safety standard IEC 1010 or IEC 61010	No.	5			
64.	Sensor thermometer (digital)	Sensor thermometer (digital) with following specifications: • Range: -50°C to 150°C • Temperature Resolution: 0.1°C • Display Min. 36 x 17mm • Accuracy: ±0.1%+0.4°C • Survey Cycle: 10 Sec • Sensor:PT 100 • Battery: 1.5V (LR44)	No.	4			
65.	Tong Tester	Digital Type Tong Tester / Clamp Meter • 0 – 100 Amp. • Dial (aka rotary switch). • Backlight button. • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum and average inputs are shown.	No.	23			

		<ul style="list-style-type: none"> • Works in current, voltage and frequency modes. • Shall comply to Safety standard IEC 1010 or IEC 61010 					
66.	Voltmeter (0-1V), (0-10V), (0-30V) (table model)	Table model Analog Voltmeter with range 0-1V : <ul style="list-style-type: none"> • Range: Voltage (V): 0 – 1 V Table model Analog Voltmeter with range 0-10V : <ul style="list-style-type: none"> • Range: Voltage (V): 0 – 1 0V Table model Analog Voltmeter with range 0-30V : <ul style="list-style-type: none"> • Range: Voltage (V): 0 – 130V 	No.	4			
67.	Voltmeter 50V/DC	<ul style="list-style-type: none"> • Voltmeter MC analog - (0 - 50V) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension • It should have banana terminals with permanent marking of range and terminals • It should have knife edged pointer and anti parallax mirror • It should be moving coil type 	No.	5			
68.	Voltmeter AC to 500 V	<ul style="list-style-type: none"> • A.C. Voltmeter • M.I. analog, • A.C. Voltmeter M.I. 75V - 150 V - 300 V – 500V A.C • Confirming to BS 89, IEC 51 & IS 1248 	No.	2			
69.	Voltmeter, AC/DC portable precision grade Digital Panel board type	Ac/DC Digital Voltmeter 0-500 Volts <ul style="list-style-type: none"> • 3 Digit, 7 Segment LED Display • True RMS Measurement for AC measurement • For 1Ø-2 Wire Electrical Network • IP Protection (Front): IP65 	No.	5			

70.	Wattmeter AC/DC, 0 to 10 Kw	<ul style="list-style-type: none"> • Kilo Wattmeter Analog 0-10 KW, • pressure coil rating- 240v/440v, • Current rating-5A/10A(min) Analog, • Portable type Housed in Bakelite case Conforming to IS 1248	No.	2			
71.	Digital Wattmeter	<ul style="list-style-type: none"> • Multi range Digital Wattmeter which calculate and displays power of single phase 230 V, 1 KW Measurement, 50 Hz on a seven segment display. • 600 V CAT IV/1000V CAT III as per International Safety standard IEC61010-1-2010 	No.	1			
72.	Conductivity meters- both low range and high range.	Digital Conductivity meters with both low range and high range. complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Display : 3.5 Digital LED • Ranges 0 to 200 uS/cm, 0 to 2 mS/cm, 0 to 20 mS/cm, 0 to 200 mS/cm & 0 to 1000 mS/cm 	No.	1			
73.	pH meters	Digital pH meters complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Display: 3 1/2 Digit LED • Accuracy: + 0.01 pH • Power Requirement 220 VAC +10% 50 Hz 	No.	1			
74.	Temperature probes	Temperature probes complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Measuring Range : -50 to +250 Deg.C; • Accuracy : Class A Accuracy of ± 0.2 Deg.C +/- 1 count • Output : Pt-100 3 Wire Type standard • Type : Simplex type with transition 	No.	1			

		teflon/teflon cable of length 3 meters. • Sensor Length : Standard 6 inch(150mm) • MOC : Stainless Steel 304 pipe of 150mm length of Outer Diameter : Standard 6 mm.					
75.	Thermo-hygrometers	Thermo-hygrometers complete in all aspect with key specifications as: • Measuring rate 18 s • Storage temp. -40 to +70 °C • Battery type 9V block battery • Battery life approx. 1 year • Material/Housing ABS • Display LCD, 2 lines	No.	1			

Note: For detailed specifications please refer table 3: Technical Specifications

Lot No : 3.2							
Lot Name: Electrical Lab equipments							
Item No	Name of Goods or Related Services	Description	Unit of Measurement	Quantity	Specification by the supplier(To be filled by the supplier)	Detailed information brochure attached at Page No.	Pass/Fail (By Purchaser)
1.	0-30 V, 2 Amp, Regulated DC Power Supply	Regulated DC Power Supply with following specifications: <ul style="list-style-type: none"> • Bench top model Type DC regulated Power supply • Input: 230v ac, +/-10%, 50hz, single phase • Output: 0-30volts, 2 Amps • Line & load regulation: $\pm 0.05\%$ for variations in input and load variations • Ripple: Less than 3mv RMS • Protections: Fuse protection to be provided Outputs are protected against over loads & short circuits 	No.	42			
2.	3- Point D.C. Starter	Starter, 3- point D.C. For 2.5 KW DC motor 3-point DC Starter. 3 Point D.C. Motor starter suitable to work on 2.5 KW. D.C. motor, Voltage 230/250 with a maximum 15% full load current the starting period shall not exceed 30 seconds with under voltage and an intensions (Magnetic) over load release device.	No.	10			

3.	4- Point D.C. Starter	Starter, 4- point D.C. For 2.5 KW DC motor 4-point DC Starter :- 4 Point D.C. Motor starter suitable to work on 2.5 KW. D.C. motor, Voltage 230/250 with a maximum 15% full load current the starting period do shall not exceed 30 seconds with under voltage and an intensions (Magnetic) over load release device.	No.	11			
4.	4 Point relays	Pin Number: 4 Pin; Current: 40A Coil Voltage: DC 12V	No.	32			
5.	5 Point relays	Pin Number:5 Pin; Current: 40A Coil Voltage: DC 12V	No.	34			
6.	Electric Induction plate	Electric Induction plate with min 1500 Watt, 240V having Ceramic cook top. •ISI mark product	No.	10			
7.	Resistance type AC starter	•AC Starters: - •Resistance type starter For A.C Motors of 2 to 5 H.P.	No.	14			
8.	DOL AC Starters	•Direct-on-Line Starters in Sheet-Steel Enclosure suitable for 2 to 5 HP motor • Conforms to IS 13947 or IEC 60947-4-1 & IEC 60947-4-1. • Sheet steel enclosures with IP 54 protection. • Wide range of relay settings and coil voltages.	No.	13			
9.	Manual Star-Delta type AC starter	Star Delta Starter- Manual • Manual Star Delta starter for 3 phase AC motors of min. 5 HP ratings complete in as aspects. • Sheet steel enclosures with IP 54 protection. with Standardized accessories and spares .	No.	13			
10.	Dimmer starter	Dimmer Starter •0 - 270 V, 3Amp (Air cooled) Specification:- •Type :Single Phase Auto Transformer Amperage 3 Amp	No.	4			

		input voltage 0-270 V with safety fuses and line indicators					
11.	DOL starter	Direct-on-Line Starters in Sheet-Steel Enclosure suitable for 1/4 HP AC motor <ul style="list-style-type: none"> • Conforms to IS 13947 or IEC 60947-4-1 & IEC 60947-4-1. • Sheet steel enclosures with IP 54 protection. • Wide range of relay settings and coil voltages. 	No.	2			
12.	Semi-Automatic Star-Delta type AC starter	Star Delta Starter – <ul style="list-style-type: none"> • Semi automatic in Sheet • Steel Enclosure (Motor Rating min 5 HP AC-3 Duty, 415V, 50Hz, 3-Ph) • Sheet steel enclosures with IP 54 protection. with Standardized accessories and spares. 	No.	14			
13.	Fully Automatic Star-Delta type AC starter	Fully Automatic Star-Delta Starters <ul style="list-style-type: none"> • Suitable for motor starting upto 2 to 5 HP AC-3 Duty, 415V, 50Hz, 3-Ph • Sheet steel enclosures with IP 54 protection. 	No.	14			
14.	Star Delta AC Soft Starter	Star Delta Starter - Soft starter <ul style="list-style-type: none"> • Star Delta soft Starter complying IEC 60947 in Enclosure with IP 20 protection class for Motor Rating 2-5 HP AC-3 Duty, 415V, 50Hz, 3-Ph 	No.	16			
15.	Auto Transformer starter	Auto Transformer starter <ul style="list-style-type: none"> • suitable for Motor starting upto 2-5 HP Motors. • Shall conform to IEC 60947-4-1 • Starter enclosure to conform IP 53 	No.	13			
16.	Air blow gun with standard accessories	Air blow gun Copper body with jet operating lever and suitable hose/connector	No.	10			

17.	Automatic Electric Press	<ul style="list-style-type: none"> • Steam 30g/min;100g steam boost • Non-stick soleplate/ Ceramic Soleplate • Anti-calc • 2100 Watts • Water tank capacity with min. 200 ml • Power supply: 220 V AC Single phase 50 Hz 	No.	2			
18.	Autotransformer	<ul style="list-style-type: none"> •Single Phase Variable Auto Transformer •0 - 270 V, 15 Amp (Air cooled) Specification:- <ul style="list-style-type: none"> •Type :Single Phase Auto Transformer Amperage 15 Amp input voltage 0-270 V with safety fuses and line indicators 	No.	7			
19.	Electric Kettle	<ul style="list-style-type: none"> •Electric Kettle Min. 1500 Watts, 240V with 1.7 Litre capacity. 	No.	8			
20.	Battery Charger	<ul style="list-style-type: none"> •Battery Charger of Capacity-30amps(High) •The charger is for automotive, SMF, VRLA,Tubular and stationary batteries. •It shall be possible to recharge 20Ah to 200Ah batteries. •These charger should be able to select 12V/24V/36V and 48V respectively with low and High current selector to choose current level for low Ah battery and High Ah battery. •Power on indication, reverse mcb and Thermal trip with connecting probes. •It shall use full wave rectifier coupled copper transformer combination . •An ammeter for indication charging current. 	No.	45			
21.	Battery charger	<ul style="list-style-type: none"> •Automotive Battery Charger of Capacity-10amps(High) •The charger is for automotive, SMF, VRLA, Tubular and stationary batteries. 	No.	1			

		<ul style="list-style-type: none"> •It shall be possible to recharge 20Ah to 100Ah batteries. •These charger should be able to select 12V/24V/36V respectively with low and High current selector to choose current level for low Ah battery and High Ah battery. •Power on indication, reverse mcb and Thermal trip with connecting probes. •It shall use full wave rectifier coupled copper transformer combination . •An ammeter for indication charging current. 					
22.	Battery terminal cleaner tool	<ul style="list-style-type: none"> •Battery Terminal Cleaner tool 	No.	2			
23.	Battery tester	<p>Auto Battery tester specifications:</p> <ul style="list-style-type: none"> •Type: Portable type with case •Test Method: Conductance, Non-loading •Battery Test: 12V starter batteries (standard, maintenance-free, and AGM) •Power Supply: From test battery with voltages from 5.5V •Voltmeter: 5.5 – 19.99V DC •Operating Range, Amps: 200 to 850 CCA, 200 to 900 SAE/EN, 120 to 550 DIN/IEC <p>Test State/Diagnostic Capability: Battery life, voltmeter, starter system, charging system</p> <ul style="list-style-type: none"> •Display: 4-digit LED numeric display, 3 LED indicators •User Interface: Push-button operation •Cable: Min. 1.3 ft •CE Mark/ ISO 9001 certified factory product 	No.	1			
24.	BLDC motor with controller	<ul style="list-style-type: none"> •15-30 Watts, 315 Volt DC BLDC Motor with controller on panel mounted 	No.	4			

		<ul style="list-style-type: none"> • Mains Supply : Single Phase, 230V AC $\pm 10\%$, 50Hz • Machine Type : BLDC, Rating : 15-30 W • Voltage Rating : 24V DC • Loading arrangement : Mechanical • Brake Drum/Pulley : Aluminum casted • Instrumentation Power Supply : 24V DC , 10A DC • Digital Meters used to display DC Voltage and Current with Digital Tachometer 					
25.	Electric Iron	Electric Iron Automatic - 750 W, 240 V.	No.	7			
26.	Ceiling fan coil Winding Machine	Ceiling fan coil Winding Machine with following specifications: <ul style="list-style-type: none"> • Winding Gauge: 27 SWG to 37 SWG • Size of fan :600 mm to 1400 mm • Starting coil winding :4 slots to 20 slots • Running coil winding: 4 slots to 20 slots • Motor AC 1/ 10 H.P, 1350 R.P.M • Power requirement: 220V AC, 50 HZ Single Phase • Fill counter:4-Digit, Preset, LED Display through controller • Winding Speed: Continuously variable Max. 1000 R.P.M to 1350 R.P.M 	No.	24			
27.	Contactor & auxiliary contacts-25Amps	Contactor & Auxiliary contacts 3 phase, 415 Volt, 25 Amp with 2 NO and 2 NC	No.	36			
28.	Contactor & auxiliary contacts- 32 Amps	Contactor & Auxiliary contacts 3 phase, 415 Volt, 32 Amp with 2 NO and 2 NC	No.	24			
29.	Copper bit soldering iron 0.25Kg	Copper Bit Soldering iron 0.25 KG:	No.	8			

30.	Core drill Machine	Core drill Machine : •Input Supply Voltage : single phase 220-240 V •Core Cutting Capacity: 12 - 38 mm •Core Cutting Depth: 50 mm	No.	2			
31.	Immersion Heater	Immersion Heater 1500 Watt, 240V.	No.	10			
32.	D.O.L Starter	Direct-on-Line Starters in Sheet-Steel Enclosure suitable for 2 HP motor • Conforms to IS 13947 or IEC 60947-4-1 & IEC 60947-4-1. • Sheet steel enclosures with IP 54 protection. • Wide range of relay settings and coil voltages.	No.	2			
33.	Dc Power Supply	DC Power supply- 0 to 30V •Table Top and Portable type Outputs: •0 to 30V DC continuously Variable •+ 15 V and -15 V Volts DC constant output •+ 5 V DC Constant output •Current capacity : 5 Amps	No.	21			
34.	DC regulated power supply (5 volts and 12 volts)	DC Power supply- 0 to 5V •Table Top and Portable type Outputs: •0 to 5V DC continuously Variable DC Power supply- 0 to 12V •Table Top and Portable type Outputs: •0 to 5V DC continuously Variable	No.	20			
35.	DC Regulated Variable Programmable DC Power Supply 0 - 30V / 3A	Regulated DC Power Supply with following specifications: • Bench top model Type DC regulated Power supply • Input: 230v ac, +/-10%, 50hz, single phase	No.	9			

		<ul style="list-style-type: none"> • Output: 0-30volts, 3 Amps • Line & load regulation: $\pm 0.05\%$ for variations in input and load variations • Ripple: Less than 3mv RMS • Protections: Fuse protection will be provided Outputs are protected against over loads & short circuits 					
36.	Desoldering pump	<ul style="list-style-type: none"> • Manual, suction type. With static free Teflon nozzle. • Type: Manual Hot Solder Sucker De-soldering Pump Tool. • Operation: Hand operated. • Body: Metal or Moulded. Non Static Teflon Nozzle 	No.	82			
37.	De-soldering pump electrical heated	<ul style="list-style-type: none"> • Electric Vacuum Desoldering Pump • Wattage: 40 Watt • Power Supply: 220-240 Volts AC 50 Hz 	No.	20			
38.	De-soldering pump/gun	<ul style="list-style-type: none"> • Manual, suction type. With static free Teflon nozzle. • Type: Manual Hot Solder Sucker De-soldering Pump Tool. • Operation: Hand operated. • Body: Metal or Moulded. Non Static Teflon Nozzle 	No.	42			
39.	Dual DC regulated power supply	<p>Regulated DC Power Supply with following specifications:</p> <ul style="list-style-type: none"> • Bench top model Type DC regulated Power supply • Input: 230v ac, $\pm 10\%$, 50hz, single phase • Output: 30-0-30volts, 2 Amps • Line & load regulation: $\pm 0.05\%$ for variations in input and load variations • Ripple: Less than 3mv RMS • Protections: Fuse protection will be provided Outputs 	No.	11			

		are protected against over loads & short circuits					
40.	Dual Power Supply	<p>Dual Power Supply complete in all aspect with key specifications as:</p> <ul style="list-style-type: none"> • DC Output : 2 outputs of 0 - 30 V, 2 A continuously variable by means of coarse and fine controls • Resolution : Voltage : 100 mV and Current : 10 mA • Recovery Time : $\leq 50 \mu s$ • Load Regulation : $\pm (0.05 \% + 10 \text{ mV})$ • Line Regulation : $\pm (0.05\% + 10 \text{ mV})$ • Display : 3 digit for voltage & 3 digit for current LED indication for Voltage & Current • Accuracy : $\pm (1 \% + 1 \text{ digit})$ • Over Range Indication : Glowing 'ORA' and 'ORB' LEDs indicate Overload • Both outputs are floating. • Built-in Overheat, Over Voltage and Short Circuit protection. • Power Supply : 230 V, $\pm 10\%$, 50 Hz • Operating Temperature : 0 - 40°C, 80% RH 	No.	2			
41.	ELCB and RCCB	<p>Earth Leakage Circuit Breaker- (ELCB)</p> <ul style="list-style-type: none"> • 25Amps • Double pole and 25Amps, double pole, $I_{\Delta n}$ 30 mA (Rated Short circuit capacity) • Specification: shall comply to IEC 61008-1/IS 12640-1:2008/EN 61008-1 <p>Residual Current Circuit Breaker (RCCB)</p> <ul style="list-style-type: none"> • 25 Amps, Double pole , $I_{\Delta n}$ 30 mA (Rated Short circuit capacity) • Specification: IEC 61008-1/IS 12640-1:2008/EN 61008-1 	No.	38			

42.	Electric Automatic steam press	<ul style="list-style-type: none"> • Steam 30g/min;100g steam boost • Non-stick soleplate/ Ceramic Soleplate • Anti-calc • 2100 Watts • Water tank capacity with min. 200 ml • Power supply: 220 V AC Single phase 50 Hz 	No.	9			
43.	Electric Automatic steam press	<ul style="list-style-type: none"> • Steam 30g/min;100g steam boost • Non-stick soleplate/ Ceramic Soleplate • Anti-calc • 2100 Watts • Water tank capacity with min. 200 ml • Power supply: 220 V AC Single phase 50 Hz 	No.	4			
44.	Electric pump	<p>Electric Pump of 1 HP with min. desired specifications as Follows:</p> <ul style="list-style-type: none"> • Head :10-40 M • Discharge : 3960 - 360 LPM • Rating :1.00HP • Voltage Range : 170 - 230 V single Phase <p>MATERIAL OF CONSTRUCTION</p> <ul style="list-style-type: none"> • Pump Housing : Cast Iron • Impeller : H T Brass/bronze • Shaft : Carbon Steel • Motor Body : Extruded Aluminium 	No.	1			
45.	Electric Soldering Iron	<p>Soldering iron 25 Watts:</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	No.	29			

		<p>Soldering Iron 60 Watts:</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: Min 60W Temperature: 850° F / 440° C • Cord length: 5 feet • Tip: Short length, Taper, Chisel type, 0.15” , Replaceable Soldering Pencil type • Peg hook for hanging the Soldering Iron • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 					
46.	Electric Automatic steam press	<ul style="list-style-type: none"> • Steam 30g/min;100g steam boost • Non-stick soleplate/ Ceramic Soleplate • Anti-calc • 2100 Watts • Water tank capacity with min. 200 ml • Power supply: 220 V AC Single phase 50 Hz 	No.	9			
47.	Growler	<p>Growler</p> <ul style="list-style-type: none"> • 230 V, 50 Hz, Single Phase, • ISO 9001 of latest version certified Factory product 	No.	40			
48.	Hand blower	<p>Hand blower with following Min. Specifications:</p> <ul style="list-style-type: none"> • Supply voltage: 230 V AC • Motor Power: 500watts • RPM: Min. 14000 r/min • Air Flow: Min. 3.5l/min 	No.	2			
49.	Vacuum Cleaner	<p>Portable Vacuum Cleaner with Min. Desired specifications as :</p> <ul style="list-style-type: none"> • Power Supply: Single Phase 220 V, AC 50 Hz • Vacuum Pressure: 22kpa -34 kpa • Noise (dB):<= 82dB (A) • Power Cord Length: 5m (min) • Airflow: > 1.8m3/min or > 30 L/s • Power: 1200 W(min.) 	No.	7			

		<ul style="list-style-type: none"> • Dry type filtration system with mi. capacity of 1.5 L Action Radius: 8 Meter (min.)					
50.	Vacuum cleaner -Hand Held	Hand Held Vacuum Cleaner with Min. Desired specifications as : <ul style="list-style-type: none"> • Power Supply: Single Phase 220 V, AC 50 Hz • Vacuum Pressure: 15kpa -22 kpa • Noise (dB): ≤ 86dB • Power Cord Length: 5m (min) • Power: 850 W(min.) • Dry type filtration system with mi. capacity of 0.4 L 	No.	4			
51.	Wax heater	Wax heater with Min. Specifications as: <ul style="list-style-type: none"> • Power Supply: 220-240 V AC with 50 Hz • Capacity: Mi. 2 Kg • Type: Single Jar 	No.	1			
52.	Mixture & Grinder	<ul style="list-style-type: none"> • Input Voltage: 230 V, 50Hz • Power: 750 W or above • Motor rating: 30 minute(s) • Capacity chutney jar: 0.5 L or above • Capacity wet grinding jar: 1.5 L or above • Capacity multi-purpose jar: 1.25 L or above • Blender volume capacity liquid: 1.5 L or above • Motor rating: 30 minute(s) or above • Capacity chutney jar: 0.5 L or above • Capacity wet grinding jar: 1.5 L or above • Capacity multi-purpose jar: 1.25 L or above • Blender volume capacity liquid: 1.5 L or above 	No.	9			
53.	Geyser (Storage type)	Capacity 10 Liters 3 KW Heating Element Min. Min. 4 Star rated from BEE ISI Mark Product	No.	8			

54.	Heat convector	Heat convector with mln. following specifications: • Operating voltage of 220 -240 volts AC 50 Hz. • Power Wattage: 2000 W	No.	4			
55.	Heating kit with infrared bulb	Heating kit with infrared bulb of 200 Watt Capacity	No.	2			
56.	Motor Pump set	Electric Pump of 1 HP with min. desired specifications as Follows: •Head :10-40 M •Discharge : 3960 - 360 LPM •Rating :1.00HP •Voltage Range : 170 - 230 V single Phase MATERIAL OF CONSTRUCTION •Pump Housing : Cast Iron •Impeller : H T Brass/bronze •Shaft : Carbon Steel •Motor Body : Extruded Aluminium •Mechanical Steel : Carbon Ceramic	No.	13			
57.	IDU Plus Generation type motor	•IDU Plus Generation type motor of 15 Watts,230 Volt AC complete with all accessories •Power supply: 230 V AC 50 Hz.	No.	4			
58.	Knife Switch DPDT fitted with fuse terminals	•Knife Switch DPDT fitted with fuse of Min. 16 Amps. •The arrangement shall be enclosed in the MS box	No.	58			
59.	Laboratory Type Induction Coil	•Laboratory Type Induction Coil 1000 Watt •Laboratory type induction coil 6 volt to 800-1000 volt	No.	30			
60.	LED lighting system	•LED lighting system with Measurement of Power, Voltage, Current, Power Factor and Light output performance of different lighting products like LED, CFL at variable input voltages 0 to 245V variable AC	No.	12			

61.	Limit Switch	Limit Switch • Liver operated 2A 500v, •2-contacts	No.	28			
62.	Manual Motor coil Winding Machine	•Manual Motor coil Winding Machine with min. six numbers of Straight and Step Arbors •Suitable for 1/8 H.P. to 40 H.P. Motor coil. •Durable and efficient, with capacity of winding both-Single and Three phase Motor's coil of Straight and Step winding.	No.	23			
63.	MCCB	MCCB of Min. 100 Amps Triple pole 440 V with enclosure.	No.	23			
64.	Megger	Megger - (500 Volt) insulation Tester •Nominal test voltages •Dust & Water protection: IP54 Protected against dust and splashing water •Safety Protection Meets EN 61010-1 (1995) to 600 V phase to earth, Category IV •Designed to Generally Confirm to IS 10656-1983	No.	4			
65.	Megger	Megger - (500 Volt) insulation Tester •Nominal test voltages •Dust & Water protection: IP54 Protected against dust and splashing water •Safety Protection Meets EN 61010-1 (1995) to 600 V phase to earth, Category IV •Designed to Generally Confirm to IS 10656-1983	No.	25			
66.	Megger	Megger - (1000 Volt) insulation Tester •Nominal test voltages:50 V, 100 V, 250 V, 500 V, 1000 V •Insulation resistance range: 2 GΩ •Dust & Water protection: IP54 Protected against dust and splashing water	No.	5			

		<ul style="list-style-type: none"> •Safety Comply to EN 61326-1:2005, CAT IV 600V, IP54 protection 					
67.	Miniature Breaker	MCB 16 Amps.	No.	24			
68.	Insulators	PIN INSULATORS:- <ul style="list-style-type: none"> •11/22KV Brown Glazed pin insulators confirming to IS-731 to give rigid support to an over-head line and intended to be mounted vertically on •Supporting structure by GI Pin passing up inside this insulator with minimum failing loads 10 KN. Shackle type Insulator <ul style="list-style-type: none"> •Standards to which insulators will conform IS: 1445/1977 Latest amendment. •Dry Power freq. Withstand voltage (KV) : 12 KV •Wet Power freq. Withstand voltage (KV) : 06 KV •Minimum failing Load (KN): 7.7 KN Egg type Insulator <ul style="list-style-type: none"> •11 KV Egg Type Insulator conforming to relevant IS standard. Suspension type insulators <ul style="list-style-type: none"> •11KV Brown Glazed 'Disc' insulators conforming to IS-731/71 for suspension or tension strings, ball and socket type having ball shank dia.16mm •Minimum failing load of 70 KN along with phosphor bronze 'W' clips. 	No.	39			
69.	Portable electric drill Machine	<ul style="list-style-type: none"> •Portable hand Drill (Electric) with min. 2 to 20mm Capacity •Input Voltage: 1 Phase 230 V AC •For drilling into masonry, concrete, wood and metal. 	No.	9			

70.	Potential Transformer	<ul style="list-style-type: none"> • Potential Transformer Test Set with 415 V, 50Hz, PT Ratio, 440V/110V, • Burden: 10VA • Complete with control panel 	No.	23			
71.	Power Supply	<ul style="list-style-type: none"> • Bench top model Type DC regulated Power supply • Input: 230v ac, +/-10%, 50hz, single phase • Output: 0-12volts • Line & load regulation: $\pm 0.05\%$ for variations in input and load variations • Ripple: Less than 3mv RMS • Protections: Fuse protection will be provided Outputs are protected against over loads & short circuits 	No.	3			
72.	Primary current injection set	220V, 50 Hz, 1- Φ , output current -200 A (min) with timer with following min. specifications: <ul style="list-style-type: none"> • Output current: 200A (Min.) • Mains supply: 230Vac, 50Hz ± 10 • Operation: manual • Display: LED • Indication: Bright LED for Test ON and Power ON operation • Protected by MCB, HRC fuse, Zero start interlock 	No.	27			
73.	Reverse current Relay	Reverse current relay of 16A, 440V The Experimental Setup consists of the following parts: <ul style="list-style-type: none"> • 2nos. of Reverse Power Relay provided on the Front Panel. • 2 Nos. of Digital Current meter (0-20A) provided on the Front Panel. • 2 Nos. of Digital Timer provided on the Front Panel. • Power Requirement: 440V/50Hz . 	No.	29			
74.	Rheostat (Sliding type)	<ul style="list-style-type: none"> • Rheostat (Sliding type) 0 - 25 Ohm, 2 Amp • Standard ISI Product 	No.	15			

75.	Rheostat (Sliding type)	Rheostat (Sliding type) 0 - 300 Ohm, 2 Amp	No.	14			
76.	Rheostat (Sliding type)	Rheostat (Sliding type) 0 -1 Ohm, 10Amp	No.	14			
77.	Rheostat (Sliding type)	Rheostat (Sliding type) 0 -10 Ohm, 5 Amp	No.	15			
78.	Rheostat variable values	<ul style="list-style-type: none"> •0-1 ohm, 5 A •0-10 ohm, 5 A •0-25 ohm, 1 A •0-300 ohm, 1 A 	No.	16			
79.	Rotary Switch	Rotary Switch of 16 A/440v	No.	32			
80.	Rubber mat	Rubber Mat of Min 2' x 4' x 1" dimensiona conforming to IS 15652	No.	6			
81.	SC Couplers	Fiber optic cable adaptor coupler SC-SC Duplex single mode.	No.	48			
82.	Shaded Pole Motor	Fractional HP,with Min. 25 Watt Shaded pole motor 240 V, 50 Hz	No.	15			
83.	SMD Soldering & De soldering Station with necessary accessories	<p>SMD soldering/desoldering station with Fume Extractor with following specifications: Input Power: 220-240 V AC 50 Hz Soldering: Wattage: 100 W or above Temp. range: 150-450 deg C Tip code: 44-710652 or better SMD Rework: Wattage: 100 W or above Temp. range: 150-450 deg C or above Air Flow Capacity range: 2 L/min to 38 L/min (or above) De-Soldering: Wattage: 100 W or above Temp. range: 300-400 deg C or above Tip code: 44-915412 or better</p>	No.	7			

84.	SMD soldering/desoldering station	SMD soldering/desoldering station with Fume Extractor with following specifications: Input Power: 220-240 V AC 50 Hz Soldering: Wattage: 100 W or above Temp. range: 150-450 deg C Tip code: 44-710652 or better SMD Rework: Wattage: 100 W or above Temp. range: 150-450 deg C or above Air Flow Capacity range: 2 L/min to 38 L/min (or above) De-Soldering: Wattage: 100 W or above Temp. range: 300-400 deg C or above Tip code: 44-915412 or better	No.	8			
85.	SMPS of different make	SMPS •Input power: 200-300V AC. •Output Voltage: 12V. •Power Rating: 450 Watt.	No.	6			
86.	SMPS of PC	•Input power: 200-300V AC. •Output power: 12V. • Power Rating: 450 Watt.	No.	20			
87.	Solar panel with Battery	Solar panel with Battery •12 volts solar panel charging at 12 volt battery with a traditional 12 volt Pulse Width Modulation (PWM) charge controller •It should be a 12 volt solar panel with a 12 volt charge controller, 12 volt battery bank and a 12 volt inverter •Battery Bank Specification - 18 Watt battery,12volt rechargeable 8 Amp •Nos. of cells - 36 •Open circuit Voltage - 22 volt	No.	24			

		•Maximum Power Volt - 18 Volt					
88.	Soldering & De soldering Station	Temperature controlled soldering/ desoldering station with min. specifications as: <ul style="list-style-type: none"> • Input Voltage : 180-240VAC,50Hz Fuse : Suitable rating • DEsold pump :Suitable rating • Vacuum Pressure :Suitable rating • Min. Temp Range : 180 to 480°C • Temperature control accuracy +/- 1°C • Tip Leakage Current : < 2 mA • Temperature control Stability +/- 1°C • Tip to Ground Resistance : < 2 Ohms • Tip to Ground Leakage Voltage : < 2 mV 	No.	1			
89.	Soldering iron	Soldering iron 25 Watt 240 V <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	No.	42			
90.	Soldering Iron 10 w	Soldering iron 10 Watt 240 V <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 10W • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	No.	12			
91.	Soldering Iron 240 W	Soldering iron of Min. 240 Watt Rating, with soldering working stand compete in all aspects	No.	1			

92.	Soldering Iron 25 W	<p>Soldering iron 25 Watt 240 V</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	No.	6			
93.	Soldering iron 25 W. 240 V.	<p>Soldering iron 25 Watt 240 V</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	No.	21			
94.	Soldering Iron Changeable bits 15 W	<p>Soldering iron with changable bits 15 Watt 240 V</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 15W • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	No.	21			
95.	Soldering Iron	<p>Soldering Iron 65 Watts:</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: Min 60W Temperature: 850° F / 440° C • Cord length: 5 feet • Tip: Short length, Taper, Chisel type, 0.15" , Replaceable Soldering Pencil type • Peg hook for hanging the Soldering Iron • Firm Stand for placing the soldering iron during use 	No.	10			

		with built in Sponge for Tip Cleaning.					
96.	Soldering iron, 20/25watts	Soldering iron 25 Watt 240 V <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	No.	42			
97.	Soldering iron 25W 240 V	Soldering iron 25 Watt 240 V <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	No.	38			
98.	Solenoid with core	Educational Solenoid and Electromagnet with Iron Core	No.	20			
99.	Star delta starter	Fully Automatic Star-Delta Starters <ul style="list-style-type: none"> • Suitable for motor starting up to 2 HP or higher, AC-3 Duty, 415V, 50Hz, 3-Ph • Sheet steel enclosures with IP 54 protection. 	No.	2			
100.	Synchronous Motor Capacitor For Synchronous Motor	Synchronous Motor and capacitor for Synchronous Motor 240V, 60rpm 0.8mf ± 5% 450 VAC	No.	2			
101.	Temperature controlled Soldering Iron	<ul style="list-style-type: none"> • Type: Temperature controlled • Wattage: 50W at 230 Volts Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, 	No.	46			

		<ul style="list-style-type: none"> • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 					
102.	Temperature controlled soldering/ desoldering station	Temperature controlled soldering/ desoldering station with min. specifications as: <ul style="list-style-type: none"> • Input Voltage : 180-240VAC,50Hz Fuse : Suitable rating • DEsolder pump :Suitable rating • Vacuum Pressure :Suitable rating • Min. Temp Range : 180 to 480°C • Temperature control accuracy +/- 1°C • Tip Leakage Current : < 2 mA • Temperature control Stability +/- 1°C • Tip to Ground Resistance : < 2 Ohms • Tip to Ground Leakage Voltage : < 2 mV 	No.	18			
103.	Transformer 0-12 V, 6-0-6 V, 1 Amp	Transformer 0-12 V, 6-0-6 V, 1 Amp	No.	8			
104.	Under Voltage Relay	Under voltage Relay 360V-440V Technical Specifications: <ul style="list-style-type: none"> • Relay Type : Over / Under Voltage Relay (Static Type) • Terminals : 4mm Terminals for Trip, Voltage Output and Input • Meters (Digital) : 1No. AC Voltmeter Meter 0 – 220V & 1 No. Digital Timer ..0001sec. to 9999sec. (Auto) • Voltage Injector : Inbuilt variable voltage injector 220V to create Fault Voltage • Indicators : Provided on front panel for Mains, Voltage, Trip and Alarm • Power Requirement : 440VAC +10%, 50Hz 	No.	29			

105.	Variable resistance /potentiometer	Variable resistance boxes/variatic of Following Ohm Values each: 220Ω, 150Ω, 1kΩ, 33Ω, 100Ω, 1.2Ω	No.	12			
106.	Various Lamps	<ul style="list-style-type: none"> • Halogen Incandescent Lamp: 100 Watts with fixture and all accessories. The applicable standard for lamp shall be as IEC 432 • Fluorescent tube: Min 40 Watt with fixture fitted with choke(copper), starter and holder. • HP mercury vapor Lamp : Min. 150 Watt with fixture and all accessories • High-pressure sodium Lamp : Min. 150 Watt with fixture and all accessories • Low-pressure sodium Lamp LED: Min. 150 Watt with fixture and all accessories 	No.	1			
107.	Hammering drilling machine	<ul style="list-style-type: none"> • Portable Hammering Drill (Electric) with min. 2 to 20mm Capacity • Input Voltage: 1 Phase 230 V AC • Suitable for drilling into masonry, concrete, wood and metal. • Auxiliary handle with adjustable depth stop can be rotated 360° • CE Mark product 	No.	1			
108.	UPS Trainer kit	AC Input : 190 to 260 V 10%, 50 Hz Load Output : 230 V / 2.5A Transformer Used Input : 12 - 0 - 12 V Outputs : 0, 190, 220, 240, 260 V Battery charging: 0-18 V 12V DC Battery Test points are provided to analyse signals at various points.	No.	6			

		5 no's of Fault Switches Provided All ICS are mounted on IC Sockets. Bare board Tested Glass Epoxy SMOBC PCB with Block Diagram.					
109.	SMPS	Power Supply 24 Pin 450w Atx 12v SMPS PC Supply 100% Compatible With latest motherboards, 20+4 Pins Compliant with ATX 12V. 20/24 pin Main Power Connector 20/24 pin SATA Connectors-3 Pcs. Molex Connectors-2 Pcs 4 Pin ATX Connectors.-1Pc 120mm Smart Cooling Fan /230VAC 50/60Hz input, +3.3V/25A, +5V/0.3A, +12V/17A, -12V/0.8A, +5V/2A DC output	No.	35			
110.	SMPS Tester	<ul style="list-style-type: none"> • PC Power Supply Tester • 20/24 Pin PSU ATX SATA HDD • SMPS LED Display 	No.	8			

Note: For detailed specifications please refer table 3: Technical Specifications

2. Delivery and Completion Schedule

The delivery period shall start as of *date of Signing the Contract*

Lot No.	Description of Goods or Related Services	Delivery Schedule (Duration)	Location	Required Arrival Date of Goods or Completion Date for Related Services
Lot-2.1	Lot-2.1: AC & refrigeration items	Within 365 Days from the Signing of the contract.	The location of Delivery of various items of Lot-2.1 attached separately	Within 365 Days from the Signing of the contract.
Lot-2.2	Lot-2.2: Audio-visual & communication devices	Within 365 Days from the Signing of the contract.	The location of Delivery of various items of Lot-2.2 attached separately	Within 365 Days from the Signing of the contract.
Lot-2.3	Lot-2.3: Electronics items	Within 365 Days from the Signing of the contract.	The location of Delivery of various items of Lot-2.3 attached separately	Within 365 Days from the Signing of the contract.
Lot-3.1	Lot-3.1: Metering & Measuring Devices	Within 365 Days from the Signing of the contract.	The location of Delivery of various items of Lot-3.1 attached separately	Within 365 Days from the Signing of the contract.
Lot-3.2	Lot-3.2: Electrical Lab equipment's	Within 365 Days from the Signing of the contract.	The location of Delivery of various items of Lot-3.2 attached separately	Within 365 Days from the Signing of the contract.

3. Technical Specifications

- Special Note: 1** As a part of Documentation even if not mentioned all items supplied shall have minimum of 1. User/Operation Manual and 2. Warranty Certificate. Additional requirements for specific items will be explicitly mentioned.
- Special Note: 2** The installation has to be carried out as per the guidelines given by the OEM with necessary ground work and fixtures wherever necessary.
- Special Note: 3** All Light, Medium and Heavy machineries and item needing installation either on Ground or on Wall is the sole responsibility of the supplier.
- Special Note: 4** All costs involved in installation such as materials and Labour is to be borne by the Supplier.
- Special Note: 5** Machines and items shall be installed at the identified position in the designated ITI workshop /Laboratory.
- Special Note: 6** Warranty of One/Two/.. / means that the Supplier of the item takes full responsibility in ensuring the best working condition of the item during the warranty period.
- Special Note: 7** In the event the item is not working the OEM ensure that the item is brought back to best working condition with-in a reasonable period of time not more than 5 days in the worst case.
- Special Note: 8** All parts of the machine not intentionally damaged by the user should be replaced free of cost by the supplier.
- Special Note: 9** All consumable items if any needing replacement will be supplied by the ITI.
- Special Note: 10** All Items of delicate nature shall be supplied in a suitable Cloth/Wooden/ Other suitable storage case/cover for protection of the item from dust and moisture.
- Special Note: 11** Detailed information brochures having specifications, make and model number of individual item to be attached.

Lot 2.1: AC & refrigeration items

Item No.	Name of Goods or Related Services	Technical Specifications of Item and/or Bureau of Indian Standards (BIS) (if applicable) reference	Features	Accessories	Spare parts	Documents	Installation & Training	Warranty of Equipment/parts
1.	Air Conditioner unit split 2 Ton capacity with Stabilizer	<ul style="list-style-type: none"> • Type - Split AC complete in all aspects • Capacity in Tons- 2 Ton • Star Rating- Min. 3 Star BEE Rating • BEE Rating Year- 2019 • Power Requirement AC 230 V, 50 Hz • Color -White • Compressor- Rotary • Dehumidification- Yes • Remote Control -Yes • Technology Used- Hybrid jet 	<ul style="list-style-type: none"> • Auto Air Swing, • Dust Filter, • Auto Restart, • Timer, • Sleep Mode, • Refrigerant Leakage Detector • LED Display • Turbo Mode 	Voltage stabilizer with other standard Accessories as required		Product Catalogue	Installation shall be in scope of supplier without any cost. Further, installation also includes the material required for	2 Years

		<ul style="list-style-type: none"> • Condenser Coil –Copper 					installation .	
2.	Air conditioner split type 1.5 tons	<ul style="list-style-type: none"> • Type -Split type AC complete in all aspects • Capacity in Tons- 1.5 Ton • Star Rating- Min. 3 Star BEE Rating • BEE Rating Year- 2019 • Power Requirement AC 230 V, 50 Hz • Color -White • Compressor- Rotary • Dehumidification- Yes • Remote Control -Yes • Technology Used- Hybrid jet • Condenser Coil –Copper 	<ul style="list-style-type: none"> • Auto Air Swing, • Dust Filter, • Auto Restart, • Timer, • Sleep Mode, • Refrigerant Leakage Detector • LED Display • Turbo Mode 	Voltage stabilizer(if required) with other standard Accessories as required		Product Catalogue	Installation shall be in scope of supplier without any cost. Further, installation also includes the material required for installation .	2 Years
3.	Deep freezer	Deep freeze with following Specifications: <ul style="list-style-type: none"> •Capacity: 200 L •Refrigerant: 134a • Power Supply: 230V • Phase: Single Phase • Frequency: 50 Hz • Inner Cabinet: Anodised Stucco Aluminium • PUF Thickness: 65mm(min) •Compressor Type: Reciprocating •Wheels/Legs: Heavy Duty Castors 	<ul style="list-style-type: none"> • Robust construction for heavy duty use • Corrosion resistant body • Suited for high ambient temperatures in tropical countries • Twin door larger capacity models to avoid cooling loss • Locks • High density PUF insulation for better holding time • Highly energy-efficient compressor •Color: White • ISI/CE Mark Product 	Standard Accessories as required		Product Catalogue		1 Year on product and 5 years on Compress or
4.	A.C. Ceiling Fan and AC Table Fan	A.C. Ceiling Fan :min 1200mm 68-Watt 230 V with handing arrangement and regulator AC Table Fan: Min. 68 Watt, 230 V with oscillation mechanism	<ul style="list-style-type: none"> •ISI Mark product 			Manual		

5.	Frost free refrigerator	Frost Free refrigerator specifications: •Capacity: Min. 200 Liter •Input Power: 220-240 V AC 50 Hz • Type -Double Door Refrigerator with • Star Rating- Min. 3 Star BEE Rating • Color -White • Compressor- Reciprocatory type • Refrigerant -R600a	•Auto Fridge defrost to stop ice build up •LED Interior Light • Manual Defrost • Stabilizer Free Operation • Mechanical Temperature Cooling System • Lock and Key • BEE Rating Year- 2019 • CE/ISI mark product	standard Accessories as required		Product Catalogue		1 Year on product and 5 years on Compressor
6.	Washing Machine Semi Automatic	•Washing Machine Semi Automatic 5 Kg & above •Input voltage 100V- 240V, 50Hz •Power in 1200W / Output power 100–400W •Top loading / Front loading type •Capacity: 5 Kg or above •Induction motor •Water proof •Body type: Plastic	•CE/ISI Mark product			Catalogue		2 years
7.	Refrigerator	• Type -Double Door Refrigerator with Top Freezer Refrigerator • Capacity : Min. 165 liters • BEE Rating Year- 2019 • Power Requirement AC 230 V, 50 Hz • Color -White • Compressor- Reciprocatory type	• LED Interior Light • Manual Defrost • Stabilizer Free Operation • Mechanical Temperature Cooling System • Lock and Key • Star Rating- 3 Star BEE Rating • CE Mark product	standard Accessories as required		Product Catalogue		2 Years
8.	Air Conditioner unit split 1.5 Ton	• Type - Split AC complete in all aspects • Capacity in Tons- 1.5 Ton	• Auto Air Swing, • Dust Filter,	Voltage stabilizer with other		Product Catalogue	Installation shall be in	1 Year on product

	Invertor Technology	<ul style="list-style-type: none"> • Star Rating- Min. 3 Star BEE Rating • BEE Rating Year- 2019 • Power Requirement AC 230 V, 50 Hz • Color -White • Compressor- Rotary • Dehumidification- Yes • Remote Control -Yes • Refrigerant -R-134a or R-22 • Technology Used- Hybrid jet • Condenser Coil -Copper 	<ul style="list-style-type: none"> • Auto Restart, • Timer, • Sleep Mode, • Refrigerant Leakage Detector • LED Display • Turbo Mode 	standard Accessories as required			scope of supplier without any cost. Further, Installation also includes the material required for installation.	and 5 years on Compress or
9.	Split A/C(Inverter technology)	<ul style="list-style-type: none"> • Type - Inverter Split AC complete in all aspects • Capacity in Tons- 1.5 Ton • Star Rating- Min. 3 Star BEE Rating • BEE Rating Year- 2019 • Power Requirement AC 230 V, 50 Hz • Color -White • Compressor- Rotary • Dehumidification- Yes • Remote Control -Yes • Technology Used- Hybrid jet • Condenser Coil -Copper 	<ul style="list-style-type: none"> • Auto Air Swing, • Dust Filter, • Auto Restart, • Timer, • Sleep Mode, • Refrigerant Leakage Detector • LED Display • Turbo Mode 	Standard Accessories as required		Product Catalogue	Installation shall be in scope of supplier without any cost. Further, Installation also includes the material required for installation.	1 Year on product and 5 years on Compress or
10.	Three/four door refrigerator	Three / four door refrigerator <ul style="list-style-type: none"> •Capacity: Min. 300 Liter •Input Power: 220-240 V AC 50 Hz • Type -Double Door Refrigerator with • Star Rating- Min. 3 Star BEE Rating • BEE Rating Year- 2019 • Color -White • Compressor- Reciprocatory type • Refrigerant -R600a 	<ul style="list-style-type: none"> • LED Interior Light • Manual Defrost • Stabilizer Free Operation • Mechanical Temperature Cooling System • Lock and Key 	standard Accessories as required		Product Catalogue		1 Year on product and 5 years on Compress or

Lot 2.2: Audio-visual & communication devices

Item No.	Name of Goods or Related Services	Technical Specifications of Item and/or Bureau of Indian Standards (BIS) (if applicable) reference	Features	Accessories	Spare parts	Documents	Installation & Training	Warranty of Equipment/parts
1.	Car stereo	Car Stereo with following specifications: <ul style="list-style-type: none"> • Min. 15 cm Wide Screen • Audio Format: WMA/MP3/AAC/WAV • Video/Image Format: MPEG/JPEG / BMP • Operation: Touch Panel • Band: FM/AM • Disc Media: DVD-R/RW, CD-R/RW • AUX: 1 (Rear) • POWER: MOSFET 50W • Equalizer: G.EQ (5BAND) • RCA Pre-outs: 2 (Front, Rear or Subwoofer) • Audio IN RCA: 1 IN • Video IN RCA: 1 IN • Video OUT RCA for Rear Screen: 1 OUT 	<ul style="list-style-type: none"> • Stations Memory • DVD Videos with DVD Menu direct touch control • Rear USB Interface • Rear View Camera IN • Picture Adjustment • LED Backlight • Clear Type Resistive Touch Panel with Anti Glare / Reflection • Clock, Calendar • Dimmer with Dimmer Trigger (Auto/Manu+H3: M20a1/Clock) • Display Off Option • Wired Remote Input • Remote Control Included • CE Mark Product 	<ul style="list-style-type: none"> • Power Connector • Truss Screws • 1.5 m USB Cable 		Catalogue		2 years
2.	Cell phone power source with charger chords for different cell phones	Cell phone power source with charger chords for different cell phones *Min. capacity:20000 -mAh Li-Ion *Micro USB connectors *Min. 2 Outputs of 1 Amps and 2 Amps for	<ul style="list-style-type: none"> • CE Mark product/Latest ISO 9001 Certified factory 	USB Cables		Catalogue		2 Years

		phone charging *LED Charging indicator and torch	product					
3.	Credit card detection machine	Portable Credit card detection machine with printing features. With Wifi and GPRS facility along with Chip sensing feature	• Latest ISO 9001 Certified factory product	Standard Accessories		Operating Manual	Installation & training	2 Years
4.	Document Camera / Visualiser	Document Camera / Visualiser with Min. Specifications as: • Image pick-up device: 1/ 2.7 " or 1/ 3 "CMOS sensor • Effective Pixels: Min 1920 Horizontal x 1080 Vertical • Frame Rate: max. 30 fps OPTICAL • Zoom Optical 12, Digital 10 • Focus Auto • Shooting Area: A3 sized: 297 x 420 mm IMAGE • High Resolution Output : up-to 1080p • Image Adjustments: Auto Exposure, Black and White, Brightness Adjustment, Contrast Adjustment, Image • Rotation, Microscope mode CONNECTIVITY • Interfaces USB 1.1 Type B, VGA in, VGA out, HDMI out, built-in microphone, SD memory card	Min. Desired Features: • PC-Free Image Viewer View images from internal or supported external memory • Image Storage SD/SDHC compatibility (128MB-32GB) • Features Auto focus, Freeze, Parallel video output, SD card viewer, Split screen, Zoom • Security Kensington lock, Security bar, Security cable hole • Illumination LED lights • Included Software Easy Interactive Tools and driver for Document Camera (for Windows) • Portable and light weight	• AC Adaptor • Carrying Case • VGA cable • Microscope Adapter • Power cable • Remote control incl. batteries • USB cable		• CD Manual • Quick Setup Guide • Software and drivers (CD)		2 Years
5.	FAX Machines with answering facility	• Printing method: Laser printing on plain paper	• Dial Mode: Tone (DTMF) /	Standard Accessories		Operating Manual	Installation & training	2 Years

		<ul style="list-style-type: none"> • Effective scanning width : Min. 208 mm • Effective printing width: 202 mm (A4), 208 mm (Letter / Legal) • Resolution: Standard / Fine / Photo / Super Fine / Mixed • Paper size : A4 / Letter / Legal • Modem Speed: Min. 33.6 kbps • Document Memory 2.5 MB (Reception: 100 pages / Transmission: 150 pages)*2 • LCD readout 16 digits / 2 lines • Power Supply: AC 220 - 240 V, 50/60 Hz 	Pulse <ul style="list-style-type: none"> • Manual answer: TEL, TEL / FAX • Callback feature: Available*1 • Incoming call ringer: Ring tone 1, 2, 3 • Monitor volume: 8 levels • Handset volume: 3 levels • Flash: Available • Caller ID: FSK / DTMF compatible*1 CE Mark Product					
6.	Hand Held GPS	Hand Held GPS complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Display: Min. of 2.2" transfective, 65K color TFT • Water rating: IPX7 • USB interface with High-sensitivity receiver • Basemap with ability to add maps • Built-in memory: Min 3.7 GB and shall also Accepts data cards such as microSD™ card • Shall have Custom POIs (ability to add additional points of interest) • Routes: Min. 200 • Track log: Min. 10,000 points, 200 saved tracks 	<ul style="list-style-type: none"> • Automatic routing (turn by turn routing on roads) • Paperless Geocaching-friendly • Custom maps compatible • Sun and moon information • Tide tables • Area calculation • Picture viewer 	USB Cable Batteries Case etc		Operation Manual		2 Years
7.	Home theatre system	Home theatre system <ul style="list-style-type: none"> • 5.1 Channel FM Radio • Remote controlled, 100w, USB, HDMI, AUX, With blue ray/ DVD Player. Bluetooth connectivity • 5 Speakers 	Stereophonic audio system. CE Mark product	Accessories: Cables, connectors, etc., as required.		English language user manual with Operation and Maintenance		2 Years

						instructions to be provided		
8.	LCD PROJECTOR	<p>LCD PROJECTOR with following specifications:</p> <ul style="list-style-type: none"> • Lamp Type: 190W P-VIP • Zoom Magnification and Control: 1.0x Fixed • Focus Control: Manual • Brightness: 3000 lumens (2200 Lumens Eco mode) • Contrast Ratio: 2300:1 (with lamp control) • Screen Size: Min. 70" - 120" (151 x 94cm - 258 x 162cm) • 4000h lamp life (6000h in Eco Mode) • Power Source: 100V - 240V AC, 50/60Hz • Noise Level: Normal Mode: 36dBA / Eco Mode: 29dBA • Operating Environment: 0°C to +40°C 	<ul style="list-style-type: none"> • Digital RGB Compatibility: (UXGA / SXGA+ / WXGA+ / FWXGA) / WXGA / SXGA / XGA / SVGA / VGA • Analogue RGB Compatibility: (UXGA / SXGA+ / WXGA+ / FWXGA) / WXGA / SXGA / XGA / SVGA / VGA / MAC • Digital Video Scan Systems: 1080p / 1080i / 720p / 576p / 480p • Display Modes: Presentation, Standard, sRGB, Movie, User 1 & 2 • Built-in Speaker: 10W RMS, Monaural • HDMI™ port and 2 x VGA ports RJ-45 network port for remote control and monitoring • CE mark Product 	Standard Accessories		Operating Manual	Installation & training	2 Years
9.	LCD SCREEN	<p>40-inch LCD panel with full HD 1080p resolution (1920 x 1080 pixels)</p> <p>Five separate HD inputs (two HDMI, two HD components, one PC)</p>	<p>Comm Port Compatible, USB 2.0</p> <ul style="list-style-type: none"> • CE mark 	Standard Accessories		Operating Manual	Installation & training	2 Years

		Light Sensor adjusts picture brightness based on ambient light Dynamic contrast ratio: 1000:1	Product					
10.	LCD TV (21")	<ul style="list-style-type: none"> •Superior quality 21-inch full HD LED Color Television/ PC Monitor. •PAL/ NTSC video formats Std AV/RF Inputs, PC Audio In: 1, PC D-sub: 1, RF Connectivity Input: 1, HDMI-CEC, RF Capable and USB. 	<ul style="list-style-type: none"> •Manual and Remote control operation •Camera and mobile synchronisation/ connectivity with TV. • CE Mark Product 	Cables, connectors, Chrome cast, etc., as required.		English language user manual with Operation and Maintenance instructions to be provided	In house training to be provided to the Instructors of the Institute.	2 Years
11.	LED TV (21")	<ul style="list-style-type: none"> •Superior quality 21-inch full HD LED Color Television/ PC Monitor.PAL/ NTSC video formats Std AV/RF Inputs, PC Audio In: 1, PC D-sub: 1, RF Connectivity Input: 1, HDMI-CEC, RF Capable and USB. 	<ul style="list-style-type: none"> •Manual and Remote control operation •Camera and mobile synchronisation/ connectivity with TV. • CE Mark Product 	Cables, connectors, Chrome cast, etc., as required.		English language user manual with Operation and Maintenance instructions to be provided	In house training to be provided to the Instructors of the Institute.	2 Years
12.	Mobile (GMS/CDMA).	RAM 4GB Min, Internal Storage - 64GB, Processor - Octa Core 2GHz, Latest Operating Version of Android (4G & 5G Support), IS 13252 (Part 1) / IEC 609500-1	Screen Size 6" Touch Screen Colour LED Display, Bluetooth, Wi-Fi, Dual Rear Camera with Flash Min. 16MP.	Mobile Charger, Bluetooth earphone, Mobile Cover Temper Glass.		Operating Manual		2 Years
13.	Photocopy machine	Multifunctional Photocopy machine with following Specifications: <ul style="list-style-type: none"> • Paper Input Capacity: Standard: 2 x 250-sheet paper trays, 100-sheet multi-bypass tray Maximum: 1600 Sheets • Recommended paper size: Paper tray(s): A5 - A3, Bypass tray: A6 - A3 • Paper Output Capacity: Maximum: 350 sheets Copier <ul style="list-style-type: none"> • Copying Process: Laser beam scanning 	Scanner Features <ul style="list-style-type: none"> • Type Colour & BW • Scan Modes Binary/ Halftone/ Grayscale/ 8Colors/ Full Colors • Resolutions Maximum: 600 dpi 	Standard Accessories		Operating Manual	Installation & training	2 Years

		and electro photographic printing • Multiple Copies: Up to 99 copies • Resolutions: 600 dpi • Zoom: From 50 to 200% Power Input: 1 Phase 220-240 V AC 50 Hz CE Mark Product	• Original Size A3, A4, A5 • Bundled Drivers TWAIN, Network (Option) Printer • Resolutions 600 x 600 dpi • Interface Standard: USB 2.0 Option: Ethernet 10 base-T / 100 base-TX • Supported Environments Windows® XP/Vista/7/Server 2003/Server 2008/					
14.	Smart Board / Inter Active Board	Smart Board / Inter Active Board with Min. Specifications as: • Min. Size 78" diagonal LxH -(6x4 feet) • Whiteboard Surface: Non-Ceramic/ Ceramic High luminance nanotechnology, anti-scratch, anti glare surface • Aspect Ratio: 4:3 • Touch accuracy: 0.1 mm • Touch response time: < 8ms • Resolution: Min. 9600 x 9600 • DPI: Min. 600 • Power supply: USB (<5V/500mA) • Operations: Temperature: 0 to 60 degree Celsius; Humidity: 0% to 95%	• Operating system: Windows XP/2003/Vista/7/ 10, Linux, Android, MAC 10.6/10.7 • Multi-touch capability • Touch Technology: DViT (Digital Touch Vision) Optical Sensors • Touch type: Finger touch & touch with any opaque object	• Smart Whiteboard Software, • USB Cable, • Smart Pens, • Wall mount bracket		• CD Manual • Quick Setup Guide • Software and drivers (CD)		2 years
15.	Smart phones of different make (android/Windows)	Android Smartphone: OS: Android Nougat 7.1.2 • 2G/3G/4G GSM Mobile Specifications:- • 2 GB RAM 16 GB ROM Expandable	• Front & Back camera. • Easy to hold • handy • Gorilla glass	• Ear phone • Charger • Blue tooth Ear phone		English language user manual with Operation		2 Years

		Upto 32 GB • Min. 4.5 inch Full HD+ Display • Min. 12MP + 2MP Dual Rear Camera 13MP Front Camera • 4000 mAh Li Polymer Battery • Qualcomm Snapdragon 636 Processor Windows Smartphone: OS : Windows 10 • 2 GB RAM 16 GB ROM Expandable Upto 128 GB • 4.7 inch HD Display • 5MP Rear Camera 5MP Front Camera • 2220 mAh Battery • Qualcomm Snapdragon 400 Processor	•safety cover.			and Maintenance instructions to be provided		
16.	Telephone (STD & ISD facility).	Capacity: 4 Main Lines (Trunk Line/ P& T) and 32 Extensions, Internal/External Music on Holding, Operator/Auto-attendant Mode, Remote Programming, Day/Night Mode(Manual), Music & Ringing Recordable OGM(outgoing message), Music Duration 20 Seconds, Caller ID, Call Transfer, Call Forwarding Manually, Outgoing Call Transfer, Power Failure Transfer, Specific Main Line , (C.O./Trunk Line) Dialling, Three Way Conference, Do Not Disturb, Auto/Manual Dial-Out Mode, Brand: S-Tech (Manufactured By Swift Technologies) Model: STECH-CS416	Call Forwarding, Call Accounting, Selective Outgoing Calling Feature, Conference calling, Voicemail	Standard Accessories		Operating Manual	Installation & training	2 Years
17.	Telephone with intercom facilities	6 lines 6 SIP accounts, Up to 6-way voice conferencing, 3-way video conferencing, Dual-switched Gigabit ports and integrated WiFi (802.11b/g/n), FREE IP Video Talk account for video calling, 1 megapixel CMOS camera, 4.3 inch (480×272) capacitive touch screen	Indicates pressing the Feature key, Briefly display the approximate length of your current or most recent call., Send your calls to another telephone in your system	Standard Accessories		Operating Manual	Installation & training	2 Years
18.	Digital cameras	Digital cameras complete in all aspect with key specifications as: Digital camera with Min. 20 MP, Sensor	Digital cameras with min. features as:	Standard Accessories		Product Catalogue		2 Years

		type: CMOS, Data Storage as Micro SD Card with Min. 16 GB Micro SD Card. Chargeable Battery with Adapter	• CE Mark Product					
19.	LED Projector	<ul style="list-style-type: none"> o Display Type: LCD/LED/DLP o Input: Video input, Audio input, HDMI input, Computer Input, Mic input o Output: Audio output, Monitor Output, USB Output. o Resolution: 1280 X 800 o Contrast Ratio: 10000:1 o Light Output: 3000 Lumens or above o Life of Lamp: 5000 Hours (Full Usage) o Power Supply: AC 100-120/AC 220-240 V 50 Hz o Connectivity: Ethernet enable, Wireless enable, USB Compatible 	Standard Features /Latest ISO 9001 Certified factory product	<ul style="list-style-type: none"> • Remote control with 2 AA batteries, • Power Cord, • Adaptor Cover, • Lens Cover, • Computer Cable, • (USB Wireless Adaptor Optional) 	Standard Spares	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	<ul style="list-style-type: none"> - To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises 	2 Years Minimum
20.	Screen for Projector (Matte Material) ant glare	Motor: Tubular (with smooth and quieter operation) Control: Inline switches and wireless remote Material: White Anti Glare (matte material) Size: - 6x4 Ft. Viewing angle: 145 degree or higher Double layer Fabric Wall Mountable / Stand mountable Mounting stand Auto lock (motorized)	Relay: Power synchronised relay to create a synchronised control with projector i.e. when the projector is turned on the screen will automatically lower and the Projector is off the screen will automatically retract	Standard Accessories	Standard Spares	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	<ul style="list-style-type: none"> - To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises 	2 Years Minimum
21.	Profile Projector	Screen Diameter: Fine grain ground glass screen with cross lines, Axis colon: vertical lens axis; Electronic Protractor: Switchable degree/decimal, 1 minute / 0. Measuring Range X/Y Axis: 201 x 150 mm Max or equivalent Range: +/- 370 degree Workpiece Height: 110 mm Resolution: 0.001 mm	High versatility and easy operation Easy to read digital X-Y counter Digital read out protector screen Zero setting +/- direction switching and RS	Standard Accessories	Standard Spares	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service	<ul style="list-style-type: none"> - To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises 	2 Years Minimum

			232 C output			Provider details		
22.	Smart LED TV 42"	<ul style="list-style-type: none"> • Screen Size (Measured Diagonally): approx 42 inch • Display Type: LCD • DISPLAY RESOLUTION: 4K/(3840x2160) • Backlit Type: Edge LED • Backlit Dimming Type: Frame Dimming • HDR Compatibility: Yes • Audio Power Output: 10W + 10W • Operating System: Android • Storage: 16 GB • CONNECTIVITY: • Wi-Fi, • Ethernet Inputs: 01 • Built-in Chromecast or equivalent • HDMI Inputs: 4, • USB Ports: 03 • USB Drive Format Support: FAT16/FAT32/extant/NTFS 	IR Blaster Voice Search	AC Power Cord Batteries IR Blaster Operating Instructions Quick Setup Guide Table Top Stand Voice Remote Control	Standard Spares	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	<ul style="list-style-type: none"> - To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises 	2 Years Minimum
23.	Digital SLR Camera with Video recording capability	Technology: SLR Sensor: Full-frame CMOS Megapixels: 24.3MP minimum Autofocus: 51-point AF, 15 cross-type Screen type: 3 inch minimum, tilting capability Connectivity: Wi-Fi Power: Rechargeable Li-ion batteries Video Recording: Yes, minimum 1080p	Full HD Movie 1080/60p/60i/24p and Clean Output via HDMI Three-way Tilt and Swivel LCD Screen Professional Rugged, Weather-Resistant Body Instant Sharing via Smartphone with Build-in Wi-Fi and NFC	Memory Card : 64 GB, Speed Class 4 Filters: Polariser UV Protection Filter Lenses: 28-300mm, f/3.5-5.6G VR Prime 50mm, f/1.4G Wireless Remote Camera Pouch, Lens holder pouch Battery: Lithium ion battery with charger	Standard spares, as suggested by the manufacturer	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	<ul style="list-style-type: none"> - To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises 	2 Years Minimum
24.	Sound system	Form Factor: 5.1 Power Output: 1,200W	Play Mode: Normal, Repeat,	Wireless amplifier	Standard	Operating Manual/user	- To be installed at the	2 Years Minimum

		Connectivity: BLUETOOTH, NFC, Wi-Fi, HDMI in/out, Ethernet, USB Keyboard Digital Amplifier: 24bit Speakers: Wireless Mica Reinforced Cellular woofer cone Speaker System: 3-way Radio: FM Playback: BLU-RAY 3D, BLU-RAY DISC, DVD Compatible: USB FILE SYSTEM (FAT32, NTFS), EXTERNAL HDD	Shuffle and Resume HDMI Inputs / Outputs Number of Channels 5 or more Remote Control Dolby Atmos, 4K upscaling	FM Antenna (Pig tail/T type) Batteries Auto Calibration Mic	spares, as suggested by the manufacturer	Manual, General Maintenance manual System Warranty Card Local Service Provider details	designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises	
25.	Interactive Board	USB Powered. 2397 sq. in. panel - 82" (2082) diagonal 1 panel. Operates as an Interactive Electronic Board with Projector & White Board modes. This unit is powered by the USB interface. Includes: Multi-touch Operation Built-in Stereo Speakers 02 USB Hub Ports Simultaneous Operation Up To 10 Points	Drawing tools(e.g. pens and erasers), Lessons & Audio Recorder, Slide Show, On-Screen Keyboard, Magnifier, Shape Recognition, Print, Text Recognition Highly integrated with central control with PC, document camera high-power speakers 4k HD video & IP radio One-button to power on/off, easier & faster operation to improve efficiency of class 10 touch points Plug-and-play Modular structure design, easy to assemble and maintain	Stand, Electronic Pens, Wireless Kit	Standard spares, as suggested by the manufacturer	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	- To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises	2 Years Minimum

			Wireless module optional 10 Points Multi- touch true multi-point writing					
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Lot-2.3 Electronics items

Item No.	Name of Goods or Related Services	Technical Specifications of Item and/or Bureau of Indian Standards (BIS) (if applicable) reference	Features	Accessories	Spare parts	Documents	Installation & Training	Warranty of Equipment/parts
1.	Calculator Desk Type	Desk Type Calculator with Min. specifications as: <ul style="list-style-type: none"> • Shall have memory • Dual power (Battery and solar) • LR44 Battery • 12 Digits Display • mini desktop Type • Upright Angled LCD Display with Angled Display • Calculation Command Sign Display • Thousand separator Digit Comma Separator 	<ul style="list-style-type: none"> • Constant Calculation • Grand Total • Key Roll-Over • Change Function • Percentage, O Key(s), Plastic Keytops, Reverse (RV) Key, Shift key, Square Root, GT Key, Sign Change Key, Total Key, Mark-up • Auto-power Off • Display up to 150 previous calculation steps • CE mark Product 	Batteries		Manual		2 Years
2.	Calculator Scientific (Non-programmable)	Display <ul style="list-style-type: none"> • Display type: 31 * 96 FULL DOT, Natural display • Algebraic input logic: Natural V.P.A.M. with Number of characters/lines: 15/1+10/1 and Significand function: 10+2 Memory • Repeat function with Variable memory of 9 and Number of storable programs as Calc / Solv button Energy supply: Solar+Battery Statistics Functions: • Summations, Standard deviations for grouped and ungrouped values, Distribution functions (normal distribution and inverse normal	Basic mathematics <ul style="list-style-type: none"> • Angle dimensions DEG/RAD/GRAD, Conversions between >DEG/>RAD/>G RAD' Coordinate conversion Pol, Trigonometric functions, Hyperbolic functions, Exponent, log,	Batteries and Case		Manual		2 Years

		<p>distribution, binominal distribution, Poisson distribution), Regression analysis, Permutations (nPr) and combinatorics (nCr), Matrix calculation/vector calculation, REF/RREF function, Equation calculation, Inequality calculation</p> <p>Differential and integral calculus: • Numerical integral calculus, Numerical differential calculus</p>	<p>In, 10x, ex ,Mathematical functions, Calculations based on n , hexadecimal/decimal/binary/octal) , Logical operators , Percentage calculations, Remainder function, , Calculation of complex numbers, Random number generator, Random integers, Calculation of the minimum or maximum of a quadratic function, Base-N calculations, "Verify" test function, Value table, Recurring decimal fractions</p>					
3.	Digital Theodolite	<p>Digital Theodolite Specifications: Angle Measuring System</p> <ul style="list-style-type: none"> • Mode of Angle Measurement: Photoelectric Incremental Reading Min. • Detection Method: H: Both Sides • Detection Method: V: Single Side • Precision of Angle Measurement: 2" • Unit of Angle: DEG MIL GON • Display: LCD Double Side, 7 digits x 2 lines, backlight • Tilt Sensor: Automatic vertical compensation <p>Compensator of Tilt Sensor type with $\pm 3'$ as Range of Compensation</p>	<ul style="list-style-type: none"> • 2.5" – unsurpassed telescope resolving power • 5" Accuracy, Fast distance measurement of 0.9s.. • Reflector less operation from 30cm to 500m. • 50,000-point internal memory • Upto 32GB USB 	<ul style="list-style-type: none"> • LR6/AA batteries (x4) • Lens cap • Plumb bob • Tool kit • Operator's manual • Carrying case and shoulder strap 		Operation Manual (CD-R)		2 Years

		<p>Laser Optical plummet</p> <ul style="list-style-type: none"> • Magnification Ratio : 3x • Angle of View: 3° • Min. Focus: 0.5m <p>Telescope:</p> <ul style="list-style-type: none"> • Magnification: 30 x • Min. focus: 1 Meter • Objective aperture: 45 mm 	<p>Pen Drive Support</p> <ul style="list-style-type: none"> • Coaxial laser-ponter for fast and accurate aiming. • Ensures accuracy even with reflective sheets. • IP66 dust-proof waterproof rating. • Rugged metal chassis and heavy duty handle. • Standard usage temperature range -20° to 60°C. • Long-Range Laser with Ultra-Small Beam Spot • Detachable Tribach 					
4.	Digital weighing machine	<p>Digital Weighing Machine Specifications:</p> <ul style="list-style-type: none"> • Type: Bench Type • Weighing Capacity: 100Kg or more • Present keys/Hot keys: 20 • Power Supply: 230V AC, 50 Hz • Operating Temperature: 0C to 45C • Display Type: 7 Segment LED • Display Digit and Size: Min. 19 digits, 10 mm height • Battery: 6V/4 AH Rechargeable • Platter MOC: SS • Interface: Inbuilt RS232 	<ul style="list-style-type: none"> • Count accumulation and subtraction function • Automatic re-computing function to enhance sampling accuracy • Net weight/gross weight display • Easy to use full function numeric keypad • In-built rechargeable 	standard Accessories as required		Product Catalogue		2 Years

			battery <ul style="list-style-type: none"> • Date and Time • Weight can be viewed on PC or serial printer • Unit weight recall facility through present keys 					
5.	EMS machine	EMS (Electronic Muscle Stimulator) Machine with Min Specifications as: <ul style="list-style-type: none"> • Min Channel 12 with pads 24 output • Body: Heavy Plastic Body • Technology: Micro-computer controlled/ Processor Control /PCB Based • Operation: Manual Mode/Timer Based/Auto Mode • Power Supply: 220-240 V AC with 50 Hz 	<ul style="list-style-type: none"> • Digital Display • Wire Check Facility • Each channel with independent intensity controls • Programs to include lifting, inch loss , fat loss , figure correction, toning firming all in one etc. • Auto-cut-off with buzzer. • Latest ISO 9001 certified factory product/ CE Mark product 	standard Accessories as required		Catalogue		2 Years
6.	Total Station	Total Station complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Laser pointer: Coaxial red laser using EDM beam • Levels Graphic: 6' (Inner Circle) • Circular Level: 10'/2mm • Optical: Magnification: 3x with Minimum focus: 0.5m from tribrach bottom 	<ul style="list-style-type: none"> • 5" Accuracy, Fast distance measurement of 0.9s.. • Reflector less operation from 30cm to 500m. • 50,000-point internal memory • Upto 32GB USB Pen Drive Support • Coaxial EDM beam and laser-pointer for fast 	1 No. Battery (BDC46C) 1 No. Battery Charger (CDC68A) Battery Adapter, Power Cable, Lens Cap, Lens Hood, Tool Pouch, Screwdriver, Lens Brush, Adjusting Pin 2x, Cleaning Cloth Carrying case,		Operation Manual (CD-R)		2 Years

			and accurate aiming. • Ensures accuracy even with reflective sheets. • IP66 dust-proof waterproof rating. • Rugged metal chassis and heavy duty handle. • Standard usage temperature range -20° to 60°C. • Able to interchange data between GPS and Total station without any data conversion.	Carrying Strap, Heavy Duty Wooden Tripod, Prism with Holder & Target Plate, Telescopic Prism Pole etc.				
7.	Inverter with Battery	Inverter with Battery 12 V Heavy Duty , Battery Input- 12 volt DC, Output- 220 volt AC Inverters IGBT based . It should provide a uniform output of 230V . Power Output: 1.1 KVA at an input voltage of 12 volts. Wave Form: Square Wave	• Inverter should have an electronic circuit that contains battery charge sensor, AC mains sensor, Soft start facility, output control etc. • It should be 1.1KVA Inverter features a sophisticated design that works on IGBT Based PWM Technology. • The output produced is a square waveform that consists of			Product Catalogue		

			<p>flat increase in positive voltage and drops drastically to zero for a minimum period of time.</p> <ul style="list-style-type: none"> • It provides maximum operational efficiency to offer the perfect output. • It drops again to flat increase in negative voltage. It goes back to zero and then returns to positive level. The short stoppage time at zero level offers more amount of power to 50 Hz frequency of AC. 					
8.	Scientific Calculator	<p>Display</p> <ul style="list-style-type: none"> • Display type: 31 * 96 FULL DOT, Natural display • Algebraic input logic: Natural V.P.A.M. with Number of characters/lines: 15/1+10/1 and Significand function: 10+2 <p>Memory</p> <ul style="list-style-type: none"> • Repeat function with Variable memory of 9 and Number of storable programs as Calc / Solv button <p>Statistics Functions:</p> <ul style="list-style-type: none"> • Summations, Standard deviations for grouped and ungrouped values, Distribution functions (normal distribution and inverse normal distribution, binominal distribution, Poisson distribution), Regression analysis, Permutations (nPr) and combinatorics (nCr), Matrix calculation/vector calculation, 	<p>Basic mathematics</p> <ul style="list-style-type: none"> • Angle dimensions DEG/RAD/GRAD, Conversions between >DEG/>RAD/>G <p>RAD' Coordinate conversion Pol, Trigonometric functions, Hyperbolic functions, Exponent, log, In, 10x, ex ,Mathematical functions,</p>	Batteries and Case		Manual		2 Years

		REF/RREF function, Equation calculation, Inequality calculation Energy supply: Solar+Battery	Calculations based on n , hexadecimal/decimal/binary/octal) , Logical operators , Percentage calculations, Remainder function, , Calculation of complex numbers, Random number generator, Random integers, Calculation of the minimum or maximum of a quadratic function, Base-N calculations, "Verify" test function, Value table, Recurring decimal fractions Differential and integral calculus • Numerical integral calculus, Numerical differential calculus					
9.	Location and navigational equipment set consisting of : • Hand held GPS units • Compass clinometers • Prismatic compass	Hand Held GPS complete in all aspect with key specifications as: • Display: Min. of 2.2" transfective, 65K color TFT • Water rating: IPX7 • USB interface with High-sensitivity receiver • Basemap with ability to add maps • Built-in memory: Min 3.7 GB and shall also Accepts data cards such as microSD™ card • Shall have Custom POIs (ability to add additional points of interest) • Routes: Min. 200	Hand Held GPS with min. features as: • Automatic routing (turn by turn routing on roads) • Paperless Geocaching-friendly • Custom	Standard Accessories		Product Catalogue		2 Years

		<ul style="list-style-type: none"> • Track log: Min. 10,000 points, 200 saved tracks <p>Compass clinometers complete in all aspect with key specifications as:</p> <ul style="list-style-type: none"> • +/- 0.5° Azimuth/Bearing Accuracy • +/- 90° Inclinometer • 0-45° Sine and Tangent Scales • Sapphire Jewel Bearing • Inch and Millimetre Scales • Aluminium Housing • Integrated Carrying Lanyard • Azimuth and Inclination Tripod Mounts <p>Prismatic compass complete in all aspect with key specifications as:</p> <p>Prismatic Compass is made of Brass / Aluminium / Gun Metal with min. size of 125mm dia</p>	<p>maps compatible</p> <ul style="list-style-type: none"> • Sun and moon information • Tide tables • Area calculation • Picture viewer• CE Mark Product <p>Compass clinometers with min. features as:</p> <ul style="list-style-type: none"> • In-built spirit level • Durable aluminium housing – protects against impact, corrosion and water • Edges at 90 degrees angles for contact measuring • In-built spirit level • Individually calibrated • Optical adjustment for reading• Nylon pouch with belt-loop• CE Mark Product <p>Prismatic compass with min. features as:</p> <ul style="list-style-type: none"> • Quality metal Prismatic Compass • Military Model , Coated metal case and foldable metal lid fitted a glass window with the sighting line etched into it 					
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			<ul style="list-style-type: none"> • Floating luminous arrow dial with sapphire bearing • scale adjustable • Sighting slot and sighting hair-line • Adjustable lens prism • cm and inch scales on both side of body as a map measuring ruler • Reference table at bottle of base for estimating distance and angle of slop Screw hole at base for fitting with a tripod • Thumb ring for firm holding and neck strap • CE Mark Product 					
10.	Anemometers	<p>Anemometers complete in all aspect with key specifications as:</p> <ul style="list-style-type: none"> • LCD Display • Measurement Units: Velocity: m/s, km/h, ft/min, knots, mile/hr • Temperature: °C or °F • Sampling Time: <ul style="list-style-type: none"> o Auto: 1 to 3600 seconds o Manual: Push the data logger button once, will save data one time • Operating Humidity: Less than 85% RH • Power: 6 “AAA” alkaline or heavy-duty batteries (included), or 9V power adaptor (optional) 	<p>Anemometers with min. features as:</p> <ul style="list-style-type: none"> • CE Mark Product • Data Output: <ul style="list-style-type: none"> o RS232: With optional cable/software o USB: With optional cable/software • Operating Temperature: 0 to 50°C (32 to 122°F) 	Standard Accessories		Product Catalogue		2 Years

			• Real Time SD Memory Card Data Logger					
11.	Wind watch- which incorporates a barometer, altimeter, temperature probe and anemometer in a single hand held device. It can also measure wind-chill	Wind watch complete in all aspect with key specifications as: Wind watch- which incorporates a barometer, altimeter, temperature probe and anemometer in a single hand held device. It can also measure wind-chill	Wind watch with min. features as: • CE Mark Product Waterproof (IP-67)	Standard Accessories		Product Catalogue		2 Years
12.	Spring scales	• Spring scales complete in all aspect with key specifications as: Spring scales Handy 100 KG Weighing scale machine	Spring scales with min. features as: Latest Iso 9001 certified Factory Product	Standard Accessories		Product Catalogue		2 Years
13.	Callipers	Digital Callipers complete in all aspect with key specifications as: • Resolution: 0.01mm or .0005"/0.01mm • Repeatability: 0.01mm / .0005"	Callipers with min. features as: • Display: LCD • Battery: Solar battery • Dust/Water protection level: IP67 • CE/ Latest ISO 9001 certified factory product	Standard Accessories		Product Catalogue		2 Years
14.	UPS 5 KV Online with 30 Minutes back up for 20 PC	UPS Type: Online double conversion Wave form: Pure sinewave Operating Voltage range: 150 V - 240V AC, Frequency: 50 Hz +/- 3 Hz Protection: Against Over Load / Short Circuit Indication (LED) : Low i/p voltage, UPS ON, UPS OFF, Nominal Battery voltage : Up to 96 V . Battery Backup: 01 Hr (Minimum) for 20 Computers Recharge time: approximately 08 Hr's	Automatic change over from mains to UPS and vice versa.	Standard Accessories	Standard Spares	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	- To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises	2 Years Minimum

15.	UPS 3 KVA with backup time minimum 30 minutes	UPS Type: Online double conversion Wave form: Pure sinewave Operating Voltage range: 150 V - 240V AC, Frequency: 50 Hz +/- 3 Hz Protection: Against Over Load / Short Circuit Indication (LED) : Low i/p voltage, UPS ON, UPS OFF, Nominal Battery voltage : Up to 48 V . Battery Backup: 01 Hr (Minimum) for 10 Computers Recharge time: approximately 08 Hr's	Automatic change over from mains to UPS and vice versa.	Standard Accessories	Standar d Spares	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	- To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises	2 Years Minimum
16.	UPS 2 KVA	UPS Type: Online double conversion Wave form: Pure sinewave Operating Voltage range: 150 V - 240V AC, Frequency: 50 Hz +/- 3 Hz Protection: Against Over Load / Short Circuit Indication (LED) : Low i/p voltage, UPS ON, UPS OFF, Nominal Battery voltage : Up to 24 V . Battery Backup: 01 Hr (Minimum) for 10 Computers Recharge time: approximately 08 Hr's	Automatic change over from mains to UPS and vice versa.	Standard Accessories	Standar d Spares	Operating Manual/user Manual, General Maintenance manuals System Warranty Card Local Service Provider details	- To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises	2 Years Minimum
17.	UPS - 650VA	UPS- 650 VA (Off Line) Wave form: Pure sinewave Operating Voltage range: 150 V - 240V AC, Frequency: 50 Hz +/- 3 Hz Battery Backup: 01 Hr (Minimum)	Automatic change over from mains to UPS and vice versa.	Standard Accessories	Standar d Spares	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	- To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises	2 Years Minimum
18.	Voltage Stabilizer	Voltage Stabilizer with following specifications: • Type: Automatic Voltage Stabiliser, Single Phase	• Efficiency: Better than 96% under 20-100% Load Conditions			Product Catalogue		2 Years

		<ul style="list-style-type: none"> • Type of Control: PWM Controlled AC to AC • Rating: 600 VA • Input : 150 – 260 volts Ac, 1-phase, 2 wire, 45 - 55Hz • Output : Stabilised 240 volt AC, 10 A 50 Hz • Output Regulation: Nominal +- 1% under 0 to 100% Load 	<ul style="list-style-type: none"> • Protection: Over-load Protection and Output Short circuit Protection. • Safety Standard: IP20 					
19.	Maintenance Free Battery	<ul style="list-style-type: none"> •VRLA Maintenance Free Battery with following Specifications: •Voltage: 12 Volt •Capacity: 9 AH 	<ul style="list-style-type: none"> • Latest ISO 9001 Certified Factory Product or Relevant IS complying product 			Catalogue		2 Years
20.	Battery storage lead acid 6V & 12 V	<ul style="list-style-type: none"> *Voltage :12 V •Capacity (Ah): 50 AH •Battery Type: Sealed Acid Lead Battery *Voltage :6 V •Capacity (Ah):4.5 AH •Battery Type: Sealed Acid Lead Battery 	<ul style="list-style-type: none"> •CE Mark or ISO 9001 Certified factory product or As per Relevant IS Standards 			Product Catalogue		2 Years
21.	UPS - 650VA	UPS- 650 VA (Off Line) Wave form: Pure sinewave Operating Voltage range: 150 V - 240V AC, Frequency: 50 Hz +/- 3 Hz Battery Backup: 01 Hr (Minimum)	Automatic change over from mains to UPS and vice versa.	Standard Accessories	Standard Spares	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	- To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises	

Lot 3.1 Metering & Measuring Devices

Item No.	Name of Goods or Related Services	Technical Specifications of Item and/or Bureau of Indian Standards (BIS) (if applicable) reference	Features	Accessories	Spare parts	Documents	Installation & Training	Warranty of Equipment/parts
1.	A.C. Energy Meter	A.C. Energy Meter- induction type Single Phase, 10 A, 240 V • Conforming to IEC 62052 or IS 13779 • portable type Housed in Bakelite case	<ul style="list-style-type: none"> • 6 digits including one decimal digit display • LED indication for Calibration, phase indication, earth load tamper and reverse tamper. • Accuracy Class 1.0 	case and connection cords		*Manual *Test Certificates		2 Years
2.	A.C. Energy Meter	AC energy meter Three Phase, 15 A , 440 V induction portable type AC Energy Meter Housed in Bakelite case	<ul style="list-style-type: none"> • 6 digits including one decimal digit display • LED indication for Calibration, phase indication, earth load tamper and reverse tamper. • Conforming to IEC 62052 or IS 13779 • portable type Housed in Bakelite case • Accuracy Class 1.0 	case and connection cords		*Manual *Test Certificates		2 Years
3.	A.C. Voltmeter M.I. Analog	A.C. Voltmeter M.I. analog, Multi Range A.C. Voltmeter M.I. 75V - 150 V - 300 V – 600V A.C Confirming to BS 89, IEC 51 & IS 1248	portable box type housed in Bakelite case	Batteries, Case		User Manual		

4.	Ac Ammeter Mi, Analog	<ul style="list-style-type: none"> •AC Ammeter MI • Analog • 0-1 A range with Moving iron spring-mounted jewel bearing suspension 	<ul style="list-style-type: none"> • This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic moulded case) , portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010, 			Product Catalogue		
5.	Ac Ammeter Mi, Analog	<ul style="list-style-type: none"> •AC Ammeter MI • Analog • (0-5 A MI) with Moving iron spring-mounted jewel bearing suspension 	<ul style="list-style-type: none"> • This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic moulded case) , portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010, 			Product Catalogue		
6.	Ac Ammeter Mi, Analog	<ul style="list-style-type: none"> •AC Ammeter MI •Analog •(0-25A MI) with Moving iron spring-mounted jewel bearing suspension 	<ul style="list-style-type: none"> • This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic moulded case) , portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010, 			Product Catalogue		

7.	Ammeter (0-10 mA), (0-50mA), (0-100mA) (table model)	Table model Analog Ammeter with range 0-10 mA : • Range: Current (A): 0 – 10 m A Table model Analog Ammeter with range 0-50 mA : • Range: Current (A): 0 – 50 m A Table model Analog Ammeter with range 0-100mA : • Range: Current (A): 0 – 100 m A	• Movement Type: Moving Iron type • Standards: IS-1248 • Accuracy: $\pm 1.5\%$ of Full Scale			catalogue		2 Years
8.	Ammeter 300A/60A DC with external shunt	•Analog type portable Ammeter •Min 300 A/60 A DC with external shunt with probe Fitted in Box •Shall conform to I.S. 1248 / I.E.C. 60051 (Part 2)	•Linear Scale •Anti-glare Glass.	Patch Cords		Catalogue		2 years
9.	Ammeter 300A/60A DC with external shunt	•Analog type portable Ammeter •Min 300 A/60 A DC with external shunt with probe Fitted in Box •Shall conform to I.S. 1248 / I.E.C. 60051 (Part 2)	•Linear Scale •Anti-glare Glass.	Patch Cords		Catalogue		2 years
10.	Ammeter 300A/60A DC with external shunt	•Analog type portable Ammeter •Min 300 A/60 A DC with external shunt with probe Fitted in Box •Shall conform to I.S. 1248 / I.E.C. 60051 (Part 2)	•Linear Scale •Anti-glare Glass.	Patch Cords		Catalogue		2 years
11.	Ammeter DC with external shunt	•Analog type portable Ammeter •Min 300 A/60 A DC with external shunt with probe Fitted in Box •Shall conform to I.S. 1248 / I.E.C. 60051 (Part 2)	•Linear Scale •Anti-glare Glass.	Patch Cords		Catalogue		2 years
12.	Ammeter Mc Analog	•Ammeter MC analog - (0 - 500mA) with Moving Coil with Central Magnetic Core • Spring Mounted Jewel Bearing Suspension •It should have banana terminals with permanent marking of range and terminals • it should have knife edged pointer and anti parallax mirror • it should be moving coil type	• This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic moulded case) • portable box type housed in Bakelite case • Meters Shall comply to IS-1248	case and connection cords		User Manual		2 Years

			or IEC-1010,					
13.	Ammeter Mc Analog	<ul style="list-style-type: none"> •Ammeter MC analog - (0-5 A- MC) with Moving Coil with Central Magnetic Core • Spring Mounted Jewel Bearing Suspension •It should have banana terminals with permanent marking of range and terminals •It should have knife edged pointer and anti parallax mirror •It should be moving coil type 	<ul style="list-style-type: none"> • This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic molded case) •portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010, 	case and connection cords		User Manual		2 Years
14.	Ammeter Mc Analog	<ul style="list-style-type: none"> •Ammeter MC analog - (0-5 A- MC) with Moving Coil with Central Magnetic Core • Spring Mounted Jewel Bearing Suspension •It should have banana terminals with permanent marking of range and terminals •It should have knife edged pointer and anti parallax mirror •It should be moving coil type 	<ul style="list-style-type: none"> • This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic moulded case) •portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010, 	case and connection cords		User Manual		2 Years
15.	Ammeter, AC/DC portable precision grade Digital Panel board type	AC/DC Digital ammeter 0-30 Amps <ul style="list-style-type: none"> • 3 Digit, 7 Segment LED Display • True RMS Measurement for AC measurement • For 1Ø-2 Wire Electrical Network • IP Protection (Front): IP65 	<ul style="list-style-type: none"> •Panel Mounted •Accuracy: $\pm 0.5\%$ 	Standard Accessories		Manual		2 Years
16.	Analog multimeter	Analog Multimeter <ul style="list-style-type: none"> •AC Voltage (Volts) 10-1000 V •AC Voltage Accuracy $\pm 4\%$ •DC Voltage Accuracy $\pm 3\%$ •DC Current (Amp) 50μA-10 A 	<ul style="list-style-type: none"> • Analog Multimeter with Mirror Scale • Inbuilt Buzzer and LED 	*Batteries *Case *Test Leads		*Manual *Test Certificates		2 Years

		<ul style="list-style-type: none"> •DC Voltage 0.1mV-1000 V •DC Current Accuracy $\pm 3\%$ •Resistance (ohm) 0.2 Ω-20 MΩ •Resistance Accuracy $\pm 3\%$ 	<ul style="list-style-type: none"> • 0 Ω Adjustment with X 100 Range • Transistors Test , hFE with Diode. • Test Resistance Range : X1 , X10 , X100 , X1K , X10K • Diode Test • Transistor Testing • Continuity Buzzer About 100 Ω • Function Protection • Meters Shall comply to IS-1248 or IEC-1010, 					
17.	Analog Multimeter	Analog Multimeter as per IS 1248 with following range: <ul style="list-style-type: none"> •AC Voltage (Volts) 10-1000 V •AC Voltage Accuracy $\pm 4\%$ •DC Voltage Accuracy $\pm 3\%$ •DC Current (Amp) 50μA-10 A •DC Voltage 0.1mV-1000 V •DC Current Accuracy $\pm 3\%$ •Resistance (ohm) 0.2 Ω-20 MΩ •Resistance Accuracy $\pm 3\%$ 	<ul style="list-style-type: none"> • Analog Multimeter with Mirror Scale • Inbuilt Buzzer and LED • 0 Ω Adjustment with X 100 Range • Transistors Test , hFE with Diode. • Test Resistance Range : X1 , X10 , X100 , X1K , X10K • Diode Test • Transistor Testing • Continuity Buzzer About 100 Ω • Function Protection 	*Batteries *Case *Test Leads		*Manual *Test Certificates		2 Years
18.	Auto Transformer starter	<ul style="list-style-type: none"> •Auto Transformer starter suitable for Motor starting upto 3 HP Motors. •Shall conform to IEC 60947-4-1 	<ul style="list-style-type: none"> •Push button operation for ON-OFF 	standard accessories		Operation Manual		2 Years

		• Starter enclosure to conform IP 53	• Ammeters, ammeter selector switch					
19.	Clamp meter	<p>Tong Tester / Clamp Meter</p> <ul style="list-style-type: none"> • 0 – 10 amp.(Min) • Dial (aka rotary switch). • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum and average inputs are shown. Works in current, voltage and frequency modes. • Zero button (yellow): Removes dc offset from dc current measurements. Also serves as dial's shift button to select yellow functions scattered around the dial. • Shall comply to Safety standard IEC 1010 or IEC 61010 	<ul style="list-style-type: none"> • Current-sensing jaw. • Tactile barrier (to protect fingers from shocks). • Hold button: Freezes the display reading. Reading is released when button is pushed a second time. • Backlight button. • Jaw release lever. • Alignment marks: To meet accuracy specifications, a conductor must be aligned with these marks. • Common input jack. • Volts/ohm input jack. • Input for flexible current probe 	<ul style="list-style-type: none"> • Test Leads • Batteries • Soft carrying case 		Catalogue		2 Years
20.	Compound gauge, Digital type	<ul style="list-style-type: none"> • Digital type Compound gauge diameter 63mm with recalibration set screw • scale vacuum 76mm. • Pressure 15 Kg/sq.cm 	• Case ABS plastic	ABS Plastic Case with standard accessories		Product Catalogue		2 Years
21.	DC Ohmmeter	<p>Ohm Meter</p> <p>Specification :-</p> <ul style="list-style-type: none"> • Measuring min. 0- 300 Ohm with mid scales at 20 Ohms Capacity with Probe Black & red Ohm meter. • Range : min. 0-300 ohm . • Accuracy : +/- 5 % of the indicating value at center zero - Set of 2 pcs . • Shall comply to IS 1248 	<ul style="list-style-type: none"> • Portable Box type, • Self contained , • Battery operated, • Should be moving coil type and anti parallax mirror scale and knife edge pointer provided accurate reading. Should have facility of 	Patch cords Standard Accessories Case		Manual		2 years

			press to read switch avoids battery drain, • An infinity adjustment potentiometer help to provide accurate reading without effect of variation of battery voltage. • Mechanical zero adjuster is provided adjust zero,					
22.	DC & AC ammeter 0-1 A(table model for lab experiments)	<ul style="list-style-type: none"> • AC Ammeter MI, analog, 0-1 A range with Moving iron spring-mounted jewel bearing suspension • DC Ammeter MC analog- (0 - 1 A MC) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension • It should have banana terminals with permanent marking of range and terminals • It should have knife edged pointer and anti-parallax mirror 	<ul style="list-style-type: none"> • It should have banana terminals with permanent marking of range and terminals , it should have knife edged pointer and anti-parallax mirror, it should be moving coil type • This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic moulded case) , portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010, 	case and connection cords		User Manual		2 Years
23.	DC & AC ammeter 0-1mA(table model for lab experiments)	<ul style="list-style-type: none"> • AC Ammeter MI, analog, 0-1 mA range with Moving iron spring-mounted jewel bearing suspension • Ammeter MC analog- (0 - 1 mA MC) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension 	<ul style="list-style-type: none"> • It should have banana terminals with permanent marking of range and terminals , it should have knife 	case and connection cords		User Manual		2 Years

		<ul style="list-style-type: none"> •It should have banana terminals with permanent marking of range and terminals •It should have knife edged pointer and anti parallax mirror 	edged pointer and anti parallax mirror, it should be moving coil type <ul style="list-style-type: none"> • This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic moulded case) , portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010, 					
24.	DC & AC ammeter 0-50 mA (table model for lab experiments)	<ul style="list-style-type: none"> • AC Ammeter MI, analog, 0-50 mA range with Moving iron spring-mounted jewel bearing suspension • Ammeter MC analog- (0 - 50 mA MC) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension •It should have banana terminals with permanent marking of range and terminals •It should have knife edged pointer and anti parallax mirror 	<ul style="list-style-type: none"> • It should have banana terminals with permanent marking of range and terminals , it should have knife edged pointer and anti parallax mirror, it should be moving coil type • This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic moulded case) , portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010, 	case and connection cords		User Manual		2 Years

25.	DC & AC ammeter 0-500 mA(table model for lab experiments)	<ul style="list-style-type: none"> • AC Ammeter MI, analog, 0-500 mA range with Moving iron spring-mounted jewel bearing suspension • Ammeter MC analog- (0-500 mA MC) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension • It should have banana terminals with permanent marking of range and terminals • It should have knife edged pointer and anti-parallax mirror 	<ul style="list-style-type: none"> • It should have banana terminals with permanent marking of range and terminals , it should have knife edged pointer and anti-parallax mirror, it should be moving coil type • This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic moulded case) , portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010, 	case and connection cords		User Manual		2 Years
26.	Dial thermometer remote control, armored capillary dial	Dial thermometer Specifications: <ul style="list-style-type: none"> • Range:-50 ... 50 °C • Dial size in mm: 75 mm (Min.) • Capillary length: Min. 20 m • Material • Connection: Stainless steel 316 • Stem: Stainless steel 316L • Case/ring: Stainless steel 304 or 316L • Capillary: Stainless steel 316 • Armor: Flexible, SS 304 • Window: Instrument glass, optional laminated safety glass 	<ul style="list-style-type: none"> • Rugged stainless steel construction • Fast response • Protection IP65 • High repeatability and small hysteresis • Dry or liquid filled • Rigid stem or bulb with capillary • Dial: Aluminium, black markings on white background • Pointer: Aluminium, black • Movement: Stainless steel 304 • Accuracy: Class 1 	Standard Accessories		Product Catalogue		2 Years

27.	Digital LCR Meter	<p>Digital LCR meter with following specifications:</p> <ul style="list-style-type: none"> • RESISTANCE: 600/6k/60k/600k/6M $\Omega \pm 1.0\%$, 60M $\Omega \pm 1.5\%$ • CAPACITANCE: 6nF $\pm 2.0\%$, 60n/600n/6 Ω F $\pm 1.0\%$, 60 Ω /600Ω /6mF $\pm 1.5\%$ • INDUCTANCE: 600 Ω H $\pm 2.5\%$; 6m/60m/600mH $\pm 1.5\%$; 6H: <4H $\pm 2.8\%$ >4H $\pm 5.0\%$; 60H: <40H $\pm 3.5\%$ >40H Unspecified • POWER: 6 (1.5V) (AAA Type) 	<ul style="list-style-type: none"> • Designed to international safety standard IEC1010-1 • A tilt stand provides position flexibility for viewing and operating the meter • SMT application • Auto range and manual range • Data hold • Max. /min. Value measurement • Auto power off / disable auto power off 	<ul style="list-style-type: none"> *Batteries *Case *Test Leads 		<ul style="list-style-type: none"> *Manual *Test Certificates 		2 Years
28.	Digital Multimeters	<p>Multimeter Digital Specifications :-</p> <ul style="list-style-type: none"> • Voltage between any Terminal and Earth Ground: 1000V Min • Display: Digital: 4000 count updates 3/sec • Operating Altitude: 0 to 2000 meters <p>Specification:</p> <ul style="list-style-type: none"> • DC voltage: 200m/2V/20V/200V $\pm 0.5\%$, 1000V $\pm 0.8\%$ • AC voltage: 2V/20V/200V $\pm 0.8\%$, 750V $\pm 1.2\%$ • Resistance: 200/2k/20k/200k/2M? $\pm 0.8\%$, 20M? $\pm 1.0\%$ • DC current: 200mA $\pm 1.5\%$, 10A $\pm 2.0\%$ • AC current: 200mA $\pm 1.8\%$, 10A $\pm 3.0\%$ • Capacitance: 20nF/200nF/2 μF/20 μF/200 μF $\pm 4.0\%$ • Temperature: -20 $^{\circ}$ C ~ 1000 $^{\circ}$ C • Inductance: 20mH/200mH/2H/20H $\pm 3.0\%$ • Transistor hFE: 1 ~ 1000 • Power supply: (9V) • Battery Life: Alkaline: 500 Hours • Safety Compliance: IEC 61010-1, 2000 CAT I 1000 V, CAT II 600 V, and CAT III 	<ul style="list-style-type: none"> • Basic dc accuracy • Digital display to 4,000 words • Automatic and manual range • Display hold function • Diode and continuity test with buzzer • Cover designed for easy hanging • Automatic shutdown • Easily replaceable battery design • 500 hours battery life • Voltage AC, Voltage DC, resistance, capacitance, continuity beeper, diode test, A ac, A dc all in a durable 	<ul style="list-style-type: none"> • Universal hanger clip • Test Leads • Batteries 		User Manual		2 Years

		300 V overvoltage standards	holster • Rugged and durable design – all inputs, ranges and functions are protected up to 1000 V					
29.	Digital thermometer	Digital thermometer •Type: Graduated disc analogy •Range: -50...50 °C	• ISI/CE Mark Product	Standard Accessories		Product Catalogue		2 Years
30.	Digital Tong Tester	Tong Tester / Clamp Meter •0 – 20 amp.(min) •Shall comply to Safety standard IEC 1010 or IEC 61010 • Current-sensing jaw. • Tactile barrier (to protect fingers from shocks). • Hold button: Freezes the display reading. Reading is released when button is pushed a second time. • Dial (aka rotary switch). • Backlight button. • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum and average inputs are shown. Works in current, voltage and frequency modes.	• Zero button (yellow): Removes dc offset from dc current measurements. Also serves as dial's shift button to select yellow functions scattered around the dial. • Jaw release lever. • Alignment marks: To meet accuracy specifications, a conductor must be aligned with these marks. • Common input jack. • Volts/ohm input jack. • Input for flexible current probe	Test Leads Batteries Soft carrying case		Product Catalogue		3 Years
31.	Digital Wattmeter	•Digital Wattmeter which calculate and displays power of single phase 230 V, Min. 1 KW Measurement, 50 Hz on a seven segment display. •600 V CAT IV/1000V CAT III as per International Safety standard IEC61010-1-2010	• Range change function. • Data Hold Function freezes the reading. • Continuity check. • Diode measurement. • Low battery indication	*Batteries *Case		*Manual *Test Certificates		2 Years

			<ul style="list-style-type: none"> • Auto Power Off (APO) function. • Active Reactive and Apparent Power • Horse Power Measurement 					
32.	A.C. Energy Meter	<ul style="list-style-type: none"> • A.C. Energy Meter- induction type • Single Phase, 5 A, 230-240 V 	<ul style="list-style-type: none"> • 6 digits including one decimal digit display • LED indication for Calibration, phase indication, earth load tamper and reverse tamper. • Conforming to IEC 62052 or IS 13779 • portable type Housed in Bakelite case • Accuracy Class 1.0 	case and connection cords		<ul style="list-style-type: none"> *Manual *Test Certificates 		
33.	Clamp Meter	<ul style="list-style-type: none"> • Fluke Meter Tong Tester / Clamp Meter • 0 – 100 amp.(Min) • Shall comply to Safety standard IEC 1010 or IEC 61010 	<ul style="list-style-type: none"> • Current-sensing jaw. • Tactile barrier (to protect fingers from shocks). • Hold button: Freezes the display reading. Reading is released when button is pushed a second time. • Dial (aka rotary switch). • Backlight button. • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum 	<ul style="list-style-type: none"> • Test Leads • Batteries • Soft carrying case 		Catalogue/Manual		2 Years

			<p>and average inputs are shown. Works in current, voltage and frequency modes.</p> <ul style="list-style-type: none"> • Zero button (yellow): Removes dc offset from dc current measurements. Also serves as dial's shift button to select yellow functions scattered around the dial. • Jaw release lever. • Alignment marks: To meet accuracy specifications, a conductor must be aligned with these marks. • Common input jack. • Volts/ohm input jack. • Input for flexible current probe 					
34.	Clamp Meter	<p>Fluke Meter Tong Tester / Clamp Meter 0 – 100 amp.(Min)</p> <ul style="list-style-type: none"> • Hold button: Freezes the display reading. Reading is released when button is pushed a second time. • Dial (aka rotary switch). • Backlight button. • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum and average inputs are shown. Works in current, voltage and frequency modes. • Shall comply to Safety standard IEC 1010 or IEC 61010 	<ul style="list-style-type: none"> • Current-sensing jaw. • Tactile barrier (to protect fingers from shocks). • Zero button (yellow): Removes dc offset from dc current measurements. Also serves as dial's shift button to select yellow functions scattered around the dial. • Jaw release 	<ul style="list-style-type: none"> • Test Leads • Batteries • Soft carrying case 		Catalogue/Manual		2 Years

			lever. <ul style="list-style-type: none"> • Alignment marks: To meet accuracy specifications, a conductor must be aligned with these marks. • Common input jack. • Volts/ohm input jack. • Input for flexible current probe 					
35.	Frequency Meter	Frequency Meter <ul style="list-style-type: none"> • AC frequency meter analog with range 45 to 55hz • Installation category 300 V CAT III • IS : 1248 / IEC 51 	<ul style="list-style-type: none"> • Better resolution. • Linear Scale • Glass filled polycarbonate • Knife edge pointer. • Easily replicable glass and bezel. • IP 52 case • Accuracy class 0.5 according to IS: 1248 	<ul style="list-style-type: none"> • Test Leads • Batteries • Soft carrying case 		*Manual *Test Certificates		
36.	Glow plug tester	Glow Plug tester/analyser suitable for voltages upto 48 Volts.	<ul style="list-style-type: none"> • Test the Glow Plug / Heater Plug • Test the glow plug without removing from the Engine • Latest ISO 9001 Certified factory product 	Patch cords Case		Manual		
37.	Hydrometer	Hydrometer <ul style="list-style-type: none"> • Range: 1.100 - 1.300 Specific Gravity at 27°C • Complete with Glass Barrel 	Use to check gravity of battery	Case		Product Catalogue		2 Years
38.	Digital Wattmeter	<ul style="list-style-type: none"> • Digital Wattmeter which calculate and displays power of single phase 230 V, Min. 1 KW Measurement, 50 Hz on a seven segment display. • 600 V CAT IV/1000V CAT III as per 	<ul style="list-style-type: none"> • Range change function. • Data Hold Function freezes the reading. 	*Batteries *Case *Test Leads		*Manual *Test Certificates		2 Years

		International Safety standard IEC61010-1-2010	<ul style="list-style-type: none"> • Continuity check. • Diode measurement. • Low battery indication • Auto Power Off (APO) function. • Active Reactive and Apparent Power • Horse Power Measurement 					
39.	Kilo Wattmeter	<ul style="list-style-type: none"> • Kilo Wattmeter Analog 0-1.5-3KW, • Pressure coil rating- 240v/440v, • Current rating-5A/10A(min) Analog, • Portable type Housed in Bakelite case Conforming to IS 1248 	<ul style="list-style-type: none"> • Knife edge pointer and Anti-parallax mirror scale. • Accuracy class as per IS:1248 • Wooden case with Bakelite Top. • Wide window for easy reading. • Quick response due to unique damping. 	<ul style="list-style-type: none"> *Connecting Leads *Case 		<ul style="list-style-type: none"> *Manual *Test Certificates 		2 Years
40.	LCR meter	Digital LCR meter with following specifications: <ul style="list-style-type: none"> • RESISTANCE: 600/6k/60k/600k/6M $\Omega \pm 1.0\%$, 60M $\Omega \pm 1.5\%$ • CAPACITANCE: 6nF $\pm 2.0\%$, 60n/600n/6 Ω F $\pm 1.0\%$, 60 Ω /600Ω /6mF $\pm 1.5\%$ • INDUCTANCE: 600 Ω H $\pm 2.5\%$; 6m/60m/600mH $\pm 1.5\%$; 6H: <4H $\pm 2.8\%$ >4H $\pm 5.0\%$; 60H: <40H $\pm 3.5\%$ >40H Unspecified • POWER: 6 (1.5V) (AAA Type) 	<ul style="list-style-type: none"> • Designed to international safety standard IEC1010-1 • A tilt stand provides position flexibility for viewing and operating the meter • SMT application • Auto range and manual range • Data hold • Max. /min. Value measurement • Auto power off / disable auto power 	<ul style="list-style-type: none"> *Batteries *Case *Test Leads 		<ul style="list-style-type: none"> *Manual *Test Certificates 		2 Years

			off					
41.	LCR meter (Digital) Handheld	Digital LCR meter with following specifications: • RESISTANCE: 600/6k/60k/600k/6M $\Omega \pm 1.0\%$, 60M $\Omega \pm 1.5\%$ • CAPACITANCE: 6nF $\pm 2.0\%$, 60n/600n/6 Ω F $\pm 1.0\%$, 60 Ω /600 Ω /6mF $\pm 1.5\%$ • INDUCTANCE: 600 Ω H $\pm 2.5\%$; 6m/60m/600mH $\pm 1.5\%$; 6H: <4H $\pm 2.8\%$ >4H $\pm 5.0\%$; 60H: <40H $\pm 3.5\%$ >40H Unspecified • POWER: 6 (1.5V) (AAA Type)	<ul style="list-style-type: none"> Designed to international safety standard IEC1010-1 A tilt stand provides position flexibility for viewing and operating the meter SMT application Auto range and manual range Data hold Max. /min. Value measurement Auto power off / disable auto power off 	<ul style="list-style-type: none"> *Batteries *Case *Test Leads 		<ul style="list-style-type: none"> *Manual *Test Certificates 		2 Years
42.	Lux Meter	Lux Meter - • Display - 3½ digit ,LCD , • Ranges - 0-70,000 Lux .(3 ranges) , • Accuracy - + (5% rdg. +2 dgts) , • Operating Temperature - 0° to 50 °(32° to 122° F) • Operating Humidity - Less than 80% R.H. • Power Supply - min 9V battery (6F 22) ,	<ul style="list-style-type: none"> *Photo Detector Shall have a Spectral Sensitivity close to CIE photopic Curve. *Low Battery Indication - (- +) , Data Hold , Display in Lux , 	Standard Accessories Case, batteries		<ul style="list-style-type: none"> *Manual *Test Certificates 		
43.	Magnetic Flux	•Magnetic Flux Meter portable type Housed in Bakelite case Technical Specifications : •Range : 0-500 tesla •Accuracy : $\pm 0.5\%$ •Display : 3 ½ digit 7 seg. (DPM) •Detector : Hall probe with an imported hall element •Power : 220V, 50 Hz	<ul style="list-style-type: none"> Shall operate on the principle of Hall Effect in Semiconductors. Indicate the direction of the magnetic field. Latest ISO 9001 Certified factory product 	Standard Accessories Case		<ul style="list-style-type: none"> *Manual *Test Certificates 		
44.	Milli Ammeter (AC)	AC Ammeter MI, analog, 0-200mA range with Moving iron spring-mounted jewel bearing suspension	• This precision grade portable laboratory type	Standard Accessories		Catalogue/Manual		2 Years

			direct indicating meter should be housed in electrical grade phenolic (plastic molded case) , portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010,					
45.	Milli Ammeter (DC)	Ammeter MC analog- (0 - 500 mA MC) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension •It should have banana terminals with permanent marking of range and terminals •It should have knife edged pointer and anti parallax mirror •It should be moving coil type	• This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic molded case) , portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010,	case and connection cords		User Manual		
46.	Milli Voltmeter	Milli Voltmeter •Centre - zero analog, •Milli Voltmeter centre zero 100 - 0 - 100 m volt •Confirming to BS 89, IEC 51 & IS 1248	portable box type housed in Bakelite case	Batteries, Case		User Manual		
47.	Analogue type Multimeter	Analog Multimeter •AC Voltage (Volts) 10-1000 V •AC Voltage Accuracy $\pm 4\%$ •DC Voltage Accuracy $\pm 3\%$ •DC Current (Amp) 50 μ A-10 A •DC Voltage 0.1mV-1000 V •DC Current Accuracy $\pm 3\%$ •Resistance (ohm) 0.2 Ω -20 M Ω •Resistance Accuracy $\pm 3\%$	• Analog Multimeter with Mirror Scale • Inbuilt Buzzer and LED • 0 Ω Adjustment with X 100 Range • Transistors Test , hFE with Diode. • Test Resistance Range : X1 , X10 , X100 , X1K , X10K • Diode Test	*Batteries *Case *Test Leads		*Manual *Test Certificates		2 Years

			<ul style="list-style-type: none"> • Transistor Testing • Continuity Buzzer About 100 Ω • Function Protection 					
48.	Digital Multimeter	<p>Multimeter Digital Specifications :-</p> <ul style="list-style-type: none"> • Voltage between any Terminal and Earth Ground: 1000V Min • Display: Digital: 4000 count updates 3/sec • Operating Altitude: 0 to 2000 meters <p>Specification:</p> <ul style="list-style-type: none"> • DC voltage: 200m/2V/20V/200V \pm 0.5%, 1000V \pm 0.8% • AC voltage: 2V/20V/200V \pm 0.8%, 750V \pm 1.2% • Resistance: 200/2k/20k/200k/2M? \pm 0.8%, 20M? \pm 1.0% • DC current: 200mA \pm 1.5%, 10A \pm 2.0% • AC current: 200mA \pm 1.8%, 10A \pm 3.0% • Capacitance: 20nF/200nF/2 μF/20 μF/200 μF \pm 4.0% • Temperature: -20 ° C ~ 1000 ° C • Inductance: 20mH/200mH/2H/20H \pm 3.0% • Transistor hFE: 1 ~ 1000 • Power supply: (9V) • Battery Life: Alkaline: 500 Hours • Safety Compliance: IEC 61010-1, 2000 CAT I 1000 V, CAT II 600 V, and CAT III 300 V overvoltage standards 	<ul style="list-style-type: none"> • Basic dc accuracy • Digital display to 4,000 words • Automatic and manual range • Display hold function • Diode and continuity test with buzzer • Cover designed for easy hanging • Automatic shutdown • Easily replaceable battery design • 500 hours battery life • Voltage AC, Voltage DC, resistance, capacitance, continuity beeper, diode test, A ac, A dc all in a durable holster • Rugged and durable design – all inputs, ranges and functions are protected up to 1000 V 	<ul style="list-style-type: none"> • Universal hanger clip • Test Leads • Batteries 		User Manual	1 Year	2 Years
49.	Ohm Meter; Portable box type	<p>Ohm Meter- Shunt Type - Specification :-</p> <ul style="list-style-type: none"> • Measuring 0- 2000 Ohm Capacity with 	<ul style="list-style-type: none"> • Latest ISO 9001 Certified factory product 	Batteries if applicable, Case		User Manual		

		Probe Black & red Ohm meter. •Range : 0-2000 ohm . •Accuracy : +/- 5 % of the indicating value at center zero	• Portable Box type, Self contained , Battery operated, • Should be moving coil type and anti parallax mirror scale and knife edge pointer provided accurate reading. Should have facility of press to read switch avoids battery drain, • An infinity adjustment potentiometer help to provide accurate reading without effect of variation of battery voltage. • Mechanical zero adjuster is provided adjust zero,					
50.	Ohm Meter; Series Type	Ohm Meter- Series Type - Specification :- •Measuring 0- 2000 Ohm Capacity with Probe Black & red Ohm meter. •Range : 0-2000 ohm . •Accuracy : +/- 5 % of the indicating value at center zero	• Latest ISO 9001 Certified factory product • Portable Box type, Self-contained , Battery operated, • Should be moving coil type and anti-parallax mirror scale and knife edge pointer provided accurate reading. Should have facility of press to read switch avoids battery drain, • An infinity	Batteries if applicable, Case		User Manual		

			adjustment potentiometer help to provide accurate reading without effect of variation of battery voltage. • Mechanical zero adjuster is provided adjust zero,					
51.	Ohm Meter; Shunt Type	Ohm Meter- Shunt Type - Specification :- •Measuring 0- 2000 Ohm Capacity with Probe Black & red Ohm meter. •Range : 0-2000 ohm . •Accuracy : +/- 5 % of the indicating value at center zero	<ul style="list-style-type: none"> • Latest ISO 9001 Certified factory product • Portable Box type, Self contained , Battery operated, • Should be moving coil type and anti parallax mirror scale and knife edge pointer provided accurate reading. Should have facility of press to read switch avoids battery drain, • An infinity adjustment potentiometer help to provide accurate reading without effect of variation of battery voltage. • Mechanical zero adjuster is provided adjust zero, 	Batteries if applicable, Case		User Manual		
52.	Electrode drying Oven	Electrode drying Oven •capacity: 10 kg •Voltage : 230 volt ac •Temperature : Max:350 Deg.cel •Wattage : 1000 Watt Min	<ul style="list-style-type: none"> • Easy to carry • High density insulation for energy savings • Insulated chamber door 	Power Cord		Manual		2 years

			along with gasket to avoid heat losses <ul style="list-style-type: none"> • Inner mild steel duly painted with heat resistant paint • Auto Cut with temperature control. • Digital display of Temp. at front 					
53.	Phase Sequence Indicator	Phase Sequence Indicator <ul style="list-style-type: none"> • 3 Phase, 415 V , • Working Voltage: 100 - 500 Volt • Freq. : 25-60 Hz • Shall comply to Safety standard IEC 1010 or IEC 61010 or EN 61010 	<ul style="list-style-type: none"> • Indicates Phase Presence • Indicates Phase Rotation • Indicates Motor Rotation / wiring • Indicates Battery Status 	Standard Accessories		Product Catalogue		
54.	Power Factor	415 V, 20 A, Three Phase portable portable type Power Factor Meter <ul style="list-style-type: none"> • Accuracy Class Class1.0 • Frequency 50Hz \pm 5 % • System Voltage 415V AC • Mounting flush Display parameters: E.B Energy (6.3 format),Line voltages (Vr, Vy, and Vb with respect to Neutral),Line currents (Ir, Iy, and Ib),Line Frequency, Average power factor lag or lead, Active power- R ph, Y ph, B ph & summation, EB On hour	<ul style="list-style-type: none"> • True RMS measurements • Accuracy class 1.0 • L.E.D Indications:• Presence of phases (R, Y, B)• Reverse polarity <ul style="list-style-type: none"> • 2 –Line, 16 Char back lit LCD display • Confirms to IS-13779/ IEC-62052-11& IEC-62053-21 • RS 485 PORT – Mod bus protocol • Compact and ideal for industrial environment 			*Manual *Test Certificates		
55.	Power Meter	<ul style="list-style-type: none"> • Digital Wattmeter which calculate and displays power of single phase 230 V, Min. 1 KW Measurement, 50 Hz on a seven segment display. • 600 V CAT IV/1000V CAT III as per International Safety standard IEC61010-1- 	<ul style="list-style-type: none"> • Range change function. • Data Hold Function freezes the reading. • Continuity check. 	*Batteries *Case		*Manual *Test Certificates		2 Years

		2010	<ul style="list-style-type: none"> • Diode measurement. • Low battery indication • Auto Power Off (APO) function. • Active Reactive and Apparent Power • Horse Power Measurement 					
56.	Power Meter	<ul style="list-style-type: none"> • Digital Wattmeter which calculate and displays power of single phase 230 V, Min. 1 KW Measurement, 50 Hz on a seven segment display. • 600 V CAT IV/1000V CAT III as per International Safety standard IEC61010-1-2010 	<ul style="list-style-type: none"> • Range change function. • Data Hold Function freezes the reading. • Continuity check. • Diode measurement. • Low battery indication • Auto Power Off (APO) function. • Active Reactive and Apparent Power • Horse Power Measurement 	Standard accessories		Operating Manual/user Manual,		2 Years
57.	Pressure gauge Digital type	Digital type Pressure gauge with diameter 63mm with recalibration set <ul style="list-style-type: none"> • Min Pressure (PSI)0 and Max Pressure (PSI)30 • Min Temperature (° C)-20 and Max Temperature (° C)60 • Display 5-digit LCD, 0.5" H • Battery Type : Two AA (included) • Battery Life 2000 hours minimum 	<ul style="list-style-type: none"> • Case ABS plastic • Enclosure Rating: IP67 • Media Compatibility: Gases and liquids compatible with wetted materials • Resolution: 0.01 psi • Accuracy ±0.5% full-scale • CE Mark product / Latest ISO 9001 Certified factory 	ABS Plastic Case with standard accessories		Instructional manual with calibration certificate		2 Years

			product					
58.	Room temperature thermometer	Spirit-filled glass thermometer mounted on a rust-proof aluminium plate with dual scale -20° to 230°F x 1°F and -30 to 110 C x 1°C division.	<ul style="list-style-type: none"> • Latest ISO 9001 Certified Factory Product / CE mark product 	Standard accessories should be provided.		manual/catalogue		2 Years comprehensive on site warranty
59.	Analog Tachometer	Tachometer - Analog type Analog Type - 10000 RPM	<ul style="list-style-type: none"> • Hand held type • Latest ISO 9001 Certified factory product 	Standard Accessories Case		*Manual *Test Certificates		2 Years
60.	Digital Tachometer	Tachometer Digital <ul style="list-style-type: none"> • Digital Photo Sensor Type - 10000 RPM (Tachometer - 5 Digit bright LED display of 10 mm height with memories of last ,highest and lowest readings , • 60 to 10000 RPM for rotational speeds, Auto - ranging ,Resolution 0.1 RPM from 60 to 1000 RPM ,1 RPM from 1000 to 50000 RPM. 6 to 1000 MPM (meters per minute) for surface speeds with resolution of 0.1 RPM • Choice of battery operation with 4 pen cells of 1.5 volts ,or mains voltage 230 + 10 % volts AC ,50/60 Hertz with the help of battery adaptor supplied • Auto power off facility. 	<ul style="list-style-type: none"> • Portable Type with sensor • Display 5 Digital LCD Display • The Last Value/ Max Value/ Min Value will be Automatically Stored in Memory. • Surface Speed Sensor for Speed Measurement • Low Battery Indication. • Testing Parameters : RPM, m/min, ft/min 	Power Cords if applicable, Batteries If Applicable		Manual		2 Years
61.	Tachometer digital, multi range	Tachometer Digital <ul style="list-style-type: none"> • Digital Photo Sensor Type - 3000 RPM (Tachometer - 5 Digit bright LED display of 10 mm height with memories of last ,highest and lowest readings , 	<ul style="list-style-type: none"> • Portable Type with sensor • Display 5 Digital LCD Display • The Last Value/ Max Value/ Min Value will be Automatically Stored in Memory. • Surface Speed Sensor for Speed Measurement • Low Battery Indication. • Testing 	Power Cords if applicable, Batteries If Applicable		Manual		2 Years

			Parameters : RPM, m/min, ft/min					
62.	Thermometer Digital	<ul style="list-style-type: none"> • 0° C - 150° C Industrial-grade digital thermometer with stainless steel probe for use with all hot and cold fluids and solids, including aquariums and hydroponics, ovens, refrigerators and freezers, ventilation systems, and heating systems • Dual-reading display has -58 to +482 degree F/ -50 to +250 degree C temperature range and 0.1 degree resolution • 2-1/2" stainless steel probe with 20" cable • Includes wallet-style case 	<ul style="list-style-type: none"> • Includes wallet-style case • Latest ISO 9001 Certified factory product 	Probes		Instruction Manual		2 Years
63.	Tong tester (clamp on multi meter)	<p>Tong Tester / Clamp Meter</p> <ul style="list-style-type: none"> • 0 – 10-30 amp.(min) with 0-500 V • Dial (aka rotary switch). • Backlight button. • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum and average inputs are shown. • Works in current, voltage and frequency modes. • Shall comply to Safety standard IEC 1010 or IEC 61010 	<ul style="list-style-type: none"> • Current-sensing jaw. • Tactile barrier (to protect fingers from shocks). • Hold button: Freezes the display reading. Reading is released when button is pushed a second time. • Zero button (yellow): Removes dc offset from dc current measurements. Also serves as dial's shift button to select yellow functions scattered around the dial. • Jaw release lever. • Alignment marks: To meet accuracy specifications, a conductor must be aligned with these marks. 	Test Leads Batteries Soft carrying case		Product Catalogue		3 Years

			<ul style="list-style-type: none"> • Common input jack. • Volts/ohm input jack. • Input for flexible current probe 					
64.	Sensor thermometer (digital)	Sensor thermometer (digital) with following specifications: <ul style="list-style-type: none"> • Range: -50°C to 150°C • Temperature Resolution: 0.1°C • Display Min. 36 x 17mm • Accuracy: ±0.1%+0.4°C • Survey Cycle: 10 Sec • Sensor: PT 100 • Battery: 1.5V (LR44) 	<ul style="list-style-type: none"> • IP67 waterproof • Max/Min/Avg function • Backlit LCD • Resolution 0.1°C; 0.1°F • Battery life indicator • ISO 9001 Certified Factory Product/ CE mark Product 	Batteries and case		Manual		2 Years
65.	Tong Tester	Digital Type Tong Tester / Clamp Meter <ul style="list-style-type: none"> • 0 – 100 Amp. • Dial (aka rotary switch). • Backlight button. • Min Max button: On first push, display shows maximum input. On subsequent pushes, minimum and average inputs are shown. • Works in current, voltage and frequency modes. • Shall comply to Safety standard IEC 1010 or IEC 61010 	<ul style="list-style-type: none"> • Current-sensing jaw. • Tactile barrier (to protect fingers from shocks). • Hold button: Freezes the display reading. Reading is released when button is pushed a second time. • Zero button (yellow): Removes dc offset from dc current measurements. Also serves as dial's shift button to select yellow functions scattered around the dial. • Jaw release lever. • Alignment marks: To meet accuracy specifications, a conductor must be 	<ul style="list-style-type: none"> • Test Leads • Batteries • Soft carrying case 		Product Catalogue		3 Years

			aligned with these marks. • Common input jack. • Volts/ohm input jack. • Input for flexible current probe					
66.	Voltmeter (0-1V), (0-10V), (0-30V) (table model)	Table model Analog Voltmeter with range 0-1V : • Range: Voltage (V): 0 – 1 V Table model Analog Voltmeter with range 0-10V : • Range: Voltage (V): 0 – 1 0V Table model Analog Voltmeter with range 0-30V : • Range: Voltage (V): 0 – 130V	• Movement Type: Moving Iron type • Standards: IS-1248 • Accuracy: $\pm 1.5\%$ of Full Scale			catalogue		2 Years
67.	Voltmeter 50V/DC	• Voltmeter MC analog - (0 - 50V) with Moving Coil with Central Magnetic Core, Spring Mounted Jewel Bearing Suspension • It should have banana terminals with permanent marking of range and terminals • It should have knife edged pointer and anti parallax mirror • It should be moving coil type	• This precision grade portable laboratory type direct indicating meter should be housed in electrical grade phenolic (plastic molded case) , portable box type housed in Bakelite case • Meters Shall comply to IS-1248 or IEC-1010,	case and connection cords		User Manual		2 Years
68.	Voltmeter AC to 500 V	• A.C. Voltmeter • M.I. analog, • A.C. Voltmeter M.I. 75V - 150 V - 300 V - 500V A.C • Confirming to BS 89, IEC 51 & IS 1248	portable box type housed in Bakelite case	Batteries, Case		User Manual		
69.	Voltmeter, AC/DC portable precision grade Digital Panel board type	Ac/DC Digital Voltmeter 0-500 Volts • 3 Digit, 7 Segment LED Display • True RMS Measurement for AC measurement • For 1Ø-2 Wire Electrical Network • IP Protection (Front): IP65	• Panel Mounted • Accuracy: $\pm 0.5\%$	Standard Accessories		Manual		2 Years
70.	Wattmeter AC/DC, 0 to 10 Kw	• Kilo Wattmeter Analog 0-10 KW, • pressure coil rating- 240v/440v,	• Knife edge pointer and Anti-	*Connecting Leads		*Manual *Test		2 Years

		<ul style="list-style-type: none"> • Current rating-5A/10A(min) Analog, • Portable type Housed in Bakelite case Conforming to IS 1248 	parallax mirror scale. <ul style="list-style-type: none"> • Accuracy class as per IS:1248 • Wooden case with Bakelite Top. • Wide window for easy reading. • Quick response due to unique damping. 	*Case		Certificates		
71.	Digital Wattmeter	<ul style="list-style-type: none"> • Multirange Digital Wattmeter which calculate and displays power of single phase 230 V, 1 KW Measurement, 50 Hz on a seven segment display. • 600 V CAT IV/1000V CAT III as per International Safety standard IEC61010-1-2010 	<ul style="list-style-type: none"> • Range change function. • Data Hold Function freezes the reading. • Continuity check. • Diode measurement. • Low battery indication • Auto Power Off (APO) function. • Active Reactive and Apparent Power • Horse power Measurement 	*Batteries *Case		*Manual *Test Certificates		2 Years
72.	Conductivity meters- both low range and high range.	Digital Conductivity meters with both low range and high range. complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Display : 3.5 Digital LED • Ranges 0 to 200 uS/cm, 0 to 2 mS/cm, 0 to 20 mS/cm, 0 to 200 mS/cm & 0 to 1000 mS/cm 	Digital Conductivity meters with min. features as: <ul style="list-style-type: none"> • CE/ Latest ISO 9001 certified factory product • Accuracy + 1%FS ± 1 digit • Adjustable Cell constant on Digital Display • Resolution 0.1uS/cm • Power 230V + 10?, 50Hz 	Standard Accessories		Product Catalogue		2 Years

73.	pH meters	Digital pH meters complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Display: 3 1/2 Digit LED • Accuracy: + 0.01 pH • Power Requirement 220 VAC +10% 50 Hz 	Digital pH meters with min. features as: <ul style="list-style-type: none"> • CE/ Latest ISO 9001 certified factory product 	Standard Accessories		Product Catalogue		2 Years
74.	Temperature probes	Temperature probes complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Measuring Range : -50 to +250 Deg.C; • Accuracy : Class A Accuracy of ± 0.2 Deg.C +/- 1 count • Output : Pt-100 3 Wire Type standard • Type : Simplex type with transition teflon/teflon cable of length 3 meters. • Sensor Length : Standard 6 inch(150mm) • MOC : Stainless Steel 304 pipe of 150mm length of Outer Diameter : Standard 6 mm. 	Temperature probes with min. features as: <ul style="list-style-type: none"> • CE/ Latest ISO 9001 certified factory product 	Standard Accessories		Product Catalogue		2 Years
75.	Thermo-hygrometers	Thermo-hygrometers complete in all aspect with key specifications as: <ul style="list-style-type: none"> • Measuring rate 18 s • Storage temp. -40 to +70 °C • Battery type 9V block battery • Battery life approx. 1 year • Material/Housing ABS • Display LCD, 2 lines 	Thermo-hygrometers with min. features as: <ul style="list-style-type: none"> • Continuous display of temperature, humidity and dewpoint • Max. and min. value display • Battery monitor • LED alarm reports limit value violations • High accuracy ± 2 %RH • CE/ Latest ISO 9001 certified factory product 	Standard Accessories		Product Catalogue		2 Years

Lot:- 3.2 Electrical Lab Equipments

Item No.	Name of Goods or Related Services	Technical Specifications of Item and/or Bureau of Indian Standards (BIS) (if applicable) reference	Features	Accessories	Spare parts	Documents	Installation & Training	Warranty of Equipment/parts
1.	0-30 V, 2 Amp, Regulated DC Power Supply	Regulated DC Power Supply with following specifications: <ul style="list-style-type: none"> • Bench top model Type DC regulated Power supply • Input: 230v ac, +/-10%, 50hz, single phase • Output: 0-30volts, 2 Amps • Line & load regulation: $\pm 0.05\%$ for variations in input and load variations • Ripple: Less than 3mv RMS • Protections: Fuse protection to be provided Outputs are protected against over loads & short circuits 	<ul style="list-style-type: none"> • Indications: LED indications for ac input CV,CC operations 4 ½ digit digital meters to read output voltage & load current. • Controls: On/Off switch at input side Coarse and fine voltage set potentiometer Coarse current set potentiometers • Terminations: Input through a power card Output will be brought on to binding terminals on front panel and also with remote sense terminals on to rear pane • Latest ISO 9001 Certified factory product 	Standard Accessories		*Manual *Test Certificates		2 Years
2.	3- Point D.C. Starter	Starter, 3- point D.C. For 2.5 KW DC motor 3-point DC Starter. 3 Point D.C. Motor starter suitable to work on	Relay Operated, Under/Over voltage and	Standard Accessories		<ul style="list-style-type: none"> • Calibration certificate • User's 		2 Years

		2.5 KW. D.C. motor, Voltage 230/250 with a maximum 15% full load current the starting period shall not exceed 30 seconds with under voltage and an intensions (Magnetic) over load release device.	overload Relay shall be included. Latest ISO 9001 Certified factory product.			Manual		
3.	4- Point D.C. Starter	Starter, 4- point D.C. For 2.5 KW DC motor 4-point DC Starter :- 4 Point D.C. Motor starter suitable to work on 2.5 KW. D.C. motor, Voltage 230/250 with a maximum 15% full load current the starting period do shall not exceed 30 seconds with under voltage and an intensions (Magnetic) over load release device.	Relay Operated, Under/Over voltage and overload Relay shall be included. Latest ISO 9001 Certified factory product.	Standard Accessories		<ul style="list-style-type: none"> • Calibration certificate • User's Manual 		2 Years
4.	4 Point relays	Pin Number: 4 Pin; Current: 40A Coil Voltage: DC 12V	<ul style="list-style-type: none"> • Latest ISO 9001 Certified factory product 	<ul style="list-style-type: none"> *Connecting terminals *Leads *Connector 		<ul style="list-style-type: none"> • Calibration certificate • User's Manual 		2 Years
5.	5 Point relays	Pin Number: 5 Pin; Current: 40A Coil Voltage: DC 12V	<ul style="list-style-type: none"> • Latest ISO 9001 Certified factory product 	<ul style="list-style-type: none"> *Connecting terminals *Leads *Connector 		<ul style="list-style-type: none"> • Calibration certificate • User's Manual 		2 Years
6.	Electric Induction plate	Electric Induction plate with min 1500 Watt, 240V having Ceramic cook top. • ISI mark product	<ul style="list-style-type: none"> • Touch panel • Automatic Whistle counter, • Timer with temp. control facility • Automatic Keep warm Function • Automatic voltage regulator • Anti-magnetic wall • Feather-touch buttons, High/Low Voltage protection. 	Power Cord		Manual		2 Years
7.	Resistance type AC starter	<ul style="list-style-type: none"> • AC Starters: - • Resistance type starter For A.C Motors of 2 to 5 H.P. 	<ul style="list-style-type: none"> • ISO 9001 of latest version certified Factory product 			Product Catalogue		
8.	DOL AC Starters	<ul style="list-style-type: none"> • Direct-on-Line Starters in Sheet-Steel Enclosure suitable for 2 to 5 HP motor 	<ul style="list-style-type: none"> • Built-in single phasing 	standard accessories		Operation Manual		2 Years

		<ul style="list-style-type: none"> • Conforms to IS 13947 or IEC 60947-4-1 & IEC 60947-4-1. • Sheet steel enclosures with IP 54 protection. • Wide range of relay settings and coil voltages. 	<ul style="list-style-type: none"> • protection • Terminal block for ease of termination • Relays having phase failure sensitive tripping mechanism provides reliable protection against Single Phasing & Overload conditions. 					
9.	Manual Star-Delta type AC starter	Star Delta Starter- Manual <ul style="list-style-type: none"> • Manual Star Delta starter for 3 phase AC motors of min. 5 HP ratings complete in as aspects. • Sheet steel enclosures with IP 54 protection. with Standardized accessories and spares . 	<ul style="list-style-type: none"> • Latest ISO 9001 Certified factory product 			Product Catalogue		2 Years
10.	Dimmer starter	Dimmer Starter <ul style="list-style-type: none"> • 0 - 270 V, 3Amp (Air cooled) Specification:- <ul style="list-style-type: none"> • Type :Single Phase Auto Transformer Amperage 3 Amp input voltage 0-270 V with safety fuses and line indicators	<ul style="list-style-type: none"> • ISO 9001 of latest version certified Factory product or Standard ISI product or CE Mark Product 	Standard Accessories		<ul style="list-style-type: none"> • Calibration certificate • User's Manual 		2 Years
11.	DOL starter	Direct-on-Line Starters in Sheet-Steel Enclosure suitable for 1/4 HP AC motor <ul style="list-style-type: none"> • Conforms to IS 13947 or IEC 60947-4-1 & IEC 60947-4-1. • Sheet steel enclosures with IP 54 protection. • Wide range of relay settings and coil voltages. 	<ul style="list-style-type: none"> • Built-in single phasing protection • Terminal block for ease of termination • Relays having phase failure sensitive tripping mechanism provides reliable protection against Single 	standard accessories		Operation Manual		2 Years

			Phasing & Overload conditions.					
12.	Semi-Automatic Star-Delta type AC starter	Star Delta Starter – •Semi-automatic in Sheet •Steel Enclosure (Motor Rating min 5 HP AC-3 Duty, 415V, 50Hz, 3-Ph) •Sheet steel enclosures with IP 54 protection. with Standardized accessories and spares.	<ul style="list-style-type: none"> • Flush Mounted Push Buttons • Built in Overload Relay • Copper & Aluminium cable terminations possible • As per IS: 13947-4-1 and IEC: 60947-1 standards • Wide Band Operating Coil • Wide Relay Range • Silver Contacts for Long Life 	standard accessories		Operation Manual		2 Years
13.	Fully Automatic Star-Delta type AC starter	Fully Automatic Star-Delta Starters •Suitable for motor starting upto 2 to 5 HP AC-3 Duty, 415V, 50Hz, 3-Ph •Sheet steel enclosures with IP 54 protection.	<ul style="list-style-type: none"> • Flush Mounted Push Buttons • Built in Overload Relay • Copper & Aluminium cable terminations possible • As per IS: 13947-4-1 and IEC: 60947-1 standards • Wide Band Operating Coil • Wide Relay Range • Silver Contacts for Long Life 	standard accessories		Operation Manual		2 Years
14.	Star Delta AC Soft Starter	Star Delta Starter - Soft starter •Star Delta soft Starter complying IEC		standard accessories		Operation Manual		2 Years

		60947 in Enclosure with IP 20 protection class for Motor Rating 2-5 HP AC-3 Duty, 415V, 50Hz, 3-Ph						
15.	Auto Transformer starter	Auto Transformer starter •suitable for Motor starting up to 2-5 HP Motors. •Shall conform to IEC 60947-4-1 •Starter enclosure to conform IP 53	•Push button operation for ON-OFF •Ammeter selector switch	standard accessories		Operation Manual		2 Years
16.	Air blow gun with standard accessories	Air blow gun Copper body with jet operating lever and suitable hose/connector	*Removable nozzle and connection nipple. *The gun is fitted with a non-leak air-valve and can be used on both high and low pressures. *the gun fitted with a non-leak air-valve and can be used on both high and low pressures *comfortable pistol grip	*Jet Operating lever * Suitable Hose/connector	*Spare Jet operating Lever and hose/connector	Catalogue		2 years
17.	Automatic Electric Press	• Steam 30g/min;100g steam boost • Non-stick soleplate/ Ceramic Soleplate • Anti-calc • 2100 Watts • Water tank capacity with min. 200 ml • Power supply: 220 V AC Single phase 50 Hz	• Drip stop system • Triple precision tip Reaching tricky areas • Vertical steaming • Spray • ISI Product	standard accessories		Manual		2 Years
18.	Autotransformer	•Single Phase Variable Auto Transformer •0 - 270 V, 15 Amp (Air cooled) Specification:- •Type :Single Phase Auto Transformer Amperage 15 Amp input voltage 0-270 V with safety fuses and line indicators	•ISO 9001 of latest version certified Factory product	Standard Accessories		• Calibration certificate • User's Manual		2 Years
19.	Electric Kettle	•Electric Kettle Min. 1500 Watts, 240V with 1.7 Litre capacity.	•ISI Mark product	standard accessories		Manual		2 Years

20.	Battery Charger	<ul style="list-style-type: none"> •Battery Charger of Capacity-30amps(High) •The charger is for automotive, SMF, VRLA, Tubular and stationary batteries. •It shall be possible to recharge 20Ah to 200Ah batteries. •These charger should be able to select 12V/24V/36V and 48V respectively with low and High current selector to choose current level for low Ah battery and High Ah battery. •Power on indication, reverse mcb and Thermal trip with connecting probes. •It shall use full wave rectifier coupled copper transformer combination . •An ammeter for indication charging current. 	<ul style="list-style-type: none"> •Charger should have the facility to disconnect the charging when battery is fully charged, to prevent the over-charging or damage. • Latest ISO 9001 Certified Factory Product 	<ul style="list-style-type: none"> • Patch cords for connecting Machine to panel(5 Meter) • Any other special tool required for assembling/dissembling the Setup supplied. 		Instruction manual for complete panel along with test details to be performed.	NA	2 years
21.	Battery charger	<ul style="list-style-type: none"> •Automotive Battery Charger of Capacity-10amps(High) •The charger is for automotive, SMF, VRLA, Tubular and stationary batteries. •It shall be possible to recharge 20Ah to 100Ah batteries. •These charger should be able to select 12V/24V/36V respectively with low and High current selector to choose current level for low Ah battery and High Ah battery. •Power on indication, reverse mcb and Thermal trip with connecting probes. •It shall use full wave rectifier coupled copper transformer combination . •An ammeter for indication charging current. 	<ul style="list-style-type: none"> •Charger should have the facility to disconnect the charging when battery is fully charged, to prevent the over-charging or damage. 	<ul style="list-style-type: none"> • Patch cords for connecting Machine to panel • Any other special tool required for assembling/disassembling the Setup supplied. 		Instruction manual for complete panel along with test details to be performed.	NA	2 years
22.	Battery terminal cleaner tool	•Battery Terminal Cleaner tool	Standard Features	Standard Accessories		Product Catalogue		
23.	Battery tester	Auto Battery tester specifications: <ul style="list-style-type: none"> •Type: Portable type with case •Test Method: Conductance, Non-loading •Battery Test: 12V starter batteries (standard, maintenance-free, and AGM) •Power Supply: From test battery with voltages from 5.5V •Voltmeter: 5.5 – 19.99V DC 	Features: <ul style="list-style-type: none"> • 12V load-free battery tester • Suitable for testing lead-acid batteries: Standard, Maintenance			Operational manual		1 years Warranty

		<ul style="list-style-type: none"> •Operating Range, Amps: 200 to 850 CCA, 200 to 900 SAE/EN, 120 to 550 DIN/IEC Test State/Diagnostic Capability: Battery life, voltmeter, starter system, charging system •Display: 4-digit LED numeric display, 3 LED indicators •User Interface: Push-button operation •Cable: Min. 1.3 ft •CE Mark/ ISO 9001 certified factory product 	free, plus AGM batteries <ul style="list-style-type: none"> • Capable of diagnosing 12V starter and charging systems • Lowest voltage storage function when testing starter systems • Highest and lowest voltage storage function when testing charging systems • Accurate test results under all temperature conditions • Indicator for defective battery • Solid and rugged housing stands up to daily shop use • The four digit LED voltage screen, three LED indicators and the arrow keys enable easy and intuitive handling of the device 					
24.	BLDC motor with controller	<ul style="list-style-type: none"> •15-30 Watts,315 Volt DC BLDC Motor with controller on panel mounted •Mains Supply : Single Phase, 230V AC $\pm 10\%$, 50Hz •Machine Type : BLDC, Rating : 15-30 W • Voltage Rating : 24V DC •Loading arrangement : Mechanical • Brake Drum/Pulley : Aluminium casted •Instrumentation Power Supply : 24V DC , 10A DC 	Standard Features	Standard Accessories		Manuals/ catalogues		2 Years

		<ul style="list-style-type: none"> Digital Meters used to display DC Voltage and Current with Digital Tachometer 						
25.	Electric Iron	Electric Iron Automatic - 750 W, 240 V.	•ISI Mark product			Manual		
26.	Ceiling fan coil Winding Machine	Ceiling fan coil Winding Machine with following specifications: <ul style="list-style-type: none"> Winding Gauge: 27 SWG to 37 SWG Size of fan :600 mm to 1400 mm Starting coil winding :4 slots to 20 slots Running coil winding: 4 slots to 20 slots Motor AC 1/ 10 H.P, 1350 R.P.M Power requirement: 220V AC, 50 HZ Single Phase Fill counter:4-Digit, Preset, LED Display through controller Winding Speed: Continuously variable Max. 1000 R.P.M to 1350 R.P.M 	<ul style="list-style-type: none"> *Running direction indicator; Type Led Indicator *Controller Micro Processor Logic Controller • Program memory :Micro Controller Logic Controller • Stamping length in mm: 09 mm to 45 mm • Speed control of Main Motor: Through AC, with wire cut function • Latest ISO 9001 Certified factory product 	Relevant Fitting tools for Machines		Operational and training Manual		
27.	Contactor & auxiliary contacts-25Amps	Contactor & Auxiliary contacts 3 phase, 415 Volt, 25 Amp with 2 NO and 2 NC	Shall comply with IS/IEC 60947-2			Product catalogue		2 Years
28.	Contactor & auxiliary contacts-32 Amps	Contactor & Auxiliary contacts 3 phase, 415 Volt, 32 Amp with 2 NO and 2 NC	Shall comply with IS/IEC 60947-2			Product catalogue		2 Years
29.	Copper bit soldering iron 0.25Kg	Copper Bit Soldering iron 0.25 KG:				Product Catalogue		
30.	Core drill Machine	Core drill Machine : <ul style="list-style-type: none"> •Input Supply Voltage : single phase 220-240 V •Core Cutting Capacity: 12 - 38 mm •Core Cutting Depth: 50 mm 	<ul style="list-style-type: none"> • Compact, Light weight core drill with ease of use vertical and overhead use. • Safety fuse protection for overload. 	Power Cords and other standard accessories		Operation Manual		2 Years

			•CE Mark product or Latest ISO Certified factory product					
31.	Immersion Heater	Immersion Heater 1500 Watt, 240V.	•ISI Mark product			Manual		
32.	D.O.L Starter	Direct-on-Line Starters in Sheet-Steel Enclosure suitable for 2 HP motor • Conforms to IS 13947 or IEC 60947-4-1 & IEC 60947-4-1. • Sheet steel enclosures with IP 54 protection. • Wide range of relay settings and coil voltages.	• Built-in single phasing protection • Terminal block for ease of termination • Relays having phase failure sensitive tripping mechanism provides reliable protection against Single Phasing & Overload conditions.	standard accessories		Operation Manual		2 Years
33.	Dc Power Supply	DC Power supply- 0 to 30V •Table Top and Portable type Outputs: •0 to 30V DC continuously Variable •+ 15 V and -15 V Volts DC constant output •+ 5 V DC Constant output •Current capacity : 5 Amps	•Input Overload Protected •Output Short Circuit Protected •Digital Display of Variable output Voltage and Load current •latest ISO 9001 certified factory product	Standard Accessories		Operating Manual		
34.	DC regulated power supply (5 volts and 12 volts)	DC Power supply- 0 to 5V •Table Top and Portable type Outputs: •0 to 5V DC continuously Variable DC Power supply- 0 to 12V •Table Top and Portable type Outputs: •0 to 5V DC continuously Variable	•Input Overload Protected •Output Short Circuit Protected •Digital Display of Variable output Voltage and Load current •Latest ISO 9001	Standard Accessories		Operating Manual		

			certified factory product					
35.	DC Regulated Variable Programmable DC Power Supply 0 - 30V / 3A	Regulated DC Power Supply with following specifications: <ul style="list-style-type: none"> • Bench top model Type DC regulated Power supply • Input: 230v ac, +/-10%, 50hz, single phase • Output: 0-30volts, 3 Amps • Line & load regulation: $\pm 0.05\%$ for variations in input and load variations • Ripple: Less than 3mv RMS • Protections: Fuse protection will be provided Outputs are protected against over loads & short circuits 	<ul style="list-style-type: none"> • Indications: LED indications for ac input CV,CC operations 4 ½ digit digital meters to read output voltage & load current. • Controls: On/Off switch at input side Coarse and fine voltage set potentiometer Coarse current set potentiometers • Terminations: Input through a power card Output will be brought on to binding terminals on front panel and also with remote sense terminals on to rear pane • Latest ISO 9001 Certified factory product 	Standard Accessories		*Manual *Test Certificates		2 Years
36.	DE soldering pump	<ul style="list-style-type: none"> • Manual, suction type. With static free Teflon nozzle. • Type: Manual Hot Solder Sucker De-soldering Pump Tool. • Operation: Hand operated. • Body: Metal or Moulded. Non Static Teflon Nozzle 	<ul style="list-style-type: none"> • Tools easily disassemble for fast cleaning. • Fitted with a Teflon tip. 	Cleaning kit	One Spare Nozzle	User Manual		2 Years
37.	De-soldering pump electrical heated	<ul style="list-style-type: none"> • Electric Vacuum DE soldering Pump • Wattage: 40 Watt 	<ul style="list-style-type: none"> • Tools easily disassemble for 	Cleaning kit		User Manual		2 Years

		<ul style="list-style-type: none"> • Power Supply: 220-240 Volts AC 50 Hz 	fast cleaning. <ul style="list-style-type: none"> • Fitted with a Teflon tip. 					
38.	De-soldering pump/gun	<ul style="list-style-type: none"> • Manual, suction type. With static free Teflon nozzle. • Type: Manual Hot Solder Sucker De-soldering Pump Tool. • Operation: Hand operated. • Body: Metal or Moulded. Non Static Teflon Nozzle 	<ul style="list-style-type: none"> • Tools easily disassemble for fast cleaning. • Fitted with a Teflon tip. 	Cleaning kit	One Spare Nozzle	User Manual		2 Years
39.	Dual DC regulated power supply	Regulated DC Power Supply with following specifications: <ul style="list-style-type: none"> • Bench top model Type DC regulated Power supply • Input: 230v ac, +/-10%, 50hz, single phase • Output: 30-0-30volts, 2 Amps • Line & load regulation: $\pm 0.05\%$ for variations in input and load variations • Ripple: Less than 3mv RMS • Protections: Fuse protection will be provided Outputs are protected against over loads & short circuits 	<ul style="list-style-type: none"> • Indications: LED indications for ac input CV,CC operations 4 ½ digit digital meters to read output voltage & load current. • Controls: On/Off switch at input side Coarse and fine voltage set potentiometer Coarse current set potentiometers • Terminations: Input through a power card Output will be brought on to binding terminals on front panel and also with remote sense terminals on to rear pane • Latest ISO 9001 Certified factory product 	Standard Accessories		*Manual *Test Certificates		2 Years

40.	Dual Power Supply	<p>Dual Power Supply complete in all aspect with key specifications as:</p> <ul style="list-style-type: none"> • DC Output : 2 outputs of 0 - 30 V, 2 A continuously variable by means of coarse and fine controls • Resolution : Voltage : 100 mV and Current : 10 mA • Recovery Time : $\leq 50 \mu s$ • Load Regulation : $\pm (0.05 \% + 10 \text{ mV})$ • Line Regulation : $\pm (0.05\% + 10 \text{ mV})$ • Display : 3 digit for voltage & 3 digit for current LED indication for Voltage & Current • Accuracy : $\pm (1 \% + 1 \text{ digit})$ • Over Range Indication : Glowing 'ORA' and 'ORB' LEDs indicate Overload • Both outputs are floating. • Built-in Overheat, Over Voltage and Short Circuit protection. • Power Supply : 230 V, $\pm 10\%$, 50 Hz • Operating Temperature : 0 - 40°C, 80% RH 	<p>Dual Power Supply with min. features as:</p> <ul style="list-style-type: none"> • Digital display for Voltage and Current • Adjustable Current limiter • Excellent Line & Load Regulation • Low Ripple Voltage • Automatic Overload (Current protection) • Constant Voltage & Constant Current operation • Latest ISO 9001 certified factory product 	Power Cords		Product Catalogue		2 Years
41.	ELCB and RCCB	<p>Earth Leakage Circuit Breaker- (ELCB)</p> <ul style="list-style-type: none"> • 25Amps • Double pole and 25Amps, double pole, $I_{\Delta n}$ 30 mA (Rated Short circuit capacity) • Specification: shall comply to IEC 61008-1/IS 12640-1:2008/EN 61008-1 <p>Residual Current Circuit Breaker (RCCB)</p> <ul style="list-style-type: none"> • 25 Amps, Double pole , $I_{\Delta n}$ 30 mA (Rated Short circuit capacity) • Specification: IEC 61008-1/IS 12640-1:2008/EN 61008-1 	<p>Earth Leakage Circuit Breaker- (ELCB):</p> <ul style="list-style-type: none"> • Features: Shock proof, Fine finish, Easy to use <p>Residual Current Circuit Breaker (RCCB)</p> <p>Features:</p> <ul style="list-style-type: none"> • Shock proof, Fine finish, Easy to use • Shape compatible with and suitable for standard busbar connection to 			Product Catalogue		

			other devices. •Twin-purpose terminal (lift/open-mouthed) above and below. •Bus bar positioning optional line or load. •Free terminal space despite installed busbar. •Suitable for being used with standard fluorescent tubes with or without electrical ballast (typically up to 20 units per phase conductor)					
42.	Electric Automatic steam press	<ul style="list-style-type: none"> • Steam 30g/min;100g steam boost • Non-stick soleplate/ Ceramic Soleplate • Anti-calc • 2100 Watts • Water tank capacity with min. 200 ml • Power supply: 220 V AC Single phase 50 Hz 	<ul style="list-style-type: none"> • Drip stop system • Triple precision tip Reaching tricky areas • Vertical steaming • Spray • CE Mark Product 			Manual		2 Years
43.	Electric Automatic steam press	<ul style="list-style-type: none"> • Steam 30g/min;100g steam boost • Non-stick soleplate/ Ceramic Soleplate • Anti-calc • 2100 Watts • Water tank capacity with min. 200 ml • Power supply: 220 V AC Single phase 50 Hz 	<ul style="list-style-type: none"> • Drip stop system • Triple precision tip Reaching tricky areas • Vertical steaming • Spray • CE Mark Product 			Manual		2 Years

44.	Electric pump	<p>Electric Pump of 1 HP with min. desired specifications as Follows:</p> <ul style="list-style-type: none"> • Head :10-40 M • Discharge : 3960 - 360 LPM • Rating :1.00HP • Voltage Range : 170 - 230 V single Phase <p>MATERIAL OF CONSTRUCTION</p> <ul style="list-style-type: none"> • Pump Housing : Cast Iron • Impeller : H T Brass/bronze • Shaft : Carbon Steel • Motor Body : Extruded Aluminium 	<ul style="list-style-type: none"> • Aluminium extruded motor body to prevent corrosion • Compact, sleek look and robust construction • High quality and long life mechanical • Fitted with Thermal Overload Protector(TOP) - protector motor from burning • capacitor inside terminal box • Mechanical Steel : Carbon Ceramic • Motor with IP 44 protection and class B insulation 	Standard Accessories		Instruction manual		2 Years
45.	Electric Soldering Iron	<p>Soldering iron 25 Watts:</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. <p>Soldering Iron 60 Watts:</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: Min 60W Temperature: 850° F / 440° C • Cord length: 5 feet • Tip: Short length, Taper, Chisel type, 0.15" , Replaceable Soldering Pencil type • Peg hook for hanging the Soldering Iron • Firm Stand for placing the soldering iron 	<p>Features:</p> <ul style="list-style-type: none"> • Moulded, soft-grip handle design for reduced slippage. • Round shaped handle for easy rotation. • Stainless steel heater technology for heat up to 750o F for 25 Watt and 850oF for 60 Watt Soldering iron • Cord Strain relief for 	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • Screw driver or Allen key for replacing soldering Iron Tip • Tip Cleaning Knife <p>Note: above accessories of suitable rating/size shall be provided with each Type of soldering iron.</p>	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • One spare Tip cleaning sponge. 	Instruction manual for complete panel along with test details to be performed.		2 years

		during use with built in Sponge for Tip Cleaning.	extended life.					
46.	Electric Automatic steam press	<ul style="list-style-type: none"> • Steam 30g/min;100g steam boost • Non-stick soleplate/ Ceramic Soleplate • Anti-calc • 2100 Watts • Water tank capacity with min. 200 ml • Power supply: 220 V AC Single phase 50 Hz 	<ul style="list-style-type: none"> • Drip stop system • Triple precision tip Reaching tricky areas • Vertical steaming • Spray • CE/ ISI Mark Product 			Manual		2 Years
47.	Growler	<p>Growler</p> <ul style="list-style-type: none"> • 230 V, 50 Hz, Single Phase, • ISO 9001 of latest version certified Factory product 	<ul style="list-style-type: none"> • Adjustable jaws, Testing armature with ampere meter and testing probes. • External meter type checking capacity, adjustable dia, and for checking the reverse coil, defective winding and complete for commutator ground test switch • Built in check meter for checking reverse coils, defective windings etc. Complete with probes for commutator ground test, switch and test leads. 	Power cord		Instruction manual		2 years

48.	Hand blower	Hand blower with following Min. Specifications: <ul style="list-style-type: none"> • Supply voltage: 230 V AC • Motor Power: 500watts • RPM: Min. 14000 r/min • Air Flow: Min. 3.5l/min 	<ul style="list-style-type: none"> • Light and compact designs for ease of handling • Optimized fan structure for better air flow • Lock-on button for one hand control and user safety • Hand grip design suitable for left/right handed users 	Standard Accessories		Manual		2 Years
49.	Vacuum Cleaner	Portable Vacuum Cleaner with Min. Desired specifications as : <ul style="list-style-type: none"> • Power Supply: Single Phase 220 V, AC 50 Hz • Vacuum Pressure: 22kpa -34 kpa • Noise (dB): <= 82dB (A) • Power Cord Length: 5m (min) • Airflow: > 1.8m3/min or > 30 L/s • Power: 1200 W(min.) • Dry type filtration system with mi. capacity of 1.5 L • Action Radius: 8 Meter (min.) 	Min. Desired Features: <ul style="list-style-type: none"> • Flexible Hose • One-step click-off nozzle for easy emptying • Cyclonic airflow with filtration system • Soft touch handle • Adjustable suction • Rubber type wheel • CE/ISI Mark Product 	<ul style="list-style-type: none"> • Crevice tool • Integrated brush • Turbo brush • MultiClean nozzle 		Manual	Demonstration / training to be provided at the time of supply.	2 Years
50.	Vacuum cleaner - Hand Held	Hand Held Vacuum Cleaner with Min. Desired specifications as : <ul style="list-style-type: none"> • Power Supply: Single Phase 220 V, AC 50 Hz • Vacuum Pressure: 15kpa -22 kpa • Noise (dB): ≤ 86dB • Power Cord Length: 5m (min) • Power: 850 W(min.) • Dry type filtration system with mi. capacity of 0.4 L 	Min. Desired Features: <ul style="list-style-type: none"> • Flexible Hose • One-step click-off nozzle for easy emptying • Cyclonic airflow with filtration system • Soft touch 	<ul style="list-style-type: none"> • Cord clip • Flexible hose • Shoulder strap • Brush tool and flexible hose 		Manual		2 Years

			handle • Adjustable suction					
51.	Wax heater	Wax heater with Min. Specifications as: • Power Supply: 220-240 V AC with 50 Hz • Capacity: Mi. 2 Kg • Type: Single Jar	• With Thermostat • Auto Cut-off • Shock Proof • CE Mark Product	Wax Heater Cleaning kit along with standard accessories		Catalogue		2 Years
52.	Mixture & Grinder	• Input Voltage: 230 V, 50Hz • Power: 750 W or above • Motor rating: 30 minute(s) • Capacity chutney jar: 0.5 L or above • Capacity wet grinding jar: 1.5 L or above • Capacity multi-purpose jar: 1.25 L or above • Blender volume capacity liquid: 1.5 L or above • Motor rating: 30 minute(s) or above • Capacity chutney jar: 0.5 L or above • Capacity wet grinding jar: 1.5 L or above • Capacity multi-purpose jar: 1.25 L or above • Blender volume capacity liquid: 1.5 L or above	• ISI Mark product			Catalogue		
53.	Geyser (Storage type)	Capacity 10 Liters 3 KW Heating Element Min. Min. 4 Star rated from BEE ISI Mark Product	Long lasting outer body made of high impact resistance rust proof ABS material and sturdy inner tank made of 304 grade high quality stainless steel a) Thermostat, b) Thermal cut off, c) Pressure release valve (PRV), d) Non returning valve	Flexible corrugated Stainless steel connectors for hot water heaters. Of Min. of 18" size (st of 2 -for Both Hot and cold)		Catalogue		5 Years inner tank warranty and 2 year product warranty

			(NRV), e) Fusable plug					
54.	Heat convector	Heat convector with mIn. following specifications: • Operating voltage of 220 -240 volts AC 50 Hz. • Power Wattage: 2000 W	<ul style="list-style-type: none"> • Thermostat control. • Handle on the top with firm grip • Twin-blade fan. • Min. Three heating positions and two fan speeds. • Twin Turbo Design for fast & efficient heating • Side Vents to draw in air easily • Inbuilt fan ensure instant heating • Shock Proof • Night light indicator • ISI mark Product 	Suitable Power socket along with standard Accessories as required		Catalogue		
55.	Heating kit with infrared bulb	Heating kit with infrared bulb of 200 Watt Capacity	• ISI/CE Mark Product	standard accessories		Product Catalogue		
56.	Motor Pump set	Electric Pump of 1 HP with min. desired specifications as Follows: •Head :10-40 M •Discharge : 3960 - 360 LPM •Rating :1.00HP •Voltage Range : 170 - 230 V single Phase MATERIAL OF CONSTRUCTION •Pump Housing : Cast Iron •Impeller : H T Brass/bronze •Shaft : Carbon Steel •Motor Body : Extruded Aluminium •Mechanical Steel : Carbon Ceramic	<ul style="list-style-type: none"> • Aluminium extruded motor body to prevent corrosion • Compact, sleek look and robust construction • High quality and long life mechanical • Fitted with Thermal Overload Protector(TOP) - protector motor from burning • capacitor inside 	Standard Accessories		Instruction manual		2 Years

			terminal box • Motor with IP 44 protection and class B insulation					
57.	IDU Plus Generation type motor	<ul style="list-style-type: none"> • IDU Plus Generation type motor of 15 Watts, 230 Volt AC complete with all accessories • Power supply: 230 V AC 50 Hz. 	<ul style="list-style-type: none"> • Duct Type Indoor Unit • Built-in drain pump, 	Standard Accessories		Manuals/ catalogues		2 Years
58.	Knife Switch DPDT fitted with fuse terminals	<ul style="list-style-type: none"> • Knife Switch DPDT fitted with fuse of Min. 16 Amps. • The arrangement shall be enclosed in the MS box 	<ul style="list-style-type: none"> • Latest ISO 9001 Certified factory product 			Product Catalogue		2 Years
59.	Laboratory Type Induction Coil	<ul style="list-style-type: none"> • Laboratory Type Induction Coil 1000 Watt • Laboratory type induction coil 6 volt to 800-1000 volt 	<ul style="list-style-type: none"> • Latest ISO 9001 Certified factory product 			Product Catalogue		2 Years
60.	LED lighting system	<ul style="list-style-type: none"> • LED lighting system with Measurement of Power, Voltage, Current, Power Factor and Light output performance of different lighting products like LED, CFL at variable input voltages 0 to 245V variable AC 		LED and CFL bulbs of different sizes.		English language user manual with Operation and Maintenance instructions to be provided		2 Years
61.	Limit Switch	Limit Switch <ul style="list-style-type: none"> • Liver operated 2A 500v, • 2-contacts 	Shall comply to IS 13947			Product catalogue		2 Years
62.	Manual Motor coil Winding Machine	<ul style="list-style-type: none"> • Manual Motor coil Winding Machine with min. six numbers of Straight and Step Arbors • Suitable for 1/8 H.P. to 40 H.P. Motor coil. • Durable and efficient, with capacity of winding both-Single and Three phase Motor's coil of Straight and Step winding. 	<ul style="list-style-type: none"> • Digital Counter system with reset/hold. • Machine fitted on Movable stand with sitting arrangement 	relevant Fitting tools for Machines		Operational Manual		
63.	MCCB	MCCB of Min. 100 Amps Triple pole 440 V with enclosure.	<ul style="list-style-type: none"> • MCCB shall conform to IEC 60947 and enclosure shall conform to IEC 62208 with IP 30 Protection. • Inbuilt neutral link for TPN 			Product Catalogue		

			system. • Mounting holes on the back plate of enclosure.					
64.	Megger	Megger - (500 Volt) insulation Tester • Nominal test voltages • Dust & Water protection: IP54 Protected against dust and splashing water • Safety Protection Meets EN 61010-1 (1995) to 600 V phase to earth, Category IV • Designed to Generally Confirm to IS 10656-1983	*ABS Resin Case with Acrylic Meter Cover *Measurement from 10% to 100% of the Insulation Resistance Range *Terminal Voltage : >85% of Rated Voltage for Insulation Resistance	• Pair of Crocodile / Alligator Test Leads (Red & Black) • Carrying Case • AA Batteries (Fitted - In) or Battery adaptor if required [Input : 240V, 50]		• Calibration certificate • User's Manual		2 Years
65.	Megger	Megger - (500 Volt) insulation Tester • Nominal test voltages • Dust & Water protection: IP54 Protected against dust and splashing water • Safety Protection Meets EN 61010-1 (1995) to 600 V phase to earth, Category IV • Designed to Generally Confirm to IS 10656-1983	*ABS Resin Case with Acrylic Meter Cover *Measurement from 10% to 100% of the Insulation Resistance Range *Terminal Voltage : >85% of Rated Voltage for Insulation Resistance	• Pair of Crocodile / Alligator Test Leads (Red & Black) • Carrying Case • AA Batteries (Fitted - In) or Battery adaptor if required [Input : 240V, 50]		• Calibration certificate • User's Manual		2 Years
66.	Megger	Megger - (1000 Volt) insulation Tester • Nominal test voltages: 50 V, 100 V, 250 V, 500 V, 1000 V • Insulation resistance range: 2 GΩ • Dust & Water protection: IP54 Protected against dust and splashing water • Safety Comply to EN 61326-1:2005, CAT IV 600V, IP54 protection	• CAT IV 600 V rating • Adjustable insulation test voltages • Dual digital display readout • Digital and analog arc display • Continuity	• Red/Black silicone test lead set with crocodile clips • Hard carry case • Instrument rubber boot with built-in stand		• Calibration certificate • User's Manual		2 Years

			auto-test capability • Automatically perform PI and DAR tests, Polarization Index (PI) and Dielectric Absorption Ratio (DAR) • True RMS voltage measurement • Auto fuse warning • Buzzer select button					
67.	Miniature Breaker	MCB 16 Amps.	Conforming to IS/IEC 60898-1			Product Catalogue		2 Years
68.	Insulators	PIN INSULATORS:- •11/22KV Brown Glazed pin insulators confirming to IS-731 to give rigid support to an over-head line and intended to be mounted vertically on •Supporting structure by GI Pin passing up inside this insulator with minimum failing loads 10 KN. Shackle type Insulator •Standards to which insulators will conform IS: 1445/1977 Latest amendment. •Dry Power freq. Withstand voltage (KV) : 12 KV •Wet Power freq. Withstand voltage (KV) : 06 KV •Minimum failing Load (KN): 7.7 KN Egg type Insulator •11 KV Egg Type Insulator conforming to relevant IS standard. Suspension type insulators •11KV Brown Glazed 'Disc' insulators conforming to IS-731/71 for suspension or tension strings, ball and socket type having ball shank dia.16mm •Minimum failing load of 70 KN along with		all the insulators shall include hardware fittings for conductor fixing.		Product Catalogue		2 Years

		phosphor bronze 'W' clips.						
69.	Portable electric drill Machine	<ul style="list-style-type: none"> •Portable hand Drill (Electric) with min. 2 to 20mm Capacity •Input Voltage: 1 Phase 230 V AC •For drilling into masonry, concrete, wood and metal. 	<ul style="list-style-type: none"> *Dual-mode selector – converts operation from rotation-only to hammer drilling *Variable-speed trigger with reversing – allows for accurate bit starting as well as removing fasteners or bound bits *Ball-and-roller bearing construction — provides smooth power transmission and extended tool life Auxiliary handle with adjustable depth stop can be rotated 360° *Soft grip for a secure hold • CE mark product / Latest ISO 9001 Certified factory product 	<ul style="list-style-type: none"> *Set of drill bits of different sizes (12 pieces) each for concrete, Steel, and wood. *Depth Gauge *Chuck Key *Carrying Case 		Catalogue		2 years
70.	Potential Transformer	<ul style="list-style-type: none"> •Potential Transformer Test Set with 415 V, 50Hz, PT Ratio, 440V/110V, •Burden: 10VA •Complete with control panel 	<ul style="list-style-type: none"> Floor mounting Type PT Test Set provides the following:- • Separate terminals to connect standard P.T. and P.T. 	Standard accessories		Operational Manual		

			under test • Ratio error and phase angle error calibrated dials • Range selecting Switch • Polarity check indicator • Voltmeter to indicate percentage voltage injected • Null detector with sensitivity control • Terminal to connect burden box • Power supply to energize electronic null detector • high permeability magnetic core • secondary voltage selector switch for 110 V and 63.5V					
71.	Power Supply	• Bench top model Type DC regulated Power supply • Input: 230v ac, +/-10%, 50hz, single phase • Output: 0-12volts • Line & load regulation: $\pm 0.05\%$ for variations in input and load variations • Ripple: Less than 3mv RMS • Protections: Fuse protection will be provided Outputs are protected against over loads & short circuits	• Indications: LED indications for ac input CV,CC operations 4 ½ digit digital meters to read output voltage & load current. • Controls: On/Off switch at input side Coarse and fine voltage set potentiometer	Standard Accessories		*Manual *Test Certificates		2 Years

			Coarse current set potentiometers • Terminations: Input through a power card Output will be brought on to binding terminals on front panel and also with remote sense terminals on to rear pane • Latest ISO 9001 Certified factory product					
72.	Primary current injection set	220V, 50 Hz, 1-Φ, output current -200 A (min) with timer with following min. specifications: • Output current: 200A (Min.) • Mains supply: 230Vac, 50Hz ±10 • Operation: manual • Display: LED • Indication: Bright LED for Test ON and Power ON operation • Protected by MCB, HRC fuse, Zero start interlock	• Zero start interlock for safety • Continuously variable output current • High VA burden to test high impedance object • Digital timer for measuring tripping time • Auto cut off upon tripping relay • Wheel mounted for easy transportation • Standard Output cables • CE Mark product / Latest ISO 9001 Certified factory product	• Test Lead set: pair of cotton braided • copper cables with lugs at both end • Mains Cord • Spare Fuse • Instruction manual • Calibration certificate • Warranty certificate	pair of cotton copper cables with C - clamp at one end	Product Catalogue		

73.	Reverse current Relay	Reverse current relay of 16A, 440V The Experimental Setup consists of the following parts: • 2nos. of Reverse Power Relay provided on the Front Panel. • 2 Nos. of Digital Current meter (0-20A) provided on the Front Panel. • 2 Nos. of •Digital Timer provided on the Front Panel. • Power Requirement: 440V/50Hz .	•To study the construction and operation of relay •Relay Circuit Diagram : Screen Printed on front panel • Latest ISO 9001 Certified factory product • Circuit Diagram printed on front panel With Instruments Connecting lamp i.e TRIP, CURRENT & ALARM.	Standard Accessories: •Power Cords, Patch Cords,		Instruction Manual		2 Years
74.	Rheostat (Sliding type)	•Rheostat (Sliding type) 0 - 25 Ohm, 2 Amp •Standard ISI Product	• Latest ISO 9001 Certified factory product			Product Catalogue		
75.	Rheostat (Sliding type)	Rheostat (Sliding type) 0 - 300 Ohm, 2 Amp	• Latest ISO 9001 Certified factory product			Product Catalogue		
76.	Rheostat (Sliding type)	Rheostat (Sliding type) 0 -1 Ohm, 10Amp	• Latest ISO 9001 Certified factory product			Product Catalogue		
77.	Rheostat (Sliding type)	Rheostat (Sliding type) 0 -10 Ohm, 5 Amp	• Latest ISO 9001 Certified factory product			Product Catalogue		
78.	Rheostat variable values	•0-1 ohm, 5 A •0-10 ohm, 5 A •0-25 ohm, 1 A •0-300 ohm, 1 A	• Latest ISO 9001 Certified Factory Product	Connecting cables		Product Catalogue	Demonstration / training to be provided at the time of supply.	2 Years
79.	Rotary Switch	Rotary Switch of 16 A/440v	Shall comply to IS 13947			Product catalogue		2 Years
80.	Rubber mat	Rubber Mat of Min 2' x 4' x 1" dimensional conforming to IS 15652				Product Catalogue		
81.	SC Couplers	Fiber optic cable adaptor coupler SC-SC Duplex single mode.	SC to SC, Duplex Multimode Fiber	Standard Accessories		Product catalogue		2 Years

			Optic Cables,					
82.	Shaded Pole Motor	Fractional HP, with Min. 25 Watt Shaded pole motor 240 V, 50 Hz				Product Catalogue		
83.	SMD Soldering & De soldering Station with necessary accessories	SMD soldering/disordering station with Fume Extractor with following specifications: Input Power: 220-240 V AC 50 Hz Soldering: Wattage: 100 W or above Temp. range: 150-450 deg C Tip code: 44-710652 or better SMD Rework: Wattage: 100 W or above Temp. range: 150-450 deg C or above Air Flow Capacity range: 2 L/min to 38 L/min (or above) De-Soldering: Wattage: 100 W or above Temp. range: 300-400 deg C or above Tip code: 44-915412 or better	<ul style="list-style-type: none"> • Lead Free Operation • Double digital LED displays • Soldering iron stands • ESD Safe and Spike Free Circuitry • Delayed Suction Feature to eliminate the problem of solder clogging up the tip • Temperature and air flow adjustment to suit the task you are doing • CE Mark Product 	Fume extractor Extra heating element Min. 2 soldering iron stands Min. of 4 hood tips Min. 4 tweezers and other accessories as per product.		<ul style="list-style-type: none"> • Operating manual, 		2 Years
84.	SMD soldering/desoldering station	SMD soldering/desoldering station with Fume Extractor with following specifications: Input Power: 220-240 V AC 50 Hz Soldering: Wattage: 100 W or above Temp. range: 150-450 deg C Tip code: 44-710652 or better SMD Rework: Wattage: 100 W or above Temp. range: 150-450 deg C or above Air Flow Capacity range: 2 L/min to 38 L/min (or above) De-Soldering: Wattage: 100 W or above Temp. range: 300-400 deg C or above Tip code: 44-915412 or better	<ul style="list-style-type: none"> • Lead Free Operation • Double digital LED displays • Soldering iron stands • ESD Safe and Spike Free Circuitry • Delayed Suction Feature to eliminate the problem of solder clogging up the tip • Temperature and air flow 	Fume extractor Extra heating element Min. 2 soldering iron stands Min. of 4 hood tips Min. 4 tweezers and other accessories as per product.		<ul style="list-style-type: none"> • Operating manual, 		2 Years

			adjustment to suit the task you are doing • CE Mark Product					
85.	SMPS of different make	SMPS •Input power: 200-300V AC. •Output Voltage: 12V. •Power Rating: 450 Watt.	•Over Voltage, Output Short Circuit protection. •Low Noise and Ripple output. •Suitable for LED Strip, CCTV, Radio, Spy camera, etc. •Low Power consumption and high efficiency			Manual		2 Years
86.	SMPS of PC	•Input power: 200-300V AC. •Output power: 12V. • Power Rating: 450 Watt.	•Over Voltage, Output Short Circuit protection. •Low Noise and Ripple output. Suitable for LED Strip, CCTV, Radio, Spy camera, etc. •Low Power consumption and high efficiency •CE Mark product	standard accessories		Manual		2 Years
87.	Solar panel with Battery	Solar panel with Battery •12 volts solar panel charging at 12 volt battery with a traditional 12 volt Pulse Width Modulation (PWM) charge controller •It should be a 12 volt solar panel with a 12 volt charge controller, 12 volt battery bank and a 12 volt inverter •Battery Bank Specification - 18 Watt battery, 12 volt rechargeable 8 Amp •Nos. of cells - 36				Product Catalogue		

		<ul style="list-style-type: none"> •Open circuit Voltage - 22 volt •Maximum Power Volt - 18 Volt 						
88.	Soldering & De soldering Station	Temperature controlled soldering/ desoldering station with min. specifications as: <ul style="list-style-type: none"> • Input Voltage : 180-240VAC,50Hz Fuse : Suitable rating • DEsolder pump :Suitable rating • Vacuum Pressure :Suitable rating • Min. Temp Range : 180 to 480°C • Temperature control accuracy +/- 1°C • Tip Leakage Current : < 2 mA • Temperature control Stability +/- 1°C • Tip to Ground Resistance : < 2 Ohms • Tip to Ground Leakage Voltage : < 2 mV 	<ul style="list-style-type: none"> • Latest ISO 9001 Certified Factory Product • Microprocessor based power control unit with built in vacuum pump. • Temperature Control for accurate and precise temperature • Digital Display for clear visibility with 7 segment display • Auto tune systems control • Closed loop temperature control • Soft On/Off Power switch • Modular and compact design • Quality nozzles for long life 	<ul style="list-style-type: none"> • Stand with cleaning sponge & Cellulose tip cleaning sponge • Power cord & Tool box: Fibre filters ,solder collector glass tube , Tip replace Spanner , • Cleaning spring, Silicon washers . 		<ul style="list-style-type: none"> • Operating manual, 		2 Years
89.	Soldering iron	Soldering iron 25 Watt 240 V <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	Features: <ul style="list-style-type: none"> • Moulded, soft-grip handle design for reduced slippage. • Round shaped handle for easy rotation. • Stainless steel heater technology 	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • Screw driver or Allen key for replacing soldering Iron Tip • Tip Cleaning Knife 	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • One spare Tip cleaning sponge. 	Instruction manual for complete panel along with test details to be performed.		

			• Cord Strain relief for extended life.					
90.	Soldering Iron 10 w	Soldering iron 10 Watt 240 V • Type: Non-temperature controlled • Wattage: 10W • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning.	Features: • Moulded, soft-grip handle design for reduced slippage. • Round shaped handle for easy rotation. • Stainless steel heater technology • Cord Strain relief for extended life.	• One set of Soldering Iron tips of different shapes. • Screw driver or Allen key for replacing soldering Iron Tip • Tip Cleaning Knife Note: above accessories of suitable rating/size shall be provided with each Type of soldering iron.	• One set of Soldering Iron tips of different shapes. • One spare Tip cleaning sponge.	Instruction manual for complete panel along with test details to be performed.		2 Years
91.	Soldering Iron 240 W	Soldering iron of Min. 240 Watt Rating, with soldering working stand compete in all aspects	Shall comply with relevant safety standards	Standard Accessories		Manual		2 Years
92.	Soldering Iron 25 W	Soldering iron 25 Watt 240 V • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning.	Features: • Moulded, soft-grip handle design for reduced slippage. • Round shaped handle for easy rotation. • Stainless steel heater technology • Cord Strain relief for extended life.	• One set of Soldering Iron tips of different shapes. • Screw driver or Allen key for replacing soldering Iron Tip • Tip Cleaning Knife Note: above accessories of suitable rating/size shall be provided with each Type of soldering iron.	• One set of Soldering Iron tips of different shapes. • One spare Tip cleaning sponge.	Instruction manual for complete panel along with test details to be performed.		

93.	Soldering iron 25 W. 240 V.	<p>Soldering iron 25 Watt 240 V</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	<p>Features:</p> <ul style="list-style-type: none"> • Moulded, soft-grip handle design for reduced slippage. • Round shaped handle for easy rotation. • Stainless steel heater technology • Cord Strain relief for extended life. 	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • Screw driver or Allen key for replacing soldering Iron Tip • Tip Cleaning Knife <p>Note: above accessories of suitable rating/size shall be provided with each Type of soldering iron.</p>	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • One spare Tip cleaning sponge. 	Instruction manual for complete panel along with test details to be performed.		
94.	Soldering Iron Changeable bits 15 W	<p>Soldering iron with changeable bits 15 Watt 240 V</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 15W • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	<p>Features:</p> <ul style="list-style-type: none"> • Moulded, soft-grip handle design for reduced slippage. • Round shaped handle for easy rotation. • Stainless steel heater technology • Cord Strain relief for extended life. 	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • Screw driver or Allen key for replacing soldering Iron Tip • Tip Cleaning Knife <p>Note: above accessories of suitable rating/size shall be provided with each Type of soldering iron.</p>	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • One spare Tip cleaning sponge. 	Instruction manual for complete panel along with test details to be performed.		
95.	Soldering Iron	<p>Soldering Iron 65 Watts:</p> <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: Min 60W Temperature: 850° F / 440° C • Cord length: 5 feet • Tip: Short length, Taper, Chisel type, 0.15" , Replaceable Soldering Pencil type 	<p>Features:</p> <ul style="list-style-type: none"> • Moulded, soft-grip handle design for reduced slippage. • Round shaped 	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • Screw driver or Allen key for replacing 	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. 	Catalogue		2 Years

		<ul style="list-style-type: none"> • Peg hook for hanging the Soldering Iron • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	handle for easy rotation. <ul style="list-style-type: none"> • Stainless steel heater technology for heat up to 750o F for 25 Watt and 850oF for 60 Watt Soldering iron • Cord Strain relief for extended life. 	soldering Iron Tip <ul style="list-style-type: none"> • Tip Cleaning Knife Note: above accessories of suitable rating/size shall be provided with each Type of soldering iron.	<ul style="list-style-type: none"> • One spare Tip cleaning sponge. 			
96.	Soldering iron, 20/25watts	Soldering iron 25 Watt 240 V <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	Features: <ul style="list-style-type: none"> • Moulded, soft-grip handle design for reduced slippage. • Round shaped handle for easy rotation. • Stainless steel heater technology • Cord Strain relief for extended life. 	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • Screw driver or Allen key for replacing soldering Iron Tip • Tip Cleaning Knife Note: above accessories of suitable rating/size shall be provided with each Type of soldering iron.	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • One spare Tip cleaning sponge. 	Instruction manual for complete panel along with test details to be performed.		
97.	Soldering iron 25W 240 V	Soldering iron 25 Watt 240 V <ul style="list-style-type: none"> • Type: Non-temperature controlled • Wattage: 25W Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	Features: <ul style="list-style-type: none"> • Moulded, soft-grip handle design for reduced slippage. • Round shaped handle for easy rotation. • Stainless steel heater technology 	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • Screw driver or Allen key for replacing soldering Iron Tip • Tip Cleaning Knife Note: above	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • One spare Tip cleaning sponge. 	Instruction manual for complete panel along with test details to be performed.		

			<ul style="list-style-type: none"> • Cord Strain relief for extended life. 	accessories of suitable rating/size shall be provided with each Type of soldering iron.				
98.	Solenoid with core	Educational Solenoid and Electromagnet with Iron Core	<ul style="list-style-type: none"> • Latest ISO 9001 Certified Factory Product 			Instruction Sheet		2 Years
99.	Star delta starter	Fully Automatic Star-Delta Starters <ul style="list-style-type: none"> • Suitable for motor starting up to 2 HP or higher, AC-3 Duty, 415V, 50Hz, 3-Ph • Sheet steel enclosures with IP 54 protection. 	<ul style="list-style-type: none"> • Flush Mounted Push Buttons • Built in Overload Relay • Copper & Aluminium cable terminations possible • As per IS: 13947-4-1 and IEC: 60947-1 standards • Wide Band Operating Coil • Wide Relay Range • Silver Contacts for Long Life 	standard accessories		Operation Manual		2 Years
100.	Synchronous Motor Capacitor For Synchronous Motor	Synchronous Motor and capacitor for Synchronous Motor 240V, 60rpm 0.8mf \pm 5% 450 VAC	<ul style="list-style-type: none"> • Latest ISO 9001 Certified factory product 			Manual		2 Years
101.	Temperature controlled Soldering Iron	<ul style="list-style-type: none"> • Type: Temperature controlled • Wattage: 50W at 230 Volts Temperature: 750° F / 400° C • Cord length: 5 feet • Iron tip: MT1, conical, 0.125" • Peg hook for hanging the Soldering Iron, • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. 	Features: <ul style="list-style-type: none"> • Moulded, soft-grip handle design for reduced slippage. • Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning. • Stainless steel heater technology for heat up to 750o 	<ul style="list-style-type: none"> • One set of Soldering Iron tips of different shapes. • Screw driver or Allen key for replacing soldering Iron Tip • Tip Cleaning Knife 	<ul style="list-style-type: none"> • One spare Tip cleaning sponge. 	Instructional Manual		<ul style="list-style-type: none"> • 2 years

			F <ul style="list-style-type: none"> • Cord Strain relief for extended life. • Latest ISO 9001 Certified factory product 					
102.	Temperature controlled soldering/ desoldering station	Temperature controlled soldering/ desoldering station with min. specifications as: <ul style="list-style-type: none"> • Input Voltage : 180-240VAC,50Hz Fuse : Suitable rating • DEsolder pump :Suitable rating • Vacuum Pressure :Suitable rating • Min. Temp Range : 180 to 480°C • Temperature control accuracy +/- 1°C • Tip Leakage Current : < 2 mA • Temperature control Stability +/- 1°C • Tip to Ground Resistance : < 2 Ohms • Tip to Ground Leakage Voltage : < 2 mV 	<ul style="list-style-type: none"> • Latest ISO 9001 Certified Factory Product • Microprocessor based power control unit with built in vacuum pump. • Temperature Control for accurate and precise temperature • Digital Display for clear visibility with 7 segment display • Auto tune systems control • Closed loop temperature control • Soft On/Off Power switch • Modular and compact design • Quality nozzles for long life 	<ul style="list-style-type: none"> • Stand with cleaning sponge & Cellulose tip cleaning sponge • Power cord & Tool box: Fiber filters ,solder collector glass tube , Tip replace Spanner , • Cleaning spring, Silicon washers . 		<ul style="list-style-type: none"> • Operating manual, 		2 Years
103.	Transformer 0-12 V, 6-0-6 V, 1 Amp	Transformer 0-12 V, 6-0-6 V, 1 Amp	ISO 9001 Certified Factory Product/ CE mark Product			Catalogue		2 Years
104.	Under Voltage Relay	Under voltage Relay 360V-440V Technical Specifications:	Objective: <ul style="list-style-type: none"> • To study the construction of 	Standard Accessories: <ul style="list-style-type: none"> •Power Cords 		Instruction Manual		2 Years

		<ul style="list-style-type: none"> • Relay Type : Over / Under Voltage Relay (Static Type) • Terminals : 4mm Terminals for Trip, Voltage Output and Input • Meters (Digital) : 1No. AC Voltmeter Meter 0 – 220V & 1 No. Digital Timer ..0001sec. to 9999sec. (Auto) • Voltage Injector : Inbuilt variable voltage injector 220V to create Fault Voltage • Indicators : Provided on front panel for Mains, Voltage, Trip and Alarm • Power Requirement : 440VAC +10%, 50Hz 	relay <ul style="list-style-type: none"> • Test an relay in over / under voltage protection scheme for operating characteristic using voltage injection • To obtain the time & current characteristics of a over / under voltage type relay (Static) • Switches : Provided on front panel for Mains, Timer Reset, Test Switch (ON/OFF) • Relay Circuit Diagram : Screen Printed on front panel • Latest ISO 9001 Certified factory product 	<ul style="list-style-type: none"> • Patch Cords • Instruction Manual. 				
105.	Variable resistance /potentiometer	Variable resistance boxes/varioc of Following Ohm Values each: 220Ω, 150Ω, 1kΩ, 33Ω, 100Ω, 1.2Ω	<ul style="list-style-type: none"> • Latest ISO 9001 Certified Factory Product 					2 Years
106.	Various Lamps	<ul style="list-style-type: none"> • Halogen Incandescent Lamp: 100 Watts with fixture and all accessories. The applicable standard for lamp shall be as IEC 432 • Fluorescent tube: Min 40 Watt with fixture fitted with choke(copper), starter and holder. • HP mercury vapour Lamp : Min. 150 Watt with fixture and all accessories • High-pressure sodium Lamp : Min. 150 Watt with fixture and all accessories 				Product Catalogue		

		<ul style="list-style-type: none"> • Low-pressure sodium Lamp LED: Min. 150 Watt with fixture and all accessories 						
107.	Hammering drilling machine	<ul style="list-style-type: none"> • Portable Hammering Drill (Electric) with min. 2 to 20mm Capacity • Input Voltage: 1 Phase 230 V AC • Suitable for drilling into masonry, concrete, wood and metal. • Auxiliary handle with adjustable depth stop can be rotated 360° • CE Mark product 	<ul style="list-style-type: none"> *Dual-mode selector – converts operation from rotation-only to hammer drilling *Variable-speed trigger with reversing – allows for accurate bit starting as well as removing fasteners or bound bits *Ball-and-roller bearing construction — provides smooth power transmission and extended tool life *Soft grip for a secure hold 	<ul style="list-style-type: none"> *Set of drill bits of different sizes (12 pieces) each for concrete, Steel, and wood. *Depth Gauge *Chuck Key *Carrying Case 		Catalogue		2 Years
108.	UPS Trainer kit	AC Input : 190 to 260 V 10%, 50 Hz Load Output : 230 V / 2.5A Transformer Used Input : 12 - 0 - 12 V Outputs : 0, 190, 220, 240, 260 V Battery charging: 0-18 V 12V DC Battery Test points are provided to analyse signals at various points. 5 no's of Fault Switches Provided All ICS are mounted on IC Sockets. Bare board Tested Glass Epoxy SMOBC PCB with Block Diagram.	Standard Features /Latest ISO 9001 Certified factory product	Standard Accessories	Standard Spares	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	- To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises	2 Years Minimum
109.	SMPS	Power Supply 24 Pin 450w Atx 12v SMPS PC Supply 100% Compatible With latest motherboards, 20+4 Pins	Lightening Proof Fan for temperature control	Standard accessories	Standard spares, as	Operating Manual/user Manual, General	- To be installed at the designated ITI in	2 Years Minimum

		Compliant with ATX 12V. 20/24 pin Main Power Connector 20/24 pin SATA Connectors-3 Pcs. Molex Connectors-2 Pcs 4 Pin ATX Connectors.-1Pc 120mm Smart Cooling Fan /230VAC 50/60Hz input, +3.3V/25A, +5V/0.3A, +12V/17A, -12V/0.8A, +5V/2A DC output	Low noise and ripple Universal motherboard plug 20+4 pin supporting the latest motherboards. Output over voltage. Over current protection Short circuit protection on all output		suggested by the manufacturer	Maintenance manual System Warranty Card Local Service Provider details	Himachal Pradesh. - Training to the staff should be provided as required at the institute premises	
110.	SMPS Tester	<ul style="list-style-type: none"> • PC Power Supply Tester • 20/24 Pin PSU ATX SATA HDD • SMPS LED Display 	<ul style="list-style-type: none"> • Material: PVC/Metal • Testing device for all PC SMPS 	Standard accessories should be provided.	Standard spares, as suggested by the manufacturer	Operating Manual/user Manual, General Maintenance manual System Warranty Card Local Service Provider details	- To be installed at the designated ITI in Himachal Pradesh. - Training to the staff should be provided as required at the institute premises	2 Years Minimum

4. Drawings

Not Applicable

Section 7 - General Conditions of Contract

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1. Definitions

1.1 The following words and expressions shall have the meanings hereby assigned to them:

- (a) "Contract" means the Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendixes, and all documents incorporated by reference therein.
- (b) "Contract Documents" means the documents listed in the Agreement, including any amendments thereto.
- (c) "Contract Price" means the price payable to the Supplier as specified in the Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.
- (d) "Day" means calendar day.
- (e) "Delivery" means the transfer of the Goods from the Supplier to the Purchaser in accordance with the terms and conditions set forth in the Contract.
- (f) "Completion" means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- (g) "Eligible Countries" means the countries and territories eligible as listed in Section 5.
- (h) "GCC" means the General Conditions of Contract.
- (i) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- (j) "Purchaser's Country" is the country specified in the Special Conditions of Contract (SCC).
- (k) "Purchaser" means the entity purchasing the Goods and Related Services, as specified in the SCC.
- (l) "Related Services" means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other similar obligations of the Supplier under the Contract.
- (m) "SCC" means the Special Conditions of Contract.
- (n) "Subcontractor" means any natural person, private or government entity, or a combination of the above, including its legal successors or permitted assigns, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.
- (o) "Supplier" means the natural person, private or government entity, or a combination of the above, whose bid to perform the

Contract has been accepted by the Purchaser and is named as such in the Agreement, and includes the legal successors or permitted assigns of the Supplier.

(p) "ADB" is the Asian Development Bank.

(q) "The Site," where applicable, means the place named in the SCC.

2. Contract Documents

2.1 Subject to the order of precedence set forth in the Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory.

3. Fraud and Corruption

3.1 ADB's Anticorruption Policy requires Borrowers (including beneficiaries of ADB-financed activity), as well as Bidders, Suppliers, and Contractors under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB

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

- (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
- (ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- (iv) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;
- (v) "obstructive practice" means (a) deliberately destroying, falsifying, altering, or concealing of evidence material to an ADB investigation; (b) making false statements to investigators in order to materially impede an ADB investigation; (c) failing to comply with requests to provide information, documents or records in connection with an Office of Anticorruption and Integrity (OAI) investigation; (d) threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or (e) materially impeding ADB's contractual rights of audit or access to information; and
- (vi) "integrity violation" is any act which violates ADB's Anticorruption Policy, including (i) to (v) above and the following: abuse, conflict of interest, violations of ADB sanctions, retaliation against whistleblowers or witnesses, and other violations of ADB's Anticorruption Policy,

including failure to adhere to the highest ethical standard.

- (b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract;
- (c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation; and
- (d) will impose remedial actions on a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate¹ in ADB-financed, administered, or supported activities or to benefit from an ADB-financed, administered, or supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations.

- 3.2 The Supplier shall permit ADB to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by ADB, if so required by ADB.

4. Interpretation

- 4.1 If the context so requires it, singular means plural and vice versa.

4.2 Incoterms

- (a) The meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms.
- (b) EXW, CIF, CIP, and other similar terms, shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce at the date of the Invitation for Bids or as specified in the SCC.

4.3 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations, and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.

¹ Whether as a Contractor, Subcontractor, Consultant, Manufacturer or Supplier, or Service Provider; or in any other capacity (different names are used depending on the particular Bidding Document).

4.4 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.5 Nonwaiver

(a) Subject to GCC Subclause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

(b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.6 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language specified in the SCC. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the SCC, in which case, for purposes of interpretation of the Contract, this translation shall govern.

5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

6. Joint Venture

6.1 If the Supplier is a Joint Venture all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the Joint Venture. The composition or the constitution of the Joint Venture shall not be altered without the prior consent of the Purchaser.

7. Eligibility

7.1 The Supplier and its Subcontractors shall have the nationality of an eligible country. A Supplier or Subcontractor shall be deemed to have the nationality of a country if it is a citizen or constituted or incorporated, and operates in conformity with the provisions of the laws of that country.

- 7.2 All Goods and Related Services to be supplied under the Contract and financed by ADB shall have their origin in Eligible Countries. For the purpose of this clause, origin means the country where the goods have been grown, mined, cultivated, produced, manufactured, or processed; or through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its imported components.
- 8. Notices**
- 8.1 Any Notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the SCC. The term “in writing” means communicated in written form with proof of receipt.
- 8.2 A Notice shall be effective when delivered or on the Notice’s effective date, whichever is later.
- 9. Governing Law**
- 9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Purchaser’s country, unless otherwise specified in the SCC.
- 10. Settlement of Disputes**
- 10.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 10.2 If the parties fail to resolve such a dispute or difference by mutual consultation within 28 days from the commencement of such consultation, either party may require that the dispute be referred for resolution to the formal mechanisms specified in the SCC.
- 11. Scope of Supply**
- 11.1 Subject to the SCC, the Goods and Related Services to be supplied shall be as specified in Section 6 (Schedule of Supply).
- 11.2 Unless otherwise stipulated in the Contract, the Scope of Supply shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Delivery and Completion of the Goods and Related Services as if such items were expressly mentioned in the Contract.
- 12. Delivery**
- 12.1 Subject to GCC Subclause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Section 6 (Schedule of Supply). The details of shipping and other documents to be furnished by the Supplier are specified in the SCC.
- 13. Supplier’s Responsibilities**
- 13.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 11, and the Delivery and Completion Schedule, as per GCC Clause 12.
- 14. Purchaser’s Responsibilities**
- 14.1 Whenever the supply of Goods and Related Services requires that the Supplier obtain permits, approvals, and import and other licenses from local public authorities, the Purchaser shall, if so required by the Supplier, make its best effort to assist the Supplier in complying with such requirements in a timely and expeditious manner.

- 14.2 The Purchaser shall pay all costs involved in the performance of its responsibilities, in accordance with GCC Subclause 14.1.
- 15. Contract Price**
- 15.1 The Contract Price shall be as specified in the Agreement subject to any additions and adjustments thereto, or deductions therefrom, as may be made pursuant to the Contract.
- 15.2 Prices charged by the Supplier for the Goods delivered and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in the SCC.
- 16. Terms of Payment**
- 16.1 The Contract Price shall be paid as specified in the SCC.
- 16.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 12 and upon fulfillment of all the obligations stipulated in the Contract.
- 16.3 Payments shall be made promptly by the Purchaser, no later than 60 days after submission of an invoice or request for payment by the Supplier, and the Purchaser has accepted it.
- 16.4 The currency or currencies in which payments shall be made to the Supplier under this Contract shall be specified in the SCC.
- 17. Taxes and Duties**
- 17.1 For goods supplied from outside the Purchaser's country, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Purchaser's country.
- 17.2 For goods supplied from within the Purchaser's country, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.
- 17.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in the Purchaser's Country, the Purchaser shall use its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.
- 18. Performance Security**
- 18.1 The Supplier shall, within 28 days of the notification of Contract award, provide a Performance Security for the due performance of the Contract in the amounts and currencies specified in the SCC.
- 18.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 18.3 The Performance Security shall be denominated in the currencies of the Contract, or in a freely convertible currency acceptable to the Purchaser, and shall be in one of the forms stipulated by the Purchaser in the SCC, or in another form acceptable to the Purchaser.

- 18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than 28 days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless specified otherwise in the SCC.
- 19. Copyright**
- 19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.
- 20. Confidential Information**
- 20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 20.
- 20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the Contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the design, procurement, or other work and services required for the performance of the Contract.
- 20.3 The obligation of a party under GCC Subclauses 20.1 and 20.2 above, however, shall not apply to information that
- (a) the Purchaser or Supplier need to share with ADB or other institutions participating in the financing of the Contract;
 - (b) now or hereafter enters the public domain through no fault of that party;
 - (c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or
 - (d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.
- 20.4 The above provisions of GCC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

- 20.5 The provisions of GCC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.
- 21. Subcontracting**
- 21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the Bid. Subcontracting shall in no event relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.
- 21.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.
- 22. Specifications and Standards**
- 22.1 Technical Specifications and Drawings
- (a) The Supplier shall ensure that the Goods and Related Services comply with the technical specifications and other provisions of the Contract.
 - (b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.
 - (c) The Goods and Related Services supplied under this Contract shall conform to the standards mentioned in Section 6 (Schedule of Supply) and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the country of origin of the Goods.
- 22.2 Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Section 6 (Schedule of Supply). During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.
- 23. Packing and Documents**
- 23.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination of the Goods and the absence of heavy handling facilities at all points in transit.
- 23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the SCC, and in any other instructions ordered by the Purchaser.

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| 24. Insurance | 24.1 Unless otherwise specified in the SCC, the Goods supplied under the Contract shall be fully insured, in a freely convertible currency from an eligible country, against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the SCC. |
| 25. Transportation | 25.1 Unless otherwise specified in the SCC, obligations for transportation of the Goods shall be in accordance with the Incoterms specified in Sections 6 (Schedule of Supply). |
| 26. Inspections and Tests | <p>26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in Sections 6 (Schedule of Supply).</p> <p>26.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the final destination of the Goods, or in another place in the Purchaser's country as specified in the SCC. Subject to GCC Subclause 26.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.</p> <p>26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Subclause 26.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.</p> <p>26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.</p> <p>26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications, codes, and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.</p> <p>26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.</p> <p>26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat</p> |

the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Subclause 26.4.

- 26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Subclause 26.6, shall release the Supplier from any warranties or other obligations under the Contract.

27. Liquidated Damages

- 27.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the SCC of the Contract Price for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in the SCC. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 35.

28. Warranty

- 28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 28.2 Subject to GCC Subclause 22.1, the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.
- 28.3 Unless otherwise specified in the SCC, the warranty shall remain valid for 12 months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC, or for 18 months after the date of shipment or loading in the country of origin, whichever period concludes earlier.
- 28.4 The Purchaser shall give Notice to the Supplier, stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.
- 28.5 Upon receipt of such Notice, the Supplier shall, within the period specified in the SCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- 28.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the SCC, the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

29. Patent Indemnity

29.1 The Supplier shall, subject to the Purchaser's compliance with GCC Subclause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of

- (a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and
- (b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Subclause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

29.3 If the Supplier fails to notify the Purchaser within 28 days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

29.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

29.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

30. Limitation of Liability

- 30.1 Except in cases of gross negligence or willful misconduct,
- (a) neither party shall be liable to the other party for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and
 - (b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort, or otherwise, shall not exceed the amount specified in the SCC, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Supplier to indemnify the Purchaser with respect to patent infringement.

31. Change in Laws and Regulations

- 31.1 Unless otherwise specified in the Contract, if after the date of the Invitation for Bids, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in the place of the Purchaser's country where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.

32. Force Majeure

- 32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 32.2 For purposes of this clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
- 32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

33. Change Orders and Contract Amendments

- 33.1 The Purchaser may at any time order the Supplier through Notice in accordance GCC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:

- (a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
- (b) the method of shipment or packing;
- (c) the place of delivery; and
- (d) the Related Services to be provided by the Supplier.

33.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery and Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within 28 days from the date of the Supplier's receipt of the Purchaser's change order.

33.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

34. Extensions of Time

34.1 If at any time during performance of the Contract, the Supplier or its Subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 12, the Supplier shall promptly notify the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 27, unless an extension of time is agreed upon, pursuant to GCC Subclause 34.1.

35. Termination

35.1 Termination for Default

- (a) The Purchaser, without prejudice to any other remedy for breach of Contract, by Notice of default sent to the Supplier, may terminate the Contract in whole or in part,
 - (i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 34; or
 - (ii) if the Supplier fails to perform any other obligation under the Contract.

- (b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.
- (c) if the Supplier, in the judgment of the Purchaser has engaged in fraud and corruption, as defined in GCC Clause 3, in competing for or in executing the Contract.

35.2 Termination for Insolvency

The Purchaser may at any time terminate the Contract by giving Notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser.

35.3 Termination for Convenience

- (a) The Purchaser, by Notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The Notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.
- (b) The Goods that are complete and ready for shipment within 28 days after the Supplier's receipt of the Notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect
 - (i) to have any portion completed and delivered at the Contract terms and prices; and/or
 - (ii) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

36. Assignment

- 36.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

Section 8- Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC 1.1(j)	The Purchaser's country is: India
GCC 1.1(k)	The Purchaser is: Directorate of Technical Education, Vocational and Industrial Training, Himachal Pradesh represented by The Director
GCC 1.1 (q)	The Site is: the deliveries shall be made at multiple locations within the state of Himachal Pradesh India as stated in Delivery and Completion Schedule of Section 6 (Schedule of Supply)
GCC 4.2 (b)	The version of Incoterms shall be: 2010
GCC 5.1	The language shall be: English
GCC 8.1	<p>For <u>notices</u>, the Purchaser's address shall be:</p> <p>Attention: The Director</p> <p>Directorate of Technical Education, Vocational and Industrial training</p> <p>Circular Road</p> <p>City: Sunder Nagar,</p> <p>District: Mandi</p> <p>Himachal Pradesh</p> <p>ZIP code: 175018</p> <p>Country: India</p> <p>Telephone & Fax: 01907-266120; 266722</p> <p>E-mail address: techedu-hp@nic.in</p>
GCC 9.1	The governing law shall be: Laws of India
GCC 10.2	<p>The formal mechanism for the resolution of disputes shall be:</p> <p><u>For a contract with a Foreign Supplier:</u></p> <p>International arbitration shall be conducted in accordance with the rules of the Singapore International Arbitration Centre (SIAC).</p>

	<p>Arbitration shall be administered by the Singapore International Arbitration Centre (SIAC).</p> <p>The place of arbitration shall be: the place of the institution administering the arbitration.</p> <p><u>For a contract with a Local Supplier:</u></p> <p>In the case of a dispute between the purchaser and the supplier, the dispute shall be settled by arbitration in accordance with the provisions of the local arbitration procedures in the Purchaser's country.</p> <p>Place of arbitration: in the Purchaser's country.</p>
GCC 11.1	<p>The Scope of Supply shall be defined in: List of Goods and Related Services of Section 6 (Schedule of Supply). At the time of awarding the contract, the Purchaser shall specify any change in the scope of supply with respect to Section 6 (Schedule of Supply) included in the Bidding Document. Such changes may be due, for instance, if the quantities of Goods and Related Services are increased or decreased at the time of award.</p>
GCC 12.1	<p>Details of shipping and documents to be furnished by the Supplier shall be:</p> <p>For Goods supplied from abroad as per Incoterm CIP:</p> <p>Upon shipment, the Supplier shall notify the Purchaser and the Insurance Company by telex or fax the full details of the shipment, including Contract number, description of Goods, quantity, the vessel, the bill of lading number and date, port of loading, date of shipment, port of discharge, etc. The Supplier shall send the following documents to the Purchaser, with a copy to the Insurance Company:</p> <ul style="list-style-type: none"> (a) 3 copies of the Supplier's invoice showing the description of the Goods, quantity, unit price, and total amount; (b) Original and 3 copies of the negotiable, clean, on-board bill of lading marked "freight prepaid" and 3 copies of non-negotiable bill of lading; (c) 3 copies of the packing list identifying contents of each package; (d) Insurance certificate; (e) Manufacturer's or Supplier's warranty certificate; (f) Inspection certificate, issued by the nominated inspection agency, and the Supplier's factory inspection report; and (g) Certificate of origin. <p>The Purchaser shall receive the above documents atleast one (1) week before arrival of Goods at the port or place of arrival and, if not received, the Supplier will be responsible for any consequent expenses.</p>

	<p><u>For Goods from within the Purchaser's country as per Incoterm EXW:</u></p> <p>Upon delivery of the Goods to the transporter, the Supplier shall notify the Purchaser and send the following documents to the Purchaser:</p> <ul style="list-style-type: none"> (a) 3 copies of the Supplier's invoice showing the description of the Goods, quantity, unit price, and total amount; (b) Delivery note, railway receipt, or truck receipt; (c) Manufacturer's or Supplier's warranty certificate; (d) inspection certificate issued by the nominated inspection agency, and the Supplier's factory inspection report; and (e) Certificate of origin. <p>The Purchaser shall receive the above documents before the arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses..</p>
GCC 15.2	The price adjustment <i>shall not</i> be applicable.
GCC 16.1	<p>Payment of the Contract Price shall be made in the following manner:</p> <p>For Goods and Related Services supplied from outside the Purchaser's country:</p> <ul style="list-style-type: none"> a) Advance Payment: 10% of the Contract Price within 28 days of signing of the Contract. Payment shall be made provided the Supplier presents a request for payment accompanied by an Advance Payment Security in the form of a bank guarantee for an amount equal to the amount of the payment, and that shall be valid until the Goods are delivered. The security shall be in the form as specified in Section 9 (Contract Forms); b) On Shipment: The Purchaser shall pay the Supplier 80% of the Contract Price of the Goods shipped through irrevocable confirmed letter of credit opened in favor of the Supplier in a bank in its country under the ADB commitment procedure, upon submission of documents specified in SCC Clause 12.1; c) On Acceptance: 10% of the Contract Price of Goods received shall be paid within 28 days of receipt of the Goods upon submission of a claim supported by the acceptance certificate issued by the Purchaser. <p>For Goods and Related Services supplied from within the Purchaser's country:</p> <ul style="list-style-type: none"> (a) Advance Payment: 10% of the Contract Price within 28 days of signing of the Contract. Payment shall be made provided the Supplier

	<p>presents a request for payment accompanied by an Advance Payment Security in the form of a bank guarantee for an amount equal to the amount of the payment, and that shall be valid until the Goods are delivered. The security shall be in the form as specified in Section 9 (Contract Forms);</p> <p>(b) On Delivery: The Purchaser shall pay the Supplier 80% of the Contract Price of the Goods shipped through irrevocable confirmed letter of credit opened in favor of the Supplier in a bank in its country under the ADB commitment procedure, upon submission of documents specified in SCC Clause 12.1;</p> <p>(c) On Acceptance: 10% of the Contract Price of Goods received shall be paid within 28 days of receipt of the Goods upon submission of a claim supported by the acceptance certificate issued by the Purchaser.</p>
GCC 16.4	The currencies for payments shall be: the currency/ies in which the bid price is expressed in the bid of the successful bidder.
GCC 18.1	<p>The Supplier shall provide a Performance Security of 10% of the Contract Price. The Performance Security shall be denominated in the following amounts and currencies: 10% of the Contract Price in INR.</p> <p>Because of the above, the currencies and amounts of the performance security can only be specified at the time of awarding the contract.</p>
GCC 18.3	The forms of acceptable Performance Security are: A bank guarantee issued by a reputable bank located in the Purchaser's country or abroad, acceptable to the Purchaser, in the format included in Section 9 (Contract Forms), or a cashier's or certified check, or cash
GCC 18.4	Discharge of the Performance Security shall take place: Pursuant to GCC Subclause 18.4, after delivery and acceptance of the Goods, the performance security shall be reduced to five percent (5.0 %) of the Contract Price to cover Supplier's warranty obligations in accordance with GCC Clause 28.3.
GCC 23.2	<p>The packing, marking, and documentation within and outside the packages shall be:</p> <p>Packing:</p> <p>(1) The supplied Goods shall be packed by standard protective measures. Such packing shall be suitable for long distance transportation and well protected against dampness, moisture, shock, rust and rough handling so as to ensure that the Goods will safely arrive at the designated site without any damage due to the above mentioned reasons, and</p>

	<p>(2) In each package there shall be one copy each of the detailed packing list and the quality certificate.</p> <p>Marking:</p> <p>(1) The Supplier shall mark the following on the four adjacent sides of each package with indelible paint in conspicuous English printed words:</p> <p>A. CONSIGNEE</p> <p>B. CONTRACT NO.</p> <p>C. SHIPPING MARK</p> <p>D. CONSIGNEE CODE</p> <p>E. DESTINATION</p> <p>F. NAME OF GOODS AND ITEM NO., CASE NO.</p> <p>G. GROSS/NET WEIGHT (Kg)</p> <p>H. MEASUREMENT (LENGTH x WIDTH x HEIGHT IN CM)</p> <p>(2) If any package weighs two (2) tons or more, the Supplier shall mark on two sides of each package in English and with appropriate transportation marks to show the "center of gravity" and "points of slinging" in order to facilitate loading, discharging and handling. According to the characteristics of the Goods and the different</p> <p>8-6 Section 8 - Special Conditions of Contract</p> <p>Bidding Document for _____ Procurement of Goods Single-Stage: Two-Envelope</p> <p>requirements in transportation, packages shall be marked legibly by the Supplier with words "Handle with Care", "Right Side Up", "Keep Dry", etc., and with other appropriate marks..</p>
GCC 24.1	<p>The insurance coverage shall be in accordance with: Pursuant to GCC, Subclause 24.1, the Supplier must insure the Goods in an amount to equal to 110% of the CIP or EXW price of the Goods from "Warehouse" to "Warehouse" on "All Risks" basis, including War Risks and Strikes.</p>
GCC 25.1	<p>Obligations for transportation of the Goods shall be in accordance with: Incoterms 2010 - the Supplier is required to transport the Goods to a specified place of final destination, in good condition, including storage, and related costs shall be borne by the Supplier.</p>
GCC 26.2	<p>Tests and Inspections specified in Section 6 (Schedule of Supply), shall be carried out at the following times or milestones, and places:</p> <p>Factory Inspection: Not required;</p> <p>Site inspection: upon delivery of the Goods</p>

GCC 27.1	The applicable rate for liquidated damages for delay shall be: 0.1% of the Contract Price per day.
GCC 27.1	The maximum amount of liquidated damages shall be: 10% of the Contract Price.
GCC 28.3	The period of validity of the Warranty shall be: 365 days. The place of final destination shall be: As specified in the Delivery and Completion Schedule of Section 6 (Schedule of Supply).
GCC 28.5	The Supplier shall correct any defects covered by the Warranty within 14 days of being notified by the Purchaser of the occurrence of such defects.
GCC 30.1 (b)	The amount of aggregate liability shall be: equivalent to 100% of the Contract Price

Section 9- Contract Forms

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Contract Agreement 9-3

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Letter of Acceptance

---- on letterhead of the purchaser ----

..... date.

To: name and address of the supplier

Subject: Notification of Award Contract No.

This is to notify you that your Bid dateddate. . . . for execution of the name of the contract and identification number, as given in the Bid Data Sheet for the Accepted Contract Amount of the equivalent of amount in figures and words and name of currency , as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the Performance Security Form included in Section 9 (Contract Forms) of the Bidding Document.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made on the *[insert number]* day of *[insert month]*, *[insert year]*, between *[insert complete name of Purchaser]* of *[insert complete address of purchaser]* (hereinafter "the Purchaser"), of the one part, and *[insert complete name of supplier]* of *[insert complete address of supplier]* (hereinafter "the Supplier"), of the other part:

WHEREAS the Purchaser invited Bids for certain Goods and Related Services, viz., *[insert brief description of the goods and related services]* and has accepted a Bid by the Supplier for the supply of those Goods and Related Services in the sum of *[insert currency or currencies and amount of contract price in words and figures]* (hereinafter "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) the Letter of Acceptance;
 - (b) the Price Bid Submission Sheet and the Price Schedules submitted by the Supplier;
 - (c) the Technical Bid Submission Sheet submitted by the Supplier;
 - (d) the Special Conditions of Contract;
 - (e) the List of Eligible Countries that was specified in Section 5 of the Bidding Document;
 - (f) the General Conditions of Contract;
 - (g) the Schedule of Supply;

This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

3. In consideration of the payments to be made by the Purchaser to the Supplier as indicated in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Related Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Related Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of *[indicated name of country]* on the day, month and year indicated above.

Signed by *[insert authorized signature for the purchaser]* (for the Purchaser)

Signed by *[insert authorized signature for the supplier]* (for the Supplier)

Performance Security

*Bank's name, and address of issuing branch or office*¹

Beneficiary: *Name and address of purchaser*

Date:

Performance Guarantee No.:

We have been informed that *name of the supplier*. (hereinafter called "the Supplier") has entered into Contract No. *reference number of the contract*. datedwith you, for the execution of *name of contract and brief description of goods and related services*. (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Supplier, we *name of the bank*. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *name of the currency and amount in figures*². (*amount in words*.) such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Supplier is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the day of,³ and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458 , except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.⁴

.....
Seal of bank and signature(s)

-- Note to Bidder --

If the institution issuing the performance security is located outside the country of the purchaser, it shall have a correspondent financial institution located in the country of the purchaser to make it enforceable.

- ¹ All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.
- ² The guarantor shall insert an amount representing the percentage of the contract price specified in the contract and denominated either in the currency(ies) of the contract or a freely convertible currency acceptable to the purchaser.
- ³ Insert the date 28 days after the expected completion date. The purchaser should note that in the event of an extension of the time for completion of the contract, the purchaser would need to request an extension of this guarantee from the guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the purchaser might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Purchaser's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."
- ⁴ Or the same or similar to this clause specified in the Uniform Rules for Demand Guarantees, ICC Publication No. 758 where applicable.

Advance Payment Security

Bank's name, and address of issuing branch or office¹

Beneficiary: *Name and address of purchaser*

Date:

Advance Payment Guarantee No.:

We have been informed that *name of the supplier*. (hereinafter called "the Supplier") has entered into Contract No. *reference number of the contract*. dated with you, for the execution of *name of contract and brief description of goods and related services*. (hereinafter called "the Contract").

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum of. *name of the currency and amount in figures²*. (*amount in words*.) is to be made against an advance payment guarantee.

At the request of the Supplier, we *name of the bank*. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *name of the currency and amount in figures³*. (*amount in words*.) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Supplier is in breach of its obligation under the Contract because the Supplier used the advance payment for purposes other than the costs of mobilization in respect of the Goods and Related Services.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Supplier on its account number *Supplier's account number*. at *name and address of the bank*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Supplier as indicated in copies of interim statements or payment certificates that shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety percent (90%) of the Contract Price has been certified for payment, or on the . . . day of,⁴ whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458 (or ICC Publication No. 758 as applicable).

..... *Seal of bank and signature(s)*

-- Note to Bidder --

If the institution issuing the advance payment security is located outside the country of the purchaser, it shall have a correspondent financial institution located in the country of the purchaser to make it enforceable.

¹ All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.

² The guarantor shall insert an amount representing the amount of the advance payment denominated either in the currency(ies) of the advance payment as specified in the contract, or in a freely convertible currency acceptable to the purchaser.

³ Footnote 2.

⁴ Insert the expected expiration date of the time for completion. The purchaser should note that in the event of an extension of the time for completion of the contract, the purchaser would need to request an extension of this guarantee from the guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the purchaser might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Purchaser's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Himachal Pradesh Skill Development Project.

Loan No: 3573-IND

Procurement of Goods **Single-Stage: Two-Envelope Bidding Procedure**

Bidding Document for Procurement of

Supply of **Electrical and Electronics related equipment's** for Industrial Training Institutes to enhance Technical and Vocational Skills among the youth of Himachal Pradesh (**HPSDP-DOTE/03**);

Volume 2 (Price Bid)

Issued on: **22nd June 2020**

Invitation for Bids No.:**001/2020**

NCB No: **HPSDP-DOTE/03**

Purchaser: Department of Technical Education, Vocational and Industrial Training, Himachal Pradesh represented by The Director

Country: **India**

Section 4- Bidding Forms

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Price Bid Submission Sheet

-- Note --

The Bidder must accomplish the Price Bid Submission Sheet on its letterhead clearly showing the bidder's complete name and address.

Date: _____

NCB No.: _____

Invitation for Bid No.: _____

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including the Addenda issued in accordance with Instructions to Bidders (ITB) Clause 8. _____
- (b) We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule specified in Section 6(Schedule of Supply), the following Goods and Related Services.
- (c) The total Bid price, excluding any discounts offered in item (d) below is

[amount of foreign currency in words], [amount in figures], and [amount of local currency in words],
[amount in figures]

The total bid price from the Price Schedules should be entered by the Bidder inside this box. Absence of the total bid price in the Price Bid Submission Sheet may result in the rejection of the bid.

- (d) The discounts offered and the methodology for their application are as follows:

Discounts: If our Bid is accepted, the following discounts shall apply: _____

Methodology of Application of the Discounts: The discounts shall be applied using the following method: _____

- (e) Our bid shall be valid for a period of _____ days from the date fixed for the submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (f) If our Bid is accepted, we commit to obtain a Performance Security in the amount of _____ percent of the Contract Price for the due performance of the Contract.
- (g) The following commissions, gratuities, or fees have been paid or are to be paid with respect to the bidding process or execution of the Contract:

Name of Recipient	Address	Reason	Amount
_____	_____	_____	_____
_____	_____	_____	_____

(If none has been paid or is to be paid, indicate "none.")

- (h) 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 a formal Contract is prepared and executed.
- (i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (j) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

Price Schedule for Goods to Be Offered from Within the Purchaser's Country

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item	Description	Country of Origin	Domestic Value Added in Percent	Quantity and Unit of Measurement	Unit Price EXW (INR)	Total EXW Price per item (INR)	Sales and Other Taxes Per Item (INR)	Total Price per Item including Taxes (INR)
1	2	3	4	5	6	7 = 5 x 6	8	9 = 7 + 8
			Not Applicable					
Total Amount								

Notes:

- Column 4: In accordance with margin of preference ITB 38, if applicable.
Domestic Value Added comprises domestic labour, the domestic content of materials, domestic overheads and profits from the stage of mining the raw material until final assembly.
- Column 6: Incoterm in accordance with ITB 14
Currency in accordance with ITB 15
Price shall include all customs duties and sales and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of the item or the customs duties and sales and other taxes already paid on previously imported items.
- Column 8: Payable in the Purchaser's country if Contract is awarded

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

Price Schedule for Goods to Be Offered from Outside the Purchaser's Country

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item	Description	Country of Origin	Quantity and Unit of Measurement	Unit Price CIF (...) or CIP (...) (INR)	Unit Price FOB (...) or FCA (...) (INR)	Total Price CIF or CIP per Item (INR)	Total Price FOB or FCA per Item (INR)
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Total Amount							

Notes:

Column 5 and 6: Incoterm in accordance with ITB 14
Currency in accordance with ITB 15

Column 6: Only to be used if the Purchaser wishes to reserve transportation and insurance to domestic companies or other designated sources. Identification of the lowest evaluated bid must be on the basis of the CIF or CIP price, but the Purchaser may sign the contract on FOB or FCA terms and make its own arrangement for transportation and/or insurance.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

Price Schedule for Related Services to Be Offered from Outside and Within the Purchaser's Country

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item No.	Description	Country of Origin	Quantity and Unit of Measurement	Unit Price		Total Price per Item	
				(a)	(b)	(a)	(b)
				Foreign Currency	Local Currency	Foreign Currency	Local Currency
1	2	3	4	5(a)	5(b)	6(a) = 4 x 5(a)	6(b) = 4 x 5(b)
				Not Applicable		Not Applicable	
Total Amount							

Notes:

Column 5 and 6: Currencies in accordance with ITB 15

Prices are to be quoted inclusive of all customs duties, sales and other similar taxes applicable in the Purchaser's country and payable on the Related Services, if the Contract is awarded to the Bidder

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____