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**NATIONAL COMPETITIVE BIDDING FOR SUPPLY OF LIFE-SAVING APPLIANCES,  
FIRE FIGHTING APPLIANCES, LABS / WORKSHOPS EQUIPMENT AT NATIONAL  
INLAND NAVIGATION INSTITUTE (NINI), GAIGHAT, PATNA, BIHAR**

BID REFERENCE	: IN-IWAI-493444-GO-RFB
DATE OF COMMENCEMENT OF SALE OF BIDDING DOCUMENT	: 30.05.2025
LAST DATE FOR SALE OF BIDDING DOCUMENT	: 01.07.2025
LAST DATE AND TIME FOR RECEIPT OF BIDS	: 01.07.2025 at 1500 Hours
TIME AND DATE OF OPENING OF BIDS – Technical Part	: 01.07.2025 at 1530 Hours
OFFICER INVITING BIDS	: Vice Chairman & Project Director (JMVP) Inland Waterways Authority of India, A-13, Sector-1, Noida-201301, UP

**SECTION I: INVITATION FOR BIDS (IFB)**

**NATIONAL COMPETITIVE BIDDING FOR LIFE-SAVING APPLIANCES, FIRE FIGHTING APPLIANCES, LABS / WORKSHOPS EQUIPMENT AT NATIONAL INLAND NAVIGATION INSTITUTE (NINI), GAIGHAT, PATNA, BIHAR**

**(Two-Envelope Bidding Process with e-Procurement)**

**INVITATION FOR BIDS (IFB)**  
**E-Procurement Notice**

Date : 30.01.2025

Credit No. : Not Applicable

Loan No. : 87520-IN

IFB No : IN-IWAI-493444-GO-RFB

1. The Government of India has received for financing from the World Bank towards the cost of Jal Marg Vikas Project (JMVP) project and it is intended that part of the proceeds will be applied to eligible payments under the Contract for Supply of Life-Saving Appliances, Fire Fighting Appliances, Labs/ Workshops Equipment at National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar
2. The Inland Waterways Authority of India (IWAI), Ministry of Ports, Shipping & Waterways (MoPSW), Government of India (GoI) now invites online bids from eligible bidders for Supply of Life-Saving Appliances, Fire Fighting Appliances, Labs/ Workshops Equipment at National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar.
3. Bidding will be conducted through the National Competitive Bidding (NCB) procedures agreed with World Bank. The bidding is open to all eligible bidders as defined in the Bank's Procurement Guidelines. In addition, please refer to paragraphs 1.6 and 1.7 of the Guidelines setting forth the World Bank's policy on conflict of interest.
4. Bidding documents are available online on <https://eprocure.gov.in/eprocure/app> (website) for a non-refundable fee as indicated below, in the form of RTGS/ NEFT/ Demand Draft/ cashier's cheque/ certified cheque from any scheduled/ nationalized bank payable at Noida/ New Delhi in favour of IWAI Fund Jal Marg Vikas (proof of cost of bid document to be submitted subsequently as per the procedure described in paragraph 7 below). Bidders will be required to register on the website, which is free of cost. The

bidder would be responsible for ensuring that any addenda available on the website is also downloaded and incorporated.

- (a) Price of bidding document (non-refundable) : Rs. 5,900 (Rs. 5,000 + 18% GST)
- (d) Date of commencement of sale of bidding document : 30.01.2025
- (e) Last date for sale of bidding document : 01.07.2025
- (f) Last date and time for receipt of bids : 01.07.2025 at 1500 Hours
- (g) Time and date of opening of bids-technical part : 01.07.2025 at 1530 Hours

5. For submission of the bids, the bidder is required to have Digital Signature Certificate (DSC) from one of the authorized Certifying Authorities, authorised by Government of India for issuing DSC. Aspiring bidders who have not obtained the user ID and password for participating in e-procurement in this Project, may obtain the same from the website: <https://eprocure.gov.in/eprocure/app>. A non-refundable fee of Rs. 5,900/-(inclusive of tax) is required to be paid (to be submitted along with other documents listed in paragraph 7 below) before submission of the bid i.e. before 01.07.2025. The mode of payment shall be in the form of RTGS/ NEFT/ Demand Draft/ Cashier's cheque/ Certified cheque drawn in favour of IWAI Fund Jal Marg Vikas from any scheduled/ nationalized bank payable at Noida/ New Delhi.

- (a) Name of Bank Account: IWAI Fund Jal Marg Vikas
- (b) Bank Name and Address Canara Bank, Sector-18, (Morna)  
Branch, Noida, UP
- (c) Bank Account Number 87781010014534
- (d) IFSC CNRB0018778

6. Bids security of the amount specified in the bidding document, drawn in favour of IWAI Fund Jal Marg Vikas must be submitted as per the procedure described in paragraph 7 below. The Bid security will have to be in any one of the forms as specified in the bidding document and shall have to be valid for 45 days beyond the validity of the bid. Bids must be submitted online on <https://eprocure.gov.in/eprocure/app> (website) on or before the date and time for receipt of bids, and the 'Technical Part' of bids will be opened online on the specified time and date for opening of bids, as given above. The "Financial Part"

shall remain unopened in the e-procurement system until the second public bid opening for the Financial Part. Any bid or modifications to bid (including discount) received outside e-procurement system will not be considered. If the office happens to be closed on the date of opening of the bids as specified, the bids will be opened on the next working day at the same time. The electronic bidding system would not allow any late submission of bids.

7. The bidders are required to submit (a) original RTGS/ NEFT/ demand drafts/ cashier's cheque/ certified cheque towards the cost of bid document and registration on e-procurement website (if not previously registered); (b) original bid security in approved form; and (c) original affidavit regarding correctness of information furnished with bid document with Vice Chairman & Project Director, JMVP, IWAI, A-13, Sector-1, Noida-201301, U.P before the bid submission deadline of the bid given above, either by registered post/speed post/courier or by hand, failing which the bids will be declared non-responsive and will not be opened.
8. Other details can be seen in the bidding document. The Purchaser shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt to notify the bidders of any bid updates, the Purchaser shall not be liable for any information not received by the bidder. It is the bidders' responsibility to verify the website for the latest information related to this bid.

Seal of Office & Address

**Vice Chairman & Project Director, JMVP**

**Inland Waterways Authority of India,**

**A-13, Sector-1, Noida-201301, U.P**

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## **PART 1 – BIDDING PROCEDURES**

## **SECTION I - INSTRUCTIONS TO BIDDERS [ITB]**



# Section I. Instructions to Bidders

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# Section I. Instructions to Bidders

## A. General

- 1. Scope of Bid**
- 1.1 The Purchaser **indicated in the Bidding Data Sheet (BDS)**, issues these Bidding Documents for the supply of Goods and Related Services incidental thereto as specified in Section VII, Schedule of Requirements. The name, identification and number of lots (contracts) of this National Competitive Bidding (NCB) procurement are **specified in the BDS**.
- 1.2 Throughout these Bidding Documents:
- (a) the term “in writing” means communicated in written form (e.g. by mail, e-mail, fax, telex, including if **specified in the BDS**, distributed or received through the electronic-procurement system used by the Purchaser) with proof of receipt;
  - (b) if the context so requires, “singular” means “plural” and vice versa; and
  - (c) “day” means calendar day.
- 2. Source of Funds**
- 2.1 The Government of India (hereinafter called “Borrower”) **specified in the BDS** has applied for or received financing (hereinafter called “funds”) from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called “the Bank”) in an amount **specified in BDS** toward the project **named in the BDS**. The Borrower intends to apply a portion of the funds to eligible payments under the contract for which these Bidding Documents are issued.
- 2.2 Payment by the Bank will be made only at the request of the Borrower and upon approval by the Bank in accordance with the terms and conditions of the Loan (or other financing) Agreement. The Loan (or other financing) Agreement prohibits a withdrawal from the loan or other financing) account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan (or other financing) Agreement or have any claim to the funds.

- 3. Corrupt & Fraudulent Practices**
- 3.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section VI.
- 3.2 In further pursuance of this policy, Bidders shall permit and shall cause its agents (whether declared or not), associates, sub-consultants, service providers or suppliers and to permit the Bank to inspect all accounts, records and other documents relating to the submission of the application, bid submission (in case prequalified), and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.
- 4. Eligible Bidders**
- 4.1 A Bidder may be a firm that is a private entity, or a government owned entity subject to ITB 4.5.
- 4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this bidding process, if the Bidder:
- a. directly or indirectly controls, is controlled by or is under common control with another Bidder; or
  - b. receives or has received any direct or indirect subsidy from another Bidder; or
  - c. has the same legal representative as another Bidder; or
  - d. has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the bid of another Bidder, or influence the decisions of the Purchaser regarding this bidding process; or
  - e. participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which such Bidder is involved. However, this does not limit the inclusion of the same associate in more than one bid; or
  - f. any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods/equipment that are the subject of the bid; or
  - g. any of its affiliates has been hired (or is proposed to be hired) by the Purchaser or Borrower for the Contract implementation; or
  - h. would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS ITB 2.1 that it provided or were provided by any of its affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or

- i. has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding documents or specifications of the contract, and/or the bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the procurement process and execution of the contract.
- 4.3 A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.7. A Bidder shall be deemed to have the nationality of a country if the Bidder is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed associates or sub-consultants for any part of the contract including related Services.
- 4.4 A Bidder that has been sanctioned by the Bank in accordance with the above ITB 3.1, including in accordance with the Bank's Guidelines on Preventing and Combating Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants ("Anti-Corruption Guidelines"), shall be ineligible to be prequalified for, bid for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address **specified in the BDS**.
- 4.5 Bidders that are Government-owned enterprises or institutions in the Purchaser's Country may participate only if they can establish that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not dependent agencies of the Purchaser. To be eligible, a government-owned enterprise or institution shall establish to the Bank's satisfaction, through all relevant documents, including its Charter and other information the Bank may request, that it: (i) is a legal entity separate from the government (ii) does not currently receive substantial subsidies or budget support; (iii) operates like any commercial enterprise, and, inter alia, is not obliged to pass on its surplus to the government, can acquire rights and liabilities, borrow funds and be liable for repayment of its debts, and can be declared bankrupt; and (iv) is not bidding for a contract to be awarded by the department or agency of the government which under their applicable laws or regulations is the

reporting or supervisory authority of the enterprise or has the ability to exercise influence or control over the enterprise or institution.

4.6 A Bidder shall not be under suspension from bidding by the Purchaser as the result of the operation of a Bid-Securing Declaration.

4.7 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or (b) 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 any country, person, or entity in that country.

4.8 A bidder shall provide such evidence of eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.

**5. Eligible Goods  
Related  
Services**

5.1 All the Goods and Related Services to be supplied under the Contract and financed by the Bank may have their origin in any country in accordance with Section V, Eligible countries

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, installation, training, and initial maintenance.

5.3 The term "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 components.

## **B. Contents of Bidding Document**

**6. Sections of  
Bidding  
Documents**

6.1 The Bidding Documents consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any Addendum issued in accordance with ITB Clause 8.

### **PART 1 Bidding Procedures**

- Section I. Instructions to Bidders (ITB)
- Section II. Bidding Data Sheet (BDS)
- Section III. Evaluation and Qualification Criteria
- Section IV. Bidding Forms
- Section V. Eligible Countries
- Section VI Bank Policy-Corrupt and Fraudulent Practices

## **PART 2 Supply Requirements**

- Section VII. Schedule of Requirements

## **PART 3 Contract**

- Section VIII. General Conditions of Contract (GCC)
- Section IX. Special Conditions of Contract (SCC)
- Section X. Contract Forms

- 6.2 The Invitation for Bids issued by the Purchaser is not part of the Bidding Document.
- 6.3 Unless obtained directly from the Purchaser, the Purchaser is not responsible for the completeness of the document, responses to requests for clarification, minutes of pre-bid meeting (if any), or Addenda to the Bidding Document in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Purchaser shall prevail.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Documents and to furnish with its Bid all information or documentation as is required by the Bidding Documents.

## **7. Clarification of Bidding Documents**

- 7.1 The electronic bidding system **specified in the BDS** provides for online clarifications. A prospective Bidder requiring any clarification on the Bidding Documents may notify the Purchaser online. Clarifications requested through any other mode shall not be considered by the Purchaser. The Purchaser will respond to any request for clarification, provided that such request is received no later than fifteen (15) days prior to the deadline for submission of bids. Description of clarification sought and the response of the Purchaser shall be uploaded for information of all Bidders without identifying the source of request for clarification. Should the

Purchaser deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under ITB Clause 8 and ITB Sub-Clause 22.2. It is the bidder's responsibility to check on the e-procurement system, for any addendum/ amendment/ corrigendum to the bidding document.

- |  |  |
|--|--|
| <b>8. Amendment of Bidding Documents</b> | <p>8.1 At any time prior to the deadline for submission of bids, the Purchaser may amend the Bidding Documents by issuing addendum. The addendum will appear on the e-procurement system under "Latest Corrigendum" and email notification is also automatically sent to those bidders who have started working on the tender, or as <b>otherwise specified in BDS</b>.</p> <p>8.2 Any addendum thus issued shall be part of the Bidding Documents and shall be deemed to have been communicated to all the bidders.</p> <p>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 bids, pursuant to ITB Sub-Clause 22.2</p> |
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## **C. Preparation of Bids**

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|---|--|
| <b>9. Cost of Bidding</b>               | 9.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.  |
| <b>10. Language of Bid</b>              | 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 English language. 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 into English language, in which case, for purposes of interpretation of the Bid, such translation shall govern. |
| <b>11. Documents Comprising the Bid</b> | <p>11.1 The Bid shall comprise two Parts, namely the Technical Part and the Financial Part. These two Parts shall be submitted simultaneously.</p> <p>11.2 <b>The Technical Part</b> shall contain the following:</p> <ul style="list-style-type: none"> <li>(a) Letter of Bid – Technical Part, in accordance with ITB Clause 12;</li> <li>(b) Bid Security, in accordance with ITB Clause 19.1, if required;</li> </ul>  |



- (c) Alternative bids – Technical Part, if permissible, in accordance with ITB 13, the Technical Part of any Alternative Bid;
- (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB Clause 20.2;
- (e) documentary evidence in accordance with ITB Clause 17 establishing the Bidder's qualifications to perform the contract if its bid is accepted;
- (f) documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to bid;
- (g) documentary evidence in accordance with ITB Clause 16, that the Goods and Related Services to be supplied by the Bidder are of eligible origin;
- (h) documentary evidence in accordance with ITB Clauses 16, that the Goods and Related Services conform to the Bidding Documents;
- (i) Manufacturer's authorization form; and
- (j) any other document **required in the BDS.**

11.3 The **Financial Part** shall contain the following:

- (a) Letter of Bid – Financial Part: prepared in accordance with ITB 12 and ITB 14;
- (b) Price Schedules: completed prepared in accordance with ITB 12 and ITB 14;
- (c) Alternative Bid - Financial Part; if permissible in accordance with ITB 13, the Financial Part of any Alternative Bid; and
- (d) any other document **required in the BDS.**

11.4 The Technical Part shall not include any financial information related to the Bid price. Where material financial information related to the Bid price is contained in the Technical Part, the Bid shall be declared non-responsive.

11.5 The Bidder shall furnish in the Letter of Bid, information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

- 12. Process of Bid Submission**
- 12.1 The Letter of Bid – Technical Part, Letter of Bid – Financial Part, and Price Schedules shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.2. All blank spaces shall be filled in with the information requested.
- 12.2 Entire Bid including the Letter of Bid and filled-up Price Schedules shall be submitted online on e-procurement system specified in ITB 7.1. Details and process of online submission of the tender and relevant documents are given in the website mentioned above. Scanned copies of documents listed in clauses 11 and 12.3 should also be uploaded on this website.
- 12.3 **Submission of Original Documents:** The bidders are required to separately submit (i) original demand drafts towards the cost of bid document and registration on e-procurement website (if not previously registered) (as per IFB); (ii) original bid security in approved form; and (iii) original affidavit regarding correctness of information furnished with bid document, with the office **specified in the BDS**, before the opening of the technical part of the Bid, either by registered/speed post/courier or by hand, failing which the bids will be declared non-responsive and will not be opened. Hard copy of rest of the bid is not to be submitted.
- 13. Alternative Bids**
- 13.1 Unless otherwise **specified 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 Letter of Bid – Financial Part and in the Price Schedules shall conform to the requirements specified below.
- 14.2 All lots (contracts) and items must be listed and priced separately in the Price Schedules.
- 14.3 The price to be quoted in the Letter of Bid – Financial Part, in accordance with ITB 12.1, shall be the total price of the bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any discounts and indicate the methodology for their application in the Letter of Bid – Financial Part in accordance with ITB 12.1.
- 14.5 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 non-responsive and shall be rejected, pursuant to ITB 31. However, if in accordance with the BDS, prices quoted by the Bidder shall

be subject to adjustment during the performance of the Contract, a bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.

- 14.6 If so specified in ITB 1.1, bids are being invited for individual lots (contracts) or for any combination of lots (packages). Unless otherwise **specified 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 discounts for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4 provided the bids for all lots (Contracts) are submitted and opened at the same time.
- 14.7 The terms EXW and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by The International Chamber of Commerce, **as specified in the BDS**.
- 14.8 Prices shall be quoted as specified in the Price Schedule included in Section IV, Bidding Forms. The dis-aggregation of price components is required 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. In quoting prices, the Bidder shall be free to use transportation through carriers registered in any eligible country, in accordance with Section V Eligible Countries. Similarly, the Bidder may obtain insurance services from any eligible country in accordance with Section V Eligible Countries. Prices shall be entered in the following manner:
- (a) **For Goods:**
- (i) the price of the Goods quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable), including all duties, and GST and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Goods;
  - (ii) any GST and other taxes which will be payable in India on the Goods, if the contracts is awarded to the Bidder; and
  - (iii) the price for inland transportation, insurance, and other local services required to convey the Goods to

their final destination (Project Site) **specified in the BDS.**

- (b) for the Related Services, other than inland transportation and other services required to convey the Goods to their final destination, whenever such Related Services are specified in the Schedule of Requirements:

- (i) the price of each item comprising the Related Services (inclusive of any applicable taxes).

#### **14.9 Deemed Export Benefits**

Bidders may like to ascertain availability of tax/duty exemption benefits, available for contracts financed under World Bank Credits/ Loans. They are solely responsible for obtaining such benefits, which they have considered in their bid and in case of failure to receive such benefits for reasons whatsoever, the Purchaser will not compensate the bidder.

Where the bidder has quoted taking into account such benefits, it must give all information required for issue of necessary Certificates in terms of the Government of India's relevant Notification along with its bid as per form stipulated in Section IV Bidding Forms. Where the Purchaser issues such Certificates, such taxes and duties will not be reimbursed separately.

If the Bidder has considered the Deemed Export Benefits in its bid, the Bidder shall confirm and certify that the Purchaser will not be required to undertake any responsibilities of the deemed export scheme or the benefits available during contract execution except issuing the required certificates. Bids which do not conform to this provision or any condition by the Bidder which makes the bid subject to availability of deemed export benefits or compensation on withdrawal of or any variations in the deemed export benefits scheme will make the bid non responsive and hence liable to rejection.

### **15. Currencies of Bid& Payment**

- 15.1 The Bidder shall quote the Price in Indian Rupees only.

**16. Documents  
Establishing the  
Eligibility and  
conformity of  
the Goods and  
Related  
Services**

- 16.1 To establish the eligibility of the Goods and Related Services in accordance with ITB Clause 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms, included in Section IV, Bidding Forms.
- 16.2 To establish the conformity of the Goods and Related Services to the Bidding Documents, the Bidder shall furnish as part of its Bid the documentary evidence that the Goods conform to the technical specifications and standards specified in Section VII, Schedule of Requirements.
- 16.3 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 the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Section VII Schedule of Requirements.
- 16.4 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period **specified in the BDS** following commencement of the use of the goods by the Purchaser.
- 16.5 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, 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 the Section VII Schedule of Requirements.

**17. Documents  
Establishing the  
Eligibility  
&Qualifications  
of the Bidder**

- 17.1 To establish Bidder's eligibility in accordance with ITB 4, Bidders shall complete the Letter of Bid – Technical Part, included in Section IV, Bidding Forms.
- 17.2 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Purchaser's satisfaction:

- (a) that the Bidder meets each of the qualification criterion Criteria specified in Section III, Evaluation and Qualification;
- (b) (i) that, if **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 IV, 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;
- (ii) Supplies for any particular item in each schedule of the bid should be from one manufacturer only. Bids from agents offering supplies from different manufacturers for the same item of the schedule in the bid will be treated as non-responsive.
- (iii) that, if **required in the BDS**, the Bidder is or will be (if awarded the contract) 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;
- (c) Bids from Joint Ventures are not acceptable.

## 18 Period of Validity of Bids

- 18.1 Bids shall remain valid for the period **specified in the BDS** after the bid submission deadline date prescribed by the Purchaser in accordance with ITB 22.1. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.
- 18.2 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 Clause 19, it shall also be extended for a corresponding 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, except as provided in ITB Sub-Clause 18.3.
- 18.3 If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial bid validity, the Contract price shall be determined as follows:
  - (a) In the case of fixed price contract, the contract price shall be the bid price adjusted by the factor **specified in the BDS** for each week or part of the week that has elapsed from the

expiration of the initial bid validity to the date of notification of award to the successful bidder.

- (b) In the case of adjustable price contract, no adjustment shall be made.
- (c) In any case, bid evaluation shall be based on the bid Price without taking into consideration the applicable correction from those indicated above.

## **19 Bid Security**

- 19.1 The Bidder shall furnish as part of the Technical Part of its bid, a Bid Security, if required, as **specified in the BDS**.
- 19.2 Not used.
- 19.3 The Bid Security shall be in the amount **specified in the BDS** and denominated in Indian Rupees or a freely convertible currency, and shall:
  - (a) at the bidder's option, be in the form of either a certified check, demand draft, letter of credit, or a bank guarantee from a Nationalized /Scheduled Bank in India, or another security specified **in the BDS**;
  - (b) be substantially in accordance with one of the forms of Bid Security included in Section IV, Bidding Forms, or other form approved by the Purchaser prior to bid submission;
  - (c) be payable promptly upon written demand by the Purchaser in case the conditions listed in ITB Clause 19.7 are invoked;
  - (d) be submitted in its original form; copies will not be accepted;
  - (e) remain valid for a period of 45 days beyond the original validity period of the bids, or beyond any period of extension of bid validity, if so requested under ITB Clause 18.2.
- 19.4 If a Bid Security is required in accordance with ITB Sub-Clause 19.1, any bid not accompanied by a substantially responsive Bid Security shall be rejected by the Purchaser as non-responsive.
- 19.5 The Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the contract and furnishing the Performance Security pursuant to ITB Clause 44.

19.6 The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the contract and furnished the required performance security.

19.7 The Bid Security may be forfeited:

(a) if a Bidder

(i) withdraws its bid during the period of bid validity specified by the Bidder in the Letter of Bid (Technical Part and/or Financial Part), except as provided in ITB Sub-Clause 18.2;  
or

(ii) does not accept the correction of errors in pursuant to ITB 35,  
or

(b) if the successful Bidder fails to:

(i) sign the Contract in accordance with ITB Clause 43;  
or

(ii) furnish a Performance Security in accordance with ITB Clause 44.

19.8 Not used.

19.9 If a bid security is **not required in the BDS**, and

(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid Form, except as provided in ITB 18.2, or does not accept the correction of errors pursuant to ITB 35; or

(b) if the successful Bidder fails to sign the contract in accordance with ITB 43; or furnish a performance security in accordance with ITB 44;

the Borrower may, **if provided for in the BDS**, declare the Bidder ineligible to be awarded a contract by the Purchaser for a period of time **as stated in the BDS**.

## 20 Format and Signing of Bid

20.1 The Bidder shall prepare the Bid as per details given in ITB 21.

20.2 The bid shall be signed by a person duly authorized to sign on behalf of the Bidder. The authorization shall consist of a written confirmation **as specified in the BDS** and shall be uploaded along with the bid.



- 20.3 Not used.
- 20.4 Corrections if any in the bid can be carried out by editing the information before electronic submission on e-procurement portal.

## **D. Online Submission of Bids**

### **21 Preparation of Bids**

- 21.1 Bids, both Technical and Financial Parts, shall be submitted online on the e-procurement system specified in BDS 7.1. Detailed guidelines for viewing bids and submission of online bids are given on the website. The Invitation for Bids under this Project is published on this website. Any citizen or prospective bidder can logon to this website and view the Invitation for Bids and can view the details of goods for which bids are invited. A prospective bidder can submit its bid online; however, the bidder is required to have enrolment/registration in the website, and should have valid Digital Signature Certificate (DSC) in the form of smart card/e-token obtained from any authorised certifying agency of Government of India (for class of DSC **specified in BDS**). The bidder should register in the website using the relevant option available. Then the Digital Signature registration has to be done with the e-token, after logging into the website. The bidder can then login the website through the secured login by entering the password of the e-token & the user id/ password chosen during registration. After getting the bid schedules, the Bidder should go through them carefully and submit the specified documents, along with the bid, otherwise the bid will be rejected.
- 21.2 The completed bid comprising of documents indicated in ITB 12, should be uploaded on the e-procurement portal along with scanned copies of requisite certificates as are mentioned in different sections in the bidding document and scanned copy of the bid security.
- 21.3 All the documents are required to be signed digitally by the bidder. After electronic on line bid submission, the system generates a unique bid identification number which is time stamped as per server time. This shall be treated as acknowledgement of bid submission.
- 21.4 Physical, Email, Telex, Cable or Facsimile bids will be rejected as non-responsive.

### **22 Deadline for Submission of Bids**

- 22.1 Bids must be uploaded online no later than the date and time **specified in the BDS**.
- 22.2 The Purchaser may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Documents in accordance with ITB Clause 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the

deadline shall thereafter be subject to the deadline as extended.

**23 Late Bids**

23.1 The electronic bidding system would not allow any late submission of bids after due date & time as per server time.

**24 Withdrawal, Substitution, and Modification of Bids**

24.1 Bidders may modify their bids by using appropriate option for bid modification on the e-procurement portal, before the deadline for submission of bids. For this the bidder need not make any additional payment towards the cost of bid document. For bid modification and consequential re-submission, the bidder is not required to withdraw his bid submitted earlier. The last modified bid submitted by the bidder within the bid submission time shall be considered as the bid. For this purpose, modification/withdrawal by other means will not be accepted. In online system of bid submission, the modification and consequential re-submission of bids is allowed any number of times. A bidder may withdraw his bid by using appropriate option for bid withdrawal, before the deadline for submission of bids, however, if the bid is withdrawn, re-submission of the bid is not allowed (or allowed **if specified in BDS**).

24.2 Bids requested to be withdrawn in accordance with ITB Sub-Clause 24.1 shall not be opened.

24.3 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 Letter of Bid (Technical Part and/or Financial Part) or any extension thereof.

**E. Public Opening of Technical Parts of Bids**

**25 Public Opening of Technical Parts of Bids**

25.1. The Purchaser shall publicly open Technical Parts of all bids received by the deadline, at the date, time and place **specified in the BDS**, in the presence of Bidder's designated representatives and anyone who chooses to attend, and this could also be viewed by the bidders online. The Financial Parts of the bids shall remain unopened in the e-procurement system, until the subsequent public opening, following the evaluation of the Technical Parts of the Bids. In all cases, original documents submitted as specified in ITB 12.3 shall be first scrutinized, and Bids that do not comply with the provisions of ITB 12.3 will be declared non-responsive and will not be opened. Thereafter, bidder's names, and such other details as the

the Purchaser may consider appropriate will be notified online as Technical Part bid opening summary.

In the event of the specified date of bid opening being declared a holiday for the Purchaser, the bids will be opened at the appointed time and location on the next working day.

- 25.2 The electronic summary of the bid opening will be generated and uploaded online. The Purchaser will also prepare minutes of the Bid opening, including the information disclosed and upload the same for viewing online. Only Technical Parts of Bids, alternative bids - Technical Parts if permitted in ITB 13 that are opened at Bid opening shall be considered further for evaluation.

## **E. Evaluation of Bids – General Provisions**

- 26 Confidentiality** 26.1 Information relating to the examination, evaluation, comparison, and post-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 Contract Award is communicated to all Bidders in accordance with ITB 42.
- 26.2 Any effort by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and post-qualification of the bids or contract award decisions may result in the rejection of its Bid.
- 26.3 Notwithstanding ITB Sub-Clause 26.2, from the time of bid opening 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.
- 27 Clarification of Bids** 27.1 To assist in the examination, evaluation, comparison of the bids and post-qualification of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder in respect to its Bid, 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, including any voluntary increase or decrease, 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 bids, in accordance with ITB Clause 35.
- 27.2 If a Bidder does not provide clarifications of its bid by the date and time set in the Purchaser's request for clarification, its bid maybe rejected.

- 28 Deviations, Reservations, Omissions**
- 28.1 During the evaluation of bids, the following definitions apply:
- (a) “Deviation” is a departure from the requirements specified in the Bidding Documents;
  - (b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and
  - (c) “Omission” is the failure to submit part or all of the information or documentation required in the Bidding Documents.
- 29 Nonconformities, Errors and Omissions**
- 29.1 Provided that a Bid is substantially responsive, the Purchaser may waive any nonconformities or omissions in the Bid which do not constitute a material deviation, reservation or omission.
- 29.2 Provided that a 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 Bid related to documentation requirements. Such omission shall not be related to any aspect of the price or substance of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.
- 29.3** Provided that a Bid is substantially responsive, the Purchaser shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified **in the BDS.**

### **G. Evaluation of Technical Parts of Bids**

- 30 Evaluation of Technical Parts**
- 30.1 In evaluating the Technical Parts of each Bid, the Purchaser shall use the criteria and methodologies listed in ITB 31, ITB 32, and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted.
- 31 Determination of Responsiveness**
- 31.1 The Purchaser’s determination of a bid’s responsiveness is to be based on the contents of the bid itself as defined in ITB 11.
- 31.2 A substantially responsive Bid is one that meets the requirements of the Bidding Documents 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 the Contract; or
- (ii) limit in any substantial way, inconsistent with the Bidding Documents, 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 bids.

31.2.1 Bids from Agents, without proper authorization from the manufacturer as per Section IV, shall be treated as non-responsive.

31.3.1 The Purchaser shall examine the bids to confirm that all documents and technical documentation requested in ITB Clause 11 have been provided, and to determine the completeness of each document submitted.

31.3.2 The Purchaser shall examine the bid to confirm that the Bidder has accepted all terms and conditions specified in GCC and the SCC without material deviations or reservations. Deviations from or objections or reservations to critical provisions such as those concerning Performance Security (GCC Clause 18), Warranty (GCC Clause 28), Force Majeure (Clause 32), Limitation of liability (GCC Clause 30), Governing law (GCC Clause 9) and Taxes & Duties (GCC Clause 17) will be deemed to be a material deviation. The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

31.4 If a bid is not substantially responsive to the Bidding Documents, 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.

## **32 Qualification of the Bidders**

32.1 The Purchaser shall determine, to its satisfaction, whether all eligible Bidders, whose Bids have been determined to be substantially responsive to the bidding document, meet the Qualification Criteria specified in Section III, Evaluation and Qualification Criteria.

32.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17. The determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates,

associates (other than specialized associates if permitted in the bidding document), or any other firm(s) different from the Bidder.

- 32.3 If a Bidder does not meet the qualifying criteria specified in Section III, Evaluation and Qualification Criteria, its Bid shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.
- 32.4 Only Bids that are both substantially responsive to the bidding document, and meet all Qualification Criteria shall have the Financial Parts of their Bids opened at the second public opening

### **H. Public Opening of Financial Parts of Bids**

#### **33 Public Opening of Financial**

- 33.1 Following the completion of the evaluation of the Technical Parts of the Bids, and the Bank has issued its no objection (if Parts applicable), the Purchaser shall notify in writing those Bidders who have failed to meet the Qualification Criteria and/or whose Bids were considered non-responsive to the requirements in the bidding document, advising them of the following information:
- (a) their Technical Part of Bid failed to meet the requirements of the bidding document;
  - (b) their Financial Part of the Bid shall not be opened; and
  - (c) notify them of the date and time for public opening of the Financial Parts of the Bids. Financial Parts of the bids shall not be opened earlier than seven (7) days from the communication of technical evaluation results to the bidders.
- 33.2 The Purchaser shall, simultaneously, notify in writing those Bidders whose Technical Parts have been evaluated as substantially responsive to the bidding document and met the Qualification Criteria, advising them of the following information:
- (a) their Bid has been evaluated as substantially responsive to the bidding document and met the Qualification Criteria;
  - (b) their Financial Part of Bid will be opened at the public opening of Financial Parts;
  - (c) notify them of the date and time of the second public opening of the Financial Parts of the Bids, as **specified in the BDS**.

33.3 The opening date should allow Bidders sufficient time to make arrangements for attending the opening. The Financial Part of the Bid shall be opened publicly in the presence of Bidders' designated representatives and anyone who chooses to attend, and this could also be viewed by the bidders online. The bidder's names, the Bid prices, the total amount of each bid, including any discounts and Alternative Bid – Financial Part, and such other details as the Purchaser may consider appropriate will be notified online by the Purchaser at the time of bid opening.

In the event of the specified date of bid opening being declared a holiday for the Purchaser, the bids will be opened at the appointed time and location on the next working day.

33.4 The electronic summary of the bid opening will be generated and uploaded online. The Purchaser will also prepare minutes of the Bid opening, including the information disclosed and upload the same for viewing online. Only Financial Part of Bids, Financial Parts of Alternative Bids and discounts that are opened and read out at Bid opening shall be considered further for evaluation.

## **I. Evaluation of Financial Parts of Bids**

### **34 Evaluation of Financial Parts**

34.1 To evaluate the Financial Part of each Bid, the Purchaser shall consider the following:

- (a) evaluation will be done for Items or Lots (contract), as specified **in the BDS**; and the Bid Price as quoted in accordance with ITB 14;
- (b) Not used;
- (c) price adjustment due to discounts offered in accordance with ITB 14.4;
- (d) Not used;
- (e) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 29.3; and
- (f) the additional evaluation factors specified in Section III, Evaluation and Qualification Criteria.

34.2 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.

34.3 If this bidding document allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest

evaluated cost of the lot (contract) combinations, including any discounts offered in the Letter of Bid - Financial Part, is specified in Section III, Evaluation and Qualification Criteria.

34.4 The Purchaser's evaluation of a Bid will exclude and not take into account:

- (a) in the case of Goods manufactured in India or goods of foreign origin already located in India, GST and other similar taxes, which will be payable on the goods if a contract is awarded to the Bidder;
- (b) Not used;
- (c) any allowance for price adjustment during the period of execution of the contract, if provided in the Bid.

34.5 The Purchaser's evaluation of a Bid may require the consideration of other factors, in addition to the Bid price quoted in accordance with ITB 14. These factors may be related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services. The effect of the factors selected, if any, shall be expressed in monetary terms to facilitate comparison of Bids, unless otherwise specified **in the BDS** from amongst those set out in Section III, Evaluation and Qualification Criteria. The criteria and methodologies to be used shall be as specified in ITB 34.1 (f).

**35 Correction of  
Arithmetical  
Errors**

35.1 The e-procurement system automatically calculates the total amount from unit rates and quantities and the system also automatically populates the amount in words from the amount in figures and therefore there is no scope of discrepancy and need for arithmetic correction.

**36 Conversion  
to Single  
Currency**

36.1 Not applicable.

**37 Margin of  
Domestic  
Preference**

37.1 Not applicable.

**38 Comparison  
Financial  
Parts**

38.1 The Purchaser shall compare the evaluated prices of all of substantially responsive bids to determine the lowest-evaluated bid, in accordance with ITB Clause 34.



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| <b>39 Purchaser's Right to Accept Any Bid, and to or All Bids</b> | 39.1 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 <b>Reject Any</b> In case of annulment, all documents submitted and specifically, bid securities, shall be promptly returned to the Bidders. |
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## J. Award of Contract

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| <b>40 Award Criteria</b>  | 40.1 Subject to ITB 39.1, the Purchaser shall award the Contract to the Bidder whose bid has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Documents, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.  |
| <b>41 Purchaser's Right to Vary Quantities at Time of Award</b> | 41.1 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 VII, Schedule of Requirements, provided this does not exceed the percentages <b>specified in the BDS</b> , and without any change in the unit prices or other terms and conditions of the bid and the Bidding Documents.  |
| <b>42 Notification of Award/<br/>Publication of Award</b>       | 42.1 Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been The notification letter (hereinafter called "Letter of Acceptance") shall specify the sum that the purchaser will pay in consideration of the supply of Goods (hereinafter called "the Contract Price").<br><br>42.2 At the same time the Purchaser shall publish in a National website (GOI web site- <a href="http://tenders.gov.in">http://tenders.gov.in</a> or GoI Central Public Procurement Portal <a href="https://eprocure.gov.in/cppp/">https://eprocure.gov.in/cppp/</a> ) or on the Purchaser's website with free access if available, or in the official gazette, 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 successful Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. |
| <b>Recourse to Unsuccessful Bidders</b>                         | 42.3 The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after Publication of contract award, requests in writing the grounds on which its bid was not selected.<br><br>42.4 Until a formal Contract is prepared and executed, the notification of award shall constitute a binding Contract.   |

42.5 Upon the successful Bidder's furnishing of the performance security and signing the Contract Form pursuant to ITB Clause 43, the Purchaser will promptly notify each unsuccessful Bidder and will discharge its bid security, pursuant to ITB Clause 19.5

**43 Signing of Contract**

43.1 Promptly after notification, the Purchaser shall send the successful Bidder the Contract Agreement.

43.2 Within twenty-one (21) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.

**44 Performance Security**

44.1 Within twenty one (21) days of the receipt of notification of award from the Purchaser, the successful Bidder, if required, shall furnish the Performance Security in accordance with the GCC, using for that purpose the Performance Security Form included in Section X Contract forms, or another Form acceptable to the Purchaser. Failure of the successful Bidder to submit the above- mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder, whose bid is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.

## SECTION II - BIDDING DATA SHEET

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

ITB Clause Reference	A. General
ITB 1.1	The Purchaser is: Inland Waterways Authority of India, Ministry of Ports, Shipping & Waterways (MoPSW), Government of India (GoI)
ITB 1.1	<p>The name and identification number of the NCB is: Supply of Life-Saving Appliances, Fire Fighting Appliances, Labs/ Workshops Equipment at National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar</p> <p>Estimated cost: INR 2.26 Cr+ GST</p> <p>Identification number: IN-IWAI-493444-GO-RFB</p> <p>The number, identification and names of the lots (contract) comprising this NCB are: Not Applicable</p>
ITB 1.2(a)	The Purchaser shall use the electronic-procurement system specified in Bid Data Sheet ITB 7.1 to manage this Bidding process.
ITB 2.1	<p>The Borrower is Government of India</p> <p>Loan or Financing Agreement Amount: US \$ 691.61 Million</p>
ITB 2.1	The name of the Project is: Capacity Augmentation of National Waterway-1 (Jal Marg Vikas Project (JMVP))
ITB 4.4	A list of firms debarred from participating in World Bank projects is available at <a href="http://www.worldbank.org/debarr">http://www.worldbank.org/debarr</a>
ITB 6.3	<p><b>An on-line pre-proposal conference will be held:</b> Yes. Meeting link</p> <p><a href="https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZTNkNTNkYTktZGVmOC00MGQxLTgwMTAtYjU4YTU3Y2IyZTZk%40thread.v2/0?context=%7b%22Tid%22%3a%22c4d675de-e1da-4ab4-ac52-3299a6812ab9%22%2c%22Oid%22%3a%22823c1ccb-6a8f-4855-9dc6-45316b8dcd88%22%7d">https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZTNkNTNkYTktZGVmOC00MGQxLTgwMTAtYjU4YTU3Y2IyZTZk%40thread.v2/0?context=%7b%22Tid%22%3a%22c4d675de-e1da-4ab4-ac52-3299a6812ab9%22%2c%22Oid%22%3a%22823c1ccb-6a8f-4855-9dc6-45316b8dcd88%22%7d</a></p> <p>Bidders willing to attend the pre-bid meeting should inform the Purchaser beforehand in writing and email. The maximum number of participants, who</p>

	<p>chose to attend the pre-bid meeting, shall not be more than two per bidder. The representatives attending the pre-bid meeting must submit an authority letter duly signed by the authorized signatory of his/her organization permitting the representatives to attend the pre-bid meeting on behalf of the respective Bidder.</p> <p>Date of pre-bid meeting: 10.06.2025</p> <p>Time: 1500 Hours</p> <p>Address: IWAI, A-13, Sector-1, Noida-201301, Uttar Pradesh, India</p> <p>Telephone: 0120-2544004 Facsimile: 0120-2543976</p> <p>E-mail: <a href="mailto:vc.iwai@nic.in">vc.iwai@nic.in</a></p> <p>Contact person/meeting coordinator: Vice Chairman and Project Director, JMVP</p>
	<b>B. Contents of Bidding Documents</b>
<b>ITB 7.1</b>	<p><b>Electronic – Procurement System</b></p> <p>The Purchaser shall use the following electronic-procurement system to manage this Bidding process: <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a></p>
<b>ITB 8.1</b>	<p>The addendum will appear on the e-procurement system under <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a> and email notification is also automatically sent to those bidders who have started working on this tender.</p>
	<b>C. Preparation of Bids</b>
<b>ITB 11.2(j)</b>	<p>The Bidder shall submit the following additional documents in its bid – Technical Part: Nil</p>
<b>ITB 11.3(d)</b>	<p>The Bidder shall submit the following additional documents in its bid – Financial Part: Nil</p>
<b>ITB 12</b>	<p><b>Note for Bidders:</b> Bidders have to submit the bids on the e-procurement portal along with the relevant required documents. For this purpose, the bidders shall fill up online, the forms that are available for online filling on the e-portal. The rest of the forms shall be downloaded by the bidders and filled up. The filled-up pages shall then be scanned and uploaded on the e-procurement portal along with the scanned copies of the supporting documents.</p>
<b>ITB 12.3</b>	<p>For submission of original documents, the Purchaser's address is:</p> <p>Attention: Vice Chairman &amp; Project Director, JMVP</p> <p>Street Address: A-13, Sector-1</p> <p>City: Noida</p> <p>PIN/Postal Code: 201301</p> <p>Country: India</p>
<b>ITB 13.1</b>	<p>Alternative Bids shall not be considered.</p>

<b>ITB 14.5</b>	The prices quoted by the bidder shall not be subject to adjustment during the performance of the Contract. If prices shall be adjustable, the methodology specified in Special Conditions of Contract will apply.
<b>ITB 14.7</b>	The Incoterms edition is Incoterms 2010.
<b>ITB 14.8 (a) (iii)</b>	Final destination (Project Site): National Inland Navigation Institute (NINI), Gaighat, Patna
<b>ITB 16.4</b>	Period of time the Goods are expected to be functioning: 1 Year or warranty provided by the Original Equipment Manufacturer OEM), as applicable.
<b>ITB 17.2 (b) (i)</b>	Manufacturer's authorization is required as per proforma in Section IV
<b>ITB 17.2 (b) (iii)</b>	After sales service is required which shall be provided by the Supplier
<b>ITB 18.1</b>	The bid validity period shall be 120 days.
<b>ITB 18.3(a)</b>	The factor will be 6.01% per annum
<b>ITB 19.1</b>	Bid shall include a Bid Security (issued by bank) included in Section IV Bidding Forms.
<b>ITB 19.3</b>	The amount of the Bid Security shall be: Rs 4,52,000/- ( <b>Rupees Four Lakhs Fifty-Two Thousand Only</b> ).
<b>ITB 19.3 (a)</b>	None
<b>ITB 19.9</b>	Deleted
<b>ITB 20.2</b>	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: Legally valid Power of Attorney is required to demonstrate the authority of the signatory to sign the Bid supported by a Board Resolution
	<b>D. Online Submission and Opening of Bids</b>
<b>ITB 21.1</b>	Class of DSC required is: IIInd /IIIrd
<b>ITB 21.2</b>	Deleted
<b>ITB 22.1</b>	The deadline for uploading of bids is: Date: 01.07.2025 Time: 1500 Hours
<b>ITB 24.1</b>	Re-submission of the bid is not allowed, if withdrawn.

	<b>E. Public Opening of Technical Parts of Bids</b>
<b>ITB 25.1</b>	<p>The online opening of the Technical Parts of Bids shall take place at:  Street Address: IWAI, A-13, Sector-1  City: Noida Country: India  Date: <b>01.07.2025</b>, Time: 1530 Hrs</p> <p>The Bidders shall submit their bids electronically on CPP Portal <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a>.</p> <p>The electronic submission procedures shall be:  The Bidder shall upload the bid on the e-Procurement portal <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a> following the system described below.</p> <ol style="list-style-type: none"> <li>1. Possession of valid Digital Signature Certificate (DSC) and enrollment / registration of the suppliers / bidders on the eProcurement portal is a prerequisite for e-tendering.</li> <li>2. Bidder should do the enrollment in the eProcurement site using the <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a> option available on the home page. Portal enrollment is generally free of charge. During enrollment / registration, the bidders should provide the correct / true information including valid email_id. All the correspondence shall be made directly with the suppliers/bidders through email_id provided.</li> <li>3. Bidders need to login to the site through their user id / password chosen during enrollment / registration.</li> <li>4. Then the Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by SIFY / TCS / nCode / eMudra or any certifying purchaser recognized by CCA India on eToken / SmartCard, should be registered.</li> <li>5. The DSC that is registered only, should be used by the bidder and should ensure safety of the same.</li> <li>6. Bidder may go through the bid documents published on the site and download the required bid documents / schedules for the tenders he / she is interested.</li> <li>7. After downloading / getting the bid document / schedules, the bidder should go through' them carefully and then submit the documents as asked.</li> <li>8. If there are any clarifications, this may be obtained online through' the tender site, or through the contact details. Bidder should take into account of the amendment published before submitting the bids online.</li> </ol>

	<ol style="list-style-type: none"> <li>9. Bidder then logs in to the site through the secured log in by giving the user id/ password chosen during enrolment / registration and then by giving the password of the eToken / SmartCard to access DSC.</li> <li>10. Bidder selects the tender which he/she is interested in by using the search option &amp; then moves it to the 'my favourites' folder.</li> <li>11. From my favourites folder, bidder can select the tender to view all the details indicated.</li> <li>12. It is construed that the bidder has read all the terms and conditions before submitting their offer. Bidder should go through the tender schedules carefully and upload the documents as asked, otherwise, the bid will be rejected.</li> <li>13. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / xls / rar / jpg / dwf formats. If there is more than one document, they can be clubbed together and can be provided in the requested format. Each document to be uploaded through online for the tenders should be less than 2 MB. If any document is more than 2MB, it can be reduced through zip / rar and the same can be uploaded, if permitted.</li> <li>14. If there are any clarifications, this may be obtained through the site, or during the pre-bid meeting (if any). Bidder should take into account the corrigendum published from time to time before submitting the online bids.</li> <li>15. The bidders can update well in advance, the documents such as certificates, annual report details etc., under My Space option and these can be selected as per tender requirements and then send along with bid documents during bid submission. This will facilitate the bid submission process faster by reducing upload time of bids.</li> <li>16. Bidder should submit the price of bidding document/ Bid Security as specified in the bid document. The original payment instruments should be posted/couriered/given in person to the Purchaser within the due date as mentioned in this bid document. Scanned copy of the instrument should be uploaded as part of the offer, if asked for.</li> <li>17. While submitting the bids online, the bidder reads the terms &amp; conditions and accepts the same to proceed further to submit the bid packets.</li> <li>18. The bidder has to select the payment option as offline to pay the price of bidding document/ Bid Security as applicable and enter details of the instruments.</li> <li>19. The details of the DD / any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise submitted bid will not be acceptable.</li> <li>20. The bidder has to digitally sign and upload the required bid documents one by one as indicated. Bidders to note that the very act of using DSC for downloading the bids and uploading their offers shall be deemed to be a confirmation that they have read all sections and pages of the bid document including GCC without any exception and have understood the entire</li> </ol>
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	<p>document and are clear about the requirements of the tender requirements.</p> <ol style="list-style-type: none"> <li>21. The bidder has to upload the relevant files required as indicated in the cover content. In case of any irrelevant files, the bid will be rejected.</li> <li>22. If the price bid format is provided in a spread sheet file like BoQ_XXXX.xls, the rates offered should be entered in the allotted space only and uploaded after filling the relevant columns. The Price Bid/BOQ template must not be modified / replaced by the bidder, else the bid submitted is liable to be rejected for this tender.</li> <li>23. The bidders are requested to submit the bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date &amp; time (as per Server System Clock). The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders at the eleventh hour.</li> <li>24. After the bid submission, the acknowledgement number, given by the e-tendering system should be printed by the bidder and kept as a record of evidence for online submission of bid for the particular tender and will also act as an entry pass to participate in the bid opening date.</li> <li>25. The bidder should ensure / see that the bid documents submitted should be free from virus and if the documents could not be opened, due to virus, during tender opening, the bid is likely / liable to be rejected.</li> <li>26. The time settings fixed in the server side &amp; displayed at the top of the tender site, will be valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system. The bidders should follow this time during bid submission.</li> <li>27. All the data being entered by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered will not be viewable by unauthorized persons during bid submission &amp; not be viewable by any one until the time of bid opening.</li> <li>28. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.</li> <li>29. The confidentiality of the bids is maintained since the secured Socket Layer 128 bit encryption technology is used. Data storage encryption of sensitive fields is done.</li> <li>30. The bidder should logout of the tendering system using the normal logout option available at the top right hand corner and not by selecting the (X) exit option in the browser.</li> <li>31. For any queries regarding e-tendering process, the bidders are requested to contact through the modes given below:</li> </ol> <p>E-mail:- <a href="mailto:vc.iwai@nic.in">vc.iwai@nic.in</a></p>
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	<p>Web Site:- <a href="http://www.iwai.gov.in">www.iwai.gov.in</a></p> <p>Tel. No.: 0120- 2544004, Fax No. – 0120-2543976</p> <p>In person: Vice Chairman &amp; Project Director, JMVP</p> <p>Facsimile: +91 1202543976</p> <p>In case of non-receipt of these original documents, the bid will be declared non-responsive.</p>
	<b>F. Evaluation of Bids – General Provisions</b>
<b>ITB 29.3</b>	The adjustment shall be based on the highest price of the item or component as quoted in other substantially responsive Bids, subject to a maximum of the estimated price of the item. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Purchaser shall use its best estimate.
	<b>H. Public Opening of Financial Parts of Bids</b>
<b>ITB 33.2 (c)</b>	<p>Following the completion of the evaluation of the Technical Parts of the Bids, the Purchaser will notify all Bidders of the date and time of the public opening of Financial Parts.</p> <p>The online opening of the Financial Parts of bids (for technically qualified bidders) shall take place at:</p> <p>Address: IWAI, A-13, Sector-1</p> <p>City: Noida</p> <p>Country: India</p> <p>Date: To be intimated later</p> <p>Time: To be intimated later</p>
	<b>I. Evaluation and Comparison of Bids</b>
<b>ITB 34.1(a)</b>	<p>Technical Bids will be evaluated as per the evaluation criteria and the financial bid of the technically qualified bidders will be finalized on the basis of L-1 quote.</p> <p>The total amount (Supply, installation, testing &amp; commissioning i.e Price Schedule- Supply &amp; Services) will be considered during the financial evaluation &amp; identification of lowest (L1) bidder.</p>
<b>ITB 34.3</b>	Not Applicable
<b>ITB 34.5</b>	Not Applicable
	<b>J. Award of Contract</b>
<b>ITB 41.1</b>	<p>The maximum percentage by which quantities may be increased is: 15%</p> <p>The maximum percentage by which quantities may be decreased is: 15%</p>

## **SECTION III. EVALUATION AND QUALIFICATION CRITERIA**

This Section complements the Instructions to Bidders. It contains the criteria that the Purchaser shall use to evaluate a bid and determine whether a Bidder qualifies in accordance with ITB 34 & 36. No other criteria shall be used.

# TECHNICAL PART

## 1. Qualification (ITB 32)

### 1.1 Qualification Criteria (ITB 32.1)

The Purchaser shall assess each Bid against the following Qualification Criteria. Requirements not included in the text below shall not be used in the evaluation of the Bidder's qualifications.

A. The bidder must be a manufacturer & have following qualification:

#### (a) Financial Capability

The Bidder shall furnish documentary evidence that it meets the following financial requirement(s):

##### **Annual Turnover**

Minimum average annual financial turnover during the last three (3) years (2023-24, 2022-23, 2021-22), should be at least:

**Rs 67,80,000/- (Rupees Sixty Seven Lakhs Eighty Thousand Only)**

Bidders shall submit Form FIN 3.2, Section IV: Bidding Forms duly certified by a Statutory Auditor/ Chartered Accountant (CA).

##### **Liquid Assets**

The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the cash flow requirements (Form FIN 3.1 (A), Section IV: Bidding Forms) estimated as **Rs 90,40,000/- (Rupees Ninety Lakhs Forty Thousand Only)** for the subject contract (s) net of the Bidders other commitments.

The Bidders shall also demonstrate, to the satisfaction of the Purchaser, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

The audited balance sheets or, if not required by the laws of the Bidder's country, other financial statements acceptable to the Purchaser, for the last three (3) years shall be submitted and must demonstrate the current soundness of the Bidder's financial position and indicate its prospective long-term profitability

#### (b) Experience and Technical Capacity

The Bidder shall furnish documentary evidence of Supply & Commissioning to demonstrate that it meets the following experience requirement(s):

1. 3 similar completed services each costing not less than the amount equal to Rs 91 Lakhs each.  
or
2. 2 similar completed services each costing not less than the amount equal to Rs 113 Lakh each.  
or
3. 1 similar completed service costing not less than the amount equal to Rs 181 Lakhs.

“Similar items” means Labs/ Workshops Equipment related to any Maritime Institute.”

The escalation factor of 7% per year based on rupee value to bring them at the price level of the financial year in which bids are received is allowed. Accordingly, adjustment of Escalation factor (for the cost of works completed during last five (5) years will be considered as One year-1.070; Two year-1.145; Three year 1.225; four year 1.311; Five year 1.403

Note: The Bidder shall furnish documentary evidence viz. Work orders, completion certificates etc on client letterhead to demonstrate that the Goods it offers meet the usage requirement. The Bidder must furnish details of supplies made by him in the last five years in proforma attached in Section IV.

# **FINANCIAL PART**

## **1. Margin of Preference (ITB 37) – Not Applicable**

## **2. Evaluation (ITB 30, 31, and 34)**

### **2.1 Evaluation Criteria (ITB 34.5)**

The Purchaser shall use the criteria and methodologies listed in this Section to evaluate Bids. By applying the criteria and methodologies, the Purchaser shall determine the substantially responsive lowest-evaluated bid.

- (a) Cost of major replacement components, mandatory spare parts, and service – Not Applicable
- (b) Availability in the Purchaser's Country of spare parts and after sales services for equipment offered in the bid – Not Applicable
- (c) Projected operating and maintenance costs - Not Applicable
- (d) Performance and productivity of the equipment – Not Applicable
- (e) Specific additional criteria – Not Applicable

### **2.2 Multiple Contracts (ITB 34.3) – Not Applicable**

## **SECTION IV – BIDDING FORMS**

## 1A. LETTER OF BID – TECHNICAL PART

*The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and address.*

***Note: All italicized text is for use in preparing these forms and shall be deleted from the final products.***

*No alterations to the text except as provided in ITB 20.2, shall be permitted and no substitutions shall be accepted except as provided in ITB 12.]*

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

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

Invitation for Bid No.: *[insert No of IFB]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda No. issued in accordance with ITB 8: *[insert the number and issuing date of each Addenda]*;
- (b) We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;
- (c) We have not been suspended nor declared ineligible by the Purchaser based on execution of a Bid Securing Declaration in the Purchaser's country in accordance with ITB 4.6;
- (d) We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods and Related Services ***[insert a brief description of the Goods and Related Services]***;
- (e) Our bid shall be valid for the period of time specified in ITB Sub-Clause 18.1, from the date fixed for the bid submission deadline in accordance with ITB Sub-Clause 22, 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 accordance with the Bidding Documents;
- (g) We are not participating, as a Bidder or as an associate, in more than one bid in this bidding process in accordance with ITB 4.2(e), other than alternative bids submitted in accordance with ITB 13;

- (h) We, along with any of our associates, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Purchaser's Country laws or official regulations or pursuant to a decision of the United Nations Security Council;
- (i) We are not a government owned entity/ We are a government owned entity but meet the requirements of ITB 4.5;<sup>1</sup>
- (j) 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;
- (k) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive;
- (l) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption; and
- (m) We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely, "Prevention of Corruption Act 1988."

Name of the Bidder ***[insert complete name of person signing the Bid]***

Name of the person duly authorized to sign the Bid on behalf of the Bidder\*\* ***[insert complete name of person duly authorized to sign the Bid]***

Title of the person signing the Bid ***[insert complete title of the person signing the Bid]***

Signature of the person named above ***[insert signature of person whose name and capacity are shown above]***

Date signed ***[insert date of signing]*** day of ***[insert month]***, ***[insert year]***

\*\* : Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid Schedules.

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<sup>1</sup> Bidder to use as appropriate



## 1B. LETTER OF BID - FINANCIAL PART

*The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and address.*

***Note: All italicized text is for use in preparing these forms and shall be deleted from the final products.***

*No alterations to the text except as provided in ITB 20.2, shall be permitted and no substitutions shall be accepted except as provided in ITB 12.]*

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

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

Invitation for Bid No.: *[insert No of IFB]*

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

We, the undersigned Bidder, hereby submit the second part of our Bid, the Financial Part. In submitting our Financial Part we make the following additional declarations:

- (a) Our bid shall be valid for the period of time specified in ITB Sub-Clause 18.1, from the date fixed for the bid submission deadline in accordance with ITB Sub-Clause 22, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (b) The total price of our Bid, excluding any discounts offered in item (c) below, is:

In case of only one lot, total price of the Bid ***[insert the total price of the bid in words and figures]***;

~~In case of multiple lots, total price of each lot ***[insert the total price of each lot in words and figures]***;~~

~~In case of multiple lots, total price of all lots (sum of all lots) ***[insert the total price of all lots in words and figures]***;~~

- (c) The discounts offered and the methodology for their application are:
  - (i) The discounts offered are: ***[Specify in detail each discount offered.]***
  - (ii) The exact method of calculations to determine the net price after application of discounts is shown below: ***[Specify in detail the method that shall be used to apply the discounts]; Discounts.***
- (d) 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: *[insert complete name of each*

*Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*

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

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

- (e) 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.

Name of the Bidder ***[insert complete name of person signing the Bid]***

Name of the person duly authorized to sign the Bid on behalf of the Bidder\*\* ***[insert complete name of person duly authorized to sign the Bid]***

Title of the person signing the Bid ***[insert complete title of the person signing the Bid]***

Signature of the person named above ***[insert signature of person whose name and capacity are shown above]***

Date signed ***[insert date of signing]*** day of ***[insert month]***, ***[insert year]***

\*\* : Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid Schedules.

## 2. BIDDER INFORMATION FORM

*[The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]*

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

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

Page \_\_\_\_\_ of \_\_\_\_\_ pages

1. Bidder's Legal Name: <i>[insert Bidder's legal name]</i>
2. Bidder's actual or intended Country of Registration: <i>[insert actual or intended Country of Registration]</i>
3. Bidder's Year of Registration: <i>[insert Bidder's year of registration]</i>
4. Bidder's Legal Address in Country of Registration: <i>[insert Bidder's legal address in country of registration]</i>
5. Bidder's Authorized Representative Information  Name: <i>[insert Authorized Representative's name]</i> Address: <i>[insert Authorized Representative's Address]</i> Telephone/Fax numbers: <i>[insert Authorized Representative's telephone/fax numbers]</i> Email Address: <i>[insert Authorized Representative's email address]</i>
6. Attached are copies of original documents of: <i>[check the box(es) of the attached original documents]</i>  <input type="checkbox"/> Articles of Incorporation or Registration of firm named in 1, above, in accordance with ITB Sub-Clauses 4.3.  <input type="checkbox"/> In case of government owned entity from the Purchaser's country, documents establishing legal and financial autonomy and compliance with commercial law and not dependent agency of borrower or sub-borrower or purchaser, in accordance with ITB Sub-Clause 4.5.  <input type="checkbox"/> Included are the organizational chart ,a list of Board of Directors, and the beneficial ownership

## Appendix to Technical Part

### Financial Situation

#### FORMAT 3.1 Historical Financial Performances

Bidder's Legal Name: \_\_\_\_\_

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

Bidding No.: \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_ pages

To be completed by the Bidder

SUMMARY OF FINANCIAL STATEMENTS								
Name of bidder: _____								
(Equivalent Rs. Million)								
S. No.	Financial Information in Rupee equivalent with exchange rate at the end of concerned year	Actuals for Previous five years excluding the current financial year					Ref. of Page Nos. of Balance Sheets	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
1.	Total Assets							
2.	Total Turnover							
3.	Current Assets							
4.	Current Assets + Loan & Advances							
5.	Total Liabilities							
6.	Current Liabilities							
7.	Current liabilities & provision							
8.	Profit before Interest and Tax							
9.	Profit before Tax							
10.	Profit after Tax							
11.	Shareholder's Funds (Net Worth)=(Paid up equity +Reserves)-(revaluation reserves + Miscellaneous expenditure not written off)							
12.	Depreciation Current Ration (2)/(5)							
13.	Net cash accruals= Profit after Tax + depreciation							
14.								

This information should be extracted from the Annual Financial Statements/ Balance sheets, which should be enclosed. Year 1 will be the latest year for which audited financial statements are available.

Year 2 shall be the year immediately preceding year 1 and year 3 shall be the year immediately preceding Year 2.
--

## **2. Financial documents**

The Bidder and its parties shall provide copies of the balance sheets and/or financial statements for last five years pursuant Section III, Qualifications Criteria and Requirements, Sub-factor 1.1 (A) (a). The financial statements shall:

- (a) reflect the financial situation of the Bidder, and not sister or parent companies.
- (b) be audited by a certified Chartered Accountant.
- (c) be complete, including all notes to the financial statements.
- (d) Correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).
- (e) Attached are copies of financial statements (balance sheets, including all related notes, and income statements) for the last five years required above; and complying with the requirements (If the most recent set of financial statements is for a period earlier than 12 months from the date of bid, the reason for this should be justified)

Attached is a copy of certificate given from the commercial bank assuring cash flow (working capital for contracting) in the format attached.

## **Appendix to Technical Part**

### **FORM FIN – 3.1(A)**

#### **FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CASH FLOW**

[To be given from a Nationalized or Scheduled Bank in India]

#### **Clause 1.1(A)(a) of Section III – Qualification Criteria**

#### **(1) AVAILABILITY OF CASH FLOW (WORKING CAPITAL)**

This is to certify that M/s. \_\_\_\_\_ is a reputed company with a good financial standing.

If the Contract for the Supply of Goods, namely \_\_\_\_\_  
\_\_\_\_\_ [funded by the World Bank] is awarded to the above firm,  
we shall be able to provide overdraft/credit facilities to the extent of Rs. \_\_\_\_\_ to meet  
their capital requirements for executing the above Contract.

-- Sd. --

Name of Bank Manager

Senior Bank Manager

Address of the Bank

## Appendix to Technical Part

### Form FIN - 3.2

#### Annual Turnover

*[The following table shall be filled in for the Bidder]*

Bidder's Legal Name: *[insert full name]*

Date: *[insert day, month, year]*

NCB No. and title: *[insert NCB number and title]*

Page *[insert page number]* of *[insert total number]* pages

Annual turnover data*		
Year	Amount in Rupees	
<i>[indicate year]</i>	<i>[insert amount]</i>	

\* *Annual turnover calculated as total certified payments received for work in progress or completed, for last 3 years specified in Section III, Qualification Criteria and Requirements, Sub-Factor 1.1 (A) (a). This should be certified by a Statutory Auditor/ Chartered Accountant.*

# Price Schedule Forms

*[The Bidder shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the **Price Schedules** shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements.]*



# 1. PRICE SCHEDULE FOR SUPPLY AS PER SCHEDULE OF REQUIREMENTS

Prices in Rs									Date: _____
									NCB No: _____
									Alternative No: _____
									Page No _____ of _____
1	2	3	4	5	6	7	8	9	10
Line Item No	Description of Goods	Country of Origin	Delivery Date	Quantity and physical unit	Unit price EXW [including GST and other taxes if any]	Total EXW price	Price per line item for inland transportation, insurance and other services required to convey the Goods to their final destination (ITB 14.8 (a)(iii))	GST and other taxes payable per item if Supply is awarded (in accordance with ITB 14.8(a)(ii))	Total Price per line item (Col. 7+8)
						per line item			
						[including GST and other taxes if any] (Col. 5×6)			
1.	Supply of Life-Saving Appliances, Fire Fighting Appliances, Labs/ Workshops Equipment at National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar including installation, testing and commissioning		6 Months						
1.1	Mechanic Diesel Workshop			LS					
1.2	Electric Workshop			LS					
1.3	Hydraulics Lab			LS					
1.4	Pneumatics Lab			LS					
1.5	Marine Fitter Workshop			LS					
1.6	Navigation and meteorology Lab			LS					
1.7	Hot Work (Welding) Workshop			LS					
1.8	Plumber Workshop			LS					
1.9	Carpenter Workshop			LS					

Prices in Rs								Date: _____	
								NCB No: _____	
								Alternative No: _____	
								Page No _____ of _____	
1	2	3	4	5	6	7	8	9	10
Line Item  No	Description of Goods	Country of Origin	Delivery Date	Quantity and physical unit	Unit price EXW [including GST and other taxes if any]	Total EXW price per line item [including GST and other taxes if any] (Col. 5×6)	Price per line item for inland transportation, insurance and other services required to convey the Goods to their final destination (ITB 14.8 (a)(iii))	GST and other taxes payable per item if Supply is awarded (in accordance with ITB 14.8(a)(ii))	Total Price per line item  (Col. 7+8)
1.10	Stability and ship models			LS					
1.11	Seamanship Laboratory			LS					
1.12	LSA and FFA			LS					
	Total Amount Rs								

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

*Note: (a) The bidder shall give list of spares for 2 years operation (or as required for the period specified in the evaluation criteria) separately indicating description, quantity, unit price and total price in the above format, - (for those items whose scope of supply includes spare parts as per technical specification).*

## 2. PRICE AND COMPLETION SCHEDULE - RELATED SERVICES

Prices in Rs						Date: _____
						NCB No: _____
						Alternative No: _____
						Page N° _____ of _____
1	2	3	4	5	6	7
Service N°	Description of Services	Country of Origin	Delivery Date at place of Final destination	Quantity and physical unit	Unit price	Total Price per Service (Col. 5*6)
1						
<b>Total Bid Price Rs</b>						

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

Note: The total amount (Supply, Installation, Testing & Commissioning- Price schedule supply & services) will be considered during the financial evaluation & identification of Lowest (L1) bidder.

## F. Forms of Bid Security

### Form of Bid Security - Bank Guarantee

*[Guarantor letterhead or SWIFT identifier code]*

Bank Guarantee No..... *[insert guarantee reference number]*

Date..... *[insert date of issue of the guarantee]*

WHEREAS, \_\_\_\_\_ *[name of Bidder]* (hereinafter called "the Applicant") has submitted his Bid dated \_\_\_\_\_ *[date]* or will submit his Bid for the supply of \_\_\_\_\_ *[name of Contract]* (hereinafter called "the Bid") under Invitation for Bids No..... *[insert number]* (hereinafter called "the IFB")

KNOW ALL PEOPLE by these presents that We \_\_\_\_\_ *[name of bank]* of \_\_\_\_\_ *[name of country]* having our registered office at \_\_\_\_\_ (hereinafter called "the Bank") are bound unto \_\_\_\_\_ *[name of Purchaser]* (hereinafter called "the Purchaser") in the sum of \_\_\_\_\_<sup>2</sup> for which payment well and truly to be made to the said Purchaser the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

THE CONDITIONS of this obligation are:

- (1) If after Bid opening the Applicant (a) withdraws his bid during the period of Bid validity specified in the Letter of Bid; or (b) does not accept the correction of the Bid Price pursuant to ITB 35;

or

- (2) If the Applicant having been notified of the acceptance of his bid by the Purchaser during the period of Bid validity:
  - (a) fails or refuses to execute the Contract in accordance with the Instructions to Bidders, if required; or
  - (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders.

we undertake to pay to the Purchaser up to the above amount upon receipt of his first written demand, without the Purchaser having to substantiate his demand, provided that in his demand the Purchaser will

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<sup>2</sup> The Applicant should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 19.1 of the Instructions to Bidders.

note that the amount claimed by him is due to him owing to the occurrence of one or any of the four conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date \_\_\_\_\_<sup>3</sup> days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Purchaser, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE \_\_\_\_\_ SIGNATURE OF THE BANK \_\_\_\_\_

WITNESS \_\_\_\_\_ SEAL \_\_\_\_\_

\_\_\_\_\_  
[signature, name, and address]

***Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.***

\_\_\_\_\_  
<sup>3</sup> 45 days after the end of the validity period of the Bid.

## G. MANUFACTURER'S AUTHORIZATION

*[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are legally binding on the Manufacturer. The Bidder shall include it in its bid, if so indicated in the **BDS**.]*

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

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

Alternative No.: *[insert identification No if this is a Bid for an alternative]*

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 against the above IFB.

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

No company or firm or individual other than M/s. \_\_\_\_\_ are authorized to bid, and conclude the Contract for the above goods manufactured by us against this specific IFB. *[This para should be deleted for simple items where manufacturers normally sell the product through different stockists].*

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 Bidder]*

Dated on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ *[insert date of signing]*

*Note – Modify this format suitably in cases where manufacturer's warranty and guarantee are not applicable for the items for which bids are invited. If the supply consists of number of items, indicate the specific item (s) for which alone the above authorization is required.*

## **~~H. DECLARATION FOR CLAIMING TAX/ DUTY EXEMPTION<sup>4</sup>~~** **~~(Name of the Project)~~**

~~Bid No. ....~~

~~Description of item to be supplied .....~~

~~(Information for issue of certificate for claiming exemption of Tax/ Duty in terms of Government of India's relevant notification)~~

~~(Bidder's Name and Address): .....~~

~~To~~

~~(Name of Purchaser).....~~

~~Dear Sir:~~

- ~~1. We confirm that we are solely responsible for obtaining deemed export benefits which we have considered in our bid and in case of failure to receive such benefits for reasons whatsoever, Purchaser will not compensate us.~~
- ~~2. We are furnishing below the information required by the Purchaser for issue of necessary certificate in terms of Government of India's relevant notification.~~

~~(i) — Ex factory price per unit on which the tax/duty is payable: \*Rs.—~~

~~(ii) — No of Units to be supplied:~~

~~(iii) — Total cost on which the tax/duty is payable ————— (Rs.)~~

~~(The requirements listed above are as per  
Current notifications. These may be modified,  
as necessary, in terms of the rules in force)~~

~~(Signature) .....~~

~~(Printed Name) .....~~

~~(Designation) .....~~

~~(Common Seal) .....~~

<sup>4</sup>~~This declaration refers to ITB 14.9 and shall be retained only if ITB 14.9 is retained. The format may be modified as per the latest instructions of Government of India.~~

~~\* Please attach details item wise with cost, if there are more than one items. The figures indicated should tally with what is given in the price schedule.~~

## 8. PERFORMA FOR PERFORMANCE STATEMENT

[Please see ITB Clause 36.2 and Section III-  
Evaluation and Qualification Criteria]

Proforma for Performance Statement (for a period of last three/five years)

Bid No. \_\_\_\_\_ Date of opening \_\_\_\_\_ Time \_\_\_\_\_ Hours

Name of the Firm \_\_\_\_\_

<u>Order placed by (full address of Purchaser)</u>	<u>Order No. and date</u>	<u>Description and quantity of ordered equipment</u>	<u>Value of order</u>	<u>Date of completion of delivery</u>		<u>Remarks indicating reasons for late delivery, if any</u>	<u>Has the equipment been satisfactorily functioning? (Attach a certificate from the Purchaser/Consignee)</u>
				As per contract	Actual		
1	2	3	4	5	6	7	8

Signature and seal of the Bidder \_\_\_\_\_  
\_\_\_\_\_



# **SECTION V. – ELIGIBLE COUNTRIES**

## **Public Information Center**

### **Eligibility for the Provision of Goods, Works and Non Consulting Services in Bank-Financed Procurement**

In reference to ITB 4.7 and 5.1, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this bidding process:

Under ITB 4.7(a) and 5.1: None

Under ITB 4.7(b) and 5.1: None

# SECTION VI. BANK POLICY - CORRUPT AND FRAUDULENT PRACTICES

Guidelines for Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.

## “Fraud and Corruption:

1.16 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), bidders, suppliers, and their agents (whether declared or not), agency, sub-consultants, service providers or suppliers, and any personnel thereof, observe the highest standard of ethics during the procurement and execution of Bank-financed contracts.<sup>5</sup>In pursuance of this policy, the Bank:

- (a) defines, for the purposes of this provision, the terms set forth below as follows:
  - (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;<sup>6</sup>
  - ii) “fraudulent practice” is 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;<sup>7</sup>
  - (iii) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;<sup>8</sup>

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<sup>5</sup> In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

<sup>6</sup> For the purpose of this sub-paragraph, “*another party*” refers to a public official acting in relation to the procurement process or contract execution. In this context, “*public official*” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

<sup>7</sup> For the purpose of this sub-paragraph, “*party*” refers to a public official; the terms “*benefit*” and “*obligation*” relate to the procurement process or contract execution; and the “*act or omission*” is intended to influence the procurement process or contract execution.

<sup>8</sup> For the purpose of this sub-paragraph, “*parties*” refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

- (iv) “coercive practice” is 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;<sup>9</sup>
- (v) "obstructive practice" is:
  - (aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or 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
  - (bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under paragraph 1.16(e) below.
- (b) will reject a proposal for award if it determines that the bidder recommended for award, or any of its personnel, or its agents, or its sub-consultants, associates, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- (c) will declare misprocurement and cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- (d) will sanction a firm or individual, at any time, in accordance with the prevailing Bank’s sanctions procedures,<sup>10</sup> including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated<sup>11</sup>;

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<sup>9</sup> For the purpose of this sub-paragraph, “party” refers to a participant in the procurement process or contract execution.

<sup>10</sup> A firm or individual may be declared ineligible to be awarded a Bank financed contract upon: (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including, inter alia, cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

11. A nominated associate, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which has either been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

- (e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and associates, and their agents, sub-agents, personnel, consultants, service providers, or suppliers, to permit the Bank to inspect all accounts, records, and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank.”

## **PART 2 - SUPPLY REQUIREMENTS**

## SECTION VII – SCHEDULE OF REQUIREMENTS

### 1. Scope of Work

The proposed work is mainly related to the supply of PST, FPFF, LSA / Labs / Workshops Equipment at National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar.

### 2. Timelines

- (a) The Contract duration for the entire scope of work for **Supply of Life-Saving Appliances, Fire Fighting Appliances, Labs/ Workshops Equipment at National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar** as detailed out in this clause shall be 6 (six) months from the date of signing of the Contract Agreement to this effect.
- (b) The Contractor shall submit a detailed work plan indicating the timelines for main and miscellaneous activities to the EIC for approval.
- (c) The Contractor, in the course of the work, after deliberations with the EIC, shall agree and incorporate the necessary changes in within timelines.
- (d) The Contractor shall abide with the timelines in the Work Plan.
- (e) No idle time charges on any account shall be paid to the contractor during the contract period.

### 3. Milestones

- 3.1 The Contractor shall carry out **Supply of Life-Saving Appliances, Fire Fighting Appliances, Labs/ Workshops Equipment at National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar** within a period of 6 months till satisfaction of engineer in charge and handing over the electric catamaran to owner's representative.
- 3.2 The contractor, within 15 days from the Letter of award, should submit detailed Schedule of activities including supply, installation, testing and commissioning schedule, method statements, QC Manual including all data and reporting formats, for comment from EIC and should include all comments and observations to get the same approved by EIC.
- 3.3 The Contractor shall during the execution of works adhere to the Project Milestone set forth for the works so as to ensure the completion of Works within the stipulated duration. Payment Schedule with respect to the Project Milestone is listed below:

<b>Sr. No.</b>	<b>Milestones / Key Deliverables</b>	<b>Time Allowed from the Date of signing of Contract</b>	<b>Payment Schedule (to be paid on pro- rata basis of each Item) as percentage of contract price*</b>
(a)	Successful delivery of equipment as per Schedule of Requirements and certification of the delivery challan and invoice by respective Officer-in-Charge of the authority or their representative.	18 Weeks	30%
(b)	Successful installation at designated location, testing and training (if required) and certification by respective Officer-in-Charge of the authority or their representative.	22 Weeks	30%
(c)	Successful commissioning for the equipment tested & commissioned and issuance of Acceptance Certificate by respective Officer-in-Charge of the authority or their representative in the proforma given in Section VII.	24 Weeks	40%
		<b>Total</b>	<b>100%</b>

\* All the percentages mentioned above shall be applicable on the total contract price.

4. It may be noted that the milestones defined above are for the complete scope of the work. The Contractor shall ensure to adopt all necessary means during execution of works to achieve all the milestones. Failure of achieving milestones would attract LD as defined in Clause 8.12 of GCC.

## 5. Deliverables and Payment Schedule

- 5.1 The Contractor shall submit stage wise Bills for performing the works, from the Date of Commencement of Work, which will be verified by the Engineer-in-charge subject to deductions as applicable, and recovery towards repayment of Mobilization Advance & other recoveries, if any.
- 5.2 The total Contract Price payable under the Contract shall be stipulated in the Letter of Award and there upon shall become part of this Contract and be paid in accordance with the terms ref. 5.4 hereon. The price quoted will squarely and totally include all the charges to be paid to the contractor by the Employer.
- 5.3 Total Contract Price shall be firm and fixed and shall not be subject to any escalation during the period of the Contract except for any adjustment in accordance with the terms of the Contract.
- 5.4 The Contractor shall submit Running Account Bills (RA Bills) on or before the milestone dates fixed by Engineer-In-Charge (EIC) for the quantity and/or work executed with respect to the work progress requirements. The Contractor shall be paid as per the RA Bills submitted for the

work done within one month from submission of correct claim of bill. The contractor will submit the RA Bill in triplicate accompanied with 3 sets of supporting documents. Subject to deduction and other changes authorized by and to the other provisions of this contract, employer shall pay to the contractor for the **Supply of Life-Saving Appliances, Fire Fighting Appliances, Labs/ Workshops Equipment at National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar** for all works, matters, things and obligations to the executed, done, supplied, and performed by the contractor under this contract as specified by the time and manner with respect to the contract price.

**6. Warranty**

Period of time the Goods are expected to be functioning: 1 Year or warranty provided by the Original Equipment Manufacturer OEM), as applicable.

**7. OTHER CONDITIONS: -**

- (i) The Engineer-in-charge or his representative will inspect, co-ordinate, measure and certify the work. He has the right to inspect at any time during the contract period for which contractor's authorized agent shall be available at site during such inspection.
- (ii) The contractor may execute the work round the clock and on all days including Sundays and Public Holidays with due permission of the Engineer-in-charge in writing except National Holidays and subject to such restriction as may be imposed by State Govt./local body.
- (iii) If the contractor's personnel or any outside labour employed to work during execution of contract, breaks or damages/destroys any building, road, kerb, water pipe, fence, bund, wires, trees, crop, fruit or cultivated ground during the period of agreement, the same shall be made good by the contractor at his own expenses or in default the NINI may cause the same to be made good by other sources and deduct the expenses from any sums that may be then or at any time thereafter may become due to the contractor.
- (iv) The prices shall include all the taxes, levies, excise service tax, or any other local or central taxes/GST as applicable/ charged by Center or State Government. No extra in this regard shall be paid.
- (v) No forms regarding sales tax, trade tax or any other exemption, etc. will be supplied by NINI. However, department would assist to the contractor for arranging these documents at contractor's cost by writing to the concerned authorities only. Supply or arrangement of these forms, if required, shall be responsibility of the contractor.
- (vi) All arrangements for establishment, watch & ward of stores and security of sites, permits, license, appropriate vehicles for transportation, handling, etc. shall have to be made by the contractor at his own cost and nothing extra on this account shall be paid.
- (vii) The right to award split up work or to reject the offer without assigning any reason is reserved with the Authority.
- (viii) The rate shall be quoted only in Indian Rupees and payment shall be made in Indian Rupees only.



- (ix) The contractor on completion of the work should handover the site to the E-I-C or his representative.
- (x) In case of delay in work E-I-C may reduce the quantity of work without affecting the main objective of the project.

## **PART-II: TECHNICAL SPECIFICATIONS**

**DETAILED TECHNICAL SPECIFICATIONS OF LIFE-SAVING APPLIANCES, FIRE FIGHTING APPLIANCES, LABS/ WORKSHOPS EQUIPMENT AT NATIONAL INLAND NAVIGATION INSTITUTE (NINI) IS ATTACHED AT ANNEX A.**

## **DRAWINGS**

*Not Applicable*

**PROFORMA OF CERTIFICATE FOR ISSUE BY THE  
PURCHASER AFTER  
SUCCESSFUL INSTALLATION AND STARTUP OF THE  
SUPPLIED GOODS**

No.

Date:

M/s.

Sub: Certificate of startup of the supplied Goods

1. This is to certify that the plant/s as detailed below has/have been received in good condition along with all the standard and special accessories (subject to remarks in Para No. 2) and a set of spares in accordance with the Contract/Specifications. The same has been installed and commissioned.

- (a) Contract No. \_\_\_\_\_ dated \_\_\_\_\_
- (b) Description of the plant \_\_\_\_\_
- (c) Plant Nos. \_\_\_\_\_
- (d) Quantity \_\_\_\_\_
- (e) Rail/Roadways Receipt No. \_\_\_\_\_ dated \_\_\_\_\_
- (f) Name of the consignee \_\_\_\_\_
- (g) Date of startup and proving test \_\_\_\_\_

2. Details of accessories/spares not yet supplied and recoveries to be made on that account.

<u>S. No.</u>	<u>Description</u>	<u>Amount to be recovered</u>
---------------	--------------------	-------------------------------

3. The proving test has been done to our entire satisfaction and operators have been trained to operate the plant.
4. The supplier has fulfilled his contractual obligations satisfactorily. \*

or

The supplier has failed to fulfill his contractual obligations with regard to the following:

- (a)
  - (b)
  - (c)
  - (d)
5. The amount of recovery on account of non-supply of accessories and spares is given under Para No. 2.
6. The amount of recovery on account of failure of the supplier to meet his contractual obligations is as indicated in endorsement of the letter.

Signature \_\_\_\_\_

Name \_\_\_\_\_

Designation with Stamp \_\_\_\_\_

---

\* Explanatory notes for filling up the certificates:

- (a) He has adhered to the time schedule specified in the contract in dispatching the documents/drawings pursuant to Technical Specifications.
- (b) He has supervised the startup of the plan in time i.e., within the period specified in the contract from the date of intimation by the Purchaser in respect of the installation of the plant.
- (c) Training of personnel has been done by the supplier as specified in the contract
- (d) In the event of documents/drawings having not been supplied or installation and startup of the plant have been delayed on account of the supplier, the extent of delay should always be mentioned.

## **PART 3 – CONTRACT**

# SECTION VIII. GENERAL CONDITIONS OF CONTRACT

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## Section VIII. General Conditions of Contract

### 1. Definitions

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

- (a) “Bank” means the World Bank and refers to the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).
- (b) “Contract” means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
- (c) “Contract Documents” means the documents listed in the Contract Agreement, including any amendments thereto.
- (d) “Contract Price” means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.
- (e) “Day” means calendar day.
- (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) “GCC” means the General Conditions of Contract.
- (h) “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.
- (i) “Purchaser’s Country” is India.
- (j) “Purchaser” means the entity purchasing the Goods and Related Services, as specified in the SCC.
- (k) “Related Services” means the services incidental to the supply of the goods, such as insurance, installation, start-up, training and initial maintenance and other such obligations of the Supplier under the Contract.
- (l) SCC” means the Special Conditions of Contract.
- (m) “Associate” means any natural person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is outsourced by the Supplier.
- (n) “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 Contract Agreement.



- (o) “The Project 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 Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.
- 3. Corrupt & Fraudulent Practices**
  - 3.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Appendix to the GCC.
  - 3.2 The Purchaser requires the Supplier to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.
- 4. Interpretation**
  - 4.1 If the context so requires it, singular means plural and vice versa.
  - 4.2 Incoterms.
    - (a) Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of parties there under shall be as prescribed by Incoterms.
    - (b) The terms EXW and other similar terms, when used, shall be governed by the rules prescribed in the current edition of Incoterms specified in the **SCC** and published by the International Chamber of Commerce in Paris, France.
  - 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 the parties with respect thereto made prior to the date of Contract.
  - 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 Sub-Clause 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 English. 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 English language, 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, for documents provided by the Supplier.

### 6. Deleted

### 7. Eligibility

- 7.1 The Supplier and its associates shall have the nationality of an eligible country. A Supplier or associate shall be deemed to have the nationality of a country if it is a citizen or constituted, incorporated, or registered, 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 the Bank 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 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 the laws of the Union of India.

## **10. Settlement of Disputes**

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

10.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure **specified in the SCC**.

10.3 Notwithstanding any reference to arbitration herein,

- (a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree;and
- (b) the Purchaser shall pay the Supplier any monies due the Supplier.

- 11. Inspections and Audit by the** 11.1 The Supplier shall keep, and shall make all reasonable efforts to cause its associates to keep, accurate and systematic accounts and records in respect of the Goods in such form and details as will clearly identify relevant time changes and costs
- 11.2 The Supplier shall permit, and shall cause its associates to permit, the Bank and/or persons appointed by the Bank to inspect the Supplier's offices and all accounts and records relating to the performance of the Contract and the submission of the bid, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Supplier's and its associates and consultants' attention is drawn to Clause 3 [Fraud and Corruption], which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Sub-Clause 11.1 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank's prevailing sanctions procedures)
- 12. Scope of Supply** 12.1 The Goods and Related Services to be supplied shall be as specified in the **Special Conditions of Contract**.
- 13. Delivery and Documents** 13.1 Subject to GCC Sub-Clause 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 Schedule of Requirements. The details of shipping and other documents to be furnished by the Supplier are specified in the **SCC**.
- 14. Supplier's Responsibilities** 14.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 12, and the Delivery and Completion Schedule, as per GCC Clause 13.
- 15. Contract Price** 15.1 Prices charged by the Supplier for the Goods supplied 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, including any Advance Payments, if applicable, 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 13 and upon fulfillment of all other obligations stipulated in the Contract.

16.3 Payments shall be made promptly by the Purchaser, but in no case later than sixty (60) days after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it.

16.4 The payments shall be made in Indian Rupees to the Supplier under this Contract.

16.5 In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period set forth in the **SCC**, the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate shown in the **SCC**, for the period of delay until payment has been made in full, whether before or after judgment or arbitration award.

**17. Taxes and Duties**

17.1 The Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the Goods to the Purchaser as per the Contract.

**18. Performance Security**

18.1 If required as specified in the **SCC**, the Supplier shall, within twenty-one (21) days of the notification of contract award, provide a performance security for the performance of the Contract in the amount 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 As specified in the **SCC**, the Performance Security shall be denominated in the Indian Rupees, and shall be in the format stipulated by the Purchaser in the **SCC**, or in another format acceptable to the Purchaser.

18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (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 associate such documents, data, and other information it receives from the Purchaser to the extent required for the associate to perform its work under the Contract, in which event the Supplier shall obtain from such associate 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 performance of the Contract.
- 20.3 The obligation of a party under GCC Sub-Clauses 20.1 and 20.2 above, however, shall not apply to information that:
- (a) the Purchaser or Supplier need to share with the Bank 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. Associate**
- 21.1 The Supplier shall notify the Purchaser in writing of all association under the Contract if not already specified in the bid. Such notification, in the original bid or later shall not relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.
- 21.2 Associates shall comply with the provisions of GCC Clauses 3 and 7.
- 22. Specifications and Standards**
- 22.1 Technical Specifications and Drawings
- (a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section VII, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods' country of origin.
- (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) 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 Schedule of Requirements. 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 goods' final destination 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.
- 24. Insurance** 24.1 Unless otherwise specified in the **SCC**, the Goods supplied under the Contract shall be fully insured—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 & Incidental Services** 25.1 Unless otherwise specified in the **SCC**, responsibility for arranging transportation of the Goods shall be in accordance with the specified Incoterms.
- 25.2 The Supplier may be required to provide any or all of the following services, including additional services, if any, **specified in Schedule of Requirements and SCC**:
- (a) performance or supervision of on-site assembly and/or start-up of the supplied Goods;
  - (b) furnishing of tools required for assembly and/or maintenance of the supplied Goods;
  - (c) furnishing of a detailed General Upkeep and Maintenance manual for each appropriate unit of the supplied Goods;
  - (d) performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
  - (e) training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, general upkeep, maintenance, and/or repair of the supplied Goods
- 25.3 Prices charged by the Supplier for incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.
- 26. Inspections and Tests** 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 the **SCC**.
- 26.2 The inspections and tests may be conducted on the premises of the Supplier or its associates, at point of delivery, and/or at



the Goods' final destination, or in another place in the Purchaser's Country as specified in the **SCC**. Subject to GCC Sub-Clause 26.3, if conducted on the premises of the Supplier or its associates, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.

- 26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 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.
- 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.
- 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.
- 26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- 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 the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 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 Sub-Clause 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 by the Date(s) of delivery 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 delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in those **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 Sub-Clause 22.1(b), 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 twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the **SCC**, or for eighteen (18) months after the date of shipment from the port or place of 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 Sub-Clause 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 Sub-Clause 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 twenty-eight (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 associates 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 criminal negligence or willful misconduct,
- (a) the Supplier shall not be liable to the Purchaser, whether in Contract, tort, or otherwise, 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 total Contract Price, 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 28 days prior to date of Bid submission, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in India, 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/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 twenty-eight (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.

33.4 Subject to the above, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

#### **34. Extensions of Time**

34.1 If at any time during performance of the Contract, the Supplier or its associates should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 13, 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 26, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

#### **35. Termination**

35.1 Termination for Default

(a) The Purchaser, without prejudice to any other remedy for breach of Contract, by written 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;

(ii) if the Supplier fails to perform any other obligation under the Contract; or

(iii) 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.

(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.

#### 35.2 Termination for Insolvency.

- (a) 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 twenty-eight (28) days after the Supplier's receipt of 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.

**APPENDIX TO GENERAL CONDITIONS**  
***Bank's Policy- Corrupt and Fraudulent Practices***  
***(text in this Appendix shall not be modified)***

**Guidelines for Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:**

**“Fraud and Corruption:**

1.16 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), bidders, suppliers, contractors and their agents (whether declared or not), sub-contractors, associates, sub-consultants, service providers or suppliers, and any personnel thereof, observe the highest standard of ethics during the procurement and execution of Bank-financed contracts.<sup>12</sup> In pursuance of this policy, the Bank:

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

- (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;<sup>13</sup>
- (ii) “fraudulent practice” is 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;<sup>14</sup>
- (iii) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;<sup>15</sup>

In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

<sup>12</sup> For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

<sup>13</sup> For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

<sup>14</sup> For the purpose of this sub-paragraph, “parties” refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

<sup>12</sup> For the purpose of this sub-paragraph, “party” refers to a participant in the procurement process or contract execution.

<sup>13</sup> A firm or individual may be declared ineligible to be awarded a Bank financed contract upon: (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including, inter alia, cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

<sup>14</sup> A nominated sub-contractor/ associate, consultant, manufacturer or supplier, or service provider (different



names are used depending on the particular bidding document) is one which has either been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

- (iv) “coercive practice” is 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;<sup>16</sup>
- (v) "obstructive practice" is:
  - (aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or 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
  - (bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under paragraph 1.16(e) below.
- (b) will reject a proposal for award if it determines that the bidder recommended for award, or any of its personnel, or its agents, or its sub-consultants, sub-contractors/ associates, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- (c) will declare misprocurement and cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
- (d) will sanction a firm or individual, at any time, in accordance with the prevailing Bank’s sanctions procedures,<sup>17</sup> including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated<sup>18</sup>;
- (e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and contractors, and their sub-contractors, associates, agents, personnel, consultants, service providers, or suppliers, to permit the Bank to inspect all accounts, records, and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank.”

## SECTION IX. SPECIAL CONDITIONS OF CONTRACT

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

<b>GCC 1 (j)</b>	The Purchaser is: Inland Waterways Authority of India, Ministry of Ports, Shipping & Waterways, Government of India A-13, Sector-1, Noida-201301, U.P., India
<b>GCC 1 (o)</b>	The Project Site(s)/Final Destination(s) is/are: 1. National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar (Refer Schedule VII – Schedule of Requirement)
<b>GCC 4.2 (a)</b>	The meaning of the trade terms shall be as prescribed by Incoterms.
<b>GCC 4.2 (b)</b>	The version edition of Incoterms shall be 2010.
<b>GCC 8.1</b>	For <b><u>notices</u></b> , the Purchaser's address shall be: Attention: Vice Chairman & Project Director, JMVP  Street Address: IWAI, A-13, Sector-1 City: Noida, U.P. PIN Code: 201301 Country: India Telephone: 0120-2521664 Facsimile number: 0120-2543973 Electronic mail address: <a href="mailto:vc.iwai@nic.in">vc.iwai@nic.in</a>

**GCC 10.2****Settlement of Disputes**

The dispute settlement mechanism to be applied for adhoc arbitration shall be as follows:

- (a) In case of dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by the Purchaser and the Supplier. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the Indian Council of Arbitration/president of the institution of Engineers (India)/The International center for Alternative Dispute Resolution (India).
- (b) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (a) and (b) above, within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the Indian Council of Arbitration/president of the Institution of Engineers (India)/The International Centre for Alternative Dispute Resolution (India), both in cases of the Foreign supplier as well as Indian supplier, shall appoint the arbitrator. A certified copy of the order of the Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Disputes Resolution (India), making such an appointment shall be furnished to each of the parties.
- (c) Arbitration proceedings shall be held at New Delhi, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
- (d) The decision of the majority of arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself.
- (e) Where the value of the contract is Rs. 10 million and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority namely the Indian Council of Arbitration/President of the Institution of Engineers (India)/The International Centre for Alternative Dispute Resolution (India).

	(f) Except otherwise agreed to by the Parties, Arbitrators should give a decision in writing within 120 days of receipt of notification of dispute.
<b>GCC 12.1 and 25.2</b>	The scope of supply for the Goods to be supplied shall be as specified below: <b>Supply of Life-Saving Appliances, Fire Fighting Appliances, Labs/ Workshops Equipment at National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar</b>
<b>GCC 13.1</b>	<p>Details of shipping and other documents to be furnished by the Supplier are given below:</p> <p>Upon delivery of the goods to the transporter/consignee, the Supplier shall notify the Purchaser and mail the following documents to the Purchaser:</p> <ul style="list-style-type: none"> <li>(i) 04 copies of the Supplier invoice showing contract number, goods description, quantity, unit price, total amount;</li> <li>(ii) Delivery note, railway receipt, or road consignment note or equivalent transport document or acknowledgement of receipt of Goods from the consignee;</li> <li>(iii) 04 copies of packing list (01 Original + 03 Copies) identifying contents of each package.</li> <li>(iv) Insurance certificate;</li> <li>(v) Manufacturer's/Supplier's warranty certificate;</li> <li>(vi) Inspection certificate issued by the nominated inspection agency, and the Supplier's factory inspection report; and</li> <li>(vii) Certificate of origin.</li> </ul> <p>The above documents shall be received by the Purchaser before arrival of the Goods (except where it is handed over to the consignee with all documents) and if not received, the Supplier will be responsible for any consequent expenses.</p>
<b>GCC 15.1</b>	The prices charged for the Goods supplied and the related Services performed shall not be adjustable.
<b>GCC 16.1</b>	Payment shall be made in Indian Rupees in the following manner:

Payment shall be paid as per the payment schedule given below, on receipt of Goods and upon submission of the documents specified in Clause 13 of SCC:			
Sr. No.	Milestones / Key Deliverables	Time Allowed from the Date of signing of Contract	Payment Schedule (to be paid on pro- rata basis of each Item) as percentage of contract price*
(a)	Successful delivery of equipment as per Schedule of Requirements and certification of the delivery challan and invoice by respective Officer-in-Charge of the authority or their representative.	18 Weeks	30%
(b)	Successful installation at designated location, testing and training (if required) and certification by respective Officer-in-Charge of the authority or their representative.	22 Weeks	30%
(c)	Successful commissioning for the equipment tested & commissioned and issuance of Acceptance Certificate by respective Officer-in-Charge of the authority or their representative in the proforma given in Section VII.	24 Weeks	40%
		<b>Total</b>	<b>100%</b>
* All the percentages mentioned above shall be applicable on the total contract price			
<p>Failure to achieve the milestones within the stipulated duration (as given in Clause 4.3, Part 2: Supply Requirements- Scope of Work would attract liquidated damages as defined in SCC Clause 27.1.</p> <p><del>In the event that the Supplier is unable to Supply the Goods at site as per the contract, payments made for fabrication at supplier's yard (as per payment schedule (i)) has to be refunded back to IWAI within 30 days of notice by the Purchaser (IWAI) along with interest at prevailing prime lending rate of State Bank of India on the date of respective payments i.e. Payments made for</del></p>			

	<p><del>fabrication at supplier's yard etc.</del></p> <p>(a) Reimbursement of Local Taxes such as GST and other similar taxes, to the extent applicable, will be at actuals based on documentary evidence of payment within 30 days of submission of bill with documents.</p> <p>(b) (i) For all the payments to be made, against Bank guarantees, the bank guarantee shall be issued by a Scheduled Indian Bank or a foreign bank located in India in the format enclosed at Section X. The guarantees issued by other banks should be confirmed by a Scheduled Indian Bank or a foreign bank operating in India.</p> <p><del>(ii) Bank guarantees for advance payment shall be released not later than 30 days after the date of completion of contract.</del></p>
<b>GCC 16.5</b>	Not Applicable
<b>GCC 17</b>	In the case of tax/ duty waiver, the Purchaser will issue only the certificates in terms of the Government of India's notification as per information given by Supplier in form stipulated in Section IV. Supplier is solely responsible for obtaining such benefits and in case of failure to receive such benefits, the purchaser will not compensate the supplier separately.
<b>GCC 18.1</b>	<p>Performance Security to the Purchaser shall be for an amount of 5% of the contract value, valid up to 60 days after the date of completion of performance obligations including warranty obligations.</p> <p>In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/ replaced material shall be extended to a further period of 12 months and the Performance Bank guarantee for proportionate value shall be extended 60 days over and above the extended warranty period.</p>
<b>GCC 18.3</b>	The Performance Security shall be in the form of a "Bank Guarantee" or "a cashier's cheque or banker's certified cheque or crossed demand draft or pay order" drawn in favour of the Purchaser.
<b>GCC 18.4</b>	Discharge of the Performance Security shall take place not later than 60 days following the date of completion of the Supplier's performance obligations, including the warranty obligation, under the Contract.
<b>GCC 18.5</b>	<p><b>Add as Clause 18.5 to the GCC the following:</b></p> <p>In the event of any contractual amendment, the Supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the Performance Security, rendering the same valid for the duration of the Contract, as amended for 60 days after the completion of performance obligations including warranty obligations.</p>

<b>GCC 21</b>	Sub-contracting: Not allowed
<b>GCC 23.2</b>	<p><u>Packing Instructions:</u> The Supplier will be required to make separate packages for each consignee. Each package will be marked on three sides with proper paint/indelible ink with the following:</p> <p>(i) Project; (ii) Contract No.; (iii) Country of Origin of Goods; (iv) Supplier's Name; (v) Packing List Reference Number.</p> <p>Supplier should use recycled materials as much as possible for packing.</p>
<b>GCC 24.1</b>	The insurance shall be paid in an amount equal to 110 percent of the EXW value of the Goods from "Warehouse to warehouse (final destination)" on "All Risks" basis including War Risks and Strikes.
<b>GCC 24.2</b> <b>New clause</b> <b>GCC 24.2 (In</b> <b>addition to</b> <b>GCC 24.1)</b>	<p>a) The Supplier shall maintain an insurance policy (insured value should be equivalent to the Contract value) to take care of any damage caused by theft, fire, rain, snowfall, floods or any other natural calamity, whatsoever, during the execution of the contract for which the payment has been advanced to supplier. The validity of the insurance shall be starting from the issuance of LoA to handing over of Goods to IWAI. Nothing extra shall be payable to the Supplier for maintaining such insurance policy.</p> <p>b) A copy of the insurance clearly showing the value &amp; validity to be submitted during submission of every bill (as per the payment milestones).</p>
<b>GCC 25.1</b>	The Supplier is required under the Contract to transport the Goods duly insured to the specified final destination, and all related costs shall be included in the Contract Price.
<b>GCC 25.2</b>	<p>Incidental services to be provided are:</p> <p><i>[Selected services covered under GCC Clause 25.2 and/or other should be specified with the desired features. The price quoted in the bid price or agreed with the selected Supplier shall be included in the Contract Price.]</i></p>
<b>GCC 26.1</b>	The inspections and tests shall be: As defined under the Contract.
<b>GCC 26.2</b>	The inspections and tests shall be conducted at: Place of Delivery/ Final Destination(s)- National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar
<b>GCC 27.1</b>	<p>The liquidated damages shall be 0.5% of the Contract price per week or part thereof.</p> <p>The maximum amount of liquidated damages shall be: 10% of the Contract Price.</p>
<b>GCC 28.3</b>	The validity of the defect liability period/warranty period of all Goods to be supplied at National Inland Navigation Institute (NINI), Gaighat, Patna, Bihar as per the tender document, shall be Same as given in GCC 28.3 or <b>as</b>

	<b>specified in the Section VII – Schedule of Requirements.</b>
<b>GCC 28.5</b>	The period for repair or replacement shall be: 30 days
<b>GCC 31.1</b>	This clause shall be applicable only to variations in GST and other taxes payable in India on the final product which is being supplied and not for variations in tax on the individual components/raw materials which go into the product.



## Attachment: Price Adjustment Formula – Not Applicable

If in accordance with GCC 15.2, prices shall be adjustable, the following method shall be used to calculate the price adjustment:

15.2—Prices payable to the Supplier, as stated in the Contract, shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labor and material components in accordance with the formula:

$$P_1 = P_0 \left[ a + \frac{bL_1}{L_0} + \frac{cM_1}{M_0} \right] - P_0$$

$$a + b + c = 1$$

in which:

$P_1$  — adjustment amount payable to the Supplier.

$P_0$  — Contract Price (base price).

$a$  — fixed element representing profits and overheads included in the Contract Price and generally in the range of five (5) to fifteen (15) percent.

$b$  — estimated percentage of labor component in the Contract Price.

$c$  — estimated percentage of material component in the Contract Price.

$L_0, L_1$  — labor indices applicable to the appropriate industry in the country of origin on the base date and date for adjustment, respectively.

$M_0, M_1$  — material indices for the major raw material on the base date and date for adjustment, respectively, in the country of origin.

The coefficients  $a$ ,  $b$ , and  $c$  as specified by the Purchaser are as follows:

$a =$  *[insert value of coefficient]*

$b =$  *[insert value of coefficient]*

$c =$  *[insert value of coefficient]*

The Bidder shall indicate the source of the indices and the base date indices in its bid.

Base date = thirty (30) days prior to the deadline for submission of the bids.

Date of adjustment = *[insert number of weeks]* weeks prior to date of shipment (representing the mid-point of the period of manufacture).

The above price adjustment formula shall be invoked by either party subject to the following further conditions:

- (a) No price adjustment shall be allowed beyond the original delivery dates unless specifically stated in the extension letter. As a rule, no price adjustment shall be allowed for periods of delay for which the Supplier is entirely responsible. The Purchaser will, however, be entitled to any decrease in the prices of the Goods and

~~Services subject to adjustment.~~

~~(b) No price adjustment shall be payable on the portion of the Contract Price paid to the Supplier as advance payment.~~

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## **SECTION X – CONTRACT FORMS**

# 1. LETTER OF ACCEPTANCE

*[letterhead paper 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 dated . . . . *[insert date]* . . . . for execution of the . . . . .  
*[insert name of the contract and identification number, as given in the SCC]*. . . . .  
for the Accepted Contract Amount of..... *[insert amount in numbers and words in Rupees]*, 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 21 days in accordance with the  
Conditions of Contract, using for that purpose the of the Performance Security Form included  
in Section X, Contract Forms, of the Bidding Document.

Authorized Signature: \_\_\_\_\_

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

Name of Agency: \_\_\_\_\_

**Attachment: Contract Agreement**

## 2. CONTRACT AGREEMENT

*[The successful Bidder shall fill in this form in accordance with the instructions indicated]*

THIS CONTRACT is made

the [ insert: **number** ] day of [ insert: **month** ], [ insert: **year** ].

BETWEEN

- (1) [ insert complete name of Purchaser ], a [ insert description of type of legal entity, for example, an agency of the Ministry of of the Government of { insert name of Country of Purchaser }, or corporation incorporated under the laws of { insert name of Country of Purchaser } ] and having its principal place of business at [ insert address of Purchaser ] (hereinafter called “the Purchaser”), and
- (2) [ insert name of Supplier ], a corporation incorporated under the laws of [ insert: country of Supplier ] and having its principal place of business at [ insert: address of Supplier ] (hereinafter called “the Supplier”).

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., [insert brief description of Goods and Services] and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of [insert Contract Price in words and figures, expressed in Rs] (hereinafter called “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 Conditions of Contract referred to.
2. The following documents shall constitute the Contract between the Purchaser and the Supplier, and each shall be read and construed as an integral part of the Contract Agreement. This Agreement 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 below.
  - (a) The letter of Acceptance
  - (b) this Contract Agreement
  - (c) Letter of Bid – Technical Part
  - (d) The Supplier’s letter of Bid – Financial Part and original completed Schedules including Price Schedules
  - (e) Special Conditions of Contract
  - (f) General Conditions of Contract

- (g) Technical Requirements (including Schedule of Requirements and Technical Specifications)
  - (h) *[Add here any other document(s) listed in GCC/SCC as part of contract]*
3. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and 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 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 *[insert the name of the Contract governing law country]* on the day, month and year indicated above.

For and on behalf of the Purchaser

Signed: *[insert signature]*  
in the capacity of *[ insert title or other appropriate designation ]*  
in the presence of *[insert identification of official witness]*

For and on behalf of the Supplier

Signed: *[insert signature of authorized representative(s) of the Supplier]*  
in the capacity of *[ insert title or other appropriate designation ]*  
in the presence of *[ insert identification of official witness]*

### 3. Performance Security - Bank Guarantee

*[Guarantor letterhead or SWIFT identifier code]*

Performance Guarantee No..... *[insert guarantee reference number]*

Date..... *[insert date of issue of the guarantee]*

To: \_\_\_\_\_ *[name of Purchaser]*

\_\_\_\_\_ *[address of Purchaser]*

WHEREAS \_\_\_\_\_ *[name and address of Supplier]* (hereinafter called "the Applicant") has undertaken, in pursuance of Contract No. dated \_\_\_\_\_ to execute \_\_\_\_\_ *[name of Contract and brief description of Goods and related Services]* (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Applicant shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Applicant such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Applicant, up to a total of \_\_\_\_\_ *[amount of guarantee<sup>15</sup>]* \_\_\_\_\_ *[in words]*, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of \_\_\_\_\_ *[amount of guarantee]* as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Applicant before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Goods and related Services to be supplied thereunder or of any of the Contract documents which may

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<sup>15</sup> An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract and denominated in Indian Rupees.

be made between you and the Applicant shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until ..... (i.e.) 60 days following the Completion date of the Contract including any warranty obligations<sup>20</sup>, and any demand for payment under it must be received by us at this office on or before that date.

Signature and seal of the guarantor \_\_\_\_\_

Name of Bank \_\_\_\_\_

Address \_\_\_\_\_

Date \_\_\_\_\_

***Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.***

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<sup>16</sup> Completion date as described in GC Clause 18.4



## 4. Advance Payment Security– Not Applicable

### Demand Guarantee

*{Guarantor letterhead or SWIFT identifier code}*

Advance Payment Guarantee No.....*{insert guarantee reference number}*

Date.....*{insert date of issue of the guarantee}*

To:.....*{name of Purchaser}*

.....*{address of Purchaser}*

.....*{name of Contract}*

Gentlemen:

In accordance with the provisions of the Conditions of Contract, Clause 16 ("Terms of Payment") of the above mentioned Contract,.....*{name and address of Supplier}* (hereinafter called "the Applicant") shall deposit with.....*{name of Purchaser}* a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of.....*{amount of guarantee<sup>24</sup>}*.....*{in words}*.

We, the.....*{bank or financial institution}*, as instructed by the Applicant, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to.....*{name of Purchaser}* on his first demand without whatsoever right of objection on our part and without his first claim to the Applicant, in the amount not exceeding.....*{amount of guarantee}*.....*{in words}*.

We further agree that no change or addition to or other modification of the terms of the Contract or of Goods and related Services to be supplied thereunder or of any of the Contract documents which may be made between.....*{name of Purchaser}* and the Applicant, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

An amount shall be inserted by the bank representing the amount of the Advance Payment, and denominated in Indian Rupees.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until \_\_\_\_\_ *[name of Purchaser]* receives full repayment of the same amount from the Applicant. Consequently any demand for payment under this guarantee must be received by us at this office on or before that date.

Yours truly,

Signature and seal: \_\_\_\_\_

Name of Bank: \_\_\_\_\_

Address: \_\_\_\_\_

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

***Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.***

<b>LIST OF TOOLS AND EQUIPMENT</b> <b>MECHANIC DIESEL WORKSHOP (For the Batch of 10 Candidates)</b>			
S.N	Name of the Tool & Equipment	Unit	Quantity
<b>A. TRAINEES TOOL KIT</b>			
1.	Allen Key set of 12 pieces, 2mm to 14mm Material: Chrome Vanadium Steel, Finish: Black Oxide or Satin Chrome, Standard: DIN 911	No.	8
2.	Calliper inside with spring, 15 cm Material: Carbon Steel, Size: 150mm, Accuracy: $\pm 0.02$ mm Material: Carbon Steel, Size: 150mm, Accuracy: $\pm 0.02$ mm	No.	8
3.	Callipers outside with spring, 15 cm Material: Carbon Steel, Size: 150mm, Accuracy: $\pm 0.02$ mm	No.	8
4.	Center Punch., 10 mm. Dia. x 100 mm Material: Hardened Carbon Steel, Tip: 60° point, Finish: Black Oxide	No.	8
5.	Dividers with spring, 15 cm • Material: Carbon Steel with nickel/chrome plating, Range: up to 150mm	No.	8
6.	Electrician Screw Driver, 250mm Insulation: up to 1000V, Blade Material: Chrome Vanadium, Tip: Magnetic	No.	8
7.	Hammer ball peen with handle, 0.5 kg • Head: Forged steel, Handle: Wooden/Fiberglass, Weight: 500g	No.	8
8.	Hands file for Second cut flat, 20 cm. Material: High Carbon Steel, Cut: Second Cut, Length: 200mm	No.	8
9.	Philips Screw Driver set of 5 pieces, 100 mm to 300 mm Sizes: PH0, PH1, PH2, PH3, PH4; Material: Chrome Vanadium	No.	8
10.	Pliers combination, 20 cm. Material: Chrome Vanadium Steel, Jaw: Serrated Grip, Insulated handle	No.	8
11.	Screw driver Blade, 20cm. x 9mm Shaft: Hardened Steel, Tip: Slotted, Handle: PP+TPR Grip	No.	8
12.	Screw driver Blade, 30 cm. x 9 mm. Shaft: Hardened Steel, Tip: Slotted, Handle: PP+TPR Grip	No.	8
13.	Scriber, 15 cm Material: Hardened Steel, Length: 150mm, Tip Angle: 30°	No.	8
14.	Spanner D.E. set of 12 pieces, 6mm to 32mm Standard: IS 2028, Material: Chrome Vanadium, Finish: Chrome Plated	No.	8
15.	Spanner, ring set of 12, 6 to 32 mm. (metric) Material: Chrome Vanadium, Drive: 1/2 inch, Standard: DIN 3124	No.	8
16.	Spanners socket with speed handle, T-bar, ratchet and universal set of 28 pieces withbox, up to 32 mm	No.	8
17.	Steel rule, 30 cm inch and metric Material: Stainless Steel, Graduation: 0.5mm & 1/64 inch	No.	8
18.	Steel tool box with lock and key (folding type), 400x200x150 mm • Material: Cold Rolled Steel, Powder Coated, Lockable	No.	8
19.	Wire cutter and stripper, Range: 0.5mm <sup>2</sup> to 6mm <sup>2</sup> , Material: Hardened Steel, Insulated handle	No.	8
<b>B. INSTRUMENTS AND GENERAL SHOP OUTFIT - For 2 (1+1) units no additional items are required</b>			
20.	Adjustable spanner (pipe wrench), 350 mm	No.	2

	<b>Opening: 0-40mm, Material: Chrome Vanadium, Finish: Satin Chrome</b>		
21.	<b>Air blow gun with standard accessories Pressure: up to 10 bar, Inlet: 1/4" BSP</b>	No.	1
22.	<b>Ammeter DC with external shunt, 300A/ 60A Accuracy Class: 1.5, Scale: 0-300A, Shunt: 60mV</b>	No.	4
23.	<b>Air ratchet with standard accessories Drive: 1/2", Torque: 300 Nm, Pressure: 6.2 bar</b>	No.	4
24.	<b>Air impact wrench with standard accessories, Drive: 1/2", Torque: 300 Nm, Pressure: 6.2 bar</b>	No.	4
25.	<b>Angle plate adjustable, 250x150x175mm • Material: Cast Iron, Machined faces, Accuracy: 0.01mm</b>	No.	1
26.	<b>Angle plate size, 200x100x200mm • Material: Cast Iron, Machined faces, Accuracy: 0.01mm</b>	No.	2
27.	<b>Anvil with Stand, 50 Kgs Material: Hardened Cast Steel, Face Hardness: 50-55 HRC</b>	No.	1
28.	<b>Auto Electrical test bench</b>	No.	1
29.	<b>Battery –charger, 5 meters flexible in case Output: 12V/24V, Ampere: 20-30A</b>	No.	2
30.	<b>Blow Lamp, 1 litre: Brass/steel body, 1-liter capacity, suitable for kerosene, flame control valve, ergonomic handle.</b>	No.	2
31.	<b>Belt Tensioner gauge, Dial type, range 150 lbs, suitable for automotive V-belts and serpentine belts.</b>	No.	1
32.	<b>Calliper inside with Spring, 15 cm Hardened steel, spring joint, capacity 150mm.</b>	No.	4
33.	<b>Callipers outside with spring, 15 cm Hardened steel, 150mm measuring range, fine adjustment spring.</b>	No.	4
34.	<b>Car Jet washer with standard accessories, Pressure 150 bar, flow rate 8 LPM, standard nozzles and gun, 220V/1Ph or 3Ph motor.</b>	No.	1
35.	<b>Chain Pulley Block capacity with tripod stand, 3 ton Lift Height: 3 meters, Chain: Grade 80 Alloy Steel</b>	No.	1
36.	<b>Chisel flat, 10 cm, • Chrome-vanadium steel, 100mm length, 10mm width cutting edge.</b>	No.	4
37.	<b>Chisels cross cut, 200 mm x 6mm Chrome steel, 200mm long, 6mm width, hardened and tempered.</b>	No.	4
38.	<b>Circlip pliers Expanding and contracting, 15cm and 20cm Forged steel, spring loaded, capacity 19-60mm internal/external.</b>	No.	4
39.	<b>Clamps C, 100mm</b>	No.	2
40.	<b>Clamps C, 150mm</b>	No.	2
41.	<b>Clamps C, 200mm</b>	No.	2
42.	<b>Cleaning tray, 45x30 cm. Steel or polypropylene, corrosion resistant, depth 5cm.</b>	No.	4
43.	<b>Compression testing gauge suitable for diesel Engine with standard accessories 0-1000 psi (0-70 kg/cm<sup>2</sup>), heavy duty hose, adaptors for different engines.</b>	No.	2
44.	<b>Connecting rod alignment fixture Cast iron base, hardened steel centers, adjustable clamps.</b>	No.	1
45.	<b>Copper bit soldering iron, 0.25 Kg Wooden handle, copper bit weight 250g, 250W electric heater.</b>	No.	4
46.	<b>Cylinder bore gauge capacity, 20 to 160 mm Analog/digital dial indicator, extension rods, accuracy ±0.01mm.</b>	No.	4
47.	<b>Cylinder liner- Dry &amp; wet liner, press fit &amp; slide fit liner Training models with press fit and slide fit demonstration, cast iron sleeves.</b>	No.	1
48.	<b>DC Ohmmeter, 0 to 300 Ohms Portable analog/digital, test leads included, battery operated.</b>	No.	2
49.	<b>Depth micrometer, 0-25mm</b>	No.	4

	<b>Graduation 0.01mm, carbide tipped measuring rod, ratchet stop.</b>		
50.	<b>Dial gauge type 1 Gr. A (complete with clamping devices and with magnetic stand)</b>	No.	4
51.	<b>Different type of Engine Bearing model, Models showing shell, split, sleeve, and needle bearing types.</b>	set	1
52.	<b>Different type of piston model, • Cross-section models showing ring grooves, pin bosses, oil passages.</b>	set	1
53.	<b>Dividers with Spring, 15 cm Hardened steel legs, spring tension, capacity 150mm.</b>	No.	4
54.	<b>Drift Punch Copper, 15 Cm Solid copper, 150mm length, 10mm diameter.</b>	No.	4
55.	<b>Drill point angle gauge, Hardened steel, 118° standard angle, for 3-19mm drills.</b>	No.	1
56.	<b>Drill twist (various sizes), 1.5 mm to 15 mm by 0.5mm HSS, set of 28 pieces, split point, 118° angle.</b>	No.	4
57.	<b>Electric Soldering Iron, 230 V, 60 watts</b>	No.	2
	<b>230 V, 25 watts • 230V, 60W: For medium duty soldering. • 230V, 25W: For light electronics work.</b>	No.	2
58.	<b>Electric testing screw driver. 100-500V range, neon indicator.</b>	No.	4
59.	<b>Engineer's square, Blade size 15 cm Hardened steel, precision ground, DIN 875 standard.</b>	No.	4
60.	<b>Engineers stethoscope. Steel probe, acoustic tubing, for engine diagnosis.</b>	No.	1
61.	<b>Feeler gauge 20 blades (metric) Range 0.05 to 1mm, tempered steel blades.</b>	No.	4
62.	<b>File flat , bastard, 20 cm, Flat, Bastard, 20 cm: Coarse cut.</b>	No.	4
63.	<b>File, half round ,second cut, 20 cm Half round, Second cut, 20 cm.</b>	No.	4
64.	<b>File, Square second cut, 20 cm Second cut, 20 cm.</b>	No.	4
65.	<b>File, Square round, 30 cm Square round, 30 cm.</b>	No.	4
66.	<b>File, triangular , second cut, 15 cm Second cut, 15 cm.</b>	No.	4
67.	<b>Files assorted sizes and types including safe edge file (20 Nos)</b>	No.	2
68.	<b>Flat File , second cut, 25 cm, Second cut, 25 cm.</b>	No.	4
69.	<b>Flat File , bastard, 35 cm</b>	No.	4
70.	<b>Fuel feed pump for Diesel, • Hand operated priming pump model for training.</b>	No.	1
71.	<b>Fuel injection pump (Diesel) inline 4-cylinder model with governor assembly.</b>	No.	1
72.	<b>Fuel injection pump dismantling tool kit /Universal Vice Includes delivery valve spanner, locking plates, timing tools.</b>	No.	1
73.	<b>Fuel injection pump VE pump / Distributor fuel rotary pump (DPC) pumps / along with special tools and accessories</b>	Set	1
74.	<b>Gloves for Welding, Leather and Asbestos</b>	Set	5
75.	<b>Glow plug tester</b>	No.	2
76.	<b>Granite surface plate with stand and cover, 1600 x 1000mm</b>	No.	1

77.	Grease Gun	No.	2
78.	Grease Gun heavy duty trolley type, 10 kg capacity	No.	1
79.	Growler	No.	2
80.	Hacksaw frame, Adjustable 20-30 cm	No.	5
81.	Hammer Ball Peen, 0.75 Kg	No.	4
82.	Hammer Chipping, 0.25 Kg	No.	5
83.	Hammer copper with handle, 1 Kg	No.	4
84.	Hammer Mallet, 0.5 kg	No.	4
85.	Hammer Plastic, 0.25 kg, 0.5 kg	No.	4
86.	Hand operated crimping tool, (i) up to 4mm (ii) up to 10mm	No.	2
		No.	2
87.	Hand reamers adjustable, 10.5 to 11.25 mm, 11.25 to 12.75 mm, 12.75 to, 14.25 mm and 14.25 to 15.75 mm	Set	2
88.	Hand Shear Universal, 250mm • Blade Length: 250 mm • Cutting Capacity: Up to 1.5 mm mild steel • Handle: Insulated anti-slip grip • Body: Hardened forged steel	No.	2
89.	Hand vice, Up to 37 mm • Jaw Opening: 0 - 37 mm • Body Material: Cast iron or steel • Jaw Faces: Hardened & replaceable	No.	2
90.	Hollow Punch set of seven pieces 6mm to 15mm • Sizes: 6, 7, 8, 10, 12, 14, 15 mm • Material: Carbon steel, hardened • Application: Leather, rubber, gasket cutting	Set	2
91.	Injector – Multi hole type,	No.	4
	Pintle type • Type: Standard diesel injector model • Holes: 4-6 hole multi type; pintle single hole type • Compatibility: Suitable for CRDI and conventional engines	No.	4
92.	Injector cleaning unit, • Operation: Ultrasonic cleaning • Power: 40-60W • Capacity: For 4 injectors simultaneously	No.	1
93.	Injector testing set (Hand tester) • Pressure Range: Up to 600 bar • Gauge: Glycerin filled, calibrated • Application: Spray pattern & leakage test	No.	1
94.	Insulated Screw driver, 20 cm x 9mm blade • Blade: Chrome Vanadium, hardened • Insulation: Rated 1000V, VDE approved • Sizes: Blade length 200mm & 300mm, width 9mm	No.	4
95.	Insulated Screw driver, 30 cm x 9mm blade • Blade: Chrome Vanadium, hardened • Insulation: Rated 1000V, VDE approved • Sizes: Blade length 200mm & 300mm, width 9mm	No.	4

96.	<b>Left cut snips, 250mm</b> <ul style="list-style-type: none"> <li>• Length: 250 mm</li> <li>• Cutting Capacity: 18 gauge mild steel</li> <li>• Blade: Forged alloy steel</li> </ul>	No.	4
97.	<b>Lifting jack screw, 3 Ton</b>	No.	1
	<b>5Ton</b>	No.	1
	<b>20 Ton,</b> <ul style="list-style-type: none"> <li>• Capacity: 3 Ton, 5 Ton, 20 Ton</li> <li>• Type: Mechanical screw type</li> <li>• Lift Height: Min 180mm, Max 350mm</li> </ul>	No.	1
98.	<b>Magneto spanner set with 8 spanners</b> <ul style="list-style-type: none"> <li>• Sizes: 6mm to 17mm</li> <li>• Material: Chrome plated steel</li> <li>• Use: For electrical and ignition systems</li> </ul>	Set	1
99.	<b>Magnifying glass, 75mm</b> <ul style="list-style-type: none"> <li>• Lens Diameter: 75 mm</li> <li>• Magnification: 3x</li> <li>• Frame: Plastic or metal</li> </ul>	No.	2
100.	<b>Marking out table, 90 x 60 x 90 cm.</b> <ul style="list-style-type: none"> <li>• Table Top: Cast iron surface plate</li> <li>• Size: 900 x 600 x 900 mm</li> <li>• Finish: Lapped</li> </ul>	No.	1
101.	<b>Multimeter digital, DC 200mv - 500 V,0 – 10A &amp; AC 200mv- 500V , 0-10A,</b> <b>resistance 0-20 MΩ and 3 1/2 digit</b> <b>DC Voltage: 200mV to 500V</b> <b>AC Voltage: 200mV to 500V</b> <b>Current: 0 to 10A</b> <b>Resistance: 0 to 20 MΩ</b> <b>Display: 3½ digit LCD</b>	No.	5
102.	<b>Oil can, 0.5/0.25 liter capacity</b> <ul style="list-style-type: none"> <li>• Capacity: 0.5L and 0.25L</li> <li>• Material: Heavy-duty steel body with a rust-proof finish</li> <li>• Spout: Flexible or rigid spout</li> <li>• Operation: Lever or thumb-operated pump</li> <li>• Suitable for: Lubricating machinery and tools</li> </ul>	No.	4
103.	<b>Oil pump for dismantling and assembling.</b> <ul style="list-style-type: none"> <li>• Type: Manual or air-operated pump</li> <li>• Capacity: 5-10 liters</li> <li>• Pressure: Up to 10 bar</li> <li>• Suitable for: Engine and transmission oil handling during servicing</li> </ul>	No.	2
104.	<b>Oil Stone, 15 cm x 5 cm x 2.5 cm</b> <ul style="list-style-type: none"> <li>• Material: Silicon carbide or aluminum oxide</li> <li>• Size: 150mm x 50mm x 25mm</li> <li>• Grit: Double-sided (coarse and fine)</li> </ul>	No.	1
105.	<b>Oscilloscope, 20MHz</b> <ul style="list-style-type: none"> <li>• Bandwidth: 20 MHz</li> <li>• Channels: 2 or 4</li> <li>• Display: Digital LCD screen</li> <li>• Sample Rate: 500 MS/s</li> <li>• Features: USB connectivity, auto setup, measurement functions</li> </ul>	No.	2
106.	<b>Outside micrometer, 0 to 25 mm</b> <ul style="list-style-type: none"> <li>• 0-25 mm: Resolution 0.01 mm or 0.001 mm (digital)</li> <li>• Type: Mechanical or digital</li> </ul>	No.	2

	<ul style="list-style-type: none"> <li>• <b>Frame: Carbide-tipped measuring faces</b></li> </ul>		
107.	<b>Outside micrometer, 25 to 50 mm</b> <ul style="list-style-type: none"> <li>• 25-50 mm: Same specs as above</li> <li>• Type: Mechanical or digital</li> <li>• <b>Frame: Carbide-tipped measuring faces</b></li> </ul>	No.	2
108.	<b>Outside micrometer, 50 to 75 mm</b> <ul style="list-style-type: none"> <li>• 50-75 mm: Same specs as above</li> <li>• Type: Mechanical or digital</li> <li>• <b>Frame: Carbide-tipped measuring faces</b></li> </ul>	No.	1
109.	<b>Outside micrometer, 75 to 100 mm</b> <ul style="list-style-type: none"> <li>• 75-100 mm: Same specs as above</li> <li>• Type: Mechanical or digital</li> <li>• <b>Frame: Carbide-tipped measuring faces</b></li> </ul>	No.	1
110.	<b>Philips Screw Driver set of 5 pieces, 100 mm to 300 mm</b> <ul style="list-style-type: none"> <li>• Sizes: PH0, PH1, PH2, PH3, PH4</li> <li>• Lengths: 100 mm to 300 mm</li> <li>• Material: Chrome vanadium steel</li> <li>• Handle: Ergonomic, insulated</li> </ul>	No.	2
111.	<b>Pipe cutting tool</b> <ul style="list-style-type: none"> <li>• Cutting range: 6mm to 50mm</li> <li>• Material: Alloy steel body with hardened cutting wheels</li> <li>• Suitable for: Steel, copper, and plastic pipes</li> </ul>	No.	2
112.	<b>Pipe flaring tool</b> <ul style="list-style-type: none"> <li>• Range: 3/16" to 5/8"</li> <li>• Type: 45° or 37° flare</li> <li>• Suitable for: Copper, aluminum, brass pipes</li> </ul>	No.	2
113.	<b>Piston ring compressor</b> Compressor: Adjustable range 53mm to 175mm, steel band	No.	2
114.	<b>Piston Ring expander and remover.</b> <ul style="list-style-type: none"> <li>• Expander: Universal type with soft grip handles</li> </ul>	No.	2
115.	<b>Piston Ring groove cleaner.</b> Adjustable with different blade sizes	No.	1
116.	<b>Pliers combination, 20 cm.</b> <ul style="list-style-type: none"> <li>• Material: Chrome vanadium steel</li> <li>• Insulation: VDE rated for up to 1000V (for electrician grade)</li> <li>• Sizes: As specified (200mm, 150mm)</li> <li>• Finish: Nickel-plated, rust-resistant</li> </ul>	No.	2
117.	<b>Pliers flat nose, 15 cm</b> <ul style="list-style-type: none"> <li>• Material: Chrome vanadium steel</li> <li>• Insulation: VDE rated for up to 1000V (for electrician grade)</li> <li>• Sizes: As specified (200mm, 150mm)</li> <li>• Finish: Nickel-plated, rust-resistant</li> </ul>	No.	2
118.	<b>Pliers round nose, 15 cm</b> <ul style="list-style-type: none"> <li>• Material: Chrome vanadium steel</li> <li>• Insulation: VDE rated for up to 1000V (for electrician grade)</li> <li>• Sizes: As specified (200mm, 150mm)</li> <li>• Finish: Nickel-plated, rust-resistant</li> </ul>	No.	2
119.	<b>Pliers side cutting, 15 cm</b> <ul style="list-style-type: none"> <li>• Material: Chrome vanadium steel</li> <li>• Insulation: VDE rated for up to 1000V (for electrician grade)</li> <li>• Sizes: As specified (200mm, 150mm)</li> <li>• Finish: Nickel-plated, rust-resistant</li> </ul>	No.	2



120.	<b>Portable electric drill Machine, 15 mm drill bit capacity</b> <ul style="list-style-type: none"> <li>• Power: 600-850W</li> <li>• Chuck Capacity: 1.5 mm to 15 mm</li> <li>• Speed: Variable, 0-2800 RPM</li> <li>• Type: Reversible with hammer function (optional)</li> </ul>	No.	1
121.	<b>Prick Punch, 15 cm</b> <ul style="list-style-type: none"> <li>• Length: 150 mm</li> <li>• Diameter: 6-10 mm</li> <li>• Material: Hardened and tempered steel</li> </ul>	No.	4
122.	<b>Punch Letter 4mm (Number)</b> <ul style="list-style-type: none"> <li>• Size: 4 mm</li> <li>• Set: 0-9 numbers or A-Z alphabets</li> <li>• Material: Hardened alloy steel</li> </ul>	Set	2
123.	<b>Radiator cut section-cross flow</b> <ul style="list-style-type: none"> <li>• Educational Model: Working cut-section</li> <li>• Material: Aluminum/copper core, painted frame</li> <li>• Features: Shows water and airflow direction, fitted with cut hoses</li> </ul>	No.	1
124.	<b>Radiator cut section-down flow</b> <ul style="list-style-type: none"> <li>• Educational Model: Working cut-section</li> <li>• Material: Aluminum/copper core, painted frame</li> <li>• Features: Shows water and airflow direction, fitted with cut hoses</li> </ul>	No.	1
125.	<b>Radiator pressure cap</b> <ul style="list-style-type: none"> <li>• Type: Standard automotive</li> <li>• Pressure Rating: 0.9 to 1.3 bar</li> <li>• Material: Steel with rubber gasket</li> </ul>	No.	2
126.	<b>Right cut snips, 250mm</b> <ul style="list-style-type: none"> <li>• Length: 250 mm</li> <li>• Material: High carbon steel, hardened blades</li> <li>• Suitable for: Sheet metal cutting (right-hand curve)</li> </ul>	No.	2
127.	<b>Rivet sets snap and Dolly combined, 3mm, 4mm, 6mm</b> <ul style="list-style-type: none"> <li>• Set: Includes snap and dolly for each size</li> <li>• Material: Hardened tool steel</li> <li>• Application: For hand riveting aluminum and steel</li> </ul>	No.	2
128.	<b>Scraper flat, 25 cm</b> <ul style="list-style-type: none"> <li>• Length: 250 mm</li> <li>• Material: High carbon steel blade</li> <li>• Handle: Wooden or plastic ergonomic grip</li> </ul>	No.	2
129.	<b>Scraper half round, 25 cm</b> <ul style="list-style-type: none"> <li>• Length: 250 mm</li> <li>• Material: High carbon steel blade</li> <li>• Handle: Wooden or plastic ergonomic grip</li> </ul>	No.	2
130.	<b>Scraper Triangular, 25 cm</b> <ul style="list-style-type: none"> <li>• Length: 250 mm</li> <li>• Material: High carbon steel blade</li> <li>• Handle: Wooden or plastic ergonomic grip</li> </ul>	No.	2
131.	<b>Scriber, 15 cm</b> <ul style="list-style-type: none"> <li>• Length: 150 mm</li> <li>• Material: Hardened steel tip</li> <li>• Handle: Knurled or plastic</li> </ul>	No.	2
132.	<b>Scriber with scribing block universal</b> <ul style="list-style-type: none"> <li>• Hardened steel construction</li> <li>• Length: typically 150 mm (6 inch)</li> <li>• Comes with adjustable scribing block for precise marking</li> </ul>	No.	2
133.	<b>Set of stock and dies –Metric</b>	Set.	2

	<ul style="list-style-type: none"> <li>• Includes metric sizes (commonly M3 to M12)</li> <li>• Made of high-speed steel (HSS)</li> <li>• Comes in a metal storage case</li> </ul>		
134.	<b>Tinnman's Shear, 450 mm x 600mm</b> <ul style="list-style-type: none"> <li>• Manual sheet metal cutting tool</li> <li>• Cutting capacity: up to 1.2 mm mild steel</li> <li>• Heavy-duty cast iron frame</li> </ul>	No.	2
135.	<b>Sheet Metal Gauge</b> <ul style="list-style-type: none"> <li>• Standard wire gauge (SWG) measurement</li> <li>• Made of stainless steel</li> <li>• Measures thickness from 0.4 mm to 6 mm</li> </ul>	No.	2
136.	<b>Tinnman's Shear, 300mm</b> <ul style="list-style-type: none"> <li>• Blade length: 300 mm</li> <li>• Cutting capacity: 1 mm mild steel</li> <li>• Ergonomic handle</li> </ul>	No.	2
137.	<b>Soldering Copper, Hatchet type 500gms</b> <ul style="list-style-type: none"> <li>• 500 grams copper head</li> <li>• Wooden insulated handle</li> <li>• Suitable for heavy-duty soldering</li> </ul>	No.	2
138.	<b>Solid Parallels in pairs (Different size) in Metric</b> <ul style="list-style-type: none"> <li>• Made from hardened and ground steel</li> <li>• Sizes range from 10 mm x 10 mm to 50 mm x 100 mm</li> <li>• Precision ground flatness</li> </ul>	No.	2
139.	<b>Spanner Clyburn, 15 cm</b> <ul style="list-style-type: none"> <li>• Adjustable jaw opening up to 20 mm</li> <li>• Chrome-vanadium steel</li> <li>• Rust-resistant finish</li> </ul>	No.	1
140.	<b>Spanner D.E. set of 12 pieces, 6mm to 32mm</b> <ul style="list-style-type: none"> <li>• Double-ended open spanners</li> <li>• Sizes from 6x7 mm to 30x32 mm</li> <li>• Drop-forged, heat-treated steel</li> </ul>	No.	4
141.	<b>Spanner T. flocks for screwing up and up- screwing inaccessible</b> <ul style="list-style-type: none"> <li>• T-shaped spanner design</li> <li>• For screwing in hard-to-reach areas</li> <li>• Typically includes interchangeable sockets</li> </ul>	No.	2
142.	<b>Spanner, adjustable, 15cm</b> <ul style="list-style-type: none"> <li>• Jaw Capacity: 20-24 mm (approx.)</li> <li>• Material: Chrome vanadium steel, drop forged</li> <li>• Finish: Nickel chrome plated for corrosion resistance</li> <li>• Features: Precision machined jaws, knurled adjustment screw, slim head for tight spaces</li> </ul>	No.	2
143.	<b>Spanner, ring set of 12 metric sizes, 6 to 32 mm.</b> <b>Sizes: 6, 8, 10, 12, 13, 14, 15, 17, 19, 22, 24, 32 mm</b> <b>Material: Chrome vanadium steel</b> <b>Finish: Mirror polished or satin chrome</b> <b>Type: Bi-hex (12 point) ring type</b>	No.	4
144.	<b>Spanners socket with speed handle, T-bar, ratchet and universal</b> <ul style="list-style-type: none"> <li>• Drive Size: 1/2" or 3/8"</li> <li>• Contents: Speed handle T-bar handle Ratchet handle Universal joint Socket sizes 8 mm to 32 mm (commonly)</li> </ul>	No.	2

	<ul style="list-style-type: none"> <li>• <b>Material:</b> Hardened steel, chrome plated</li> </ul>		
145.	<b>Spark lighter</b> <b>Type:</b> Flint-based manual spark generator <b>Body:</b> Metal frame with replaceable flint <b>Usage:</b> Ignition for gas torches and burners	No.	2
146.	<b>Spark plug spanner 14mm x 18mm x Size</b> <b>Size:</b> Dual head (14 mm and 18 mm) <b>Type:</b> Box type with handle <b>Application:</b> Removal and installation of spark plugs	No.	2
147.	<b>Starter motor axial type, pre-engagement type &amp; Co-axial type</b> <ul style="list-style-type: none"> <li>• <b>Voltage:</b> 12V</li> <li>• <b>Types:</b>            Axial: Conventional direct drive            Pre-engagement: Solenoid activated with pinion shift            Co-axial: Compact, gear reduction type         </li> <li>• <b>Application:</b> Automotive engine starting</li> </ul>	No.	1
148.	<b>Steel measuring tape in a case, 10 meter</b> <ul style="list-style-type: none"> <li>• <b>Length:</b> 10 meters</li> <li>• <b>Width:</b> 12.5-16 mm</li> <li>• <b>Material:</b> Steel blade with nylon coating</li> <li>• <b>Case:</b> ABS plastic or metal with belt clip</li> <li>• <b>Graduation:</b> Metric (mm/cm)</li> </ul>	No.	4
149.	<b>Steel rule 15 cm inch and metric</b> <ul style="list-style-type: none"> <li>• <b>Lengths:</b> 150 mm (15 cm) and 300 mm (30 cm)</li> <li>• <b>Material:</b> Stainless steel</li> <li>• <b>Graduation:</b> mm/cm on one side, inches on the other</li> <li>• <b>Precision:</b> <math>\pm 0.5</math> mm</li> </ul>	No.	4
150.	<b>Steel rule 30 cm inch and metric</b> <ul style="list-style-type: none"> <li>• <b>Lengths:</b> 300 mm (30 cm)</li> <li>• <b>Material:</b> Stainless steel</li> <li>• <b>Graduation:</b> mm/cm on one side, inches on the other</li> <li>• <b>Precision:</b> <math>\pm 0.5</math> mm</li> </ul>	No.	4
151.	<b>Straight edge gauge 2 ft.</b> <ul style="list-style-type: none"> <li>• <b>Lengths:</b> 600 mm (2 ft) and 1200 mm (4 ft)</li> <li>• <b>Material:</b> Hardened and ground steel</li> <li>• <b>Accuracy:</b> Within 0.01 mm per meter</li> <li>• <b>Cross Section:</b> Rectangular or I-beam type</li> </ul>	No.	2
152.	<b>Straight edge gauge 4 ft.</b> <ul style="list-style-type: none"> <li>• <b>Lengths:</b> 1200 mm (4 ft)</li> <li>• <b>Material:</b> Hardened and ground steel</li> <li>• <b>Accuracy:</b> Within 0.01 mm per meter</li> <li>• <b>Cross Section:</b> Rectangular or I-beam type</li> </ul>	No.	2
153.	<b>Stud extractor set of 3</b> <ul style="list-style-type: none"> <li>• <b>Sizes:</b> Small, Medium, Large (covering M6-M12)</li> <li>• <b>Type:</b> Cam or roller grip type</li> <li>• <b>Drive:</b> 3/8" square drive</li> <li>• <b>Material:</b> Alloy steel</li> </ul>	Set	2
154.	<b>Stud remover with socket handle</b> <ul style="list-style-type: none"> <li>• <b>Type:</b> Cam-operated</li> <li>• <b>Drive Size:</b> 1/2"</li> <li>• <b>Grip Range:</b> Typically M6 to M14</li> <li>• <b>Features:</b> Knurled adjustment, reversible</li> </ul>	No.	1
155.	<b>Surface gauge with dial test indicator plunger type, 0.01 mm</b> <ul style="list-style-type: none"> <li>• <b>Dial Indicator:</b> Range 0-10 mm, least count 0.01 mm.</li> </ul>	No.	4

	<ul style="list-style-type: none"> <li>• <b>Base:</b> Cast iron with fine ground surface.</li> <li>• <b>Spindle movement:</b> Smooth with anti-backlash mechanism.</li> <li>• <b>Application:</b> Surface marking, inspection, and alignment.</li> </ul>		
156.	<b>Tachometer (Counting type)</b> <ul style="list-style-type: none"> <li>• <b>Type:</b> Mechanical handheld tachometer</li> <li>• <b>Range:</b> 0-10,000 RPM</li> <li>• <b>Accuracy:</b> ±0.5%</li> <li>• <b>Display:</b> Mechanical dial counter</li> <li>• <b>Application:</b> Suitable for measuring rotating speed of motors, engines, spindles</li> </ul>	No.	1
157.	<b>Tandem master cylinder with booster</b> <ul style="list-style-type: none"> <li>• <b>Type:</b> Dual circuit master cylinder with vacuum brake booster</li> <li>• <b>Bore size:</b> Typically 22 mm - 25 mm</li> <li>• <b>Booster size:</b> 8-10 inches diaphragm type</li> <li>• <b>Application:</b> Used in automotive braking systems to amplify braking force</li> </ul>	No.	4
158.	<b>Taps and Dies complete sets (5 types)</b> <ul style="list-style-type: none"> <li>• <b>Set Includes:</b> Taper, plug, bottoming taps, round dies.</li> <li>• <b>Range:</b> M3 to M24.</li> <li>• <b>Material:</b> High-speed steel (HSS).</li> <li>• <b>Comes in:</b> Sturdy metal case with tap wrench, die stock, and pitch gauge.</li> </ul>	Set	1
159.	<b>Taps and wrenches – Metric</b> <ul style="list-style-type: none"> <li>• <b>Set includes:</b> Taper, intermediate, and bottoming taps</li> <li>• <b>Range:</b> M3 to M12 or larger sets up to M20</li> <li>• <b>Material:</b> HSS (High-Speed Steel)</li> <li>• <b>Tap wrench adjustable:</b> Suitable for above sizes</li> </ul>	Set	2
160.	<b>Telescope gauge</b> <ul style="list-style-type: none"> <li>• <b>Range:</b> 8-150 mm (divided into multiple gauges)</li> <li>• <b>Construction:</b> Stainless steel with knurled locking knob</li> <li>• <b>Application:</b> Measuring internal diameters, used with micrometer.</li> </ul>		4
161.	<b>Temperature gauge with sensor, 0-100 °C</b> <ul style="list-style-type: none"> <li>• <b>Type:</b> Analog or digital</li> <li>• <b>Range:</b> 0°C to 100°C</li> <li>• <b>Sensor:</b> NTC thermistor or PT100 sensor</li> <li>• <b>Output:</b> Mechanical dial or digital display</li> <li>• <b>Application:</b> Engine coolant temperature measurement</li> </ul>	No.	2
162.	<b>Thermostat</b> <ul style="list-style-type: none"> <li>• <b>Type:</b> Wax element thermostat</li> <li>• <b>Operating range:</b> Starts opening at 82°C - fully open at 95°C</li> <li>• <b>Material:</b> Brass/steel housing</li> <li>• <b>Application:</b> Automotive engine coolant control</li> </ul>	No.	2
163.	<b>Thread pitch gauge Metric</b> <ul style="list-style-type: none"> <li>• <b>Range:</b> 0.25 mm to 6 mm pitch</li> <li>• <b>Blades:</b> 20-30 blades made of stainless steel</li> <li>• <b>Application:</b> Identifying thread pitches in metric fasteners</li> </ul>	No.	2
164.	<b>Timing lighter</b> <ul style="list-style-type: none"> <li>• <b>Type:</b> Xenon strobe light</li> <li>• <b>Voltage:</b> 12V DC (automotive battery powered)</li> <li>• <b>Clamp type:</b> Inductive pickup for spark plug wire</li> <li>• <b>Application:</b> Ignition timing adjustment in engines</li> </ul>	No.	2
165.	<b>Torque wrenches, 5-35 Nm, 12-68 Nm &amp; 50-225 Nm</b> Range 1: 5-35 Nm (¼" drive), accuracy ±3%. Range 2: 12-68 Nm (⅜" drive), accuracy ±3%. Range 3: 50-225 Nm (½" drive), accuracy ±3%. <b>Type:</b> Click type with audible sound. <b>Certification:</b> Calibrated as per IS standards with certificate.	set	1

166.	<b>Trammel, 30 cm</b> <ul style="list-style-type: none"> <li>•Type: <b>Adjustable trammel points</b></li> <li>•Length: <b>300 mm (30 cm)</b></li> <li>•Material: <b>Hardened steel or cast iron body with steel points</b></li> <li>•Application: <b>For scribing circles or arcs larger than standard dividers</b></li> <li>•Adjustment: <b>Equipped with fine adjustment screw for precise setting</b></li> <li>•Accessories: <b>Usually includes two points, may include pencil holder attachment</b></li> </ul>	No.	2
167.	<b>Turbocharger cut sectional view</b> <ul style="list-style-type: none"> <li>•Type: <b>Educational/training model</b></li> <li>•Construction: <b>Real turbocharger body cut away to show internal components</b></li> <li>•Components Exposed:  <b>Compressor wheel</b>  <b>Turbine wheel</b>  <b>Shaft</b>  <b>Bearings</b>  <b>Wastegate (if applicable)</b> </li> <li>•Material: <b>Aluminum alloy casing with steel internal parts</b></li> <li>•Finish: <b>Painted and color-coded for easy identification</b></li> <li>•Purpose: <b>Demonstrates airflow, exhaust gas path, and mechanical operation</b></li> <li>•Mounting: <b>Usually mounted on a display stand or base</b></li> </ul>	No.	1
168.	<b>Tyre pressure gauge with holding nipple</b> <ul style="list-style-type: none"> <li>• Measuring Range:  <b>Standard: 0–100 psi (0–7 kg/cm<sup>2</sup> or 0–7 bar)</b>  <b>Optional: 0–150 psi (0–10 kg/cm<sup>2</sup>) for heavy vehicles</b> </li> <li>• Accuracy:  <b>±1.5% full scale (Class 1.5 accuracy)</b>  <b>Digital models can have ±1% accuracy</b> </li> <li>• Dial Size:  <b>50 mm (2 inch) to 63 mm (2.5 inch) diameter for hand-held models</b> </li> <li>• Holding Nipple:  <b>Type: Push-on or clip-on type holding nipple</b>  <b>Material: Chrome-plated brass or stainless steel</b>  <b>Function: Allows hands-free pressure reading while attached to valve</b> </li> <li>• Connection Type:  <b>Standard Schrader valve compatible (8V1 thread)</b>  <b>Air inlet port: 1/4" BSP or NPT female</b> </li> <li>• Body Material:  <b>Zinc alloy or ABS plastic body with rubber guard for shock resistance</b> </li> <li>• Display (if Digital):  <b>Backlit LCD, auto-off function</b>  <b>Units: psi, bar, kg/cm<sup>2</sup>, kPa (selectable)</b> </li> <li>• Operating Temperature:  <b>-10°C to +60°C</b> </li> <li>• Accessories:  <b>Protective rubber cover</b>  <b>Calibration certificate (optional)</b>  <b>Flexible hose (typically 300–500 mm)</b> </li> </ul>	No.	2
169.	<b>Universal puller for removing pulleys, bearings</b> <ul style="list-style-type: none"> <li>• Type: <b>2-jaw/3-jaw reversible puller.</b></li> <li>• Material: <b>Drop forged alloy steel.</b></li> <li>• Capacity: <b>Suitable for pulleys, gears, and bearings up to 150 mm in diameter.</b></li> <li>• Features: <b>Adjustable reach and spread for versatile applications.</b></li> </ul>	No.	1
170.	<b>V' Block 75 x 38 mm pair with Clamps</b> <ul style="list-style-type: none"> <li>• Size: <b>75 x 38 mm.</b></li> <li>• Material: <b>Hardened and precision ground steel.</b></li> </ul>		2

	<ul style="list-style-type: none"> <li>• Accuracy: Parallelism and squareness within 0.005 mm.</li> <li>• Comes with: Clamps for holding round objects securely during marking or inspection.</li> </ul>	No.	
171.	<b>Vacuum gauge, 0 to 760 mm of Hg.</b> <ul style="list-style-type: none"> <li>• Range: 0 to 760 mm of Hg (Mercury).</li> <li>• Dial Size: 100 mm.</li> <li>• Connection: Bottom entry, 3/8" BSP.</li> <li>• Accuracy: ±1.6% of full scale.</li> <li>• Suitable for: Automotive and industrial vacuum testing.</li> </ul>	No.	2
172.	<b>Valve Lifter , • Type: Manual lever type</b> <ul style="list-style-type: none"> <li>• Material: Hardened steel</li> <li>• Application: For removing valves from cylinder heads</li> <li>• Features: Ergonomic handle, adjustable jaw width</li> </ul>	No.	1
173.	<b>Valve spring compressor universal,</b> <ul style="list-style-type: none"> <li>• Capacity: Suitable for most passenger vehicle engines</li> <li>• Material: Forged steel frame</li> <li>• Throat depth: Adjustable</li> <li>• Application: Compressing valve springs for removal and installation</li> </ul>	No.	1
174.	<b>Verniercalliper, 0-300 mm with least count 0.02mm</b> <ul style="list-style-type: none"> <li>• Measuring range: 0-300 mm</li> <li>• Least count: 0.02 mm</li> <li>• Material: Stainless steel</li> <li>• Type: Metric scale</li> <li>• Features: Locking screw, fine adjustment thumb wheel</li> </ul>	No.	4
175.	<b>Vice grip pliers</b> <ul style="list-style-type: none"> <li>• Size: 10 inches (250 mm)</li> <li>• Jaw capacity: Up to 40 mm</li> <li>• Material: Alloy steel with nickel plating</li> <li>• Features: Quick release lever, adjustable screw.</li> </ul>	No.	2
176.	<b>Water pump for dismantling and assembling,</b> <ul style="list-style-type: none"> <li>• Application: For automotive water pumps</li> <li>• Components: Puller set, driver sleeves</li> <li>• Material: Hardened steel</li> <li>• Compatibility: Most light motor vehicles (LMV)</li> </ul>	No.	4
177.	<b>Wire Gauge (metric )</b> <ul style="list-style-type: none"> <li>• Range: 0.2 mm to 10 mm</li> <li>• Material: Hardened steel disc</li> <li>• Markings: Laser etched, metric units</li> <li>• Application: Checking wire diameter sizes</li> </ul>	No.	2
178.	<b>Work bench, 250 x 120 x 60 cm with 4 vices 12cm Jaw</b> <ul style="list-style-type: none"> <li>• Dimensions: 2500 mm (L) x 1200 mm (W) x 600 mm (H)</li> <li>• Material: Heavy duty steel frame with hardwood top</li> <li>• Features: Fitted with 4 bench vices (jaw width 120 mm/12 cm)</li> <li>• Load capacity: 500 kg distributed load</li> </ul>	No.	4
<b>GENERAL SHOP OUTFIT</b>			
179.	<b>Air conditioned CRDI Vehicle (used) in running condition –LMV</b> <ul style="list-style-type: none"> <li>• Type: Passenger vehicle with Common Rail Direct Injection diesel engine</li> <li>• Condition: Running, used</li> <li>• Features: Air conditioning, standard instrumentation, electronic fuel injection</li> </ul>	No.	1
180.	<b>Arbor press hand operated 2 ton capacity</b> <ul style="list-style-type: none"> <li>• Capacity: 2 ton</li> <li>• Ram travel: 150 mm</li> </ul>	No.	1

	<ul style="list-style-type: none"> <li>• Throat depth: 200 mm</li> <li>• Base dimensions: 300 x 250 mm</li> <li>• Material: Cast iron frame</li> </ul>		
181.	<b>Automotive Diesel Smokemeter (for Diesel engine)</b> <ul style="list-style-type: none"> <li>• Measurement: Opacity (%), K-value (1/m)</li> <li>• Power: 12V DC from vehicle or 230V AC</li> <li>• Application: For diesel exhaust smoke testing</li> <li>• Standards: Compliant with emission testing norms</li> </ul>	No.	1
182.	<b>Bench lever shears, 250mm Blade x 3mm</b> <ul style="list-style-type: none"> <li>• Blade size: 250 mm</li> <li>• Cutting capacity: Up to 3 mm mild steel sheet</li> <li>• Material: High carbon steel blades</li> <li>• Features: Bench mounting holes, long handle for leverage</li> </ul>	No.	1
183.	<b>Diesel Engine – CRDI - 4 stroke, Dismantling and assembling with Swivelling stand</b> <ul style="list-style-type: none"> <li>• Type: 4-cylinder, Common Rail Direct Injection</li> <li>• Condition: Dismantling and assembling purpose</li> <li>• Stand: Heavy-duty with 360-degree rotation</li> </ul>	No.	1
184.	<b>Diesel engine ( Runningcondition ) Stationary type</b> <ul style="list-style-type: none"> <li>• Type: 4-stroke diesel engine</li> <li>• HP: 5 to 10 HP range</li> <li>• Cooling: Water cooled</li> <li>• Mounted on a rigid base frame</li> </ul>	No.	1
185.	<b>Discrete Component Trainer / Basic Electronics Trainer</b> <ul style="list-style-type: none"> <li>• Power Supply: <math>\pm 12V</math>, <math>+5V</math> DC</li> <li>• Built-in components: Resistors, capacitors, inductors, diodes, transistors, LEDs, switches.</li> <li>• Breadboard area: <math>\geq 1700</math> tie points</li> <li>• Digital readout: 7-segment display</li> <li>• Included accessories: Patch cords, manual, circuit diagram sheets</li> </ul>	No.	1
186.	<b>Drilling machine bench to drill up to 12mm dia along with accessories</b> Max drill capacity: 12mm (steel) Motor: 0.5 HP, 1-phase, 230V Spindle speed: 5-12 steps, 400-3500 RPM Accessories: Drill chuck key, vice, depth gauge	No.	1
187.	<b>Dual Magnetization Yoke, AC / HWDC, 230 VAC, 50Hz</b> <ul style="list-style-type: none"> <li>• Magnetization: AC / HWDC</li> <li>• Input: 230V AC, 50Hz</li> <li>• Lifting capacity: <math>\geq 4.5</math>kg in AC mode, <math>\geq 18</math>kg in HWDC</li> <li>• Cable length: 3 meters</li> </ul>	Set	1
188.	<b>Gas Welding Table, 1220mm x 760mm</b> <ul style="list-style-type: none"> <li>• Frame: Heavy-duty steel</li> <li>• Top: Heat-resistant steel grid</li> <li>• Size: 1220mm x 760mm</li> <li>• Height: 800-900mm adjustable</li> <li>• Features: Clamp slots, slag tray</li> </ul>	No.	2
189.	<b>Grinding machine (general purpose) D.E. pedestal with 300 mm dia. wheels rough and smooth</b> <ul style="list-style-type: none"> <li>• Wheel size: 300 mm diameter</li> <li>• Motor: 2 HP, 3-phase, 1440 RPM</li> <li>• Wheels: 1 rough, 1 smooth</li> <li>• Tool rest adjustable</li> <li>• Eye shield &amp; coolant tray included</li> </ul>	No.	1
190.	<b>Heavy Commercial vehicle type (without body on frame)</b>	No.	1

	<ul style="list-style-type: none"> <li>• <b>Type:</b> 6-wheeler HCV chassis frame</li> <li>• <b>Engine mounting:</b> Inline 6-cylinder diesel</li> <li>• <b>Included:</b> Transmission, axle, suspension, steering</li> <li>• <b>Application:</b> Practical training on assemblies</li> </ul>		
191.	<b>Hydraulic jack HI-LIFT type -3 ton capacity, and 5 Ton capacity</b> <ul style="list-style-type: none"> <li>• <b>Capacity:</b> 3 Ton &amp; 5 Ton</li> <li>• <b>Lift range:</b> 180mm - 350mm</li> <li>• <b>Operation:</b> Manual, HI-LIFT mechanism</li> <li>• <b>Material:</b> Alloy steel cylinder</li> </ul>	set	1
192.	<b>Liquid penetrate inspection kit</b> <ul style="list-style-type: none"> <li>• <b>Contents:</b> Cleaner, penetrant, developer sprays (each 400 ml)</li> <li>• <b>Standards:</b> ASTM E1417 compliant</li> <li>• <b>Sensitivity:</b> Level 2 or higher</li> <li>• <b>Application:</b> Crack &amp; surface flaw detection</li> </ul>	Set	1
193.	<b>Multi Scan Tool with oscilloscope</b> <ul style="list-style-type: none"> <li>• <b>Compatible with:</b> OBD-II, EOBD, CAN, KWP2000 protocols</li> <li>• <b>Oscilloscope:</b> 2-channel, 20 MHz</li> <li>• <b>Features:</b> Code reading, live data, graphing</li> <li>• <b>Power:</b> 12V vehicle battery</li> </ul>	No.	1
194.	<b>Pipe Bending Machine (Hydraulic type), 12mm to 30mm</b> <ul style="list-style-type: none"> <li>• <b>Capacity:</b> 12mm to 30mm pipe diameter</li> <li>• <b>Operation:</b> Manual hydraulic</li> <li>• <b>Bending dies:</b> 6 sizes</li> <li>• <b>Max bend angle:</b> 90°</li> <li>• <b>Frame:</b> Steel, powder-coated</li> </ul>	No.	1
195.	<b>Pneumatic rivet gun with standard accessories</b> <ul style="list-style-type: none"> <li>• <b>Rivet capacity:</b> 3/32" to 3/16"</li> <li>• <b>Air pressure:</b> 70-90 PSI</li> <li>• <b>Accessories:</b> Nosepieces, oil bottle</li> <li>• <b>Air inlet:</b> 1/4" NPT</li> </ul>	No.	2
196.	<b>Spring tension tester</b> <ul style="list-style-type: none"> <li>• <b>Load capacity:</b> 0 - 500 N</li> <li>• <b>Display:</b> Analog dial or digital</li> <li>• <b>Accuracy:</b> ±1%</li> <li>• <b>Features:</b> Zero setting, peak hold</li> </ul>	No.	1
197.	<b>Tin smiths bench folder, 600 x 1.6mm</b> <ul style="list-style-type: none"> <li>• <b>Folding length:</b> 600 mm</li> <li>• <b>Max thickness:</b> 1.6 mm (mild steel)</li> <li>• <b>Operation:</b> Manual lever</li> <li>• <b>Angle:</b> Adjustable up to 135°</li> </ul>	No.	1
198.	<b>Trolley type portable air, compressor single cylinder with 45 litres capacity Air tank, along with accessories &amp; with working pressure 6.5 kg/sq. cm</b> <b>Tank capacity: 45 litres</b> <b>Type: Single-cylinder, oil-lubricated</b> <b>Max pressure: 6.5 kg/cm² (95 PSI)</b> <b>Motor: 2 HP, 230V</b> <b>Accessories: Hose, pressure gauge, filter</b>	No.	1
199.	<b>Welding plant Oxy-Acetylene complete ( high pressure)</b> <ul style="list-style-type: none"> <li>• <b>Oxygen cylinder:</b> 47 litres, 200 bar</li> <li>• <b>Acetylene cylinder:</b> 6.8 kg</li> <li>• <b>Torch:</b> 3 nozzles (light, medium, heavy)</li> <li>• <b>Accessories:</b> Hoses, flashback arrestors, regulators</li> </ul>	No.	1



200.	<b>Welding Transformer with all accessories including consumables, 150-300 Amps</b> <b>Current range: 150-300 Amps</b> <b>Input voltage: 415V, 3-phase, 50Hz</b> <b>Duty cycle: 60% at 300A</b> <b>Cooling: Fan-cooled</b> <b>Included: Holder, earth clamp, cables, helmet</b>	No.	1
201.	<b>Working Condition of Diesel Engine – CRDI</b> <b>- 4 stroke Engine, Assembly with fault simulation board</b> <ul style="list-style-type: none"> <li>• Engine: 4-cylinder CRDI diesel</li> <li>• Simulation: 10-15 fault codes</li> <li>• Display: Live sensor data, fuel pressure</li> <li>• Mounted on: Swiveling stand with wheels</li> <li>• Accessories: ECU diagnostic connector</li> </ul>	No.	1
202.	<b>Cut section of 4/6 cylinder diesel engine with moving condition to show momentum of internal parts</b> <ul style="list-style-type: none"> <li>• Engine type: 4/6 cylinder inline</li> <li>• Cut sections: Cylinder head, block, crankshaft, camshaft</li> <li>• Drive: Electric motor to simulate motion</li> <li>• Display: Moving pistons, valves, crank</li> </ul>	No.	1
203.	<b>Fuel injection test bench for calibration of fuel pump</b> <b>Compatible: Inline and rotary diesel pumps</b> <b>Pressure: 0 - 600 bar</b> <b>Motor: 5 HP, 3-phase, 1440 RPM</b> <b>Display: Digital RPM, flow meters</b> <b>Accessories: Injector pipes, coupling adapters</b> <ul style="list-style-type: none"> <li>•</li> </ul>	No.	1
204.	<b>Electrical test bench,</b> <ul style="list-style-type: none"> <li>• Power supply: 12V &amp; 24V DC</li> <li>• Test modules: Starter, alternator, relays, sensors</li> <li>• Load bank: Up to 100A</li> <li>• Included: Multimeter, oscilloscope ports, fuse box</li> </ul>	No.	1
205.	<b>Diesel Engine six Cylinder in running condition</b> <ul style="list-style-type: none"> <li>• Engine: 6-cylinder, 4-stroke diesel</li> <li>• Mounting: Engine stand with vibration dampers</li> <li>• Display: Temperature, RPM, oil pressure gauges</li> <li>• Fuel supply: Diesel tank with filter</li> </ul>	No.	1
206.	Battery- SMF-- 12V, 65-80Ah, maintenance-free	No.	1
207.	Brake fluids---DOT 3 & DOT 4, ISO 4925 compliant	No.	1
208.	Chalk, Prussian blue---For marking and valve lapping	No.	1
209.	Chemical compound for fasteners-- Loctite thread locker (blue)	No.	1
210.	Diesel---As per IS 1460 BS VI standard	No.	1
211.	Different type gasket material---Asbestos-free sheets, thickness 0.5mm to 3mm	No.	1
212.	Different type of oil seal-- Nitrile rubber, assorted sizes	set	1
213.	Drill Twist (assorted)--- HSS, sizes 2mm to 12mm	set	1
214.	Emery paper - 36–60 grit , 80–120 ---36-60 grit (coarse), 80-120 (medium)	Set	1
215.	Engine oil & Engine coolant---SAE 15W40, API CI-4	Ltr.	5

216.	Gear oils--SAE 80W90 GL-4	Ltr.	5
217.	Gloves for Welding --Leather, heat-resistant	No.	1
218.	Hacksaw blade (consumable)--- 12", 18-24 TPI	No.	6
219.	Hand rubber gloves tested for 5000 V---Rubber, ISI marked	set	5
220.	Holders, lamp teakwood boards, plug sockets,ISI marked, 6A-16A	set	1
221.	Hydrometer---Range 1.000-1.300, for battery electrolyte	No.	2
222.	Lapping abrasives -60-120 mesh (silicon carbide)	No.	5
223.	Leather apron--Split leather, full length	No.	5
224.	Petrol--As per IS 2796 BS VI	Ltr.	10
225.	Power steering oil-- ATF Dexron II/III	Ltr.	5
226.	Radiator Coolants--- Ethylene glycol-based, premixed 50%	Ltr.	2
227.	Safety glasses --- ISI marked, side shielded	No.	5
228.	Steel wire Brush 50mmx150mm --50mm x 150mm, wooden handle	No.	5
229.	<b>Instructor's table and Chair (Steel),</b> <ul style="list-style-type: none"> <li>• Table Size: 1200 mm x 600 mm x 750 mm (L x W x H)</li> <li>• Material: Powder-coated CRCA steel frame with laminated wooden top</li> <li>• Chair: Ergonomic design, steel frame with cushioned seat and backrest, anti-skid foot pads</li> </ul>	Set	1
230.	<b>Students chairs with writing pads</b> <ul style="list-style-type: none"> <li>• Frame: Powder-coated tubular steel</li> <li>• Seat &amp; Back: High-density polypropylene or molded plywood with laminate finish</li> <li>• Writing Pad: High-pressure laminate (HPL), folding type, right-hand side standard</li> <li>• Stackable design</li> </ul>	No.	10
231.	<b>White board size 1200mm X 900 mm</b> <ul style="list-style-type: none"> <li>• Surface: Melamine-coated or ceramic steel (magnetic)</li> <li>• Frame: Anodized aluminum with plastic corner caps</li> <li>• Accessories: Wall mounting kit, marker tray included</li> </ul>	No.	1
232.	<b>Instructors lap top with latest(vista &amp; above) configuration pre-loaded with operating system. and MS Office package.</b> <ul style="list-style-type: none"> <li>• Processor: Intel Core i5/i7 12th or 13th Gen or AMD Ryzen 5/7 (2023-24 models)</li> <li>• RAM: 16GB DDR4/DDR5</li> <li>• Storage: 512GB NVMe SSD</li> <li>• Display: 15.6" FHD IPS</li> <li>• OS: Windows 11 preloaded (Vista and above compatible)</li> <li>• Software: MS Office Home &amp; Student 2021 or Office 365</li> <li>• Connectivity: Wi-Fi 6, Bluetooth 5.2, USB-C, HDMI</li> </ul>	No.	1
233.	<b>LCD projector with screen or smart board, As required by client</b> <ul style="list-style-type: none"> <li>• LCD Projector: 3500-4000 lumens brightness, Full HD resolution (1920x1080), HDMI/VGA/USB inputs</li> <li>• Screen: Tripod or wall-mounted, size 70" to 100" diagonal</li> <li>• Smart Board: 75" interactive display, 4K resolution, multi-touch support, compatible with Windows &amp; Android OS</li> </ul>	No.	1
234.	<b>Lockers with drawers</b> <ul style="list-style-type: none"> <li>• Material: CRCA steel, powder-coated</li> <li>• Configuration: 6, 9, or 12 door options</li> <li>• Size: Standard locker size per door ~300 mm x 450 mm x 450 mm</li> <li>• Lock: Cam lock with master key provision</li> <li>• Ventilation: Louvred door design for air circulation</li> </ul>	No.	1

<b>Electric Workshop</b> <b>ELECTRICIAN List of Tools &amp; Equipment ELECTRICIAN (for batch of 10 candidates)</b>			
S.N	Name of the Tools and Equipment	Unit	Quantity
<b>A. TRAINEES TOOL KIT (For each additional unit trainees tool kit Sl. 1-12 is required additionally)</b>			
1	<b>Measuring Steel Tape, 5 meter</b> <ul style="list-style-type: none"> <li>• Length: 5 meters</li> <li>• Blade: Steel, coated for rust resistance</li> <li>• Graduation: Metric (mm/cm)</li> <li>• Case: ABS plastic or steel</li> <li>• Hook: Magnetic or standard</li> <li>• Accuracy: Class II</li> </ul>	No.	5
2.	<b>Combination Plier Insulated, 200 mm</b> <ul style="list-style-type: none"> <li>• Length: 200 mm (8 inch)</li> <li>• Insulation: VDE certified up to 1000V</li> <li>• Material: Chrome vanadium steel</li> <li>• Grip: Anti-slip insulated handle</li> <li>• Use: Cutting, gripping, bending wires</li> </ul>	No.	5
3	<b>Screwdriver Insulated, 4mm X 150 mm, Diamond Head</b> <ul style="list-style-type: none"> <li>• Blade: 4mm width, 150 mm length</li> <li>• Tip: Diamond coated for extra grip</li> <li>• Insulation: VDE certified 1000V</li> <li>• Handle: Ergonomic insulated handle</li> </ul>	No.	5
4.	<b>Screwdriver Insulated, 6mm X 150 mm</b> <ul style="list-style-type: none"> <li>• Blade: 6mm width, 150 mm length</li> <li>• Insulation: VDE certified 1000V</li> <li>• Handle: Ergonomic insulated handle</li> </ul>	No.	5
5	<b>Electrician screwdriver thin stem insulated handle, 4mm X 100 mm</b> <ul style="list-style-type: none"> <li>• Blade: 4mm width, 100 mm length, thin stem for tight spaces</li> <li>• Insulation: VDE certified 1000V</li> <li>• Handle: Insulated handle</li> </ul>	No.	5
6.	<b>Heavy Duty Screwdriver insulated, 5mm X 200 mm</b> <ul style="list-style-type: none"> <li>• Blade: 5mm width, 200 mm length</li> <li>• Insulation: VDE certified 1000V</li> <li>• Handle: Heavy-duty insulated grip</li> </ul>	No.	5
7	<b>Electrician Screwdriver thin stem insulated handle Insulated handle, 4mm X 250 mm</b> Blade: 4mm width, 250 mm length, thin stem Insulation: VDE certified 1000V Handle: Insulated ergonomic handle	No.	5
8.	<b>Punch Centre, 9mm X 150 mm</b> <ul style="list-style-type: none"> <li>• Tip: 9mm diameter</li> <li>• Length: 150 mm</li> <li>• Material: Hardened and tempered steel</li> <li>• Knurled body for grip</li> </ul>	No.	5

9	<b>Knife Double Bladed Electrician, 100 mm</b> <ul style="list-style-type: none"> <li>• Blade: Double blade design</li> <li>• Length: 100 mm</li> <li>• Handle: Insulated for safety</li> <li>• Use: Wire stripping and general cutting</li> </ul>	No.	5
10.	<b>Neon Tester, 500 V</b> <ul style="list-style-type: none"> <li>• Voltage range: 100V to 500V AC</li> <li>• Insulation: Plastic handle</li> <li>• Tip: Flat or slotted</li> <li>• Use: Testing live wires</li> </ul>	No.	5
11	<b>Steel Rule Graduated both in Metric and English Unit, 300 mm with precision of 1/4th mm</b> <ul style="list-style-type: none"> <li>• Length: 300 mm (12 inches)</li> <li>• Graduation: Metric (mm) and Imperial (1/64", 1/32", 1/16")</li> <li>• Precision: Up to 0.25 mm</li> <li>• Material: Stainless steel</li> </ul>	No.	5
12.	<b>Hammer, cross peen with handle, 250 grams</b> <ul style="list-style-type: none"> <li>• Head weight: 250 grams</li> <li>• Head material: Forged steel</li> <li>• Handle: Wooden or fiberglass</li> <li>• Use: Metalworking, riveting</li> </ul>	No.	5

**B. SHOP TOOLS & EQUIPMENT — For 2 (1+1) units no additional items are required**

**(i) List of Tools & Accessories**

13.	Hammer, ball peen With handle, 500 grams Forged steel head, hardened and tempered; wooden or fiberglass handle; used for metalworking.	No.	4
14.	Pincer, 150 mm, Carbon steel, nickel-plated, hardened cutting edges, used for pulling nails and gripping.	No.	4
15.	C- Clamp, 200 mm and 100 mm, Cast iron body, steel screw, plated finish, used for holding materials securely.	No.	2
16.	Spanner Adjustable drop forged, SS, 150 mm & 300mm, Drop-forged chrome vanadium, precision jaws, smooth adjustment.	No.	2
17.	Blow lamp brass, 0.5 ltr, Brass body, manual pump, fuel capacity 0.5L, suitable for soldering and heating.	No.	1
18.	Chisel Cold, 25 mm X 200 mm, Chrome vanadium, hardened tip, used for cutting metals.	No.	2
19.	Chisel firmer with wooden Handle, 6 mm X 200 mm Carbon steel blade, wooden handle, used in woodworking.	No.	2
20.	Allen Key alloy steel, 1.5-10 mm (set of 9), Alloy steel, black oxide finish, set of 9 pieces.	Set	1
21.	Grease Gun, 0.5 ltr. Capacity, Lever type, steel body, used for lubrication.	No.	1

22.	Bradawl, Hardened steel blade, wooden/plastic handle, used for making holes in wood.	No.	2
23.	Pully Puller with 3 legs, 150 mm & 300mm Forged steel arms, used for removing gears and pulleys.	No.	1
24.	Bearing Puller (inside and outside), 200 mm, three-jaw type, hardened steel, for inner and outer bearing removal.	No.	1
25.	Pipe vice Cast Iron with hardened jaw open type, 100 mm	No.	2
26.	Scissors blade, SS, 200mm, Stainless steel blades, plastic handles.	No.	2
27.	Scissors blade, SS, 150 mmStainless steel blades, plastic handles.	No.	2
28.	Crimping Tool, 1.5 sqmm to 16 sqmm	No.	1
	16 sqmm to 95 sqmm 1.5-16 sqmm: For small terminals. • 16-95 sqmm: For heavy-duty cable terminals.	No.	1
29.	Wire Cutter and Stripper, 150 mm, Insulated handles, hardened cutting edges.	No.	2
30.	Mallet hard wood, 0.50 kg, • Wooden head and handle, for gentle striking.	No.	2
31.	Hammer Extractor type, 250 grams, Claw hammer for nail pulling.	No.	2
32.	Hacksaw frame, Adjustable 300 mm Fixed 150 mm, steel frame, ergonomic handle	No.	2
33.	Try Square, 150 mm blade, • Steel blade, cast iron stock, for marking right angles.	,No.	4
34.	Outside Calliper, 150 mm spring type	No.	2
35.	Inside Calliper, 150 mm spring type	No.	2
36.	Divider, 150 mm spring type	No.	2
37.	Pliers long nose insulated, 150 mm	No.	4
38.	Pliers flat nose insulated, 200 mm	No.	4
39.	Pliers round nose insulated, 100 mm	No.	4
40.	Tweezers, 150 mm	No.	4
41.	Snip Straight and Bent heavy duty, 250 mm	No.	2
42.	D.E. metric Spanner Double Ended, 6 - 32 mm	Set	2
43.	Drill hand brace, 0-100mm	No.	4
44.	Drill S.S. Twist block, 2 mm, 5 mm and 6 mm set of 3	Set	4

45.	Plane cutters, 50 mm X 200mm	No.	2
46.	Smoothing cutters, 50 mm X 200mm	No.	2
47.	Gauge, wire imperial stainless steel marked in SWG &mm, Wire Gauge - Metric	No.	2
48.	File flat, 200 mm 2nd cut with handle	No.	2
49.	File half round, 200 mm 2nd cut with handle	No.	2
50.	File round, 200 mm 2nd cut with handle	No.	2
51.	File flat rough, 150 mm with handle	No.	2
52.	File flat bastard, 250 mm with handle	No.	2
53.	File flat smooth, 250 mm with handle	No.	2
54.	File Rasp, half round, 200 mm bastard with handle	No.	2
55.	Copper bit soldering iron, 0.25 kg	No.	2
56.	be soldering Gun, Heat proof nozzle, PVC type, 250mm	No.	2
57.	Hand Vice, 50 mm jaw	No.	4
58.	Table Vice, 100 mm jaw	No.	4
59.	Oil Can, 250 ml	No.	2
60.	Contactor & auxiliary contacts, 3 phase, 415 Volt, 25 Amp with 2 NOand 2 NC	set	2
61.	Contactor & auxiliary contacts, 3 phase, 415 volt, 32 Amp with 2 NO and 2 NC	No.	2
62.	Limit Switch, Limit Switch, Liver operated 2A 500v, 2-contacts	No.	2
63.	Rotary Switch, 16 A/440v	No.	2
64.	Relay- a. Cut out Relays - 16A, 440V b. Reverse current - 16A, 440V c. Over current - 16A, 440V d. Under voltage - 360V-440V	set	2
65.	Pin Type, shackle type, egg type & suspension type insulators including hardware fitting	set	2
66.	<b>Hydrometer,</b> ●Capacity: <b>0-6 mm (Hand Drill), 0-12 mm (Portable Electric Drill)</b> ●Motor Power: <b>750W</b> ●Voltage: <b>240V</b> ●Accessories: <b>Comes with chuck and key</b> ●Type: <b>Portable, lightweight, typically used for light industrial and laboratory drilling applications.</b>	No.	2

67.	<b>Hand Drill Machine, 0-6 mm capacity</b> Type: <b>Manual hand-operated drill</b> Drilling Capacity: <b>In steel: Up to 6 mm diameter</b> <b>In wood: Up to 8 mm</b> Chuck Size: <b>0–6 mm (standard key-operated chuck)</b> Chuck Type: <b>3-jaw keyed chuck</b> Body Material: <b>Cast iron frame with steel gears</b> Gear Mechanism: <b>Single or double pinion gear</b> Handle: <b>Wooden or plastic hand grip</b> Rotation: <b>Clockwise (reversible rotation not applicable)</b> Applications: <b>Light-duty drilling in sheet metal, wood, plastic</b> Weight: <b>Approximately 1–1.5 kg</b>	No.	2
68.	<b>Portable Electric Drill Machine, 0-12 mm capacity</b> <b>750w, 240v with chuck and key</b> <ul style="list-style-type: none"> <li>• Type: <b>Portable electric hand drill</b></li> <li>• Drilling Capacity:  <b>In steel: 10–12 mm</b>  <b>In wood: 20–25 mm</b></li> <li>• Motor Power:  <b>750 Watts (0.75 kW)</b></li> <li>• Voltage:  <b>220–240V AC, 50/60 Hz, single-phase</b></li> <li>• Chuck Size:  <b>1.5 mm to 13 mm capacity (typically supplied with 0–12 mm range)</b></li> <li>• Chuck Type:  <b>Keyed chuck with supplied chuck key</b></li> <li>• Speed:  <b>No-load speed: 0–2500 RPM (variable speed models)</b></li> <li>• Reverse Rotation:  <b>Yes (forward/reverse switch)</b></li> <li>• Body Material:  <b>High-impact ABS plastic with metal gearbox</b></li> <li>• Weight:  <b>1.8 to 2.5 kg</b></li> <li>• Cable Length:  <b>2 to 3 meters (standard)</b></li> <li>• Features:  <b>Variable speed trigger</b>  <b>Lock-on switch</b>  <b>Side handle (optional)</b></li> </ul>	No.	1

69.	<b>Load Bank ( Lamp / heater Type), 6 KW, 3Ph,</b> •Power Rating: <b>6 KW</b> •Phase: <b>3 Phase</b> •Type: <b>Resistive load using filament lamps or heating elements</b> •Purpose: <b>Used for testing generator sets, UPS systems, and battery banks by applying a load.</b>	No.	1
70.	<b>Brake Test arrangement with two spring balance rating, 0 to 25 kg,</b> •Measurement Method: <b>Uses two spring balances</b> •Spring Balance Rating: <b>0 to 25 kg</b> •Application: <b>Typically used in mechanical labs for testing torque and brake efficiency.</b>	No.	1
71.	<b>Laboratory Type Induction Coil, 1000 W,</b> •Power Rating: <b>1000 W</b> •Purpose: <b>For generating high voltage pulses in lab experiments (common in physics labs)</b>	No.	2
72.	<b>Out Side Micrometer, 0 - 25 mm least count 0.01mm,</b> •Measuring Range: <b>0 - 25 mm</b> •Least Count: <b>0.01 mm</b> •Type: <b>Mechanical or digital precision measuring instrument</b>	No.	2
73.	<b>Thermometer Digital, 0° C - 150° C,</b> •Temperature Range: <b>0°C to 150°C</b> •Display: <b>Digital LCD</b> •Usage: <b>General lab applications for measuring temperatures of solids, liquids, and semi-solids.</b>	No.	1
74.	<b>Series Test Lamp, 230V, 60W</b> •Voltage: <b>230V</b> •Wattage: <b>60W</b> •Use: <b>Diagnostic tool for checking circuits.</b>	No.	4
75.	<b>Knife Switch DPDT fitted with fuse terminals, 16 Amp</b> •DPDT Switch: <b>Double Pole Double Throw, 16 Amp rating, with fuse terminals</b> •TPDT Switch: <b>Triple Pole Double Throw, 16 Amp / 440V, with fuse terminals</b> •Usage: <b>Used in labs for manual circuit switching with clear visual confirmation.</b>	No.	4
76.	<b>Knife Switch TPDT fitted with fuse terminals, 16 Amp/ 440 V</b> •DPDT Switch: <b>Double Pole Double Throw, 16 Amp rating, with fuse terminals</b> •TPDT Switch: <b>Triple Pole Double Throw, 16 Amp / 440V, with fuse terminals</b> •Usage: <b>Used in labs for manual circuit switching with clear visual confirmation.</b>	No.	4
77.	<b>Miniature circuit Breaker, 16 amp</b> •Rating: <b>16 Amps</b> •Voltage: <b>Typically 240/415V AC</b> •Protection: <b>Against overload and short-circuit.</b>	No.	2



78.	<b>Earth Plate, 60cm X 60cm X 3.15mm Copper Plate</b> •Copper Plate: 60 cm x 60 cm x 3.15 mm •Earth Electrode: Primary: 2100 x 28 x 3.25 mm Secondary Copper Strip: 20 x 5 mm	No.	2
	<b>60cm X 60cm X 6mm GI Plate</b> •GI Plate: 60 cm x 60 cm x 6 mm •Earth Electrode: Primary: 2100 x 28 x 3.25 mm Secondary GI Strip: 20 x 5 mm	No.	2
79.	Type: <b>Pipe or Rod Type Earth Electrode</b> Material: <b>Mild Steel (Galvanized) or Copper</b> Dimensions: Length: <b>2100 mm (2.1 meters)</b> Width: <b>28 mm</b> Thickness: <b>3.25 mm</b> Purpose: <b>Acts as the main electrode driven into the ground to establish a low-resistance earth connection.</b> Standards: <b>Conforms to IS 3043 for grounding installations</b> Typical Resistance: <b>Less than 5 Ohms (site conditions apply)</b> <b>Secondary Earth Strip (Earthing Strip)</b> Material: <b>Copper (EC Grade)</b> Dimensions: Width: <b>20 mm</b> Thickness: <b>5 mm</b> Purpose: <b>Used to connect the primary electrode to the system earth bar or bus bar. It ensures low impedance path.</b> Usage: <b>Often surface-laid or buried for connection between electrode and equipment.</b> Standards: <b>As per IS 3043 and relevant electrical codes</b>	No.	1
80.	<b>MCCB and ACB of 300KVA, 100Amps, Triple pole</b> •Capacity: <b>300 KVA</b> •Current Rating: <b>100 Amps, Triple pole</b> •MCCB (Molded Case Circuit Breaker): <b>For circuit protection at medium voltage</b> •ACB (Air Circuit Breaker): <b>For main circuit protection at high capacity</b>	No.	1
81.	<b>ELCB and RCCB, 25Amps, double pole and 25Amps double pole, IAn 30 mA, •Rating: 25 Amps, Double pole</b> •Sensitivity: <b>IAn 30 mA</b> •Purpose: <b>Earth leakage protection</b>	No.	1
82.	•Type: <b>HRC (High Rupturing Capacity), Glass, Rewire Type</b> •Use: <b>Circuit protection against short circuits.</b>	No	4
83.	<b>Rheostat (Sliding type)</b> <b>0 - 25 Ohm, 2 Amp</b> <b>0 - 300 Ohm, 2 Amp</b> Use: <b>Variable resistor for current and voltage control in labs.</b>	No	1
	<b>0 -1 Ohm, 10Amp</b> <b>0 -10 Ohm, 5 Amp</b>	No.	1

	<b>Use:</b> Variable resistor for current and voltage control in labs.		
84.	<b>Capacitors, Electrolytic Ceramic Polyester film Variable Dual run</b> •Electrolytic: <b>Capacitance Range: 1μF to 10,000μF</b> <b>Voltage Ratings: 6.3V to 450V</b> <b>Polarity: Polarized</b> •Ceramic: <b>Capacitance Range: 1pF to 1μF</b> <b>Voltage Ratings: 16V to 100V</b> <b>Type: Non-polarized, for high-frequency applications</b> •Polyester Film: <b>Capacitance Range: 100pF to 10μF</b> <b>Voltage: Up to 630V</b> <b>Type: Stable, general-purpose use</b> •Variable: <b>Capacitance Range: 10pF to 500pF (typically)</b> <b>Used in tuning circuits</b>	Set.	2
85.	<b>Various Electronic components, Resistors, Diode, Transistor, UJT, FET, SCR, DIAC, TRIAC, IGBT, Small transformer etc.</b> •Resistors: <b>Range: 0.1 Ohm to 10 MOhm</b> <b>Tolerance: ±1%, ±5%</b> •Diodes: <b>Types: 1N4007 (general-purpose), Zener diodes (voltage regulation)</b> •Transistors: <b>NPN &amp; PNP, e.g., BC547, 2N2222</b> •UJT: <b>Unijunction Transistor, e.g., 2N2646</b> •FET: <b>JFET (e.g., 2N5457), MOSFET (e.g., IRF540)</b> •SCR: <b>Silicon Controlled Rectifier, e.g., TYN612</b> •DIAC: <b>Bidirectional trigger diode, e.g., DB3</b> •TRIAC: <b>Bidirectional thyristor, e.g., BT136</b> •IGBT: <b>Insulated Gate Bipolar Transistor, e.g., IRG4BC30K</b> •Small Transformers: <b>6V, 9V, 12V outputs, power rating 1VA to 100VA</b>		1
86.	<b>Various Lamps, Halogen Incandescent Lamp Fluorescent tube HP mercury vapor Lamp High-pressure sodium Lamp</b>	set	1

	<b>Low-pressure sodium Lamp</b> <b>LED</b> Halogen Lamp: <b>12V/24V/230V, 20W to 500W</b> Incandescent Lamp: <b>230V, 40W to 100W</b> Fluorescent Tube: <b>18W, 36W, length 2ft, 4ft</b> HP Mercury Vapor Lamp: <b>125W, 250W, 400W</b> High-pressure Sodium Lamp: <b>70W, 150W, 250W</b> Low-pressure Sodium Lamp: <b>35W, 55W, 90W</b> LED: <b>3V (single), 5W to 100W (bulbs and floodlights)</b>		
87.	<b>Plug socket</b> <b>Piano Switch</b> <b>Lamp Holder, 230 V, 5 A, •Plug Socket:</b> <b>230V, 6A or 16A ratings</b> •Piano Switch: <b>6A, 230V, modular type</b> •Lamp Holder: <b>Bayonet Cap (B22) or Edison Screw (E27)</b> <b>230V, 5A rating</b>	Set	2
88.	<b>Cables:</b> <b>Twisted Pair</b> <b>Non-Metallic Sheathed Cable Underground Feeder</b> <b>Cable Ribbon Cable</b> <b>Metallic Sheathed Cable Multi-Conductor Cable</b> <b>Coaxial Cable</b> <b>Direct-Buried Cable, 1 mtr each,</b> Twisted Pair: <b>CAT5e/CAT6, used in networking</b> Non-Metallic Sheathed Cable (NM Cable): <b>Used in residential wiring, e.g., 14/2 NM</b> Underground Feeder Cable (UF): <b>Direct burial rated, 600V</b> Ribbon Cable: <b>Flat cable, used in electronics, 10 to 64 conductors</b> Metallic Sheathed Cable (Armored): <b>600V rated, industrial use</b> Multi-Conductor Cable: <b>2 to 30+ conductors, shielded/unshielded</b> Coaxial Cable: <b>RG6, RG59 for TV and data, 75 Ohms</b> Direct-Buried Cable: <b>1m sample lengths, used for outdoor installations</b>	Set	1
89.	<b>Bus bar with brackets, 1 mtr each</b> •Length: <b>1 meter</b> •Material: <b>Copper or Aluminum</b> •Application: <b>Power distribution</b>	No.	2
90.	<b>Rubber mat, 2' x 4' x 1"</b> •Size: <b>2' x 4' (feet)</b> •Thickness: <b>10 mm</b> •Use: <b>Electrical insulation matting for safety near panels</b>	No.	2

91.	<b>Electrician Helmet, Yellow Colour</b>	No.	2
92.	<b>RCC Pole with accessories (MS angle iron, 'C' clamp, stay insulator etc.) and materials, 6 Mtr</b>	No.	1
93.	<b>Safety Belt, Standard quality</b> Type: Full Body Safety Harness Webbing: High-tenacity polyester or polyamide (nylon) Buckles: Alloy steel or forged steel with corrosion-resistant coating (zinc plated) Stitching: Heavy-duty synthetic thread, contrast color for easy inspection Breaking Strength: Webbing: Minimum 22 kN (5000 lbf) D-Rings: Minimum 23 kN (5180 lbf) Adjustment Points: Shoulder straps: Adjustable Thigh straps: Adjustable Chest strap: Adjustable 5 years from the date of manufacture (subject to regular inspection)	No.	2
<b>(ii) List of Equipment</b>			
94.	<b>Ohm Meter; Series Type &amp; Shunt Type, portable box type, 50/2000-ohm analog</b> Ohm Meter (Series & Shunt Type) Type: Portable, Analog Range: 50Ω to 2000Ω Display: Analog scale Housing: Portable box type	No.	2
95.	<b>Digital Multi Meter, DC 200mv -1000v, 0 — 10A &amp; AC 200mv- 750v , 0-10A, resistance 0-20 MO and 3 1/2 digit</b> <ul style="list-style-type: none"> <li>• DC Voltage: 200mV to 1000V</li> <li>• AC Voltage: 200mV to 750V</li> <li>• Current: 0 to 10A (DC &amp; AC)</li> <li>• Resistance: 0 to 20MΩ</li> <li>• Display: 3½ digit LCD</li> </ul>	No.	10
96.	<b>A.C. Voltmeter M.I. analog, portable box type housed in Bakelite case, Multi range 75 V - 150V - 300V - 600V</b> <ul style="list-style-type: none"> <li>• Multi Range: 75V, 150V, 300V, 600V</li> <li>• Type: Moving Iron, Analog</li> <li>• Housing: Bakelite portable box</li> </ul>	No.	3
97.	<b>Milli Voltmeter centre zero analog, portable box type housed in Bakelite case, 100 — 0 — 100 mV</b> <ul style="list-style-type: none"> <li>• Range: ±100mV</li> <li>• Type: Analog</li> <li>• Housing: Bakelite portable box</li> </ul>	No.	2
98.	<b>Ammeter MC analog, portable box type housed in Bakelite case, 0 - 500 mA, 0-5 A, 0-25 A</b> <ul style="list-style-type: none"> <li>• Ranges: 0-500mA, 0-5A, 0-25A</li> <li>• Housing: Bakelite portable box</li> </ul>	No.	2
99.	<b>AC Ammeter MI, analog, portable box type housed in Bakelite case, 0 - 1 A, 0-5 A, 0-25 A</b> <ul style="list-style-type: none"> <li>• Ranges: 0-1A, 0-5A, 0-25A</li> <li>• Housing: Bakelite portable box</li> </ul>	No.	2

100.	<b>Kilo Wattmeter Analog, 0-1.5-3KW, pressure coil rating-240v/440v, current rating-5A/10A Analoge, portable type Housed in Bakelite case</b> <ul style="list-style-type: none"> <li>• Range: 0-1.5-3KW</li> <li>• Voltage Rating: 240V/440V</li> <li>• Current Rating: 5A/10A</li> <li>• Housing: Portable Bakelite case</li> </ul>	No.	2
101.	<b>Digital Wattmeter, 230 V, 1 KW, 50 Hz</b> <ul style="list-style-type: none"> <li>• Voltage: 230V AC</li> <li>• Power Range: 0–1000W (1 kW)</li> <li>• Frequency: 50 Hz</li> <li>• Display: 4-digit LED/LCD</li> <li>• Accuracy: <math>\pm 1\%</math> of full scale</li> <li>• Input Current: 0–5A (direct), CT options for higher range</li> <li>• Features: True RMS measurement, overload protection</li> <li>• Power Supply: Self-powered from measurement line</li> </ul>	No.	2
102.	<b>A.C. Energy Meter, Single Phase, 10 A, 240 V induction type</b> <ul style="list-style-type: none"> <li>• Type: Electromechanical Induction Type</li> <li>• Voltage: 240V AC</li> <li>• Current: 10A</li> <li>• Frequency: 50 Hz</li> <li>• Accuracy Class: Class 1.0 or Class 2.0</li> <li>• Display: Rotating disc, mechanical counter (kWh register)</li> <li>• Standard: IS 13779 / IEC 62052-11</li> <li>• Mounting: Wall mount, base mounting</li> </ul>	No.	2
103.	<b>A.C. Energy Meter, Three Phase, 15 A , 440 V induction type</b> <ul style="list-style-type: none"> <li>• Type: Three-phase 4-wire Induction Type</li> <li>• Voltage: 440V AC</li> <li>• Current: 15A</li> <li>• Frequency: 50 Hz</li> <li>• Accuracy Class: Class 1.0 / 2.0</li> <li>• Display: Mechanical counter (kWh)</li> <li>• Standards: IS 13779 / IEC 62053-11</li> <li>• Connection: Direct connected up to 15A, CT operated for higher loads</li> </ul>	No.	2
104.	<b>Power Factor Meter Digital, 440 V, 20 A, Three Phase portable box type</b> <ul style="list-style-type: none"> <li>• Voltage Range: 0–440V AC (Three Phase)</li> <li>• Current Range: 0–20A</li> <li>• Display: LCD/LED showing PF (0.00 to 1.00 lag/lead)</li> <li>• Accuracy: <math>\pm 1\%</math> of reading</li> <li>• Frequency: 50 Hz <math>\pm 5\%</math></li> <li>• Enclosure: Portable metal/plastic box with handle</li> <li>• Features: Auto ranging, lag/lead indication, True RMS</li> <li>• Standards: IEC 62053</li> </ul>	No.	2

105.	<b>Frequency Meter, 45 to 60 Hz</b> <b>Type: Digital or Analog pointer type</b> <b>Measuring Range: 45–60 Hz</b> <b>Accuracy: <math>\pm 0.1</math> Hz (digital), <math>\pm 0.5</math> Hz (analog)</b> <b>Voltage Rating: 110V or 230V (specify)</b> <b>Display: 3 or 4-digit LCD (digital), scale mark (analog)</b> <b>Power Supply: Self-powered</b>	No.	2
106.	<b>Magnetic Flux Meter, 0-500 tesla</b> <ul style="list-style-type: none"> <li>• <b>Measuring Range: 0–500 Tesla</b></li> <li>• <b>Resolution: 0.01 Tesla</b></li> <li>• <b>Accuracy: <math>\pm 1\%</math> of reading</b></li> <li>• <b>Display: Digital LCD</b></li> <li>• <b>Probe: Hall-effect or search coil sensor</b></li> <li>• <b>Power: Rechargeable battery or 230V AC adapter</b></li> <li>• <b>Applications: Transformer core testing, motor testing, lab experiments</b></li> </ul>	No.	2
107.	<b>Lux meter, lux meter LCD read out 0.05 to 7000 lumens with battery.</b> <b>Measurement Range: 0.05 to 7000 lux (standard models)</b> <b>Display: LCD, 3.5 or 4-digit</b> <b>Accuracy: <math>\pm 5\%</math> of reading</b> <b>Sensor: Silicon photodiode with filter</b> <b>Power: 9V battery</b> <b>Features: Hold function, selectable range, auto power-off</b> <b>Standard: ISO/CIE 19476</b>	No.	2
108.	<b>Tachometer, Analog Type - 10000 RPM</b> <ul style="list-style-type: none"> <li>• <b>Type: Contact type analog tachometer</b></li> <li>• <b>RPM Range: 0 to 10000 RPM</b></li> <li>• <b>Accuracy: <math>\pm 0.5\%</math> of full scale</b></li> <li>• <b>Display: Analog needle dial</b></li> <li>• <b>Contact Tips: Rubber cone and wheel attachments</b></li> <li>• <b>Body: Metallic or heavy-duty plastic</b></li> <li>• <b>Power: Mechanical (no battery required)</b></li> </ul>	No.	1
109.	<b>Tachometer, Digital Photo Sensor Type 10000 RPM</b> <b>Type: Non-contact photo sensor type</b> <b>RPM Range: 2.5 to 99999 RPM (most models), 0–10000 RPM specific models</b> <b>Accuracy: <math>\pm 0.05\%</math> of reading</b> <b>Display: LCD, 5-digit</b> <b>Distance: 50mm to 500mm (sensor to target)</b> <b>Power: 9V battery or rechargeable</b> <b>Features: Data hold, memory recall, max/min reading</b>	No.	1
110.	<b>Tong Tester / Clamp Meter, 0 - 100 A (Digital Type)</b> <ul style="list-style-type: none"> <li>• <b>Type: AC Clamp Meter (Digital)</b></li> <li>• <b>Current Range: 0–100A AC (some models measure up to 600A)</b></li> <li>• <b>Display: 3.5-digit LCD</b></li> <li>• <b>Jaw Opening: 30mm (suitable for 100A)</b></li> <li>• <b>Accuracy: <math>\pm 1.5\%</math> of reading</b></li> <li>• <b>Voltage Measurement: 600V AC/DC (optional)</b></li> <li>• <b>Features: Continuity test, resistance measurement, data hold</b></li> <li>• <b>Standards: CAT III 600V, IEC 61010</b></li> </ul>	No.	2

111.	<b>Megger, Analog - 500 V</b> <b>General Specification</b> Type: <b>Hand-cranked / Battery-operated Analog Insulation Tester</b> Voltage Rating: <b>500 Volts DC output</b> Display Type: <b>Analog scale (with mirror band for parallax error elimination)</b> Usage: <b>Testing insulation resistance of cables, motors, transformers, and electrical installations</b> <b>Measurement Range</b> Insulation Resistance Range: <b>0.1 MΩ to 1000 MΩ (typical)</b> Accuracy: <b>±5% of reading (depending on the range)</b> Test Voltage: <b>500 V ±10%</b> <b>Power Source</b> Hand Crank: <b>Manual type (generates required DC voltage)</b> Battery Option: <b>4 x AA or 6 x AA (for battery-operated models)</b> Auto Discharge: <b>Built-in to safely discharge capacitance after test</b>	No.	2
112.	<b>3- point D.C. Starter, For 2.5 KW DC motor</b> <ul style="list-style-type: none"> <li>• Motor Capacity: <b>Up to 2.5 kW</b></li> <li>• Rated Voltage: <b>220V DC (typical for such motor size)</b></li> <li>• Construction:</li> </ul> <b>Starter arm with resistances</b> <b>3 terminals: Line (L), Armature (A), Field (F)</b> <ul style="list-style-type: none"> <li>• Starting Resistance:</li> </ul> <b>Multi-step (typically 5 or 6 steps)</b> <b>Wire wound resistors</b> <ul style="list-style-type: none"> <li>• No-volt Coil: <b>Provided to prevent accidental starting</b></li> <li>• Overload Protection: <b>Provided through overload release</b></li> <li>• Body: <b>Sheet metal enclosure with powder coating</b></li> <li>• Mounting: <b>Wall mount or panel mount</b></li> <li>•</li> </ul>	No.	1
113.	<b>4- point D.C. Starter, For 2.5 KW DC motor</b> <ul style="list-style-type: none"> <li>• Motor Capacity: <b>Up to 2.5 kW</b></li> <li>• Rated Voltage: <b>220V DC</b></li> <li>• Construction:</li> </ul> <b>Starter arm with resistances</b> <b>4 terminals: Line (L), Armature (A), Field (F), and an independent shunt field terminal</b> <ul style="list-style-type: none"> <li>• Starting Resistance: <b>Multi-step (5–6 steps)</b></li> <li>• No-volt Coil: <b>Connected independently of shunt field</b></li> <li>• Overload Protection: <b>Provided</b></li> <li>• Body: <b>MS enclosure with locking cover</b></li> <li>• Mounting: <b>Wall or panel mount</b></li> </ul>	No.	1

114.	<b>Wheat Stone Bridge with galvanometer and battery,</b> <ul style="list-style-type: none"> <li>• Type: <b>Laboratory-grade Wheatstone Bridge setup</b></li> <li>• Bridge Ratio: <b>1:1, 10:1, 100:1</b> selectable</li> <li>• Resistance Range: <b>1 ohm to 1 MΩ</b></li> <li>• Galvanometer: <b>Center-zero type, sensitivity: 1 microampere/div</b></li> <li>• Battery: <b>2V or 4V rechargeable lead-acid battery</b></li> </ul> <b>Supplied with charger</b> <ul style="list-style-type: none"> <li>• Construction: <b>Wooden or plastic box with brass terminals</b></li> <li>• Precision wire wound resistors</li> <li>• Accuracy: <b>±0.5% typical</b></li> <li>• Applications: <b>Resistance measurement, lab experiments</b></li> </ul>	No.	2
115.	<b>Single Phase Variable Auto Transformer, 0 - 270 V, 10Amp (Air cooled)</b> <ul style="list-style-type: none"> <li>• Type: <b>Single-phase variac</b></li> <li>• Input Voltage: <b>230V AC, 50Hz</b></li> <li>• Output Voltage: <b>0–270V AC (variable)</b></li> <li>• Current Rating: <b>10A</b></li> <li>• Power Rating: <b>2.7 kVA</b></li> <li>• Cooling: <b>Air cooled (open type or enclosed type)</b></li> <li>• Construction: <b>Toroidal core, copper winding</b></li> <li>• Display: <b>Analog voltmeter (optional)</b></li> <li>• Protection: <b>Fuse or MCB provided</b></li> <li>• Mounting: <b>Table-top or panel mount</b></li> </ul>	No.	2
116.	<b>Phase Sequence Indicator, 3 Phase, 415 V</b> <ul style="list-style-type: none"> <li>• Type: <b>Portable, handheld</b></li> <li>• Voltage Range: <b>380–440V AC, 3-phase</b></li> <li>• Frequency Range: <b>40–60Hz</b></li> <li>• Phase Indication: <b>LED or Neon lamp indication</b></li> <li>• Marks correct phase sequence (ABC) or reverse (CBA)</li> <li>• Connection: <b>3 test leads with crocodile clips or probes</b></li> <li>• Body: <b>ABS plastic, shockproof</b></li> <li>• Compliance: <b>IEC 61557-7</b></li> <li>• Features: <b>Phase rotation direction display</b></li> <li>• <b>Overvoltage protection</b></li> </ul>	No.	2
117.	<b>Growler, 230 V, 50 Hz, Single Phase, Adjustable jaws, Testing armature with ampere meter and testing probes.</b>	No.	1



118.	<b>AC Starters: - For A.C Motors of 2 to 5 H.P.</b> <b>a. Resistance type starter</b> <b>b. Direct online Starter</b> <b>c. Star Delta Starter- Manual</b> <b>d. Star Delta Starter — Semi automatic</b> <b>e. Star Delta Starter — Fully automatic</b> <b>f. Star Delta Starter - Soft starter</b> <b>e. Auto Transformer type</b>	Set	1
119.	<b>Oscilloscope Dual Trace, 20 MHz</b>	No.	1
120.	<b>Function Generator, 2 to 200 KHz, Sine, Square, Triangular 220 V, 50 Hz, Single Phase</b>	No.	1
121.	<b>Soldering Iron, 25-Watt, 65 Watt and 120-Watt, 230 Volt</b>	set	2
122.	<b>Temperature controlled Soldering Iron, 50-Watt, 230 Volt</b>	No.	2
123.	<b>Discrete Component Trainer, Discrete Component (for diode and transistor circuit) with regulated power supply +5,0- 5 V,+12 ,0-12 V</b>	No.	2
124.	<b>Linear I.C. Trainer, Linear I.C. Trainer with regulated power supply 1.2V to 15V PIC socket 16pin and 20 pins with bread board</b>	No.	1
125.	<b>Digital I.C. Trainer, Digital I.C. Trainer 7 segment display and bread board</b>	No.	1
126.	<b>Domestic Appliances —</b>		1
	<b>a. Electric Induction plate - 1500 Watt, 240V</b>	No.	
	<b>b. Electric Kettle - 1500 Watts, 240V</b>	No.	
	<b>c. Electric Iron - Automatic - 750 W, 240 V</b>	No.	
	<b>d. Immersion Heater - 1500 Watt, 240V</b>	No.	
	<b>e. A.C. Ceiling Fan and AC Table Fan - 68-Watt, 230 V</b>	No.	
	<b>f. Geyser (Storage type) - 10 litre</b>	No.	
	<b>EPABX- 750 W, 240 V</b>	No.	
	<b>h. Washing Machine Semi-Automatic - 5 Kg,</b>	No.	
	<b>i. Motor Pump set - 1 HP, 1 Phase, 240 V</b>	No.	

127.	<b>Oil Testing Kit, Oil Testing Kit 230 V, single phase 50 Hz 60 VA output 0-60 KV Variable</b> <ul style="list-style-type: none"> <li>• Input: <b>230V AC, 50 Hz</b></li> <li>• Output Voltage: <b>0–60 kV AC (variable)</b></li> <li>• Capacity: <b>60 VA</b></li> <li>• Type: <b>Portable Oil BDV (Breakdown Voltage) Test Kit</b></li> <li>• Test Vessel: <b>Transparent acrylic with spherical brass electrodes (2.5 mm gap)</b></li> <li>• Control: <b>Digital voltmeter display with ramp rate control</b></li> <li>• Safety: <b>Zero start interlock, overvoltage trip, earth leakage protection</b></li> <li>• Cooling: <b>Air cooled</b></li> <li>• Standards: <b>IS 6792, IEC 60156</b></li> <li>• Accessories: <b>Test cell, cleaning brush, discharge rod</b></li> </ul>	No.	1
128.	<b>Inverter with Battery, 1 KVA with 12 V Battery Input-12 volt DC, Output- 220 volt AC</b> <ul style="list-style-type: none"> <li>• Capacity: <b>1 kVA</b></li> <li>• Input: <b>12V DC (battery)</b></li> <li>• Output: <b>220V AC ±10%, 50 Hz</b></li> <li>• Waveform: <b>Pure sine wave / modified sine wave (specify)</b></li> <li>• Efficiency: <b>&gt;85%</b></li> <li>• Battery Type: <b>12V, lead-acid or lithium (optional)</b></li> <li>• Protections: <b>Overload, short circuit, low battery, over temperature</b></li> <li>• Display: <b>LED/LCD status indicator</b></li> <li>• Mounting: <b>Wall or floor mount</b></li> <li>•</li> </ul>	No.	1
129	<b>Voltage Stabilizer, AC Input - 150 - 250 V, 600 VA AC Output - 240 V, 10 A</b> <ul style="list-style-type: none"> <li>• Input Voltage: <b>150V–250V AC</b></li> <li>• Output Voltage: <b>240V AC ±5%</b></li> <li>• Capacity: <b>600 VA (0.6 kVA)</b></li> <li>• Current Rating: <b>10A</b></li> <li>• Technology: <b>Relay or servo-controlled</b></li> <li>• Correction Speed: <b>35V/sec (relay type)</b></li> <li>• Efficiency: <b>&gt;95%</b></li> <li>• Protections: <b>Overload, high/low voltage cut-off</b></li> <li>• Display: <b>Input/output LED indicators</b></li> <li>• Mounting: <b>Wall or table top</b></li> </ul>	No.	1
130.	<b>DC Power Supply, 0 - 30 V, 5 A</b> <ul style="list-style-type: none"> <li>• Output Voltage: <b>0–30V DC (variable)</b></li> <li>• Output Current: <b>0–5A</b></li> <li>• Type: <b>Linear regulated / SMPS (specify)</b></li> <li>• Display: <b>Dual LCD or LED for voltage &amp; current</b></li> <li>• Ripple: <b>&lt;1 mVrms</b></li> <li>• Protections: <b>Overload, short circuit, thermal shutdown</b></li> <li>• Cooling: <b>Fan cooled</b></li> <li>• Input Voltage: <b>230V AC, 50 Hz</b></li> <li>• Accuracy: <b>±0.5% of reading</b></li> </ul>	No.	2

131.	<b>Battery Charger, 0 - 6 - 9 - 12 - 24 - 48 V, 30amp</b> <ul style="list-style-type: none"> <li>• Voltage Range: <b>Selectable 0–6V, 9V, 12V, 24V, 48V</b></li> <li>• Current Rating: <b>30A max</b></li> <li>• Input: <b>230V AC, 50 Hz</b></li> <li>• Type: <b>Manual/automatic (multi-stage charging)</b></li> <li>• Display: <b>Ammeter and voltmeter (analog or digital)</b></li> <li>• Charging Modes: <b>Boost, float, trickle</b></li> <li>• Protections: <b>Reverse polarity, overload, over-voltage</b></li> <li>• Cooling: <b>Fan cooled</b></li> <li>• Body: <b>Metal enclosure with handles</b></li> </ul>	No.	1
132.	<b>Current Transformer, 415 V, 50Hz, CT Ratio 25 / 5 A, SVA</b> Primary Voltage: <b>415V AC, 50Hz</b> CT Ratio: <b>25A / 5A</b> Burden: <b>5 VA or 10 VA (specify)</b> Accuracy Class: <b>Class 1.0 or 0.5</b> Type: <b>Tape wound / Resin cast</b> Mounting: <b>Bus bar or cable mounted</b> Standards: <b>IS 2705, IEC 61869-2</b> Application: <b>Metering, protection</b>	No.	2
133.	<b>Potential Transformer, 415 V, 50Hz, PT Ratio, 440V/110V, 10VA</b> <ul style="list-style-type: none"> <li>• Primary Voltage: <b>440V AC</b></li> <li>• Secondary Voltage: <b>110V AC</b></li> <li>• Frequency: <b>50 Hz</b></li> <li>• Burden: <b>10 VA</b></li> <li>• Accuracy Class: <b>Class 1.0 or 0.5</b></li> <li>• Type: <b>Resin cast indoor type</b></li> <li>• Mounting: <b>Panel mount</b></li> </ul>	No.	2
134.	<b>Solar panel with Battery, 18 Watt</b> Solar Panel Power: <b>18W</b> Type: <b>Polycrystalline or Monocrystalline</b> Voltage Output: <b>12V DC nominal</b> Battery Type: <b>12V, 7Ah to 12Ah lead-acid or lithium</b> Charge Controller: <b>PWM 5A/10A</b> Mounting: <b>Adjustable stand or rooftop</b> Accessories: <b>DC cables, charge controller, mounting hardware</b> Compliance: <b>MNRE Approved, IEC 61215</b> Applications: <b>Lighting, small loads, lab experiments</b>	Set	1
135.	<b>Computer, 2.8 GHz &amp; above, 1 GB RAM, 80 GBHDD, DVD Combo Drive, 19/21" Monitor, optical scroll mouse, multimedia keyboard, 32 bit LAN card with UPP port, necessary Drivers, etc. OR(Latest Version)</b>	No.	2

136.	<b>Rotatory rectifier unit,</b> Rectifier Type: <b>Silicon Diode based (stud-type)</b> Configuration: <b>3-phase full-wave bridge rectifier</b> Mounting: <b>On rotating shaft (rotor-mounted) — hence "rotary"</b> Cooling: <b>Air cooled (natural or forced)</b> Protection: <b>Fitted with surge suppressors and thermal sensors</b> <b>Electrical Ratings:</b> AC Input Voltage: <b>Typically matches exciter alternator output (e.g., 200-500V AC)</b> DC Output Voltage: <b>Depends on generator field voltage (commonly 100V-500V DC)</b> DC Output Current: <b>Small Units: 50A - 100A</b> <b>Medium Units: 200A - 400A</b> <b>Large Units: 600A - 1000A+</b> Diodes: <b>Forward Current Rating: 50A - 1000A per diode</b> <b>Reverse Voltage Rating: 600V - 1600V</b> <b>Number of diodes: Usually 6 (3-phase bridge) + spares</b> Voltage Regulation: <b>Controlled by associated AVR (Automatic Voltage Regulator)</b> <b>Mechanical Specifications:</b> Rotor Speed: <b>1500 RPM (for 50Hz) / 1800 RPM (for 60Hz)</b> Balancing: <b>Dynamically balanced to prevent vibration</b> Insulation: <b>Class F or Class H</b> Housing: <b>Aluminum alloy or steel frame for mechanical strength</b>	No.	1
<b>C.</b>	<b>Shop Machinery</b> - For 4 (2+2) units no additional items are required		
137.	D.C. Shunt Generator with control panel, D.C. Shunt Generator with control panel, 2.5 KW, 220V & 3phase Squirrel cage Induction Motor, SHP, 440V with control panel & star delta starter	No.	1

138.	Motor-Generator (AC to DC), Squirrel Cage Induction Motor with star delta starter and directly coupled to DC shunt generator and switch board mounted with regulator, air breaker, ammeter, voltmeter, knife blade switches and fuses, set complete with case iron and plate, fixing bolts, foundation bolts and flexible coupling. Induction Motor rating: 7.5 HP, 415V, 50 cycles, 3 phases. DC Shunt Generator rating: 5 KW, 440V (Output voltage varies 110-440v)	No	1
139.	D.C. Compound Generator with control panel including fitted rheostat, voltmeter, ammeter and breaker, D.C. Compound Generator with control panel including fitted rheostat, voltmeter, ammeter and breaker, 2.5 KW, 220V & 3phase Squirrel cage Induction Motor, SHP, 440V, with control panel & star delta starter	No.	1
140.	DC Series Motor coupled with spring balance load, 2.5 KW, 220 Volts	No.	1
141.	DC Shunt Motor, 2.5 KW, 220 V	No.	1
142.	DC compound Motor with starter and switch, 2.5 KW, 220 volts	No.	1
143.	Motor Generator(DC to AC) set consisting of - Shunt Motor with starting compensator and switch directly coupled to AC generator with exciter and switch board mounted with regulator, breaker, ammeter, voltmeter frequency meter, knife blade switch and fuses etc. Set complete with cast iron bed plate, fixing bolts, foundation bolts and flexible coupling. , Shunt Motor rating: 5 HP, 440V AC Generator rating : 3-Phase, 4 wire, 3.5 KVA, 400/230 Volts, 0.8 pf, 50cycles	No.	1
144.	AC Squirrel Cage Induction Motor with star delta starter and triple pole iron clad switch fuse with Mechanical Load, 5 HP, 3-Phase, 415 V, 50 Hz	No.	1
145.	AC phase-wound slip ring Motor with starter switch, 5 HP, 440 V, 3 Phase, 50 Hz	No.	1

146.	Universal Motor with starter/switch, 240 V, 50 Hz, 1 HP	No.	1
147.	Synchronous motor with accessories like starter, excitation arrangements , 3 Phase, 3 HP, 440V, 50Hz, 4 Pole	No.	1
148.	Thyristor/IGBT controlled D.C. motor drive with tacho-generator feedback arrangement, 1 HP	No.	1
149.	Thyristor/IGBT controlled A.C. motor drive with, VVVF control 3 Phase, 2 HP	No.	1
150.	Single phase Transformer, core type, air cooled, 1 KVA , 240/415 V, 50 Hz	No.	3
151.	Three phase transformer, shell type oil cooled with Delta/ Star, 3 KVA , 415/240 V, 50 H2	No.	2
152.	Electrical Machine Trainer, Suitable for demonstrating the construction and functioning of different types of DC machines and AC machines (single phase and three phase). Should be fitted with friction brake arrangement, dynamo meter, instrument panel and power supply unit	No.	8
153.	Diesel Generator Set with changeover switch, over current breaker and water/ air-cooled with armature, star-delta connections AC 3 phase, 7.5 KVA, 415 volt or higher rating	No.	1
154.	Used DC Generators-series, shunt and compound type for overhauling practice	No.	1
155.	Pillar Electric Drill Machine Motorized, 12-20 mm Capacity, 1HP, 440V, 3 phase, Induction Motor with DOL starter, Bench Type	No.	1
156.	<b>Air Condition Control Starter panel and Air Compressor Control Starter panel</b> <ul style="list-style-type: none"> <li>• Voltage: 240V Single Phase or 415V Three Phase</li> <li>• Components: Contactor, Overload Relay, Start/Stop Push Buttons, Indication Lamps</li> <li>• Protection: MCB, Thermal overload</li> <li>• Enclosure: Powder coated MS box (IP55)</li> <li>• Control Voltage: 230V AC</li> </ul>	No.	1
157.	<b>A.C. Series type Motor, 1 HP, 240 V, 50 Hz</b> <ul style="list-style-type: none"> <li>• Power: 1 HP</li> <li>• Voltage: 240V</li> <li>• Frequency: 50Hz</li> <li>• Speed: 2800 RPM (approx.)</li> <li>• Application: Universal motor (fans, pumps, drills)</li> </ul>	No.	1

158.	<b>Single Phase Capacitor Motor with starter switch, 1 HP, 240 V, 50 Hz</b> <ul style="list-style-type: none"> <li>• Power: 1 HP</li> <li>• Voltage: 240V</li> <li>• Frequency: 50Hz</li> <li>• Capacitor: Start &amp; run type</li> <li>• Starter: Rotary switch / push button</li> <li>• Application: Compressors, washing machines, fans</li> </ul>	No.	1
159.	<b>Manual Motor coil Winding Machine, With step arbor</b> <b>Arbor: Step-type</b> <b>Operation: Hand-cranked</b> <b>Application: Stator &amp; rotor coil winding</b>	No.	1
160.	<b>Ceiling fan coil Winding Machine, 250V, 50 Hz, 1-6, with speed control</b> <ul style="list-style-type: none"> <li>• Voltage: 250V, 50Hz</li> <li>• Speed: 1-6 step with control</li> <li>• Drive: Single phase motor</li> <li>• Application: Ceiling fan stator winding</li> </ul>	No.	1
161.	<b>Primary current injection set, 220V, 50 Hz, 1-0, output current - 200 A (min) with timer</b> <b>Input: 220V, 50Hz</b> <b>Output: 200A (min)</b> <b>Timer: Built-in (0-999 sec)</b> <b>Applications: Circuit breaker testing, CT testing</b>	No.	1
162.	<b>Stepper Motor with Digital Controller</b>	No.	1
163.	<b>Shaded Pole Motor, Fractional HP, 240 V, 50 Hz</b>	No.	1
164.	<b>Smart Meter, 1 Phase - Smart Energy Meter 3 Phase - Smart Energy Meter</b> <ul style="list-style-type: none"> <li>• Comms: RF, Wi-Fi, or PLC</li> <li>• Measurement: Voltage, Current, Power Factor, kWh</li> <li>• Accuracy: Class 1 or Class 0.5</li> <li>• Display: LCD with backlight</li> </ul>	set	1
165.	<b>EV Charger, 3 phase input</b> <ul style="list-style-type: none"> <li>• Power: 7.4kW, 11kW, or 22kW</li> <li>• Input: 415V AC, 50Hz</li> <li>• Output: Type 2 connector</li> <li>• Protection: IP54, RCD Type B</li> </ul>	No.	1
166.	<b>EV Charger (Home), 1 Phase input</b>  <b>Power: 3.3kW to 7.4kW</b> <b>Input: 230V AC</b> <b>Output: Type 2 or Type 1</b> <b>Features: Wi-Fi, Mobile App Control</b>	No.	1
167.	<b>Working Bench with Stat and stop buttons, contact points and indicating lamps, 2.5 m x 1.20 m x 0.75 m</b> <ul style="list-style-type: none"> <li>• Size: 2.5m x 1.2m x 0.75m</li> <li>• Features: Start/Stop buttons, Contact points, Indicating lamps</li> <li>• Frame: MS powder coated</li> <li>• Top: Rubber mat or wooden top</li> </ul>	No.	2

168.	<p><b>Wiring Board, 3-meter x1 meter with 0.5 meter projection on the top</b>  Main Board Size: <b>3 meters (L) x 1 meter (H)</b>  Top Projection (Canopy): <b>0.5 meter depth (overhang from the top)</b>  Frame: <b>Heavy-duty Mild Steel (MS) square tubes, powder coated</b>  Board Surface: <b>High-density plywood or laminated sunmica (6mm to 12mm thickness)</b>  Height from Floor: <b>Approx. 0.75 meters (standard working height)</b>  <b>Mechanical Features:</b>  Top Projection: <b>For mounting lamps, conduit runs, and overhead wiring demonstration</b>  Base Frame: <b>Welded steel structure with anti-skid rubber pads</b>  Mounting: <b>Wall-mounted or free-standing (optional caster wheels)</b>  Provision: <b>Holes for fixing switches, sockets, holders, MCBs, conduit clamps</b>  <b>Electrical Fittings (Optional but Recommended):</b>  Switches: <b>Piano type, 6A/16A</b>  Sockets: <b>5/15A combination sockets (ISI marked)</b>  Lamp Holders: <b>230V, 5A Bakelite or brass holders</b>  Indicators: <b>Neon lamps or LED types for status</b>  MCB: <b>16A single pole, ISI certified</b>  Bus Bars: <b>Copper strip bus bar 1 meter (optional)</b>  <b>Safety Features:</b>  Earthing: <b>Copper wire earthing provision connected to main earth pit</b>  Insulation: <b>Board laminated to avoid leakage</b>  Cable Entry: <b>Proper sleeves &amp; glands provided for incoming supply</b>  <b>Finish:</b>  Frame: <b>Epoxy powder-coated in grey or blue</b>  Board: <b>White laminated or painted surface for easy marking and cleaning</b>  Edges: <b>PVC or aluminum beading for board edge protection</b>  <b>Applications:</b>  <b>Electrical house wiring practice</b>  <b>Conduit wiring, casing-capping, and cleat wiring practice</b>  <b>Switchgear mounting and demonstration</b>  <b>Lighting circuit, socket wiring, stair-case, and godown wiring practice</b></p>	No.	1
169.	<p><b>Marine PLC Controller (Nakakita/ROSMOND or equivalent</b>  • <b>Brand: Nakakita / ROSMOND or equivalent</b>  • <b>Type: Modular, marine certified</b>  • <b>I/O: Digital &amp; Analog inputs/outputs</b>  • <b>Communication: Modbus, Profibus</b></p>	No.	1



170.	<b>Oil Mist Detector with panel</b> <ul style="list-style-type: none"> <li>• <b>Power: 230V AC</b></li> <li>• <b>Detection: Mist density sensors</b></li> <li>• <b>Alarms: Visual and audible</b></li> <li>• <b>Panel: IP55 enclosure</b></li> </ul>	No.	2
171.	<b>Boiler Panel Circuit</b> <ul style="list-style-type: none"> <li>• <b>Components: Burner controller, water level controller, pressure switch, alarms</b></li> <li>• <b>Supply: 415V 3-Phase</b></li> </ul>	No.	1
172.	<b>PID Controller, Steering Panel</b> <b>General Specifications:</b> Type: <b>Digital PID Controller</b> Application: <b>Steering panel control for precise motor or actuator control</b> Input Types: <b>Thermocouple: K, J, T, E, N</b> <b>RTD: Pt100</b> <b>Analog: 4-20mA, 0-10V DC</b> Output Types: <b>Relay Output: SPDT (Single Pole Double Throw)</b> <b>SSR Driver Output</b> <b>Analog Output: 4-20mA or 0-10V</b> Display: <b>Dual 4-digit 7-segment LED (for process &amp; setpoint)</b> <b>Optional LCD display</b> Control Modes: <b>PID, PI, PD, P only</b> <b>Auto-tuning feature for precise PID settings</b> Power Supply: <b>85-265V AC, 50/60 Hz (universal input)</b> Accuracy: <b>±0.2% of FS (Full Scale)</b> Mounting: <b>Panel mounting (cutout 92mm x 92mm standard)</b> Communication: <b>RS485 Modbus RTU (optional)</b> Enclosure Protection: <b>IP54 (front panel), IP20 (rear side)</b>	No.	1
173.	<b>Thermo Couple and PT Calibration Kit upto 300 deg c</b> <ul style="list-style-type: none"> <li>• <b>Range: Up to 300°C</b></li> <li>• <b>Types: K, J, PT100</b></li> <li>• <b>Features: Dry block or oil bath</b></li> <li>• <b>Power: 230V AC</b></li> </ul>	No.	1
174.	<b>Presssure Transmitter calibration, Kit for testing pressure transmitter Vaccum and positive pressure</b> <ul style="list-style-type: none"> <li>• <b>Range: Vacuum to +10 bar</b></li> <li>• <b>Type: Hand pump with digital gauge</b></li> <li>• <b>Accuracy: ±0.05%</b></li> </ul>	No.	1

175.	<b>SCR, Electronic components for building OP-AMP Circuits with given PCB, 2 KG</b> <b>General Specifications:</b> Type: <b>Discrete Electronic Components Trainer Kit</b> Weight: <b>2 KG (approx.)</b> Kit Includes: SCRs (Silicon Controlled Rectifiers): <b>2-4 pcs (e.g., BT136, TIC106)</b> OP-AMPs: <b>LM741, LM324, TL081 (1-2 pcs each)</b> Diodes: <b>1N4007, 1N4148</b> Transistors: <b>BC547, BC557, 2N3055</b> Resistors: <b>Assorted (100Ω to 100kΩ), 0.25W</b> Capacitors: <b>Electrolytic (10uF to 1000uF), Ceramic (10nF to 100nF)</b> Potentiometers: <b>10KΩ, 100KΩ</b> Breadboard or given PCB (etched): <b>For OP-AMP circuit assembly</b> LEDs: <b>Red, Green</b> Power Supply: <b>12V DC adapter or regulated dual supply ±12V for OP-AMPs</b> Jump Wires & Connectors: <b>For circuit building</b> Manual Booklet: <b>With 10-15 experiment circuits like: Half-wave &amp; full-wave SCR control</b> <b>OP-AMP inverting &amp; non-inverting amplifier</b> <b>Integrator, differentiator circuits</b> <b>Zero crossing detector, Schmitt Trigger</b> Packing: <b>Hard plastic case or metal toolbox</b>	No.	1
176.	<b>Generator control panel and Circuit, Standard size</b>  <b>Size: Standard cabinet</b> <b>Voltage: 415V 3-Phase</b> <b>Includes: Voltage regulator, frequency meter, ammeter, protection relays</b>	No.	1

<b>List of Tools &amp; Equipment</b> <b>HYDRAULIC LABORATORY</b>			
S.N	Name of Equipment's	Unit	Qty.
1	<b>Apparatus for the conducting orifice Experiment</b> •Orifice Plate: <b>Stainless steel, diameters ranging from 10 mm to 800 mm. The diameter typically ranges from 0.4 to 0.8 times the pipe diameter.</b> •Operating Conditions: <b>Can handle temperatures up to 800°C and pressures up to 400 bar.</b> •Flow Measurement: <b>Utilizes a differential manometer (U-tube or digital) to measure pressure drop across the orifice.</b> •Additional Components: <b>Flow control valve, collecting tank, and stopwatch for timing measurements.</b>	No.	1

2	<b>Apparatus for the conduct experiment Venturi meter Experiment</b> •Venturi Tube: <b>Made of transparent acrylic or stainless steel, with diameters ranging from 100 mm to 800 mm.</b> •Pressure Measurement: <b>Equipped with pressure taps at the inlet, throat, and outlet connected to manometers.</b> •Flow Control: <b>Includes a flow control valve to regulate the flow rate.</b> •Additional Features: <b>Collecting tank and pump for water recirculation.</b>	No.	1
3	<b>Rectangular and V Notch Apparatus</b> Notches: <b>Interchangeable rectangular and V-notches (60° or 90°).</b> Flow Channel: <b>Constructed from acrylic or stainless steel.</b> Measurement Tools: <b>Hook gauge for measuring water height, and a scale for determining flow rate.</b> Additional Components: <b>Sump tank and pump for water circulation.</b>	No.	1
4	<b>Reynold Apparatus with all accessories</b> •Test Section: <b>Transparent glass tube to observe flow patterns.</b> •Flow Visualization: <b>Includes a dye injection system to visualize flow.</b> •Flow Control: <b>Adjustable flow rate to achieve both laminar and turbulent flow conditions.</b> •Additional Equipment: <b>Constant head tank and collection tank.</b>	No.	1
5	<b>Laminar Flow Apparatus with accessories</b> •Flow Channels: <b>Parallel glass tubes to demonstrate laminar flow.</b> •Flow Regulation: <b>Constant head tank to maintain steady flow.</b> •Visualization: <b>Dye injection for flow visualization.</b> •Measurement Tools: <b>Flow control valves and pressure gauges.</b>	No.	1
6	<b>Turbulent Flow Measurement Apparatus with accessories</b> •Setup: <b>Includes a turbulent jet setup to demonstrate turbulent flow.</b> •Flow Control: <b>Adjustable valves to regulate flow rate.</b> •Measurement Tools: <b>Pressure gauges and flow meters to quantify flow characteristics.</b>	No.	1
7	<b>Digital Current Meter M. B. Make</b> •Measurement Range: <b>Typically measures current from 0.01 m/s to 6 m/s.</b> •Display: <b>LCD screen with real-time velocity readout.</b> •Type: <b>Can be propeller-based or electromagnetic, depending on the application.</b>	No.	1
8	<b>Bernoulli's Theorem Apparatus</b> Test Section: <b>Convergent-divergent duct to demonstrate Bernoulli's principle.</b> Measurement Tools: <b>Multiple pressure taps connected to manometers or digital sensors.</b> Flow Control: <b>Includes a flow control valve to regulate flow rate.</b> Additional Components: <b>Circulating pump and tank for water supply.</b>	No.	1
9	<b>Pipe Friction Apparatus</b> •Test Pipes: <b>Various diameters and lengths to study frictional losses.</b> •Measurement Tools: <b>Pressure taps along the pipe length connected to manometers.</b> •Flow Control: <b>Includes a flow control valve to regulate flow rate.</b> •Additional Equipment: <b>Sump tank and pump for water circulation.</b>	No.	1

10	<b>Minor Losses in Pipe Fitting Apparatus</b> Fittings: <b>Includes bends, elbows, sudden contractions/expansions, and valves.</b> Measurement Tools: <b>Pressure taps before and after each fitting to measure head loss.</b> Flow Control: <b>Adjustable valves to regulate flow rate.</b> Additional Components: <b>Manometers or digital sensors for pressure measurement.</b>	No.	1
11	<b>Flow Measurement Using Rota meter</b> Type: <b>Typically a tapered tube with a float inside.</b> Flow Range: <b>Can measure flow rates from 0.1 LPM to 10 LPM.</b> Material: <b>Acrylic or stainless steel construction.</b> Accuracy: <b>Calibrated scale for accurate flow measurement.</b>	No.	1
12	<b>Water Pressure Measurement Device with digital Indicator</b> •Pressure Range: <b>Typically measures from 0 to 10 bar.</b> •Display: <b>Digital indicator with high accuracy.</b> •Input: <b>Compatible with 0.5-4.5 V, 0-10 V transducers, or 4-20 mA transmitters.</b> •Features: <b>May include I/O drivers for activating warning outputs or regulating system pressure.</b>	No.	1
13	<b>SAP Engineers Advance Electro Hydraulic Trainer Kit with PLC Unit with all fittings on the workstation (SAP-38A), with spare connectors, valves and hydraulic pipes</b> PLC Unit: <b>Compatible with Siemens or Allen Bradley PLCs.</b> Hydraulic Components: <b>Includes a hydraulic pump with electric motor, directional control valves (4/2, 4/3), pressure relief valve, and double-acting cylinder.</b> Workstation: <b>Features a workstation panel with component mounting.</b> Accessories: <b>Comes with spare connectors, hoses, and fittings.</b> Monitoring: <b>Includes digital monitoring display for system parameters.</b>	No.	1
14	<b>5 HP Danfos Hydraulic Motor</b> •Displacement: <b>Typically ranges from 20 cc/rev to 50 cc/rev.</b> •Speed: <b>Up to 1500 RPM, depending on model.</b> •Torque: <b>Approximately 120 Nm, varies with displacement.</b> •Design: <b>Low-speed, high-torque motor suitable for various applications.</b>	No.	1
15	<b>Cut section of hydraulic Non Return Valve, Pressure relief valve, 4/2 Direction hand lever control valve, cylinder</b> Non-Return Valve: <b>Demonstrates the operation of check valves with spring-loaded flaps.</b> Pressure Relief Valve: <b>Shows the functioning of adjustable spring-loaded poppet valves.</b> 4/2 Direction Control Valve: <b>Hand lever actuated valve with visible internal spool.</b> Hydraulic Cylinder: <b>Double-acting cylinder with visible piston rod and seals.</b>	No.	4

**LIST OF TOOLS AND EQUIPMENT**  
**Pneumatics Laboratory (For batch of 10 candidates)**

S. N	Product Details:	Unit	Qty
1	<b>Basic &amp; Electro Pneumatic Trainer Kit with compressor and aluminium, TQ MC001, TECHQUIP Lab Solutions</b> •Structure: Aluminium profile frame with perforated panels for easy component mounting. •Components: <b>Miniature compressor with a 24L tank, delivering 50L/min intake capacity and 32L/min at 8 bar pressure.</b> <b>Electro-pneumatic components including solenoid valves, limit switches, proximity sensors, and flow control valves.</b> <b>PLC unit with programming software for automation exercises.</b> <b>Integrated power supply unit to support electro-pneumatic and PLC operations.</b> <b>Two assembly panels measuring 1100x700mm each.</b> <b>Includes hoses, cables, and tools for constructing experiments.</b>	No.	2
2	<b>Cut Section of Air Compressor</b> •Type: Typically a reciprocating or rotary screw compressor. •Material: Transparent acrylic or glass for clear visibility of internal components. •Features: <b>Visible crankshaft, pistons, valves, and cylinder head.</b> <b>Internal gears and bearings exposed for educational purposes.</b> <b>Mounted on a sturdy base for stability.</b> <b>May include a motor to demonstrate operation.</b>	No.	1
3	<b>Pneumatic Butterfly valve</b> •Size Range: DN60 to DN200. •Material: <b>Body and disc: PVCu.</b> <b>Stem: Zinc-plated carbon steel.</b> <b>Seals: EPDM.</b> •Operating Pressure: PN10 at 20°C. •Temperature Range: 0 – 60°C. •Standards: <b>Flanging system: EN ISO 1452, EN ISO 15493, DIN 2501, EN1092-1; ASTM B16.5; JIS B2220.</b> <b>Actuator couplings: ISO 5211.</b>	No.	1
4	<b>Pneumatic Air motor, 0.12 KW Pneumatic Air Motor - M20</b> •Model: Prona M-20. •Power: 1/8 HP (0.12 kW). •Max Pressure: 7.0 kg/cm <sup>2</sup> (0.68 MPa). •Max Speed: 3000 RPM. •Air Consumption: 380 L/min at 3.5 kg/cm <sup>2</sup> . •Axis Dimension: Ø10 mm. •Weight: 1800 g. •Air Inlet: Ø4×Ø6 mm.	No.	1

5	<b>Pneumatic Circuit trainer</b> •Structure: <b>Modular panel system with pre-drilled holes for component mounting.</b> •Components: <b>Single and double-acting cylinders.</b> <b>3/2 and 5/2 solenoid valves.</b> <b>Flow control valves and pressure regulators.</b> <b>Air filter, lubricator, and regulator (FRL) unit.</b> <b>Pressure gauges and quick-connect fittings.</b> •Applications: <b>Suitable for demonstrating basic pneumatic circuits and automation.</b>	No.	1
6	<b>Pneumatic Chipping hammer, 7 KG, 90 PSI</b> •Model: <b>GP-893H.</b> •Shank Size: <b>14.5 mm hex.</b> •Piston Stroke: <b>51 mm.</b> •Stroke Speed: <b>2300 bpm.</b> •Weight: <b>7.0 kg.</b> •Length: <b>410 mm.</b> •Air Consumption: <b>0.85 m³/min.</b> •Air Inlet: <b>3/8".</b> •Hose Size: <b>8 mm.</b> •Sound Pressure: <b>100 dBA.</b> •Air Pressure: <b>90 psi.</b> •Vibration: <b>11.0 m/s².</b>	No.	1
8	<b>Pneumatic tools set , AKT0053-3, Air Pressure: 90 psi</b> <b>Air blow gun with 16 mm nozzle.</b> <b>Air spray gun with 600 cc paint capacity and 180-250 mm pattern width.</b> <b>Air washing gun with 750 cc capacity.</b> <b>Air tire inflating gun with max pressure of 12 bar.</b> <b>4 m recoil hose with 8 mm diameter.</b> •Operating Pressure: <b>Air spray gun: 3-4 bar.</b> <b>Air washing gun: 4 bar.</b> <b>Tire inflating gun: Max 12 bar.</b>	No.	1
9	<b>Air hose with couplings/connectors, 8mm, 90 PSI</b> •Material: <b>Flexible rubber or polyurethane.</b> •Diameter: <b>8 mm (inner).</b> •Pressure Rating: <b>90 psi (6.3 kg/cm²).</b> •Length: <b>Typically 4 m.</b> •Couplings: <b>Quick-connect fittings compatible with Nitto or European-style connectors.</b>	No.	20
11	<b>Lever Operated Directional Control Valve</b> •Type: <b>4/2 or 4/3 lever-operated valve.</b> •Mounting: <b>ISO 4401-05 (CETOP-5) interface.</b> •Positions: <b>Three positions with manual lever control.</b> •Detent: <b>Yes, to maintain last position attained.</b> •Pressure Relief: <b>Provision for mounting pressure relief valve (DPR*06).</b> •Pressure Switch: <b>Provision for mounting pressure switch (1PS*, max 350 bar).</b>	No.	1

<b>List of Tools &amp; Equipment</b> <b>MARINE FITTER Workshop (For batch of 10 candidates)</b>			
S.N	Name of the Tool & Equipment	Unit	Quantity
<b>A. TRAINEES TOOL KIT</b>			
1.	<b>Motor Vessel of a length not less than 25 m and BHP not less than 50No. for VNC and MFC</b> •Length: Typically ranges from 28 to 34 meters. •Horsepower: Between 600 to 750 BHP. •Usage: Training vessels for the Vessel Navigator training.	No.	1
2.	<b>Air compressor</b> •Type: Oil-injected rotary screw or scroll compressor. •Key Specifications: Horsepower: Varies based on application. Maximum Pressure: Dependent on model. Air Delivery: Measured in CFM (Cubic Feet per Minute). •Features: Designed for efficient air delivery with considerations for pressure and flow requirements.	No.	1
3.	<b>Air starter motor</b> •Model: ST2000. •Specifications: Maximum Horsepower: 70 HP (52 kW). Breakaway Torque: 347 ft-lb (469 Nm). Operating Pressure: 30–150 PSIG (2.1–10.3 barg). Speed Range: 0–4000 RPM. Engagement Type: Pre-engaged. Flange Type: SAE 3.	No.	1
4.	<b>Anvil,</b> Description: A metalworking tool consisting of a large block of metal (usually forged or cast steel) with a flattened top surface, upon which another object is struck.	No.	1
5.	<b>Arc welding set with accessories</b> •Model: ARC400iS. •Specifications: Input Voltage: AC 415V ±20%. Current Range: 250 to 900 amps. Time Control: 0.05 to 0.7 seconds. •Features: Solid-state power supply, built-in chuck saver module, and complete set of accessories including ground cable, welding gun, and footpiece.	No.	1
6.	<b>Bench grinder</b> •Model: DEWALT DW758. •Specifications: Wheel Size: 8 inches (205 mm). Motor Power: 4.2 amps. Speed: 3600 RPM. Spindle Diameter: 5/8 inch. •Features: Cast iron construction, precision-machined aluminum tool rests, rear exhaust ports, and includes 36 and 60 grit wheels.	No.	1

7.	<b>Bench vice, 150 mm.</b> <b>•Model: STANLEY 1-83-068.</b> <b>•Specifications:</b> Jaw Width: <b>150 mm.</b> Jaw Depth: <b>76 mm.</b> Product Width: <b>171 mm.</b> Product Height: <b>182 mm.</b> Weight: <b>14 kg.</b> <b>•Material: Cast iron body.</b>	No.	5
8.	<b>Centre lathe machine</b> <b>•Type: Heavy Duty All Geared Lathe.</b> <b>•Specifications:</b> Center Height: <b>12 inches.</b> Bed Width: <b>13 inches.</b> Spindle Bore: <b>80 mm.</b> Three Jaw True Chuck: <b>10 inches.</b> Four Jaw True Chuck: <b>10 inches.</b> Motor with Switch & Belt: <b>3 HP.</b>	No.	2
9.	<b>4 Cylinder cummins marine diesel engine about 125 HP, with spare filters and kit</b> <b>•Model: B4.5L.</b> <b>•Specifications:</b> Configuration: <b>In-line 4-cylinder, 16-valve, 4-stroke diesel engine.</b> Power Output: <b>Approximately 125 HP.</b> Fuel System: <b>High Pressure Common Rail (HPCR).</b> Features: <b>Robust rebuildable engine block designed for continuous operation, industry-leading torque for excellent vessel acceleration and maneuverability.</b>	No.	1
10.	<b>Diesel driven windlass/capstan with gear box</b> <b>•Model: Capstan T1500.</b> <b>•Features:</b> Motor IP Rating: <b>66.</b> Gearbox: <b>Anodised marine aluminium.</b> Control Box: <b>Included in package.</b>	No.	1
11.	<b>Diesel engine working model with gearbox and fixed pitch propeller</b> <b>•Propeller Type: Fixed Pitch Propeller</b> <b>•Specifications:</b> Blades: <b>Typically 5 or 7 blades.</b> Hub Diameter: <b>Varies based on model.</b> Maximum Power: <b>Up to 1600 kW.</b> Propeller Diameter: <b>Ranges from 3350 mm to 4050 mm.</b>	set	1
12.	<b>Electric blower, 440 Volts 3 phase</b> <b>•Model: Dayton 3HMJ5.</b> <b>•Specifications:</b> Voltage: <b>208/230/460V, 3-phase.</b> Features: <b>Economical air delivery for general heating, cooling, ventilating, or component cooling.</b>	No.	1
13.	<b>Electric motor, 1 HP 220 volt</b> <b>•Model: Grizzly H5380.</b> <b>•Specifications:</b> Power: <b>1 HP.</b> Voltage: <b>110V/220V.</b> Speed: <b>3450 RPM.</b> Phase: <b>Single-phase.</b> Enclosure: <b>Totally Enclosed Fan Cooled (TEFC).</b>	No.	1



14.	<b>Fuel injector pump</b> •Type: <b>Bosch High Pressure Pump (CP3).</b> •Specifications: Number of Pump Cylinders: <b>3.</b> Pressure: <b>Up to 1600 bar.</b> Cam Lobes: <b>3.</b> Fuel Control: <b>By metering unit.</b> Supply Pump: <b>Gear pump.</b>	No.	1
15.	<b>Fuel injector test bed</b> Features: <b>Capable of testing all kinds of diesel injection pumps.</b> <b>Control test of the injection time.</b> <b>Injector cleaning during vehicle engine starting (optional).</b>	No.	1
16.	<b>Fuel pump individual</b> •Individual Fuel Pump: <b>Designed to supply fuel to a single injector or cylinder.</b> •Specifications: <b>Vary based on engine requirements and manufacturer specifications.</b>	No.	2
17.	<b>Fuel pump multiple</b> •Multiple Fuel Pump: <b>Capable of supplying fuel to multiple injectors or cylinders simultaneously.</b> •Specifications: <b>Vary based on engine requirements and manufacturer specifications.</b>	No.	2
18.	<b>Gear type pump</b> Description: <b>A positive displacement pump that uses meshing gears to pump fluid by displacement.</b> Applications: <b>Commonly used for hydraulic fluid power applications.</b> Specifications: <b>Depend on flow rate, pressure requirements, and fluid viscosity.</b>	No.	1
19.	Generator for coupling to marine diesel engine in 9 above (93 kW), a generator with a prime power output of around 100 kW would be appropriate.	No.	1
20.	<b>Hand operated hydraulic pipe bending m/c</b> •Operation: <b>Manual hydraulic system for precise pipe bending.</b> •Bending Capacity: <b>Suitable for various pipe diameters and materials.</b> •Features: <b>Equipped with hydraulic controls for accurate bending operations.</b> <b>User-friendly design requiring no electric power.</b> <b>Ensures smooth bends without compromising pipe integrity.</b> •Applications: <b>Ideal for workshops, training institutes, and on-site maintenance tasks.</b>	No.	1
21.	<b>Heat exchanger</b> •Type: <b>Shell and Tube Heat Exchanger.</b> •Design Features: <b>Supports single-pass or multi-pass configurations.</b> <b>Accommodates various flow arrangements: counter-flow, co-current, and cross-flow.</b> <b>Utilizes combinations of flow patterns to maximize thermal efficiency.</b> •Applications: <b>Widely used in chemical processing, power plants, and HVAC systems.</b>	No.	1

22.	<ul style="list-style-type: none"> <li>•Type: <b>Directional Control Valve.</b></li> <li>•Specifications: Material: <b>Steel construction.</b> Working Pressure: <b>Up to 5000 PSI.</b> Adjustment Range: <b>100 - 3000 PSI.</b></li> <li>•Features: <b>Pilot-operated design for precise control.</b> <b>Available in modular configurations for system integration.</b></li> <li>•Applications: <b>Essential in hydraulic systems for controlling fluid flow direction.</b></li> </ul>	No.	1
23.	<p><b>Hydraulic line relief valve</b></p> <ul style="list-style-type: none"> <li>•Type: <b>Cartridge Relief Valve.</b></li> <li>•Specifications: Material: <b>Steel.</b> Working Pressure: <b>Rated up to 15,000 PSI.</b> Flow Capacity: <b>Up to 75 GPM.</b></li> <li>•Features: <b>Manual, electric vent, or electro-hydraulic control options.</b> <b>Protects hydraulic systems from overpressure conditions.</b></li> <li>•Applications: <b>Used in high-pressure hydraulic systems to maintain safe operating pressures.</b></li> </ul>	No.	1
24.	<p><b>Hydraulic low pressure pump</b></p> <ul style="list-style-type: none"> <li>•Type: <b>Bi-Directional Hydraulic Pump.</b></li> <li>•Specifications: Displacement: <b>Ranges from 0.49 to 0.82 GPM at 1750 RPM.</b> Maximum Pressure: <b>Up to 5000 PSI.</b> Speed: <b>Maximum RPM of 2400.</b></li> <li>•Features: <b>Compact design suitable for various applications.</b> <b>Efficient performance with low slip rates.</b></li> <li>•Applications: <b>Ideal for systems requiring consistent low-pressure hydraulic flow.</b></li> </ul>	No.	1
25.	<p><b>Hydraulic motor with pinion</b></p> <ul style="list-style-type: none"> <li>•Model: <b>MZ02-MZE02 Swing Drive Motor.</b></li> <li>•Specifications: Displacement: <b>Up to 398 cc/rev.</b> Maximum Torque: <b>1650 Nm.</b> Maximum Pressure: <b>260 bar (3771 PSI).</b> Power Output: <b>22 kW (30 HP).</b> Maximum Speed: <b>470 RPM.</b></li> <li>•Features: <b>Designed for direct swing drive applications.</b> <b>High torque output suitable for heavy-duty operations.</b></li> <li>•Applications: <b>Commonly used in construction machinery and industrial equipment.</b></li> </ul>	No.	1

26.	<b>Hydraulic pump - High pressure</b> <ul style="list-style-type: none"> <li>•Model: Series 20 Axial Piston Pump.</li> <li>•Specifications: Operating Pressure: Up to 420 bar (6092 PSI). High Pressure Setting: Maximum of 460 bar (6672 PSI). Charge Pump Output Pressure: Maximum of 35 bar (508 PSI) above case pressure.</li> <li>•Features: <b>Robust design for demanding hydraulic applications.</b> <b>Suitable for systems requiring high-pressure fluid delivery.</b></li> <li>•Applications: Used in industrial machinery, mobile equipment, and marine systems.</li> </ul>	No.	1
27.	<b>Cut model In line multi-cylinder diesel engine</b> <ul style="list-style-type: none"> <li>•Description: Actual cut-sectional 4-stroke, 6-cylinder diesel engine model.</li> <li>•Features: <b>Provides clear visualization of internal components like pistons, crankshaft, and connecting rods.</b> <b>Mounted on a motorized trolley for ease of demonstration.</b> <b>Painted with high-quality finishes for durability.</b></li> <li>•Applications: Educational tool for technical training institutes and engineering colleges.</li> </ul>	No.	1
28.	<b>Cut model single cylinder engine (Miniature Size)</b> <ul style="list-style-type: none"> <li>•Model: MUSA 1/8 2.6cc Mini Single-Cylinder Gas Powered Motor.</li> <li>•Specifications: Displacement: 2.6 cc. Type: 4-stroke gasoline engine. Cooling: Air-cooled.</li> <li>•Features: <b>Highly realistic miniature model resembling actual diesel engines.</b> <b>Suitable for hobbyists and educational demonstrations.</b></li> <li>•Applications: Used for educational purposes, exhibitions, and as a collector's item.</li> </ul>	No.	1
29.	<b>Line hauler electrically operated</b> Function: Designed for hauling fishing lines, nets, or ropes in marine applications. Power Source: Electric motor (typically 12V or 24V DC). Features: <b>Variable speed control for precise operation.</b> <b>Corrosion-resistant materials suitable for marine environments.</b> <b>Compact and portable design for easy installation on vessels.</b>	No.	1
30.	<b>Yamaha out board engine (25 HP )</b> <ul style="list-style-type: none"> <li>•Model: Yamaha F25</li> <li>•Type: 4-stroke, portable outboard motor.</li> <li>•Horsepower: 25 HP</li> <li>•Features: <b>Lightweight design, making it the lightest 25 HP outboard in its class.</b> <b>High power-to-weight ratio for efficient performance.</b> <b>Suitable for small boats and easy transportation.</b></li> </ul>	No.	1

31.	<b>Portable Petrol engine water pump (6.5 HP) with stand, 10m Inlet pipe and 30m fire hose</b> •Model: Neptune NPP-30 •Engine: 4-stroke, 196 cc petrol engine. •Power Output: 6.5 HP •Features: <b>Includes a stand for stability.</b> <b>Comes with a 10-meter inlet pipe and a 30-meter fire hose.</b> <b>Suitable for agriculture, irrigation, and emergency water transfer.</b>	No.	1
32.	<b>Pillar drilling machine</b> •Drilling Capacity: 25 mm to 32 mm in steel. •Pillar Diameter: 90 mm •Spindle Speeds: Multiple speed options ranging from 100 to 1142 RPM. •Features: <b>Tilting working table for angular drilling.</b> <b>Robust construction for heavy-duty operations.</b>	No.	1
33.	<b>Pipe vice</b> •Type: Open Side (OS) and Fixed Side (FS) types. •Jaw Opening: Up to 130 mm. •Features: <b>Designed as per IS 2587 standards.</b> <b>Suitable for holding pipes securely during cutting or threading operations.</b>	No.	1
34.	<b>Plummer block bearing</b> •Type: Split plummer block housings. •Standards: Conforms to JIS B 1551 and BAS 188. •Features: <b>Accommodates self-aligning ball or spherical roller bearings.</b> <b>Facilitates easy mounting and dismounting of shafts.</b>	No.	1
35.	<b>Portable drilling machine</b> •Drilling Capacity: Up to 50 mm in steel. •Features: <b>Suitable for drilling in ferrous and non-ferrous metals.</b> <b>Portable design for on-site operations.</b>	No.	1
36.	<b>Power Hacksaw machine</b> •Cutting Capacity: Up to 300 mm diameter. •Stroke Length: 140 mm (non-adjustable). •Speed Options: Multiple speed strokes for various materials. •Features: <b>Suitable for cutting metal, wood, and plastic.</b> <b>Robust construction for industrial use.</b>	No.	1
37.	<b>PTO clutch assembly</b> •Components: <b>Field/rotor assembly (coil, backing plate, rotor).</b> <b>Pulley/armature assembly (armature disk, springs, hub, pulley).</b> <b>Brake assembly.</b> •Function: Engages and disengages power transmission from the engine to auxiliary equipment.	No.	1

38.	<b>Shearing machine (Hand operated)</b> •Model: W01-2x610 •Max Rolling Thickness: 2.0 mm •Features: <b>Manual operation for sheet metal cutting.</b> <b>Suitable for small workshops and training institutes.</b>	No.	1
39.	<b>Single cylinder water cooled diesel engine, hand starting type, 5 hp</b> •Power Output: 5 HP •Cooling System: Water cooled. •Features: <b>Hand starting mechanism.</b> <b>Suitable for agricultural and industrial applications.</b>	Nos.	2
40.	<b>Smith's forge</b> •Function: Used in blacksmithing for heating metals. •Features: <b>Constructed with fire-resistant materials.</b> <b>Equipped with a blower for maintaining high temperatures.</b>	No.	1
41.	<b>Swage block</b> •Material: Cast iron or steel. •Features: <b>Variously-sized holes and forms on the sides.</b> <b>Used for shaping, bending, and forming metal.</b>	No.	1
42.	<b>Vacuum pump - double stage, rotary</b> •Type: Double-stage rotary vane vacuum pump. •Pressure Range: Up to $2 \times 10^{-3}$ mbar. •Features: <b>Oil-sealed and air-cooled design.</b> <b>Suitable for industrial, chemical, and pharmaceutical applications.</b>	No.	1
43.	<b>3 way valve</b> •Type: Three-way cast globe valve. •Function: Used for diverting or mixing services in fluid control systems. •Features: <b>High-output diaphragm motor.</b> <b>Suitable for high differential pressure services.</b>	No.	1
44.	<b>Acetylene Regulators for Gas welding</b> •Function: Regulates the pressure of acetylene gas for welding applications. •Features: <b>Designed for low-pressure delivery (typically up to 1.5 bar).</b> <b>Equipped with safety features to prevent backflow and overpressure.</b>	No.	1
45.	<b>Electric hand drilling machine, 230V - 1/2" capacity</b> •Power Supply: 230V AC. •Drilling Capacity: Up to 1/2 inch (13 mm) in steel. •Features: <b>Compact and lightweight design.</b> <b>Suitable for drilling in various materials.</b>	No.	1
46.	<b>Expansion valve</b> •Function: Regulates the flow of refrigerant into the evaporator in HVAC systems. •Features: <b>Maintains optimal superheat levels.</b> <b>Ensures efficient operation of refrigeration cycles.</b>	No.	1

Battery testing equipments			
47.	<b>Hydrometer</b> •Type: Glass hydrometer, constant-mass, variable-displacement. •Standards: ASTM E100. •Features: Calibrated for specific gravity or relative density; may include integral thermometer (thermohydrometer).	Nos.	3
48.	<b>Cell Tester, 2V</b> •Application: Testing 2V lead-acid cells. •Features: Measures voltage and internal resistance; suitable for maintenance of individual cells.	Nos.	2
49.	<b>Battery Tester, 12V</b> •12V Digital Battery and System Tester. •Features: Analyzes standard lead-acid, gel, AGM, and deep-cycle batteries; provides comprehensive test reports with clear results.	No.	1
50.	<b>Battery charger</b> •Types: Float-cum-boost chargers. •Input: Single-phase 240V $\pm 20\%$ , 50Hz. •Features: Suitable for various battery types; specifications vary based on application.	No.	1
Other Electrical test equipments			
51.	<b>Megger</b> •Voltage Output: Up to 15 kV. •Features: Incorporates PI Predictor™ technology for faster polarization index testing; high-performance guard terminals to minimize surface leakage effects.	Nos.	1
52.	<b>Tong Tester</b> •Function: Measures current without breaking the circuit. •Features: Utilizes electromagnetic induction; suitable for AC current measurements.	No.	1
53.	<b>Armature Growler</b> •Model: Martindale B-1. •Features: Bench-type with adjustable jaws; detects shorted coils in armatures.	No.	1
54.	<b>Test Lamp</b> •Function: Checks presence of voltage in circuits. •Features: Simple design with a bulb and probes; indicates voltage presence by illumination.	No.	1
55.	<b>Starter motor test bench</b> •Model: Durst TB-1900S. •Features: Digital load torque meter; suitable for automotive, marine, and defense applications.	No.	1
56.	<b>Alternator synchronization</b> •Function: Synchronizes alternators with power grids. •Features: Ensures matching voltage, frequency, and phase sequence before connection.	No.	1
57.	<b>Working work bench</b> <b>Specifications:</b> Industrial-grade benches with load-bearing capacity; dimensions vary based on application.	Nos.	2
58.	Motor test/Assembly bench	Nos.	1

	<b>Features:</b> Equipped with fixtures for motor testing and assembly; may include instrumentation for performance evaluation.		
<b>Electronic Equipment's&amp; Tools</b>			
59.	<b>Handheld Global Positioning System (Used and working)</b> <b>•Example: Garmin GPSMAP 67i.</b> <b>•Features: 24-hour battery life; IPX7 waterproof rating; multiband GNSS support.</b>	Nos.	2
60.	<b>Colour Video Echo Sounder (Used and working)</b> <b>•Model: Furuno FCV-667.</b> <b>•Features: 6-inch dual-frequency display; compatible with various transducers; suitable for marine applications.</b>	Nos.	1
63.	<b>Megger</b> <b>•Test Voltage Range: 250V, 500V, 1000V (some models up to 5000V)</b> <b>•Insulation Resistance Measurement Range: Up to 200 GΩ (gigohms)</b> <b>•Display: Digital LCD with analog arc for easy reading</b> <b>•Accuracy: ±5% of reading</b> <b>•Short Circuit Current: Typically 1 mA to 5 mA</b> <b>•Power Source: Rechargeable battery or 6 x AA batteries</b> <b>•Measurement Functions:</b> <b>Insulation resistance (IR)</b> <b>Polarization index (PI)</b> <b>Dielectric absorption ratio (DAR)</b> <b>Voltage detection (AC/DC)</b> <b>•Auto Discharge Function: For safely discharging capacitance after test</b> <b>•Safety Ratings:</b> <b>CAT IV 600V</b> <b>IEC 61010-1 compliant</b> <b>•Operating Temperature: 0°C to 50°C</b> <b>•Storage Temperature: -20°C to 60°C</b> <b>•Ingress Protection: IP54 (dust and splash-proof)</b> <b>•Accessories:</b> <b>Test leads with alligator clips</b> <b>Carry case</b> <b>User manual</b> <b>Calibration certificate</b>	No.	1
64.	Digital Multimeter <b>Features:</b> Measures voltage, current, resistance, frequency, and capacitance; safety compliance with EN61010-1 CAT III 1000V; IP54 ingress protection.	No.	2
65.	Analogue Multimeter <b>Features:</b> Provides readings via a moving needle; suitable for observing trends and fluctuations in measurements.	No.	2
66.	Temperature Controlled Soldering Station <b>Features:</b> Adjustable temperature settings; maintains consistent heat for precise soldering tasks.	No.	1
67.	De-soldering station <b>Features:</b> Combines soldering iron with vacuum pump; facilitates removal of solder from components.	No.	1

68.	<b>Frequency counter</b> ●Function: Measures frequency of electronic signals. ●Features: High-resolution display; suitable for RF and audio frequency measurements.	No.	1
69.	40V/20A variable voltage Battery charger <b>Features:</b> Adjustable output voltage and current; suitable for charging various battery types.	No.	1
70.	Soldering iron <b>Features:</b> Heats up to melt solder; used for joining electronic components.	No.	5
71.	<b>Bread board</b> ●Function: Prototyping electronic circuits without soldering. ●Features: Multiple tie points; reusable for various circuit designs.	No.	5
72.	<b>Panel meter</b> ●Function: Displays electrical parameters like voltage, current, or frequency. ●Features: Analog or digital display; suitable for control panels.	No.	5
73.	<b>Automatic identification system</b> ●Function: Tracks vessel movements for maritime navigation. ●Features: Transmits vessel information like position, speed, and course to other ships and shore stations.	No.	1
74.	<b>3 Leg bearing puller</b> ●Function: Removes bearings from shafts. ●Features: Three adjustable arms for balanced pulling force.	No.	1
75.	<b>BSW Tap set</b> ●Function: Cuts British Standard Whitworth threads. ●Features: Includes taper, intermediate, and bottoming taps.	set	3
76.	Adjustable pipe wrench, 20" drop-forged steel, adjustable jaws, knurled nut for adjustment, hardened teeth.	No.	3
77.	Adjustable plier 12", chrome-vanadium steel, slip-joint or groove joint type.	No.	1
78.	Adjustable reamer 15mm to 50mm, high-speed steel blades, adjustable with nut and screw.	No.	3
79.	Hand reamer HSS material, straight or spiral flutes, sizes from 6mm to 25mm.	No.	3
80.	Allen key set 1.5mm to 10mm, chrome-plated, L-type, typically 9 pieces per set.	set	1
81.	Allen screw wrench T-handle or L-type, sizes from 2mm to 12mm, hardened and tempered steel.	set	1
82.	Ball peen hammer, 1 lb	No.	6
83.	Ball peen hammer, 2 lb	No.	6



84.	<b>Bearing scraper Flat</b> <ul style="list-style-type: none"> <li>• <b>Blade material:</b> Carbon tool steel</li> <li>• <b>Length:</b> 200 mm to 300 mm</li> <li>• <b>Wooden handle, hardened cutting edges.</b></li> </ul>	No.	3
85.	<b>Bearing scraper half round</b> <ul style="list-style-type: none"> <li>• <b>Blade material:</b> Carbon tool steel</li> <li>• <b>Length:</b> 200 mm to 300 mm</li> <li>• <b>Wooden handle, hardened cutting edges.</b></li> </ul>	No.	3
86.	<b>Bearing scraper triangular</b> <ul style="list-style-type: none"> <li>• <b>Blade material:</b> Carbon tool steel</li> <li>• <b>Length:</b> 200 mm to 300 mm</li> <li>• <b>Wooden handle, hardened cutting edges.</b></li> </ul>	No.	3
87.	<b>Bevel protractor</b> <ul style="list-style-type: none"> <li>• <b>Stainless steel body, 0°–180° range</b></li> <li>• <b>Vernier reading 5' or 1' resolution.</b></li> </ul>	No.	1
88.	<b>Blow lamp</b> Brass body, 1L capacity, manual pump. <ul style="list-style-type: none"> <li>• <b>Body:</b> Brass construction</li> <li>• <b>Capacity:</b> 1 liter</li> <li>• <b>Operation:</b> Manual pump for pressurization</li> <li>• <b>Fuel:</b> Kerosene or gasoline</li> <li>• <b>Flame Control:</b> Adjustable nozzle</li> </ul>	No.	1
89.	<b>Blow pipe</b> Length: 300mm, brass with copper tip. <ul style="list-style-type: none"> <li>• <b>Length:</b> 300mm</li> <li>• <b>Material:</b> Brass body with copper tip</li> <li>• <b>Application:</b> For gas welding and cutting</li> </ul>	No.	1
90.	<b>Blue goggles for gas cutting work</b> <ul style="list-style-type: none"> <li>• <b>Lens:</b> Shade 5 DIN for gas cutting protection</li> <li>• <b>Frame:</b> Polycarbonate</li> <li>• <b>Fit:</b> Adjustable elastic headband</li> </ul>	No.	10
91.	<b>Box spanner set</b> 6mm–32mm sizes, 6-12 pcs, chrome-plated.	set	3

	<ul style="list-style-type: none"> <li>• <b>Sizes:</b> 6mm to 32mm</li> <li>• <b>Pieces:</b> 6 to 12 pcs per set</li> <li>• <b>Material:</b> Chrome vanadium steel, chrome-plated</li> </ul>		
92.	BSF Taps with tap wrench Sizes 1/8" to 1/2", carbon steel. <ul style="list-style-type: none"> <li>• <b>Sizes:</b> 1/8" to 1/2"</li> <li>• <b>Material:</b> Carbon steel</li> <li>• <b>Included:</b> Tap wrench suitable for above sizes</li> </ul>	set	4
93.	BSP die set (pipe) Sizes 1/8" to 1", carbon steel/HSS. <ul style="list-style-type: none"> <li>• <b>Sizes:</b> 1/8" to 1"</li> <li>• <b>Material:</b> Carbon steel or HSS</li> <li>• <b>Application:</b> Pipe threading</li> </ul>	set	4
94.	BSW die (pipe) Sizes 1/8" to 1", HSS. <ul style="list-style-type: none"> <li>• <b>Sizes:</b> 1/8" to 1"</li> <li>• <b>Material:</b> High-Speed Steel (HSS)</li> <li>• <b>Application:</b> Whitworth threading</li> </ul>	No.	3
95.	BSP pipe die with stock Adjustable stock handle with dies. <ul style="list-style-type: none"> <li>• <b>Stock:</b> Adjustable stock handle</li> <li>• <b>Dies:</b> BSP pipe sizes from 1/8" to 1"</li> </ul>	No.	3
96.	C clamp Sizes: 2", 4", 6", each of cast iron body. <ul style="list-style-type: none"> <li>• <b>Sizes:</b> 2", 4", 6"</li> </ul>	No.	1

	<ul style="list-style-type: none"> <li>• <b>Body:</b> Cast iron</li> <li>• <b>Spindle:</b> Steel with copper plated</li> </ul>		
97.	<p>Cable joining clamp Suitable for 1.5mm<sup>2</sup> to 16mm<sup>2</sup> cables.</p> <ul style="list-style-type: none"> <li>• <b>Capacity:</b> Suitable for cables 1.5mm<sup>2</sup> to 16mm<sup>2</sup></li> <li>• <b>Material:</b> Brass/bronze body with insulated grips</li> </ul>	No.	1
98.	<p>Calipers assorted sizes (inside/outside)</p> <ul style="list-style-type: none"> <li>• <b>Types:</b> Inside and Outside calipers</li> <li>• <b>Material:</b> Carbon steel</li> <li>• <b>Sizes:</b> 150mm, 200mm, 300mm</li> </ul>	set	3
99.	<p>Carpenter's clamp Sizes 12", 18", 24", steel frame.</p> <ul style="list-style-type: none"> <li>• <b>Sizes:</b> 12", 18", 24"</li> <li>• <b>Frame:</b> Steel frame with screw handle</li> </ul>	No.	1
100.	<p>Carpenter's vice 9" jaw width, cast iron body.</p> <ul style="list-style-type: none"> <li>• <b>Jaw Width:</b> 9"</li> <li>• <b>Material:</b> Cast iron body</li> <li>• <b>Mounting:</b> Bench mount</li> </ul>	No.	1
101.	<p>Carpentry chisel different sizes Sizes 6mm to 25mm, chrome vanadium.</p> <ul style="list-style-type: none"> <li>• <b>Sizes:</b> 6mm, 10mm, 12mm, 18mm, 25mm</li> <li>• <b>Material:</b> Chrome vanadium steel</li> <li>• <b>Handle:</b> Wooden/plastic grip</li> </ul>	No.	6
102.	<p>Centre punch Length: 100mm, tip: hardened steel.</p>	No.	6

103.	Chain pulley block Capacity: 1T, 2T, lift: 3m to 5m	No.	1
104.	Chain wrench Capacity: 4" to 6", forged steel.	No.	1
105.	Check valve	No.	1
106.	Chisel set (Flat, Half round, Cross cut, Diamond)	set	3
107.	Nose plier Size: 6", insulated handle.	No.	1
108.	Circlip plier inside Sizes: 6" to 9", forged steel.	No.	2
109.	Circlip plier outside Sizes: 6" to 9", forged steel.	No.	2
110.	Claw hammer, 1/2kg Drop forged steel, wooden/fiberglass handle.	No.	1
111.	Cold chisel Sizes: 10mm to 25mm, chrome vanadium.	No.	2
112.	Combination drill bit Sizes: 1mm to 13mm, HSS.	No.	1
113.	Combination set of Square, protractor, and center head.	No.	1
114.	Combination spanner, Sizes: 6mm to 32mm, chrome-plated.	No.	1
116.	Counter boring cutter, Sizes: 6mm to 32mm, HSS.	No.	2
117.	Counter sunk Cutter 90° angle, HSS, sizes 6mm–20mm.	No.	2
118.	Cross peen hammer Sizes: 500g, 1kg, forged steel.	No.	3
119.	Straight peen hammer Sizes: 500g, 1kg, forged steel.	No.	3
120.	Cutter gun for gas cutting Cutting capacity: up to 20mm thick.	No.	1
121.	Cutting plier Size: 7", insulated handle.	No.	2
122.	Cuttogen, blow pipe with nozzles for gas welding and cutting	No.	6
123.	Depth gauge • Range: 0-300mm • Graduation: 0.02mm.	No.	3
124.	Depth micrometer • Range: 0-100mm • Resolution: 0.01mm.	No.	1
125.	Dial gauge with magnetic stand • Range: 0-10mm • Graduation: 0.01mm.	No.	1
126.	Dial gauge stand – Inside	No.	1

127.	Dial test Indicator ange 0-0.8mm, graduation 0.01mm, jeweled bearing, anti-magnetic body.	No.	1
128.	Double end spanner Sizes 6x7mm to 30x32mm, chrome plated.	set	1
129.	Draw bolt Size depends on lathe/machine, threaded.	No.	1
130.	Parallel shank drill bit different sizes HSS, sizes 1mm to 13mm, jobber length.	set	3
131.	Taper shank drill bit different sizes HSS, sizes 6mm to 30mm, Morse taper 1-4.	set	3
132.	<i>Electrode holder</i> 300-600 Amps capacity, insulated handle.	No.	6
133.	Electronic leak tester	No.	1
134.	Emery grinding wheel dresser Diamond-tipped, for wheel dressing.	No.	1
135.	Engineer's Tri-square	No.	6
136.	Feeler gauge mm size, Range 0.03mm to 1.00mm in steps (common sets with 13-20 blades)	No.	2
138.	Flaring tool	set	1
139.	Flat chisel	No.	11
140.	Flat file rough & smooth different sizes	No.	11
141.	Folding scale, 1 meter length, made from wood or steel, marked in mm.	No.	1
142.	Foot rule	No.	3
143.	Fuel injector nozzle cleaning bit	No.	1
144.	Gas cutting torch cuttogen Suitable for LPG/Acetylene cutting.	No.	6
145.	Gas welding blow pipe low pressure different sizes Brass body, nozzle sizes 1-6.	set	1
146.	Gas welding blow pipe with high pressure different sizes for Nozzle sizes 1 to 6.	set	1
147.	Gas welding nozzles different sizes Size 1 to 5, copper tip.		4
148.	Grease gun Lever type, capacity 500g.	No.	1
149.	Green goggles	No.	3
150.	Green goggles for gas welding Shade 5 lens, impact-resistant.	No.	3
151.	<i>Hacksaw frame, 12"</i> Adjustable frame, accepts 300mm blade.	No.	6
152.	Half round file rough & smooth different sizes Sizes 6", 8", 10", available in rough & smooth cuts.	No.	6

153.	Round file rough & smooth different sizes Sizes 6", 8", 10", available in rough & smooth cuts.	No.	6
154.	Triangular file rough & smooth different sizes Sizes 6", 8", 10", available in rough & smooth cuts.	No.	6
155.	Hand file rough & smooth different sizes	set	2
156.	Hand vice	No.	2
157.	Heavy duty screw driver (carpenters) • 300mm, insulated handle.	No.	2
158.	Hole punch different size Sizes 3mm to 12mm.	set	1
159.	Hydraulic jack Bottle type, 5 Ton or 10 Ton capacity.	No.	1
160.	Needle file set rough & smooth	set	1
161.	Injector cup wrench, injector test equipment	No.	1
162.	Inside caliper spring bow	No.	1
163.	Inside micrometer	No.	1
164.	Knife edge file, 8" rough & smooth	No.	6
165.	Leather hand gloves Heat resistant, for welding.	No.	6
166.	Letter punch Size 3mm to 6mm.	set	1
167.	Magnetic stand Base size 50x60mm, arm length 200mm.	set	1
168.	Magnifying glass with handle 3x to 5x magnification, 75mm lens diameter.	No.	1
169.	Measuring tape, 3 mtrs. mm size	No.	2
170.	Metal cutting snips Straight and curved, 250mm length.	No.	1
171.	Micrometer, 0-25mm (outside) Range 25-50mm, resolution 0.01mm.	No.	1
172.	Micrometer, 25-50mm	No.	1
173.	Morse taper sleeve, 0-1, 1-2, 2-3, 3-4	set	1
174.	Drill chuck with key	No.	1
175.	Nose plier	No.	1
176.	Number punche	set	1
177.	Odd leg caliper (Spring bow)	No.	2
178.	Offset screw driver, Sizes 6mm and 8mm, L-type.	No.	1
179.	Oil can,	No.	1

	Lever pump, capacity 200ml.		
180.	Oil gun Pressure type, capacity 500ml.	No.	1
181.	Oil measuring can, 100/200 ml	No.	1
182.	Oil stone	No.	2
183.	Orifice plates (assorted sizes)	No.	2
184.	Outside caliper(Spring bow)	No.	2
185.	Oxygen regulators-gas welding • Double stage, 0-10 bar outlet pressure.	No.	6
186.	Parallel shank end mill cutter • HSS, sizes 1mm to 13mm, jobber length.	No.	1
187.	Screw driver bit different sizes • Material: S2 Alloy Steel • Sizes: PH0, PH1, PH2, PH3 (Phillips), SL3mm, SL4mm, SL5mm, SL6mm (Flat), T10, T15, T20, T25 (Torx) • Shank Type: 1/4" Hex • Length: 25mm (standard), 50mm, 100mm (extended) • Surface Finish: Sandblasted or Nickel-plated • Hardness: HRC 58-6	set	1
188.	Pin vice • Material: Hardened tool steel body with knurled grip • Clamping Capacity: 0.5mm to 6.5mm (4-jaw chuck) • Length: 100mm to 150mm • Application: Holding small drill bits, taps, wires • Features: Swivel head for precision use	No.	1
189.	Pipe die, pipe cutter • Sizes: 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2" • Thread Type: BSPT or NPT • Material: High-Speed Steel (HSS) dies • Die Head: Self-opening or manual closing type Pipe Cutter: Cutting Capacity: 6mm to 60mm (1/8" to 2" nominal bore) Roller Material: Hardened steel Body: Cast iron or aluminum alloy Features: Replaceable cutting wheel, fold-away reamer	No.	2
	pulley block • Capacity: 1 Ton, 2 Ton, 3 Ton (common ranges) • Type: Manual Chain Block or Rope Pulley Block • Lifting Height: 3 meters (standard), extendable • Chain Material: Alloy steel, grade 80 • Hook: Forged steel with safety latch • Standard: IS 3832 / EN 13157 compliance	No.	2
190.	Pipe spanner • Type: Adjustable or fixed (Stillson type) • Material: Drop-forged carbon steel, heat-treated • Size Range: 6", 8", 10", 12", 14", 18", 24" • Jaw Opening: Up to 2.5 inches • Finish: Painted or powder-coated	set	1

191.	<b>Pipe vice</b> <ul style="list-style-type: none"> <li>• Type: Fixed base or hinged (bench-mounted or tripod-mounted)</li> <li>• Capacity: 1/8" to 4" pipe</li> <li>• Jaw Material: Hardened steel</li> <li>• Body: Cast iron or ductile iron</li> <li>• Features: Replaceable jaws, self-locking mechanism</li> </ul>	No.	1
192.	<b>Pipe wrench</b> <ul style="list-style-type: none"> <li>• type: Heavy-duty straight, offset, or end pipe wrench</li> <li>• Sizes: 8", 10", 12", 14", 18", 24", 36"</li> <li>• Jaw Opening: Up to 5 inches (for 36" size)</li> <li>• Material: Cast iron body with forged steel jaws</li> <li>• Standard: IS 4003 or equivalent</li> </ul>	No.	1
193.	<b>Pitch gauge</b> <ul style="list-style-type: none"> <li>• Type: Metric and Imperial Thread Pitch Gauge</li> <li>• Range: 0.25mm to 6mm (metric) / 4 to 62 TPI (imperial)</li> <li>• Blades: Stainless steel, 52 leaves common</li> <li>• Application: Measuring thread pitch of screws and bolts</li> </ul>	No.	1
195.	<b>Radius gauge</b> <ul style="list-style-type: none"> <li>• Type: Inside and Outside radius gauge</li> <li>• Range: 1mm to 25mm (common), available up to 100mm</li> <li>• Blades: Stainless steel, 16 or 24 leaves</li> <li>• Finish: Satin chrome</li> </ul>	No.	1
196.	<b>Ratchet screw driver with bit</b> <ul style="list-style-type: none"> <li>• Type: Reversible ratchet action</li> <li>• Bit Holder: 1/4" hex shank</li> <li>• Length: 6" to 10"</li> <li>• Bits: Phillips, flat, Torx, square, hex</li> <li>• Handle: Ergonomic, rubber grip</li> <li>• Features: Magnetic tip, bit storage in handle</li> </ul>	No.	1
197.	<b>Ratchet square handle</b> <ul style="list-style-type: none"> <li>• Drive Size: 1/2" square drive (common)</li> <li>• Length: 200mm to 300mm</li> <li>• Material: Chrome vanadium steel</li> <li>• Teeth: 72-tooth mechanism (5° ratcheting arc)</li> <li>• Finish: Mirror polished or matte chrome</li> </ul>	No.	1
198.	<b>Reamer, 1/2"</b> <ul style="list-style-type: none"> <li>• Type: Hand reamer or machine reamer</li> <li>• Material: High-Speed Steel (HSS)</li> <li>• Shank: Straight or Tapered</li> <li>• Flutes: 6 to 8 (straight or spiral)</li> <li>• Size: 0.5 inch nominal (12.7mm)</li> <li>• Application: Reaming to precise diameter in metalworking</li> </ul>	No.	3
199.	<b>Ring spanner different sizes</b> <ul style="list-style-type: none"> <li>• Type: Double-ended, 6-point or 12-point</li> <li>• Material: Chrome vanadium steel, hardened and tempered</li> <li>• Sizes: 6x7mm to 30x32mm (metric), 1/4" to 1-1/4" (imperial)</li> <li>• Finish: Chrome-plated</li> <li>• Standard: DIN 838 or IS 2028</li> </ul>	set	3



200.	<b>Screw driver with plastic handle</b> <ul style="list-style-type: none"> <li>• <b>Blade Material:</b> Chrome vanadium steel, hardened and tempered</li> <li>• <b>Handle:</b> Ergonomic plastic handle, typically polypropylene or cellulose acetate</li> <li>• <b>Tip Type:</b> Flat (slotted), Phillips, or Pozidriv</li> <li>• <b>Sizes:</b> 3mm to 8mm blade width; lengths 75mm to 200mm</li> <li>• <b>Finish:</b> Nickel-chrome plated blade with magnetic tip</li> </ul>	set	3
201.	<b>Screw spanner</b> <ul style="list-style-type: none"> <li>• <b>Type:</b> Screw wrench or adjustable spanner</li> <li>• <b>Material:</b> Chrome vanadium steel</li> <li>• <b>Jaw Capacity:</b> Adjustable up to 25mm</li> <li>• <b>Sizes:</b> Typically 6", 8", 10", 12"</li> <li>• <b>Finish:</b> Satin chrome plated</li> </ul>	No.	2
202.	<b>Scriber</b> <ul style="list-style-type: none"> <li>• <b>Material:</b> Hardened and tempered steel or tungsten carbide tip</li> <li>• <b>Length:</b> 150mm to 250mm</li> <li>• <b>Handle:</b> Knurled steel or plastic grip</li> <li>• <b>Tip Angle:</b> Standard 30° for precision marking</li> </ul>	No.	3
203.	<b>Scribing block</b> <ul style="list-style-type: none"> <li>• <b>Base:</b> Cast iron with fine ground surface</li> <li>• <b>Spindle:</b> Hardened steel, height adjustable (150mm to 300mm)</li> <li>• <b>Scriber:</b> Hardened steel, replaceable</li> <li>• <b>Application:</b> Used for marking out on a surface plate</li> </ul>	No.	3
204.	<b>Single end spanner</b> <ul style="list-style-type: none"> <li>• <b>Type:</b> Open-ended spanner</li> <li>• <b>Material:</b> Drop forged chrome vanadium steel</li> <li>• <b>Sizes:</b> 6mm to 32mm (metric) or 1/4" to 1-1/4" (imperial)</li> <li>• <b>Finish:</b> Chrome plated or black oxide</li> </ul>	set	1
205.	<b>Sledge hammer</b> <ul style="list-style-type: none"> <li>• <b>Head Material:</b> Forged carbon steel, hardened and tempered</li> <li>• <b>Head Weight:</b> 2 kg, 3 kg, 4 kg, 5 kg (common)</li> <li>• <b>Handle:</b> Hickory wood or fiberglass, length 900mm to 1200mm</li> <li>• <b>Face:</b> Double-faced, ground and polished</li> </ul>	No.	3
206.	<b>Slip joint pliers</b> <ul style="list-style-type: none"> <li>• <b>Material:</b> Chrome vanadium steel</li> <li>• <b>Length:</b> 8 inches (200mm) standard</li> <li>• <b>Joint Type:</b> Two-position slip joint</li> <li>• <b>Grips:</b> Plastic coated for comfort</li> </ul>	No.	1
207.	<b>Soft hammer small size</b> <ul style="list-style-type: none"> <li>• <b>Head:</b> Polyurethane or rubber-faced</li> <li>• <b>Head Weight:</b> 500g</li> <li>• <b>Handle:</b> Fiberglass or wooden</li> <li>• <b>Purpose:</b> Prevents damage to surfaces</li> </ul>	No.	3
208.	<b>Soldering iron (for smithy)</b> <ul style="list-style-type: none"> <li>• <b>Power:</b> 500W</li> <li>• <b>Tip:</b> Copper, heavy-duty for blacksmithing</li> <li>• <b>Voltage:</b> 230V</li> <li>• <b>Handle:</b> Heat resistant</li> </ul>	No.	6
209.	<b>Spirit level with wooden case</b> <ul style="list-style-type: none"> <li>• <b>Length:</b> 300mm, 600mm, 1000mm</li> <li>• <b>Material:</b> Cast aluminum or wood with brass edges</li> <li>• <b>Accuracy:</b> 0.5 mm/m or better</li> <li>• <b>Vials:</b> 2-3 (horizontal, vertical)</li> </ul>	No.	1

210.	<b>Steel tape</b> <ul style="list-style-type: none"> <li>• Length: 3m, 5m, 10m, 30m</li> <li>• Width: 13mm, 16mm</li> <li>• Material: Carbon steel, coated</li> <li>• Graduation: Metric and Inch</li> </ul>	No.	1
211.	<b>Straight edge, 1 mtr.</b> <ul style="list-style-type: none"> <li>• Material: Hardened steel</li> <li>• Length: 1000mm</li> <li>• Accuracy: IS 5268 Grade 1 or 0</li> <li>• Finish: Ground and lapped</li> </ul>	No.	1
212.	<b>Stud Remover (assorted sizes)</b> <ul style="list-style-type: none"> <li>• Type: Roller type or cam type</li> <li>• Sizes: M6 to M20 or 1/4" to 3/4"</li> <li>• Drive: 3/8" or 1/2" square drive</li> </ul>	set	1
213.	<b>Surface gauge</b> <ul style="list-style-type: none"> <li>• Base: Cast iron</li> <li>• Spindle Height: 200mm to 300mm</li> <li>• Scriber: Hardened steel, adjustable</li> <li>• Application: Marking on surface plates</li> </ul>	No.	1
214.	<b>Surface plate, 1' x 1'</b> <ul style="list-style-type: none"> <li>• Material: Granite or Cast iron</li> <li>• Size: 300mm x 300mm (1 ft x 1 ft)</li> <li>• Flatness: IS Grade 1 or 2 (<math>\pm 5\mu\text{m}</math> over full area)</li> </ul>	No.	1
215.	<b>Swage punch, 1/8" x -3/4"</b> <ul style="list-style-type: none"> <li>• Material: Hardened tool steel</li> <li>• Size: 1/8" tip, 3/4" body</li> <li>• Application: Forming metal edges</li> </ul>	set	1
216.	<b>Swage top and bottom</b> Type: Bottom swage and top swage set Size: Various (standard 1/2", 3/4", 1") Application: Shaping rods and bars	No.	2
217.	<b>Swaging tool, 1/4 x 5/8</b> <ul style="list-style-type: none"> <li>• Material: Hardened steel</li> <li>• Sizes: 1/4" to 5/8" tubing</li> <li>• Type: Manual or hammer swage type</li> </ul>	No.	1
218.	<b>Telescopic gauge different size</b> <ul style="list-style-type: none"> <li>• Range: 8mm to 150mm (set of 6 gauges)</li> <li>• Material: Hardened steel</li> <li>• Application: Internal dimension transfer</li> </ul>	set	1
219.	<b>Tongs flat</b> <ul style="list-style-type: none"> <li>• Material: Forged carbon steel</li> <li>• Length: 300mm to 450mm</li> <li>• Jaw Type: Flat for holding sheet or flat bar</li> </ul>	No.	3
220.	<b>Tongs round, Forged steel, length 300-450mm, round jaw, heat-resistant handles.</b> - Type: Tongs, a tool used for gripping and handling hot or heavy objects - Material: Forged steel, providing strength and durability - Length: 300-450 mm (approximately 11.81-17.72 inches), allowing for comfortable handling and leverage	No.	3

	<ul style="list-style-type: none"> <li>- Jaw shape: Round jaw, designed for securely gripping round or curved objects</li> <li>- Handle: Heat-resistant handles, providing protection and comfort for the user</li> </ul>		
221.	<p><b>Tool bit holder, Compatible with lathe tool posts, holds square tool bits 6mm–12mm</b></p> <ul style="list-style-type: none"> <li>- Type: Tool bit holder, a device used to securely hold tool bits in a lathe</li> <li>- Compatibility: Designed to be compatible with lathe tool posts, providing a stable and precise platform for tool bits</li> <li>- Tool bit size: Holds square tool bits with sizes ranging from 6mm to 12mm, accommodating various cutting tool requirements</li> <li>- Material: Typically made from durable materials like steel or alloy steel, ensuring strength and longevity</li> </ul>	No.	2
222.	<p><b>Tool box-set Refrigeration plant, Includes gauges, tube cutter, flaring tool, spanner set, manifold gauge, leak detector.</b></p> <ul style="list-style-type: none"> <li>- Type: Comprehensive tool box-set designed for servicing and maintaining refrigeration plants</li> <li>- Contents: <ul style="list-style-type: none"> <li>- Gauges for measuring pressure and temperature</li> <li>- Tube cutter for cutting and preparing refrigeration tubing</li> <li>- Flaring tool for creating flared connections</li> <li>- Spanner set for handling various fittings and connections</li> <li>- Manifold gauge for measuring and controlling refrigerant flow</li> <li>- Leak detector for identifying refrigerant leaks</li> </ul> </li> <li>- Purpose: Provides a complete set of tools for installation, maintenance, and repair of refrigeration systems</li> </ul>	No.	1
223.	<p><b>Torque wrench, Mechanical, range 20-200 Nm, click type, accuracy <math>\pm 3\%</math>.</b></p> <ul style="list-style-type: none"> <li>- Type: Mechanical torque wrench, a tool used for applying precise amounts of torque to bolts and nuts</li> <li>- Range: 20-200 Nm, suitable for a wide range of applications</li> <li>- Mechanism: Click-type mechanism, providing audible and tactile feedback when target torque is reached</li> <li>- Accuracy: <math>\pm 3\%</math>, ensuring precise control over torque application</li> </ul>	No.	1
224.	<b>Torque wrench (ratchet type)</b>	No.	1

	<b>Ratcheting head, 1/2" drive, range 40-210 Nm, dual scale (Nm &amp; lb-ft).</b> - Type: Ratcheting torque wrench, a tool used for applying precise amounts of torque to bolts and nuts - Drive size: 1/2" drive, suitable for various socket sizes and applications - Range: 40-210 Nm (dual scale: Nm and lb-ft), providing flexibility for different torque requirements - Ratcheting mechanism: Allows for efficient and convenient tightening or loosening in tight spaces		
225.	<b>Trammel, Adjustable, beam length 300-1000mm, hardened steel points.</b> - Type: Adjustable trammel, a tool used for drawing large circles or arcs - Beam length: 300-1000 mm, providing flexibility for various applications - Points: Hardened steel points, ensuring durability and precision - Adjustability: Allows for easy adjustment of beam length to accommodate different circle or arc sizes  Benefits - Versatility: Suitable for various applications, including drawing, design, and layout work - Precision: Hardened steel points ensure accurate and precise drawing of circles and arcs - Convenience: Adjustable beam length allows for easy adaptation to different projects and requirements	No.	1
226.	Try square, Blade length 150mm or 300mm, hardened steel blade, cast iron stock, accuracy Grade B. - Type: Try square, a precision tool used for ensuring accuracy and squareness in layout and assembly work - Blade length: Available in two sizes: - 150 mm (approximately 5.91 inches) - 300 mm (approximately 11.81 inches) - Material: - Hardened steel blade for durability and precision - Cast iron stock for stability and strength - Accuracy: Grade B accuracy, ensuring reliable and precise measurements	No.	11
227.	<b>Tube cutter (Cu)</b> <b>Cuts 3mm–32mm OD copper tubes, alloy steel cutting wheel.</b> - Type: Tube cutter, a tool used for cutting copper tubes	No.	1

	<ul style="list-style-type: none"> <li>- Cutting range: Cuts copper tubes with outer diameters (OD) ranging from 3mm to 32mm</li> <li>- Material: Alloy steel cutting wheel, providing durability and sharpness</li> <li>- Application: Specifically designed for cutting copper tubes, often used in plumbing, HVAC, and refrigeration systems</li> </ul>		
228.	<p><b>Tube spanners, Double-ended, chrome plated, sizes 6x7mm up to 22x24mm.</b></p> <ul style="list-style-type: none"> <li>- Type: Double-ended tube spanner, a tool used for gripping and turning tube fittings and connections</li> <li>- Sizes: Available in various sizes, ranging from 6x7mm to 22x24mm, accommodating different tube fittings and connections</li> <li>- Material: Chrome-plated, providing corrosion resistance and durability</li> <li>- Double-ended design: Features two different sizes on each end, increasing versatility and convenience</li> </ul>	set	1
229.	<p><b>Universal scribing block (surface gauge)Base 100x80mm, spindle height 250mm, fine adjustment.</b></p> <ul style="list-style-type: none"> <li>- Type: Universal scribing block, also known as a surface gauge, used for layout and measurement tasks</li> <li>- Base size: 100x80mm, providing stability and support</li> <li>- Spindle height: 250mm, allowing for a range of measurement and layout applications</li> <li>- Fine adjustment: Features fine adjustment capabilities, enabling precise positioning and measurement</li> </ul>	No.	1
230.	<p><b>V block with clamp, Hardened steel, matched pair, size 75x50x50mm, accuracy within 0.005mm.</b></p> <ul style="list-style-type: none"> <li>- Type: V-block with clamp, used for precision measurement and machining applications</li> <li>- Material: Hardened steel, providing durability and resistance to wear and tear</li> <li>- Size: 75x50x50mm, suitable for various precision applications</li> <li>- Accuracy: Within 0.005mm, ensuring high precision and accuracy</li> <li>- Matched pair: Supplied as a matched pair, ensuring compatibility and precision when used together</li> </ul>	set	2
231.	<p><b>Valve seat cutter (In a box) 20-60mm seat range, carbon steel pilots, carbide cutters, wooden box.</b></p>	set	

	<ul style="list-style-type: none"> <li>- <b>Type: Valve seat cutter, a tool used for precision machining of valve seats in engines</b></li> <li>- Seat range: 20-60mm, accommodating various valve seat sizes</li> <li>- Pilots: Carbon steel pilots, providing durability and precision guidance</li> <li>- Cutters: Carbide cutters, offering high wear resistance and long tool life</li> <li>- Storage: Supplied in a wooden box, providing protection and organization</li> </ul>		
232.	Valve seat grinding machine, Electric, 220V, grinding wheel sizes 1"-2.5", adjustable speed 0-7000 RPM.	No.	1
233.	<b>V- block, Hardened and ground steel, size 75x50x50mm, accuracy 0.005mm, clamp included.</b> <ul style="list-style-type: none"> <li>- Material: Hardened and ground steel, providing durability and precision</li> <li>- Size: 75x50x50mm, suitable for various precision applications</li> <li>- Accuracy: 0.005mm, ensuring high precision and accuracy</li> <li>- Clamp: Includes a clamp for secure holding of workpieces</li> </ul>	No.	2
234.	<b>Vernier caliper different sizes</b> <ul style="list-style-type: none"> <li>- <b>Types: Available in various sizes, including:</b> <ul style="list-style-type: none"> <li>- Pocket-sized (typically 150mm/6")</li> <li>- Standard (typically 200mm/8" or 300mm/12")</li> <li>- Large (typically 450mm/18" or 600mm/24")</li> </ul> </li> <li>- Measurement Range: Varies by size, but typically includes: <ul style="list-style-type: none"> <li>- Internal measurements (e.g., hole diameters)</li> <li>- External measurements (e.g., shaft diameters)</li> <li>- Depth measurements</li> </ul> </li> <li>- Accuracy: Typically <math>\pm 0.02\text{mm}</math> to <math>\pm 0.05\text{mm}</math>, depending on the model and quality</li> <li>- Features: May include: <ul style="list-style-type: none"> <li>- Vernier scale for precise measurements</li> <li>- Digital display (for digital calipers)</li> <li>- Locking screw for secure measurement retention</li> </ul> </li> </ul>	No.	3
235.	<b>Vernier height gauge</b> <ul style="list-style-type: none"> <li>- Type: Precision measuring instrument used for measuring heights and depths of workpieces</li> <li>- Measurement Range: Varies by model, typically ranging from 300mm to 1000mm (12" to 39")</li> <li>- Accuracy: Typically <math>\pm 0.02\text{mm}</math> to <math>\pm 0.05\text{mm}</math>, depending on the model and quality</li> </ul>	No.	1

	<ul style="list-style-type: none"> <li>- Features: <ul style="list-style-type: none"> <li>- Vernier scale for precise measurements</li> <li>- Fine adjustment for accurate setting</li> <li>- Locking screw for secure measurement retention</li> <li>- Base plate for stability and precision</li> </ul> </li> </ul>		
236.	<p><b>Vice grip plier</b></p> <ul style="list-style-type: none"> <li>- Type: Locking pliers, also known as Vice Grip pliers, used for gripping and holding objects securely</li> <li>- Jaw Type: Typically features serrated or grooved jaws for secure gripping</li> <li>- Locking Mechanism: Designed with a locking mechanism that allows for hands-free holding</li> <li>- Material: Often made from durable materials like steel or alloy steel</li> <li>- Sizes: Available in various sizes, ranging from small to large, to accommodate different applications</li> </ul>	No.	1
237.	<p><b>Welding accessories, cable, cable log, earth clamps, chipping hammer, wire brush welding hatch, and leather gloves</b></p> <p><b>Cable</b></p> <ul style="list-style-type: none"> <li>- Type: Welding cable, designed for welding applications</li> <li>- Material: Typically made from copper or aluminum for good conductivity</li> <li>- Insulation: Often insulated with durable materials like rubber or PVC</li> </ul> <p><b>Cable Log</b></p> <ul style="list-style-type: none"> <li>- Purpose: Used for organizing and storing welding cables</li> <li>- Material: May be made from durable materials like metal or heavy-duty plastic</li> </ul> <p><b>Earth Clamps</b></p> <ul style="list-style-type: none"> <li>- Type: Welding earth clamps, used for securing the earth connection</li> <li>- Material: Typically made from durable materials like copper or steel</li> <li>- Design: Designed for secure clamping and good conductivity</li> </ul> <p><b>Chipping Hammer</b></p> <ul style="list-style-type: none"> <li>- Type: Used for removing slag and spatter from welds</li> <li>- Material: Often made from durable materials like steel</li> <li>- Design: Typically features a pointed end for chipping and a flat end for scraping</li> </ul>	set	1

	<p><b>Wire Brush</b></p> <ul style="list-style-type: none"> <li>- Type: Used for cleaning and preparing surfaces for welding</li> <li>- Material: Often made from durable materials like steel or brass</li> <li>- Design: Typically features stiff bristles for effective cleaning</li> </ul> <p><b>Welding Hatch (Welding Curtain or Screen)</b></p> <ul style="list-style-type: none"> <li>- Purpose: Used for protecting against welding sparks and debris</li> <li>- Material: Often made from fire-resistant materials like leather or heavy-duty fabric</li> <li>- Design: Designed for flexibility and durability</li> </ul> <p><b>Leather Gloves</b></p> <ul style="list-style-type: none"> <li>- Type: Used for protecting hands from heat, sparks, and cuts during welding</li> <li>- Material: Made from durable, fire-resistant leather</li> <li>- Design: Designed for flexibility, comfort, and protection</li> </ul>		
238.	<p><b>Welding screen, Flame-retardant PVC or canvas screen, size approx. 6'x6', mounted on steel frame with wheels.</b></p> <ul style="list-style-type: none"> <li>- Material: Flame-retardant PVC or canvas screen, designed for safety and durability</li> <li>- Size: Approximately 6'x6' (1.8m x 1.8m), providing adequate coverage for welding operations</li> <li>- Frame: Mounted on a sturdy steel frame, ensuring stability and durability</li> <li>- Mobility: Equipped with wheels, allowing for easy movement and positioning</li> </ul>	No.	6
239.	<p>Wire gauge (SWG),</p> <ul style="list-style-type: none"> <li>• Standard Wire Gauge measuring tool, steel, 0.3 mm to 10 mm.</li> </ul>	No.	1
240.	<p><b>Wooden mallet, Hardwood head (beech or hickory), handle length ~300 mm, head diameter ~100 mm.</b></p> <ul style="list-style-type: none"> <li>- Head Material: Hardwood, typically beech or hickory, known for durability and strength</li> <li>- Handle Length: Approximately 300 mm, providing a comfortable grip and leverage</li> <li>- Head Diameter: Approximately 100 mm, suitable for various applications</li> <li>- Design: Typically features a rounded or flat head, with a handle attached securely</li> </ul>	No.	6



241.	<p><b>Led wire, Soft lead wire, typically 99.9% pure, 1 mm to 3 mm diameter.</b></p> <ul style="list-style-type: none"> <li>- Material: Soft lead wire, typically made from 99.9% pure lead</li> <li>- Diameter: Available in various diameters, ranging from 1 mm to 3 mm</li> <li>- Properties: Lead is a soft, malleable, and ductile material, suitable for various applications</li> </ul>	m	10
242.	<p><b>Ear muffs / Ear plugs, Noise Reduction Rating (NRR) 25-30 dB; conforming to ANSI S3.19 standards.</b></p> <ul style="list-style-type: none"> <li>- Type: Ear muffs or ear plugs, designed for hearing protection</li> <li>- Noise Reduction Rating (NRR): 25-30 dB, indicating effective noise reduction</li> <li>- Standards Compliance: Conforms to ANSI S3.19 standards, ensuring quality and performance</li> </ul>	set	6
243.	<p><b>Masonry drill bits, Tungsten carbide tipped, sizes from 4 mm to 20 mm, SDS Plus or hex shank.</b></p> <ul style="list-style-type: none"> <li>- Type: Masonry drill bits, designed for drilling into concrete, brick, and other masonry materials</li> <li>- Tip Material: Tungsten carbide tipped, providing durability and wear resistance</li> <li>- Sizes: Available in sizes ranging from 4 mm to 20 mm, suitable for various applications</li> <li>- Shank Type: Available with SDS Plus or hex shank, compatible with different drill types</li> </ul>	set	2
244.	<p><b>Bearing pulley extractor (assorted sizes), Mechanical two or three-jaw puller, capacity from 2 to 10 tons.</b></p> <ul style="list-style-type: none"> <li>- Type: Mechanical bearing pulley extractor, designed for removing bearings and pulleys</li> <li>- Jaw Configuration: Two or three-jaw puller, suitable for various applications</li> <li>- Capacity: Capacity range from 2 to 10 tons, accommodating different bearing and pulley sizes</li> <li>- Assorted Sizes: Available in assorted sizes to fit various bearing and pulley types</li> </ul>	set	1
245.	<p><b>Safety Lamp, LED or flame type, intrinsically safe for hazardous areas (mining specification).</b></p> <ul style="list-style-type: none"> <li>- Type: LED or flame type safety lamp, designed for use in hazardous areas</li> <li>- Intrinsically Safe: Designed to prevent ignition of flammable gases or vapors, meeting mining specifications</li> <li>- Application: Suitable for use in mining, oil and gas, and other industries where hazardous environments are present</li> </ul>	No.	6

	<ul style="list-style-type: none"> <li>- Features: <ul style="list-style-type: none"> <li>- LED or flame light source</li> <li>- Intrinsically safe design</li> <li>- Durable construction</li> <li>- Suitable for use in explosive atmospheres</li> </ul> </li> </ul>		
246.	<p><b>Mallet Hammer, Rubber or leather-faced, weight 500g to 1kg, for non-marring use.</b></p> <ul style="list-style-type: none"> <li>- Type: Mallet hammer, designed for non-marring applications</li> <li>- Face Material: Rubber or leather-faced, providing a soft striking surface</li> <li>- Weight: Available in weights ranging from 500g to 1kg, suitable for various applications</li> <li>- Handle: Typically features a durable handle made from materials like wood, fiberglass, or steel</li> </ul>	No.	6
247.	<p><b>Copper Hammer, Copper head, non-sparking, weight 1 lb to 2 lb.</b></p> <ul style="list-style-type: none"> <li>- Head Material: Copper, providing a non-sparking and non-magnetic striking surface</li> <li>- Weight: Available in weights ranging from 1 lb to 2 lb, suitable for various applications</li> <li>- Handle: Typically features a durable handle made from materials like wood, fiberglass, or steel</li> <li>- Non-Sparking: Copper head is designed to prevent sparks, making it ideal for use in hazardous environments</li> </ul>	No.	6
248.	Work bench, 250x120x75 with 12.5cm vice, Size 250 x 120 x 75 cm with 12.5 cm bench vice, heavy-duty steel frame, wooden or steel top.		2
249.	Valve Timing Diagram With Single Cylinder Diesel Engine Apparatus, Cut section engine with timing disc and pointer, manual operation for educational use.	No.	1
250.	Metal rack, 180 x 150 x 45 cm, Size 180 x 150 x 45 cm, heavy-duty steel, powder-coated, with 4-5 adjustable shelves.	No.	2
251.	Steel almirah/cupboard Double door, size 1980 x 915 x 480 mm, 4 shelves, lockable, powder-coated steel.	No.	1
252.	<p>Six Cylinder Diesel Engine Cut Section for training</p> <ul style="list-style-type: none"> <li>• Cross-sectional model showing moving pistons and crankshaft, hand-cranked or motorized, mounted on trolley.</li> </ul>	No.	1
253.	<p>Instructor desk or table</p> <p>Size 150 x 75 x 75 cm, laminated top, with lockable drawers and modesty panel.</p>	No.	1

254.	Chair	No.	1
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<b>LIST OF TOOLS AND EQUIPMENT</b> <b>Navigation and Meteorology Laboratory (for batch of 30 students)</b>			
S.N	Description	Unit	Qty
1	<b>Wet Card Magnetic Compass in a binnacle (Used)</b> <ul style="list-style-type: none"> <li>Complies with ISO 25862.</li> <li>Diameter: 180mm–200mm card.</li> <li>Binnacle with correctors (Flinders bar, quadrantal spheres).</li> <li>Illuminated for night use.</li> <li>Gimbal-mounted for stability.</li> </ul>	No.	1
2	<b>Gyro Compass with repeaters (Used)</b> <ul style="list-style-type: none"> <li>IMO A.424(XI) compliant.</li> <li>Repeaters fitted at helm, wings, and ECR.</li> <li>Settling time: less than 6 hours.</li> <li>Accuracy: <math>\pm 0.1^\circ</math>.</li> <li>Interfaces: NMEA 0183 output.</li> </ul>	No.	1
3	<b>Model of steering wheel with Helm Indicator</b> <ul style="list-style-type: none"> <li>Mechanical or electronic helm angle indicator.</li> <li>Wheel diameter: ~760mm.</li> <li>Indicator range: <math>\pm 35^\circ</math>.</li> </ul>	No.	1
4	<b>Binoculars (used but functional)</b> 7x50 marine specification. Waterproof, nitrogen-filled. Compass integrated (optional).	No.	2
5	<b>Azimuth Circle (used)</b> <ul style="list-style-type: none"> <li>For taking bearings relative to ship's heading.</li> <li>Fitted on magnetic/gyro compass.</li> <li>With peep sight and mirror.</li> </ul>	No.	1
6	<b>Aneroid Barometer</b> Accuracy: $\pm 1$ hPa. Dial size: 100-150mm. Brass case, often mounted in wheelhouse.	No.	1
7	<b>Mason's Hygrometer in a Stevenson's Screen (Used)</b> <ul style="list-style-type: none"> <li>Twin thermometers (dry and wet bulb).</li> <li>Protected in ventilated screen.</li> <li>Range: <math>-5^\circ\text{C}</math> to <math>50^\circ\text{C}</math>.</li> </ul>	No.	1
8	<b>Whirling Psychrometer, • Measures relative humidity.</b> <ul style="list-style-type: none"> <li>Sling model with two thermometers.</li> </ul>	No.	1
9	<b>MOB Marker (dummy)</b> Smoke and light signal (per SOLAS). Activation on water contact. Burn time: 15 minutes (smoke), 2 hours (light).	No.	1
10	<b>Navigation Lights Sentinel (Used)</b> <ul style="list-style-type: none"> <li>LED or incandescent.</li> <li>SOLAS/Colregs compliant.</li> <li>Voltage: 24V DC or 110/220V AC.</li> </ul>	No.	1

11	<b>Walkie-Talkie</b> <ul style="list-style-type: none"> <li>• GMDSS compliant.</li> <li>• VHF band (156-174 MHz).</li> <li>• Waterproof, floatable.</li> </ul>	No.	2
12	<b>Day Signals</b> <ul style="list-style-type: none"> <li>• Cones, balls, diamonds (black).</li> <li>• Locker with ventilation, UV-resistant material.</li> </ul>	No.	1
13	<b>Flag locker</b>	No.	1
14	<b>Parallel scales,</b> <ul style="list-style-type: none"> <li>• Length: 380mm standard.</li> <li>• Material: brass, acrylic.</li> </ul>	No.	31
15	<b>Pelorus,</b> <ul style="list-style-type: none"> <li>• Bearing device for gyro/magnetic compass.</li> <li>• Graduated 360° ring.</li> </ul>	No.	1
16	<b>Azimuth mirrors (Used)</b> <ul style="list-style-type: none"> <li>• For accurate compass azimuths.</li> <li>• Mirror and prism systems.</li> </ul>	No.	1
17	<b>Telescope</b> <ul style="list-style-type: none"> <li>• 20x or 30x magnification.</li> <li>• Marine type with tripod mount.</li> </ul>	No.	1
18	<b>Self igniting light</b> <ul style="list-style-type: none"> <li>• SOLAS approved.</li> <li>• Minimum 2 cd intensity.</li> <li>• Duration: ≥2 hours.</li> </ul>	No.	2
19	<b>Magnetic board for ROR</b> <b>Educational or training tool.</b> <b>Magnet symbols for vessel positioning.</b>	No.	1
20	<b>Patent log</b> <b>Measures distance through water.</b> <b>Rotating spinner towed astern.</b>	No.	1
21	<b>Small Admiralty Stock anchor</b> <ul style="list-style-type: none"> <li>• Weight: usually 25kg–100kg.</li> <li>• Galvanized steel.</li> </ul>	No.	1
22	<b>Mast head light, side lights, Stern Light and All round Lights two each (red, white, GreenX) Inland Vessel (used)</b> <ul style="list-style-type: none"> <li>• Colregs-compliant.</li> <li>• Masthead: 225° (white).</li> <li>• Sidelights: 112.5° (red/green).</li> <li>• Stern: 135° (white).</li> <li>• All-round: 360° (various colors).</li> </ul>	No.	10
23	<b>Diving set,</b> <ul style="list-style-type: none"> <li>• For hull cleaning or underwater repairs.</li> <li>• High-pressure water jet.</li> <li>• Standard quick coupling for air supply.</li> </ul>	Set	1
24	<b>jet nozzle &amp; coupling</b> <ul style="list-style-type: none"> <li>• For hull cleaning or underwater repairs.</li> <li>• High-pressure water jet.</li> <li>• Standard quick coupling for air supply.</li> </ul>	No.	1
25	<b>Hydrostatic release gear unit</b> <b>Complies with SOLAS Chapter III.</b> <b>Releases liferaft at 1.5–4 meters depth.</b> <b>HRU lifespan: 2 years.</b>	No.	1

26	<b>Block models</b> <ul style="list-style-type: none"> <li>• Wooden or resin models for demonstrating rigging.</li> <li>• Includes single, double, triple sheave blocks.</li> <li>• Used in seamanship training</li> </ul>	No.	1
27	<b>Indian Tide Tables</b> <ul style="list-style-type: none"> <li>• Published by Indian Naval Hydrographic Office.</li> <li>• Covers major Indian ports.</li> <li>• Data: High/low tides, mean sea level, time &amp; height predictions</li> </ul>	No.	1
28	<b>Navigational charts of Hughli, Kolkata, Dhamra, Paradip, 31, 301, 3006, 3010, 3011, 3012, 3013, 3037, 3038, 3041, 7706</b> <ul style="list-style-type: none"> <li>• Issued by Indian Naval Hydrographic Office.</li> <li>• Scale: varies from 1:25,000 to 1:150,000.</li> <li>• Soundings in meters, WGS84 datum.</li> <li>• Examples: 301: Approach charts. 3006, 3010-3013, 3037-3038, 3041: Detailed port charts. 7706: Offshore approach.</li> </ul>	No.	11
29	<b>Instructional charts, 5059, 5060, 5061 &amp; 5062</b> <ul style="list-style-type: none"> <li>• Training charts (non-navigational).</li> <li>• Used in maritime institutes.</li> <li>• Large scale with educational features.</li> </ul>	No.	5
30	<b>EPIRB</b> <ul style="list-style-type: none"> <li>• Type: Float-free, auto-activating.</li> <li>• Frequency: 406 MHz (distress), 121.5 MHz (homing).</li> <li>• Battery: Lithium, 5-10 years (replace every 5 years or after use).</li> <li>• Operation Time: 48 hours minimum at -20°C.</li> <li>• Compliance: SOLAS, IMO, Cospas-Sarsat certified.</li> <li>• Waterproof: Up to 10 meters depth.</li> </ul>	No.	1
31	<b>SART</b> <ul style="list-style-type: none"> <li>• Frequency: 9.2–9.5 GHz (X-band radar).</li> <li>• Range: 5 to 10 nautical miles.</li> <li>• Battery: Lithium, 96 hrs standby, 8 hrs active.</li> <li>• Activation: Manually operated, responds to X-band radar.</li> </ul>	No.	1
32	<b>GPS (Hand Held) , Garmin Etrex 30</b> <ul style="list-style-type: none"> <li>• Display: 2.2" color TFT.</li> <li>• Receiver: High-sensitivity GPS and GLONASS.</li> <li>• Memory: 1.7GB + microSD slot.</li> <li>• Battery Life: ~25 hours (2 AA batteries).</li> <li>• Features: Electronic compass, barometric altimeter, 200 routes.</li> </ul>	No.	1
33	<b>GPS (Hand Held) Furuno 40, GPS Navigator GP-39</b> <ul style="list-style-type: none"> <li>• Channels: 12-parallel.</li> <li>• Display: 4.5" LCD monochrome.</li> <li>• Data Output: NMEA 0183.</li> <li>• Memory: 999 waypoints, 30 routes.</li> </ul>	No.	2
34	<b>samples of different types of twines and rope like PP rope, PE rope, HDPE ropes, PE twines, HDPE twines, Nylon twines with different specifications.</b>	No.	2
35	<b>Display showing different type of mountings, splicing like eye splice, long splice, short splice etc.</b>	No.	2

36	<b>Twine twister machine</b> <ul style="list-style-type: none"> <li>Capacity: <b>5-10 kg/hr.</b></li> <li>Operation: <b>Manual/electric.</b></li> <li>Material Supported: <b>PP, PE, HDPE, Nylon.</b></li> <li>Twist range: <b>60-120 TPM (twist per minute).</b></li> </ul>	No.	1
37	<b>Twine wounding spool</b> <ul style="list-style-type: none"> <li>Spool Size: <b>Adjustable (4-12 inch).</b></li> <li>Motorized: <b>Optional.</b></li> <li>Use: <b>Winding twines post-twisting.</b></li> </ul>		2
38	<b>Spotters like artificial jigs, "G" link assembly, shackle Swivels, different type of sinkers, differnt type of floats like aluminium, glass rubber, sponge corks, PVC floats etc.</b>	No.	2
39	<b>Marine VHF Radio with DSC and license, ICM 330</b> <ul style="list-style-type: none"> <li>Transmit Power: <b>25W/1W.</b></li> <li>DSC: <b>Class D with dedicated receiver.</b></li> <li>Waterproof: <b>IPX7.</b></li> <li>Channel: <b>All international VHF channels.</b></li> <li>Power: <b>13.8V DC.</b></li> </ul>	No.	2
40	<b>Loud Hailer</b> Output: <b>30-50W.</b> Range: <b>500-1000m.</b> Features: <b>Talkback, fog signals, integrated with PA system.</b>	No.	1
41	<b>Ship's bell,</b> • Material: <b>Brass/Bronze.</b> <ul style="list-style-type: none"> <li>Weight: <b>10–20 kg.</b></li> <li>Diameter: <b>300-400mm.</b></li> <li>SOLAS Required: <b>Yes, for ships &gt;20m.</b></li> </ul>	No.	1
42	<b>Ship's gong</b> <ul style="list-style-type: none"> <li>Diameter: <b>300 mm.</b></li> <li>Material: <b>Bronze.</b></li> <li>Used For: <b>Vessels &gt;100m, fog signals.</b></li> </ul>	No.	1
43	<b>AIS Type B, Samyung</b> <ul style="list-style-type: none"> <li>Transmit Power: <b>2W.</b></li> <li>Frequency: <b>161.975 &amp; 162.025 MHz.</b></li> <li>Features: <b>GPS integrated, USB &amp; NMEA 2000.</b></li> <li>Samyung Model: <b>SI-30A.</b></li> </ul>	No.	1
44	<b>AIS Type A</b> Transmit Power: <b>12.5W.</b> Mandatory for: <b>SOLAS vessels.</b> Features: <b>Dynamic (position, speed), Static (ship ID, type).</b>	No.	1
45	<b>ALDIS lamp (used) with New Battrey</b> Type: <b>Morse code signal lamp.</b> Range: <b>5-8 NM.</b> Battery: <b>12V, rechargeable, lead-acid or lithium.</b> Features: <b>Manual trigger, adjustable focus.</b>	No.	1

**LIST OF TOOLS AND EQUIPMENT**  
**Hot Work (Welding) Workshop (for batch of 10 students)**

S.N	Description	Unit	Qty
1	<b>Oxy-acetylene gas cutting/welding apparatus and its accessories (including personal protective gear) (approved type)</b> Type: <b>ISI approved set.</b> Components: <b>Oxygen &amp; Acetylene regulators (double gauge)</b> <b>Cutting torch (up to 300mm cut)</b> <b>Welding torch (nozzles for 1mm to 5mm welding)</b> <b>Hoses: 8mm x 10m (IS 447)</b> <b>Flashback arrestors (both torch &amp; regulator end)</b> Standard: <b>IS 7653, IS 6901.</b> Personal Protective Gear: <b>Goggles (DIN 4A), gloves, apron, hose clips, lighter.</b>	set	2
2	<b>Electric arc welding machine and its accessories (including personal protective gear)</b> Type: <b>Transformer or inverter-based.</b> Capacity: <b>300-400A at 60% duty cycle.</b> Input Voltage: <b>230V/415V 3-phase.</b> Accessories: <b>Electrode holder 600A</b> <b>Earth clamp 600A</b> <b>Welding cable 50/70mm<sup>2</sup></b> <b>Fiber helmet, hand shield, gloves.</b> Standard: <b>IS 1851 / IEC 60974.</b>	set	4
3	<b>Adequate mild steel material for practice of cutting and welding. (3mm,6mm plates, angle iron)</b> <ul style="list-style-type: none"> <li>Plates: Size: <b>3mm &amp; 6mm thickness.</b> Dimensions: <b>300mm x 300mm (typical practice size).</b> Grade: <b>IS 2062 E250 BR.</b></li> <li>Angle Iron: Size: <b>25x25x3 mm and 35x35x5 mm.</b> Grade: <b>IS 2062.</b></li> </ul>	Kg	1500
4	<b>Electrodes in stock for use by candidates, (2.5x350, 3x450mm)</b> <ul style="list-style-type: none"> <li>Sizes: <b>2.5 mm x 350 mm (E6013 or E7018)</b> <b>3.2 mm x 450 mm (E6013 or E7018)</b></li> <li>Standard: <b>IS 814 / AWS A5.1.</b></li> <li>Type: <b>Rutile coated general-purpose electrodes.</b></li> </ul>	Kg	75
5	<b>Welding helmet fiber</b> Material: <b>Fiber reinforced plastic.</b> Lens Holder Size: <b>108mm x 82mm.</b> Shade: <b>DIN 11/12.</b> Standard: <b>IS 1179.</b>	No.	5+1
6	<b>welding hand shield fiber</b> <ul style="list-style-type: none"> <li>Material: <b>Heat-resistant fiber.</b></li> <li>Type: <b>Handheld with grip.</b></li> <li>Lens Size: <b>108mm x 82mm.</b></li> <li>Standard: <b>IS 1179.</b></li> </ul>	No.	5+1
7	<b>chipping hammer, with metal handle 250 Grams</b> <ul style="list-style-type: none"> <li>Weight: <b>250 grams.</b></li> <li>Handle: <b>All metal or steel with anti-slip grip.</b></li> <li>Tip: <b>Pointed and flat ends.</b></li> <li>Standard: <b>IS 4943.</b></li> </ul>	No.	5+1

8	<b>Chisel cold, flat 19 mm x 150 mm</b> <ul style="list-style-type: none"> <li>• Size: 19mm width x 150mm length.</li> <li>• Material: Chrome vanadium steel.</li> <li>• Standard: IS 402.</li> </ul>	No.	5+1
9	<b>Centre punch, 9 mm x 127 mm</b> Size: 9mm diameter x 127mm length. Material: Hardened steel. Tip: 60°-90° angle. Standard: IS 5045.	No.	5+1
10	<b>Dividers, 200 mm</b> Size: 200mm leg length. Material: High carbon steel. Type: Spring-type. Standard: IS 5652.	No.	5+1
11	<b>Stainless stell rule, 300 mm</b> <ul style="list-style-type: none"> <li>• Length: 300mm.</li> <li>• Graduation: mm and inch.</li> <li>• Material: SS 304.</li> <li>• Thickness: 1.2mm.</li> <li>• Standard: IS 1481.</li> </ul>	No.	5+1
12	<b>Scriber, 150 mm double point</b> Length: 150mm. Material: Hardened steel. Type: Double-ended, knurled grip. Standard: IS 1115.	No.	5+1
13	<b>Flat Tongs, 350 mm long</b> <ul style="list-style-type: none"> <li>• Length: 350mm.</li> <li>• Material: Forged carbon steel.</li> <li>• Jaw Type: Flat, for holding plates/rods.</li> </ul>	No.	5+1
14	<b>Hack Saw frame, fixed 300 mm</b> Size: 300mm blade length. Frame: Fixed type. Material: Steel with plastic/rubber grip. Standard: IS 2594.	No.	5+1
15	<b>File half round , bastard 300 mm</b> <ul style="list-style-type: none"> <li>• Length: 300mm (12 inches).</li> <li>• Cut: Bastard (coarse).</li> <li>• Material: High carbon steel.</li> <li>• Standard: IS 1931.</li> </ul>	No.	5+1
16	<b>File flat, 350 mm bastard</b> Length: 350mm (14 inches). Cut: Bastard. Material: Alloy steel. Standard: IS 1931.	No.	5+1
17	<b>Hammer ball pane, 1 kg with handle,</b> <ul style="list-style-type: none"> <li>• Type: Ball Peen Hammer</li> <li>• Head Weight: 1 kg (1000 grams)</li> <li>• Head Material: Drop forged carbon steel, hardened and tempered.</li> <li>• Peen Type: One flat face and one spherical (ball) face.</li> <li>• Handle:</li> </ul> Material: Hickory wood or fiberglass. Length: 300mm - 350mm. Features: Anti-slip grip, securely fixed. <ul style="list-style-type: none"> <li>• Standard: IS 841 / DIN 1041.</li> <li>• Use: Metalworking, riveting, shaping metal.</li> </ul>	No.	5+1



18	<b>Tip cleaner</b> <ul style="list-style-type: none"> <li>Type: <b>Welding nozzle tip cleaner.</b></li> <li>Material: <b>Stainless steel wire files.</b></li> <li>Set Includes:</li> </ul> <b>13 cleaning wires of various diameters (typically 0.4mm to 1.8mm).</b> <b>Foldable design with handle.</b> <ul style="list-style-type: none"> <li>Features:</li> </ul> <b>Rust-proof.</b> <b>Used to clean blocked or partially blocked oxy-acetylene torch tips.</b> <ul style="list-style-type: none"> <li>Standard: <b>General workshop tool standard (no specific IS).</b></li> </ul>	No.	5+1
19	<b>try square, 6"</b> Type: <b>Engineer's Try Square.</b> Blade Length: <b>6 inches (150mm).</b> Blade Material: <b>Hardened stainless steel (SS 304/SS 420).</b> Stock/Base: <b>Cast iron or steel with ground surface.</b> Graduation: <b>Markings in mm/inches on blade.</b> Accuracy: <b>0.02mm/100mm.</b> Standard: <b>IS 2103 / BS 939.</b> Use: <b>Checking right angles, marking metal or wood.</b>	No.	5+1
<b>B. Instruments and General Shop Outfit - for 2 (1+1) units no additional items are required</b>			
<b>TOOLS &amp; EQUIPMENT</b>			
20	<b>Spindle Key, (2 for each type of gas)</b> Material: <b>High-strength steel.</b> Design: <b>Precision-machined to fit gas cylinder valves.</b> Usage: <b>For opening and closing gas cylinder valves securely.</b> Quantity: <b>2 keys per gas type (Oxygen, Acetylene, CO<sub>2</sub>, Argon).</b>	No.	8
21	<b>Screw Driver, 300 mm</b> <ul style="list-style-type: none"> <li>Blade Lengths: <b>300 mm</b> • Material: <b>High-grade steel, hardened and tempered.</b></li> <li>Handle: <b>Insulated, non-slip grip.</b></li> <li>Standards: <b>Conform to IS 844-1979.</b></li> <li>Usage: <b>For general-purpose fastening tasks.</b></li> </ul>	No.	1
	<b>blade and 250 mm blade</b> <ul style="list-style-type: none"> <li>Blade Lengths: <b>250 mm.</b></li> <li>Material: <b>High-grade steel, hardened and tempered.</b></li> <li>Handle: <b>Insulated, non-slip grip.</b></li> <li>Standards: <b>Conform to IS 844-1979.</b></li> <li>Usage: <b>For general-purpose fastening tasks.</b></li> </ul>	No.	1
22	<b>Number punch, 6 mm</b> <ul style="list-style-type: none"> <li>Material: <b>Hardened tool steel.</b></li> <li>Size: <b>6 mm (1/4 inch).</b></li> <li>Design: <b>Precision-cut for clear marking.</b></li> <li>Usage: <b>For marking numbers on metal surfaces.</b></li> <li>Quantity: <b>Set includes numbers 0-8 (6 can be used as 9).</b></li> </ul>	set	2
23	<b>Letter punch, 6 mm</b> <ul style="list-style-type: none"> <li>Material: <b>Hardened tool steel.</b></li> <li>Size: <b>6 mm (1/4 inch).</b></li> <li>Design: <b>Precision-cut for clear marking.</b></li> <li>Usage: <b>For marking letters on metal surfaces.</b></li> <li>Quantity: <b>Set includes letters A-Z.</b></li> </ul>	set	2

24	<b>Magnifying glass, 100 mm dia</b> Diameter: <b>100 mm.</b> Magnification: <b>10x.</b> Material: <b>Optical-grade glass lens.</b> Handle: <b>Ergonomic design for comfortable use.</b> Usage: <b>For detailed inspection and reading fine print.</b>	No.	2
25	<b>Universal Weld measuring gauge</b> Material: <b>Stainless steel.</b> Functions: <b>Measures weld throat thickness, leg length, reinforcement, undercut, root gap, and bevel angle.</b> Design: <b>Compact and durable for field use.</b> Usage: <b>For assessing weld quality and dimensions.</b>	No.	2
26	<b>Spanner D.E, 6 mm to 32mm</b> <ul style="list-style-type: none"> <li>Material: <b>High-grade steel, forged and heat-treated.</b></li> <li>Design: <b>Double-ended with different sizes.</b></li> <li>Finish: <b>Chrome-plated for corrosion resistance.</b></li> <li>Standards: <b>Conform to IS 2028-2004.</b></li> <li>Usage: <b>For general-purpose fastening tasks.</b></li> </ul>	No.	2
27	<b>C-Clamps, 10 cm</b>	No.	2
	<b>15 cm</b> Sizes: <b>10 cm and 15 cm.</b> Material: <b>Forged steel.</b> Design: <b>Drop-forged frame with black oxide coating.</b> Usage: <b>For holding work pieces securely during welding or assembly.</b>		2
28	<b>Hammer sledge, double faced 4 kg</b> Material: <b>High carbon steel, heat-treated.</b> Handle: <b>Top-grade U.S. hickory.</b> Weight: <b>4 kg.</b> Design: <b>Double-faced for versatile striking.</b> Usage: <b>For heavy-duty striking tasks.</b>	No.	2
29	<b>S.S tape, 5 meters flexible in case</b> Material: <b>Stainless steel blade.</b> Length: <b>5 meters.</b> Design: <b>Flexible with auto-locking mechanism.</b> Usage: <b>For measuring lengths accurately.</b>	No.	5
30	<b>H.P. Welding torch, with 5 nozzles</b> <ul style="list-style-type: none"> <li>Material: <b>Brass body with stainless steel nozzles.</b></li> <li>Design: <b>Ergonomic handle with adjustable flame control.</b></li> <li>Nozzles: <b>5 different sizes for various welding applications.</b></li> <li>Usage: <b>For high-pressure gas welding tasks.</b></li> </ul>	No.	2
31	<b>Oxygen Gas Pressure, regulator double stage,</b> Oxygen Regulator: Type: <b>Double-stage.</b> Material: <b>Brass construction.</b> Standards: <b>Conform to IS 6901:2009.</b> Usage: <b>For regulating oxygen gas pressure in welding applications.</b>	No.	2
32	<b>Acetylene Gas Pressure, regulator double stage,</b> <ul style="list-style-type: none"> <li>Type: <b>Double-stage.</b></li> <li>Material: <b>Brass construction.</b></li> <li>Standards: <b>Conform to IS 6901:2009.</b></li> <li>Usage: <b>For regulating acetylene gas pressure in welding applications.</b></li> </ul>	No.	2
33	<b>CO2 Gas Pressure regulator, with flow meter</b> <ul style="list-style-type: none"> <li>Type: <b>Single-stage with flow meter.</b></li> <li>Material: <b>Brass construction.</b></li> <li>Usage: <b>For regulating CO<sub>2</sub> gas pressure in welding applications.</b></li> </ul>	set	2

34	<b>Argon Gas pressure regulator, with flow meter</b>  Type: <b>Single-stage with flow meter.</b> Material: <b>Brass construction.</b> Usage: <b>For regulating argon gas pressure in welding applications.</b>	set	2
35	<b>Metal rack, 182 cm x 152 cm x 45 cm</b> <ul style="list-style-type: none"> <li>• Dimensions: 182 cm x 152 cm x 45 cm.</li> <li>• Material: Mild steel with powder-coated finish.</li> <li>• Design: Multiple shelves for organized storage.</li> <li>• Usage: For storing tools and equipment.</li> </ul>	No.	1
36	<b>First Aid box</b> <ul style="list-style-type: none"> <li>• Material: Metal or durable plastic.</li> <li>• Design: Lockable with multiple compartments.</li> <li>• Contents: Basic medical supplies (bandages, antiseptics, gloves, etc.).</li> <li>• Usage: For providing immediate medical assistance.</li> </ul>	No.	1
37	<b>Steel lockers, with 8 pigeon holes</b> <ul style="list-style-type: none"> <li>• Material: Mild steel with powder-coated finish.</li> <li>• Design: 8 individual compartments with lockable doors.</li> <li>• Usage: For secure storage of personal items.</li> </ul>	No.	2
38	<b>Steel almirah/cupboard</b> <ul style="list-style-type: none"> <li>• Material: Mild steel with powder-coated finish.</li> <li>• Design: Multiple shelves with lockable doors.</li> <li>• Usage: For storing documents and equipment securely.</li> </ul>	No.	2
39	<b>White board and easel with stand</b>	No.	1
40	<b>Flash back arrester (torch mounted)</b> Torch-Mounted: Material: <b>Brass construction.</b> Design: <b>Compact and easy to install on torch.</b> Usage: <b>Prevents flashbacks in the torch during gas welding.</b> Cylinder-Mounted: Material: <b>Brass construction.</b> Design: <b>Installed between regulator and hose.</b> Usage: <b>Prevents flashbacks from reaching the gas cylinder.</b>	Set	4
41	<b>Flash back arrester (cylinder mounted)</b> Torch-Mounted: Material: <b>Brass construction.</b> Design: <b>Compact and easy to install on torch.</b> Usage: <b>Prevents flashbacks in the torch during gas welding.</b> Cylinder-Mounted: Material: <b>Brass construction.</b> Design: <b>Installed between regulator and hose.</b> Usage: <b>Prevents flashbacks from reaching the gas cylinder.</b>	set	4
42	<b>Multiangle magnetic clamp set, Metal base (18x10x10 cm )</b> <ul style="list-style-type: none"> <li>• Material: Cast iron base with strong magnets.</li> <li>• Design: Adjustable arms for holding workpieces at various angles.</li> <li>• Usage: For precise positioning of workpieces during welding or assembly.</li> </ul>	set	1
<b>GENERAL SHOP OUTFIT</b>			
43	<b>Welding Transformer, with all accessories (400A, OCV 60-100 V, 60% duty cycle)</b> <b>150-300 Amps</b> <b>Current range: 150-300 Amps</b> <b>Input voltage: 415V, 3-phase, 50Hz</b> <b>Duty cycle: 60% at 300A</b> <b>Cooling: Fan-cooled</b> <b>Included: Holder, earth clamp, cables, helmet</b>	set	1

44	<b>Welding Transformer (or) Inverter based welding machine (IGBT), with all accessories (300A, OCV 60-100 V, 60% duty cycle)</b> <ul style="list-style-type: none"> <li>• Output Current: 20–300 A</li> <li>• OCV: 60–100 V</li> <li>• Duty Cycle: 60% @ 300A</li> <li>• Type: DC Arc Welding Rectifier</li> <li>• Accessories: Electrode holder, earth clamp, welding cables, face shield, wire brush, chipping hammer</li> </ul>	set	1
45	<b>D.C Arc welding rectifiers set with all accessories, (400A, OCV 60-100 V, 60% duty cycle)</b>	set	1
46	<b>GMAW welding machine, 400A Capacity with air cooled torch, regulator, Gas pre-heater, Gas hose and Standard accessories</b> <ul style="list-style-type: none"> <li>• Output Current: 50–400 A</li> <li>• OCV: 60–100 V</li> <li>• Duty Cycle: 60% @ 400A</li> <li>• Accessories: Air-cooled torch, wire feeder, CO<sub>2</sub> regulator, gas pre-heater, gas hose, standard consumables</li> </ul>	set	1
47	<b>AC/DC GTAW welding machine, with water cooled torch 300 A, Argon regulator, Gas hose, water circulating system and standard accessories.</b> <ul style="list-style-type: none"> <li>• Output Current: 5–300 A</li> <li>• Duty Cycle: 60% @ 300A</li> <li>• Cooling: Water-cooled torch with circulating system</li> <li>• Accessories: Argon regulator, gas hose, water cooler, standard TIG torch parts kit</li> </ul>	set	1
48	<b>Air Plasma cutting equipments, With all accessories, capacity to cut 12 mm clear cut</b> <ul style="list-style-type: none"> <li>• Cutting Capacity: 12 mm clear cut</li> <li>• Input Power: 415V, 3-phase</li> <li>• Accessories: Plasma torch, earth clamp, air filter regulator, consumables kit</li> </ul>	set	1
49	<b>Air compressor suitable for above air plasma cutting system., Two stage compressor 15 KW</b> <ul style="list-style-type: none"> <li>• Type: Two-stage, 15 kW (~20 HP)</li> <li>• Pressure: 10–12 bar</li> <li>• Flow: Suitable for plasma (300-400 lpm)</li> </ul>	no.	1
50	<b>Auto Darkening Welding Helmet</b>	No.	5
51	<b>Spot welding machine, 15 KVA with all accessories</b> <ul style="list-style-type: none"> <li>• Capacity: 2–3 mm MS sheet</li> <li>• Type: Pedal operated or pneumatic</li> <li>• Accessories: Welding arms, electrodes, water cooling (optional)</li> </ul>	set	1
52	<b>Portable gas cutting machine (PUG), capable of cutting Straight &amp; Circular with all accessories</b> <ul style="list-style-type: none"> <li>• Cutting: Straight &amp; circular</li> <li>• Plate Thickness: 5–100 mm</li> <li>• Accessories: Rails, circle cutting attachment</li> </ul>		1
53	<b>Pedestal grinder fitted with coarse and medium grain size grinding wheels, 300 mm dia.</b>	no.	1
54	<b>Bench grinder fitted with fine grain size silicon carbide green grinding wheel, 150 mm dia.</b>	No.	1
55	<b>AG 4 Grinder</b>	No.	2
56	<b>Suitable gas welding table, with fire bricks</b>	No.	2
57	<b>Suitable Arc welding table, with positioner</b>	No.	2
58	<b>Trolley for cylinder (H.P. Unit)</b>	No.	2

59	Hand shearing machine capacity, cut 6 mm sheets and flats	No.	1
60	Power saw machine, 18" or blade size 450 mm	No.	1
61	Portable drilling machine, (Cap. 6 mm)	No.	1
62	Oven, electrode drying, 0 to 350°C, 10 kg capacity, depth 450mm to 500 mm, intake capacity 10 kg	No.	1
63	Work bench, 340x120x75 cm with 4 bench vices of 150 mm jaw opening	set	2
64	<b>Oxy Acetylene Gas cutting blow pipe</b> <b>Type: Manual, equal-pressure type</b> <b>Fuel Gas: Acetylene</b> <b>Cutting Capacity: Up to 300 mm plate thickness</b> <b>Nozzle Type: ANME or PNM</b> <b>Inlet Connection: 3/8" BSP (oxygen and acetylene)</b> <b>Body Material: Forged brass or stainless steel</b> <b>Accessories: Cutting nozzles (various sizes), spark lighter, tip cleaner set</b>	set	2
65	<b>Oxygen, Acetylene Cylinders **</b> • Oxygen Cylinder <b>Capacity: 47 liters (approx. 7 m³ gas)</b> <b>Working Pressure: 150–200 bar</b> <b>Valve Outlet: IS:3224, Type B (5/8" BSP RH)</b> <b>Material: Seamless steel</b> • Acetylene Cylinder <b>Capacity: 6–7 m³ gas</b> <b>Working Pressure: 15 bar max</b> <b>Valve Outlet: IS:3224, Type A (5/8" BSP LH)</b> <b>Material: Steel with porous mass &amp; acetone filler</b>	set	
66	<b>CO₂ cylinder**</b> • <b>Capacity: 22.5 kg (standard welding cylinder)</b> • <b>Working Pressure: 150 bar</b> • <b>Valve Outlet: IS:3224, Type C</b> • <b>Use: MIG welding shielding gas</b>	No.	2
67	<b>Argon gas cylinder**</b> <b>Capacity: 7 m³ (47-liter water capacity)</b> <b>Working Pressure: 200 bar</b> <b>Valve Outlet: BS341 No. 3 (G 5/8" RH)</b> <b>Use: TIG welding shielding gas</b>	No.	2
68	<b>Anvil 24 sq. inches working area with stand</b> <b>Working Area: 24 sq. inches</b> <b>Weight: Typically 50–100 kg</b> <b>Material: Cast steel or forged steel</b> <b>Stand: Fabricated steel frame or cast iron base</b> <b>Features: Hardened face, horn for shaping</b>	No.	1

69	Swage block 5048, Cast iron 16x16x16 inch Size: 16 x 16 x 16 inches Material: Cast iron Features: Multiple square, round, and oval holes for shaping and forming Weight: 100–150 kg Use: Blacksmithing and heavy-duty shaping	No.	1
70	Magnetic particle testing Kit # Type: Portable Yoke Type Power: 230V AC or battery-operated Yoke Lifting Power: Minimum 10 kg (as per ASTM E709) Accessories: Magnetic powder (dry and wet), UV lamp (for fluorescent method), aerosol sprays, cleaning agents Standards: ASTM E709, ASME BPVC Sec V	set	1
71	Fire extinguishers (foam type and CO2 type) Foam Type Capacity: 9 liters Rating: A (ordinary combustibles) & B (flammable liquids) Discharge Time: 60–70 seconds Operating Pressure: 7–15 bar CO2 Type Capacity: 4.5 kg Rating: B & C (flammable liquids & electrical) Discharge Time: 10–15 seconds Operating Pressure: 55 bar at 27°C	set	1
72	Fire buckets with stand • Number of Buckets: 4 (standard) • Material: GI sheet, 9–10 liters capacity each • Stand Material: Mild steel, painted red • Accessories: Sand or water filling, "FIRE" printed in white	No.	2
73	Portable abrasive cut-off machine Cutting Capacity: 100 mm solid bars, 125 mm pipes Blade Size: 355 mm (14 inches) Motor: 2200W to 2600W, 230V single-phase Speed: 3800–4000 rpm Accessories: Cutting disc, clamping vice	No.	1
74	Suitable Gas cutting table Table Top: MS grid with replaceable slats Size: 1200 x 1200 mm or customized Height: 750–900 mm Features: Slag collection tray, fume extraction (optional)	No.	1
75	Welding Simulators for SMAW/GTAW/GMAW Types: SMAW (Stick), GTAW (TIG), GMAW (MIG) Display: VR or augmented reality with headgear Features: Real-time arc simulation Weld defect analysis Multiple joint types (butt, fillet, pipe) Accessories: Simulated torch/holder, foot pedal (for TIG), display monitor Brands: Lincoln VRTEX, Fronius, Soldamatic	No.	1
76	Water cooled induction welding/Brazing machine, 200-250 Amp., induction coil length 3 inch and 2.5 inch	No.	1
77	Plastic welding machine with hot air gun, temp. display, variable temp., PE, PP & PVC sheet or pipe welding control with stand. Accessories.	No.	1

78	Swaging and flooring tool kit 45° tubing, 1/8 to 3½ inch	No.	1
<b>C. Consumable</b>			
79	<b>Leather Hand Gloves, 14"</b> Material: <b>Split grain leather (Heat-resistant).</b> Length: <b>14 inches (355 mm).</b> Lining: <b>Cotton/insulated lining inside.</b> Use: <b>Arc welding, gas cutting, grinding.</b> Standard: <b>IS 6994 (Part-1) / EN 388, EN 407.</b>	set	10
80	<b>Cotton hand Gloves, 8"</b> • Material: <b>Knitted or woven cotton.</b> • Length: <b>8 inches (203 mm).</b> • Features: <b>Breathable, lightweight.</b> • Use: <b>Light-duty tasks, handling clean materials.</b> • Standard: <b>IS 1905 / EN 420.</b>	set	10
81	<b>Leather Apron leather</b> • Material: <b>Heat-resistant split leather.</b> • Size: <b>24" x 36" (standard), adjustable.</b> • Straps: <b>Leather/nylon with buckles.</b> • Use: <b>Welding, grinding, cutting.</b> • Standard: <b>IS 1179 / EN 470-1.</b>	set	10
82	<b>S.S Wire brush, 5 rows</b> • Material: <b>Stainless steel wire bristles.</b> • Handle: <b>Wooden or plastic.</b> • Size: <b>~10-12 inches length</b>	No.	10
	<b>3 rows,</b> • Material: <b>Stainless steel wire bristles.</b> • Handle: <b>Wooden or plastic.</b> • Size: <b>~10-12 inches length.</b>	No.	10
83	<b>Leather hand sleeves, 16"</b> • Material: <b>Split leather.</b> • Length: <b>16 inches (406 mm).</b> • Closure: <b>Elastic ends or Velcro.</b> • Use: <b>Arm protection in welding and cutting.</b>	set	10
84	<b>Safety boots for welders, size 7,8,9</b> Material: <b>Leather upper, steel toe cap.</b> Sole: <b>PU/Nitrile rubber (heat, oil, slip resistant).</b> Closure: <b>Velcro/flap (lace-free for safety).</b> Standards: <b>IS 15298 / EN ISO 20345:2011 (S1, S2 grades).</b>	set	3 p
85	<b>Leg guards leather,</b> Material: <b>Heat-resistant split leather.</b> Length: <b>12-16 inches.</b> Closure: <b>Velcro or buckle straps.</b> Use: <b>Protect legs from sparks, slag.</b>	set	3
86	<b>Rubber hose clips, ½"</b> • Size: <b>½ inch (12.7 mm) nominal bore.</b> • Material: <b>Mild steel zinc plated or stainless steel.</b> • Type: <b>Worm drive type.</b> • Standard: <b>IS 4762 / DIN 3017.</b>	no	10

87	<b>Rubber hose oxygen, 8 mm dia X 10 Mtr. long as per BIS</b> <ul style="list-style-type: none"> <li>Material: Synthetic rubber (blue color coded).</li> <li>Size: 8 mm inner dia, 10 mtr. length.</li> <li>Standard: IS 447:1988 Type 1.</li> <li>Pressure Rating: WP 20 bar, BP 60 bar.</li> <li>Use: Oxygen gas welding/cutting.</li> </ul>	no	2
88	<b>Rubber hose acetylene, 8 mm dia X 10 Mtr. long as per BIS</b> <ul style="list-style-type: none"> <li>Material: Synthetic rubber (red color coded).</li> <li>Size: 8 mm inner dia, 10 mtr. length.</li> <li>Standard: IS 447:1988 Type 2.</li> <li>Pressure Rating: WP 20 bar, BP 60 bar.</li> <li>Use: Acetylene gas supply.</li> </ul>	No.	2
89	Arc welding cables multi core, 400	mtr.	25
	<b>600 amp as per BIS</b>  Type: Multi-stranded flexible copper cable. Capacity: <b>400 Amp cable: 50 mm<sup>2</sup> (nominal area).</b> <b>600 Amp cable: 70 mm<sup>2</sup> (nominal area).</b> Insulation: Heat and abrasion-resistant rubber (EPDM/Neoprene). Standard: IS 9857:1990. Voltage Grade: 100V (AC) or 150V (DC).	Mtr.	25
90	<b>Arc welding single coloured glasses, 108 mm x 82 mm x 3 mm. DIN 11A &amp;12 A,</b> <ul style="list-style-type: none"> <li>Size: 108 mm x 82 mm x 3 mm.</li> <li>Shade: DIN 11A &amp; 12A.</li> <li>Material: Tempered filter glass.</li> <li>Use: Protects eyes during arc welding from UV and IR radiation</li> </ul>	No.	22
91	<b>Arc welding plain glass, 108 mm x 82mm x 3 mm.</b> <ul style="list-style-type: none"> <li>Size: 108 mm x 82 mm x 3 mm.</li> <li>Material: Clear tempered glass.</li> <li>Use: Front cover plate to protect the shaded lens.</li> </ul>	No.	66
92	<b>Gas welding Goggles, with Colour glass 3 or 4A DIN</b> <ul style="list-style-type: none"> <li>Shade: DIN 3 or 4A.</li> <li>Lens Size: 50mm diameter (common standard).</li> <li>Frame: Soft PVC with indirect ventilation.</li> <li>Use: Suitable for oxy-acetylene welding and cutting.</li> </ul>	No.	22
93	<b>Safety goggles plain,</b> <ul style="list-style-type: none"> <li>Lens: Polycarbonate, clear.</li> <li>Standard: ANSI Z87.1 / EN 166.</li> <li>Features: Anti-scratch, anti-fog, UV protection.</li> </ul>	No.	22
94	<b>Spark lighter, CUP lighter for welding</b> Type: Flint type spark lighter. Material: Stainless steel or plated steel. Cup Size: Standard (45-55mm diameter). Use: Safe ignition for gas torches.	No.	6
96	<b>Earth clamp, 600A</b> <ul style="list-style-type: none"> <li>Capacity: 600 Amps continuous.</li> <li>Material: Forged brass or copper alloy.</li> <li>Jaw Opening: 50mm max.</li> <li>Cable Connection: 50-70 mm<sup>2</sup> cable.</li> </ul>	No.	6



97	<b>Electrode holder, 600 amps</b> <ul style="list-style-type: none"> <li>• Capacity: <b>600 Amps at 60% duty cycle.</b></li> <li>• Electrode Size: <b>Up to 8.0 mm.</b></li> <li>• Material: <b>Brass body with insulated handle.</b></li> <li>• Standard: <b>IS/IEC 60974-11 compliant.</b></li> </ul>	No.	6
98	<b>Die penetrant testing kit,</b> <ul style="list-style-type: none"> <li>• Components:</li> </ul> <b>Cleaner (Solvent-based)</b> <b>Penetrant (Red dye)</b> <b>Developer (White powder spray)</b> <ul style="list-style-type: none"> <li>• Pack Size: <b>400-500 ml per can.</b></li> <li>• Standard: <b>ASTM E165.</b></li> </ul>	set	1
99	<b>Anti spatter spray can, 100 to 300 ml</b> <ul style="list-style-type: none"> <li>• Pack Size: <b>100 ml to 300 ml aerosol can.</b></li> <li>• Type: <b>Silicone-free water-based or solvent-based.</b></li> <li>• Use: <b>Prevents spatter adhesion on torch and workpiece.</b></li> </ul>	No.	5
100	<b>GMAW Torch nozzle tip, Size 0.8, 1.0, 1.2 (in mm)</b> <ul style="list-style-type: none"> <li>• Sizes: <b>0.8mm, 1.0mm, 1.2mm.</b></li> <li>• Material: <b>Copper alloy.</b></li> <li>• Thread: <b>M6 or M8 depending on torch type.</b></li> <li>• Use: <b>Controls wire feed in MIG welding.</b></li> </ul>	set	2
101	<b>TIG welding torch ceramic nozzle, Size 3,4,5,6,8</b> <ul style="list-style-type: none"> <li>• Sizes: <b>#3, 4, 5, 6, 8 (corresponds to 3/16" to 1/2" bore).</b></li> <li>• Material: <b>Alumina ceramic.</b></li> <li>• Fitment: <b>Standard WP-17/18/26 torch.</b></li> <li>• Standard: <b>AWS A5.12.</b></li> </ul>	Set	2
102	<b>Tungsten electrode, 1.0, 1.6, 2.0 (in mm), length 150 mm</b> <ul style="list-style-type: none"> <li>• Sizes: <b>1.0 mm, 1.6 mm, 2.0 mm.</b></li> <li>• Length: <b>150 mm.</b></li> <li>• Type:</li> </ul> <b>2% Thoriated (Red tip),</b> <b>2% Ceriated (Grey tip),</b> <b>Pure Tungsten (Green tip).</b> <ul style="list-style-type: none"> <li>• Standard: <b>AWS A5.12 / ISO 6848.</b></li> </ul>	set	2
103	<b>Brass filler wire, 1.0mm, 2.0 mm</b> <b>Sizes: 1.0 mm, 2.0 mm.</b> <b>Material: CuZn39Pb3 or similar.</b> <b>Standard: AWS A5.7 ERCuZn-A.</b> <b>Length: 1000mm rods or coils.</b>		
104	<b>AG4 cutting wheels,</b> <b>Size: 100mm (4") x 1.0-2.5mm thickness x 16mm bore.</b> <b>Type: Resin-bonded reinforced.</b> <b>Application: Mild steel, stainless steel cutting.</b> <b>Standard: EN 12413.</b>	No.	100.
105	<b>CCMS filler wire, 1.0 mm</b> <ul style="list-style-type: none"> <li>• Size: <b>1.0 mm.</b></li> <li>• Material: <b>Pure copper (C11000 or equivalent).</b></li> <li>• Application: <b>Copper to copper welding/brazing.</b></li> <li>• Standard: <b>AWS A5.7 ERCu.</b></li> </ul>	kg	4
106	Brass filler wire, 1.0 mm	kg	4
107	Copper filler wire, 1.0 mm	kg	4
108	<b>Flux for Brass</b> <b>Type: Borax-based flux powder or paste.</b> <b>Application Temp: 750-850°C.</b> <b>Standard: AWS A5.31 FB3-A.</b>	Gram	500

109	<b>Flux for Copper</b> Type: <b>Fluoride-borate based flux.</b> <ul style="list-style-type: none"> <li>• Application Temp: <b>650-850°C.</b></li> <li>• Standard: <b>AWS A5.31 FB3-C.</b></li> </ul>	Gram	500
<b>D. Class Room Furniture for Trade Theory</b>			
110	<b>Instructor's table and Chair (Steel)</b> <ul style="list-style-type: none"> <li>• Material: <b>Powder-coated steel frame with laminated MDF/plywood top.</b></li> <li>• Size: <b>~1200mm (L) x 600mm (W) x 750mm (H).</b></li> <li>• Features: <b>Lockable drawer + cabinet.</b></li> </ul>	Set	1
111	<b>Students chairs with writing pads</b> <ul style="list-style-type: none"> <li>• Material: <b>Steel frame, cushioned seat and backrest.</b></li> <li>• Design: <b>Ergonomic with armrests, swivel optional.</b></li> <li>• Seat/Back: <b>Injection-moulded plastic or plywood with laminate.</b></li> <li>• Writing Pad: <b>12mm MDF/plywood with laminate, size approx. 400mm x 300mm.</b></li> </ul>	No.	5
112	<b>White board, size 1200mm X 900 mm</b> Type: <b>Magnetic dry-erase.</b> Surface: <b>Melamine or painted steel (better: ceramic steel).</b> Frame: <b>Aluminum with ABS corner caps.</b> Mounting: <b>Wall-mount kit included.</b> Accessories: <b>Marker tray, wall anchors.</b>	No.	1
113	<b>Instructor's laptop with latest configuration pre-loaded with operating system and MS Office package.</b> <ul style="list-style-type: none"> <li>• Processor: <b>Intel Core i7 (13th Gen) / AMD Ryzen 7 (7000 series).</b></li> <li>• RAM: <b>16GB DDR5.</b></li> <li>• Storage: <b>512GB NVMe SSD or higher.</b></li> <li>• Display: <b>15.6" FHD IPS.</b></li> <li>• OS: <b>Windows 11 pre-loaded.</b></li> <li>• Office Suite: <b>Microsoft Office 2021 or Microsoft 365.</b></li> <li>• Ports: <b>USB-C, USB 3.2, HDMI, Audio jack.</b></li> <li>• Wireless: <b>Wi-Fi 6E, Bluetooth 5.3.</b></li> </ul>	No.	1
114	<b>LCD projector with screen, For workshop.</b> <ul style="list-style-type: none"> <li>• Brightness: <b>4000-5000 lumens (suitable for bright workshops).</b></li> <li>Resolution: <b>Full HD (1920x1080) or WXGA (1280x800).</b></li> <li>Lamp Life: <b>10,000-20,000 hours.</b></li> <li>Connectivity: <b>HDMI, USB, VGA, Wireless (optional).</b></li> <li>• Screen: Type: <b>Tripod or wall-mounted.</b> Size: <b>70" to 100" diagonal.</b> Material: <b>Matte white with black border.</b></li> </ul>	No.	1
115	<b>Welding Process, Inspection &amp; codes DVD/CDs, As per requirement</b> Content: <b>Welding Processes: SMAW, GMAW, GTAW, FCAW.</b> <b>Welding Inspection Techniques: Visual, Radiographic, Ultrasonic.</b> <b>Codes &amp; Standards: ASME Section IX, AWS D1.1, ISO 9606.</b> Format: <b>DVD or USB/online download versions (as CDs are now rare).</b> Language: <b>English (multilingual optional).</b> Usage: <b>Instructor-led training, student reference.</b>	set	1

<b>LIST OF TOOLS AND EQUIPMENT</b> <b>Plumber Workshop (for batch of 10 students)</b>			
S.N	Name of the Tool & Equipment	Unit	Quantity
<b>A. TRAINEES TOOL KIT</b>			
1	<b>Rule Steel, 300 mm both in inch and mm</b> - Length: 300 mm (approximately 11.81 inches) - Gradations: Features both metric (mm) and imperial (inch) graduations - Material: Made from durable steel, providing: - Resistance to wear and tear - Flexibility and strength - Applications: Suitable for various applications, including: - Measurement - Layout - Inspection - Quality control	No.	10
2	<b>Hacksaw Frame adjustable, 250 to 300 mm</b> - Type: Adjustable hacksaw frame, allowing for flexibility in cutting various lengths - Length adjustment: Adjustable length range of 250 to 300 mm (approximately 9.84 to 11.81 inches) - Material: Typically made from durable materials, such as steel or metal alloys - Blade compatibility: Designed to accommodate standard hacksaw blades	No.	10
3	<b>Scriber, 200 mm</b> - Length: 200 mm (approximately 7.87 inches) - Material: Typically made from high-carbon steel or other durable materials - Tip: Often features a sharp, pointed tip for precise marking and scribing - Handle: May have a comfortable handle design for easy grip and control	No.	10
4	<b>Centre punch, 100 mm</b> - Length: 100 mm (approximately 3.94 inches) - Material: Typically made from high-carbon steel or other durable materials - Tip: Features a hardened, pointed tip for precise punch marking	No.	10

	- Handle: Often has a comfortable handle design for easy grip and control		
5	<b>Chisel Cold, flat, 20 mm</b> - Type: Flat cold chisel, designed for general-purpose chiseling and cutting - Width: 20 mm (approximately 0.79 inches) - Material: Typically made from high-carbon steel or other durable materials - Edge: Features a flat, broad edge for effective chiseling and cutting	No.	10
6	<b>Hammer ball peen, 800 grams</b> - Type: Ball peen hammer, a versatile tool for shaping, forming, and striking - Weight: 800 grams (approximately 1.76 pounds) - Head: Features a ball-shaped head on one end and a peen (flat) end on the other - Handle: Often has a durable handle made from materials like steel, fiberglass, or wood	No.	10
7	<b>File flat rough, 300 mm</b> - Type: Flat file, a tool used for filing and smoothing surfaces - Length: 300 mm (approximately 11.81 inches) - Cut: Rough cut, designed for aggressive material removal and coarse filing - Material: Typically made from high-carbon steel or other durable materials	No.	10
8	<b>Level spirit wooden, 300 mm</b> - Type: Spirit level, a tool used for determining horizontal or vertical alignment - Length: 300 mm (approximately 11.81 inches) - Material: Wooden frame, often made from durable hardwoods - Vials: Features spirit-filled vials for indicating level or plumb conditions	No.	10
9	<b>Plumb bob, 50 gram</b> - Type: Plumb bob, a tool used for determining vertical alignment and plumb lines - Weight: 50 grams (approximately 1.76 ounces) - Material: Typically made from metal (e.g., brass, steel) or other durable materials - Point: Features a pointed tip for precise alignment and marking	No.	10
10	<b>Trowel, C-125-15: 6013.</b>	No.	10

	<ul style="list-style-type: none"> <li>- Type: Trowel, a tool used for applying, smoothing, and shaping materials like mortar, plaster, or concrete</li> <li>- Model: C-125-15 (specific model number may vary depending on manufacturer)</li> <li>- Size: May refer to specific dimensions or characteristics (e.g., blade size, handle length)</li> <li>- Material: Typically made from durable materials like stainless steel, carbon steel, or plastic</li> </ul>		
11	<b>Stillson wrench, 200 &amp; 350 mm</b> <ul style="list-style-type: none"> <li>- Type: Stillson wrench, an adjustable wrench designed for gripping and twisting pipes and fittings</li> <li>- Sizes: Available in two sizes: <ul style="list-style-type: none"> <li>- 200 mm (approximately 7.87 inches)</li> <li>- 350 mm (approximately 13.78 inches)</li> </ul> </li> <li>- Material: Typically made from durable materials like forged steel or alloy steel</li> <li>- Adjustable jaw: Features an adjustable jaw for accommodating various pipe sizes</li> </ul>	No.	10
12	<b>Screw Driver, 250 mm</b> <ul style="list-style-type: none"> <li>- Type: Screwdriver, a tool used for driving screws and other fasteners</li> <li>- Length: 250 mm (approximately 9.84 inches)</li> <li>- Tip: May feature various tip types, such as flathead, Phillips, or Torx</li> <li>- Handle: Often has a comfortable handle design for easy grip and control</li> <li>- Material: Typically made from durable materials like steel or chrome-vanadium</li> </ul>	No.	10
13	<b>Cutting pliers 200mm, IS: 3650</b> <ul style="list-style-type: none"> <li>- Type: Cutting pliers, a tool used for cutting and gripping various materials like wires, cables, and small metal objects</li> <li>- Length: 200 mm (approximately 7.87 inches)</li> <li>- Standard: Conforms to IS: 3650, an Indian Standard for cutting pliers</li> <li>- Material: Typically made from durable materials like high-carbon steel or alloy steel</li> <li>- Cutting edge: Features a sharp cutting edge for clean and precise cuts</li> </ul>	No.	10
14	<b>Steel tape, 5m</b> <ul style="list-style-type: none"> <li>- Type: Steel tape, a measuring tool used for measuring distances and lengths</li> <li>- Length: 5 meters (approximately 16.4 feet)</li> </ul>	No.	10

	<ul style="list-style-type: none"> <li>- Material: Made from durable steel, often with a protective coating</li> <li>- Gradations: Features precise graduations in metric or imperial units (or both)</li> </ul>		
15	<b>Hand Vice, Jaw, 50 mm</b> <ul style="list-style-type: none"> <li>- Type: Hand vice, a portable tool used for holding and gripping small workpieces</li> <li>- Jaw width: 50 mm (approximately 1.97 inches)</li> <li>- Material: Typically made from durable materials like steel or cast iron</li> <li>- Jaw type: Features serrated or smooth jaws for secure gripping of workpieces</li> </ul>	No.	2
16	<b>File Flat, Smooth, 200 mm</b> <ul style="list-style-type: none"> <li>- Type: Flat file, a tool used for filing and smoothing surfaces</li> <li>- Length: 200 mm (approximately 7.87 inches)</li> <li>- Cut: Smooth cut, designed for fine filing and polishing</li> <li>- Material: Typically made from high-carbon steel or other durable materials</li> </ul>	No.	2
17	<b>File Half Round, Rough, 300 mm</b> <ul style="list-style-type: none"> <li>- Type: Half round file, a tool used for filing and shaping curved and flat surfaces</li> <li>- Length: 300 mm (approximately 11.81 inches)</li> <li>- Cut: Rough cut, designed for aggressive material removal and coarse filing</li> <li>- Shape: Half-round shape allows for filing and shaping of curved and flat surfaces</li> <li>- Material: Typically made from high-carbon steel or other durable materials</li> </ul>	No.	2
18	<b>File, Square, rough, 250mm</b> <ul style="list-style-type: none"> <li>- Type: Square file, a tool used for filing and shaping square corners and edges</li> <li>- Length: 250 mm (approximately 9.84 inches)</li> <li>- Cut: Rough cut, designed for aggressive material removal and coarse filing</li> <li>- Shape: Square shape allows for precise filing and shaping of square corners and edges</li> <li>- Material: Typically made from high-carbon steel or other durable materials</li> </ul>	No.	2
19	<b>File, Square, Smooth, 200 mm</b> <ul style="list-style-type: none"> <li>- Type: Square file, a tool used for filing and shaping square corners and edges</li> <li>- Length: 200 mm (approximately 7.87 inches)</li> </ul>	No.	2

	<ul style="list-style-type: none"> <li>- Cut: Smooth cut, designed for fine filing and polishing</li> <li>- Shape: Square shape allows for precise filing and shaping of square corners and edges</li> <li>- Material: Typically made from high-carbon steel or other durable materials</li> </ul>		
20	File Triangular Rough, 250 mm	No.	2
21	File Flat Rasp, 250 mm	No.	2
22	File Triangular Smooth, 200 mm	No.	2
23	Chisel Cold Flat, 20 mmX300mm	No.	2
24	Chisel Cross Cut, 6X150 mm   S-402	No.	2
25	Chisel Round Nose, 3X150 mm IS-402	No.	2
26	Chisel Diamond Point, 16X150mm	No.	2
27	Punch, Letter set	No.	1
28	Punch, Number set	No.	1
29	Spanner monkey up to, 50mm	No.	2
30	Cutter, Pipe, wheel type, 6mm to 25mm	No.	1
31	Oil stone, 150X50X25mm	No.	2
32	Soldering Iron, Copper, Bit, Fire heated, Hatched, Straight, 500 grams	No.	2
33	Try square, 200mm	No.	2
34	Inside Caliper, 150mm	No.	2
35	Caliper outside, 150mm	No.	2
36	Odd leg caliper, 200mm	No.	2
37	Mirror, 100X150 mm	No.	2
38	Soil pot with brush,	No.	1
39	D. E. Spanners, 7X8, 10X11, 13X17, 19X22, 24X27 15:2028	Set	2
40	Bending Spring	Set	1
41	Plumbers Laddle	Set	1
42	Tool caulking	No.	2
43	Plumbers' metal melting pot, 10 kg	No.	1
44	Pipe stock and dies complete with stocks, bushing, bushing holders, Taps and wrenches sizes covered, to suit pipes, bore dia 6, 8, 10, 20, 25, 32, 40 & 50 mm	Set	2
45	Pipe vice, to grip up to 77 mm IS 2587	No.	2
46	Stillson pattern pipe wrenches, 450 mm to take pipe up to 52 mm dial S-4003	Set	2
47	Stillson pattern pipe wrenches, 300mm to take pipe 20 mm to 32mm	Set	2
48	Chain :pipe wrench, 90mm-650 15 4123	Set	2

49	Adjustable, spanner, A-375, IS-6149	No.	2
50	Pipe bender, manually operated	No.	1
51	Leg vice, 75mm jaw on Stand IS-2588	No.	1
52	Hand drill 6mm capacity with drill chuck (Electric)	No.	1
53	Drill Twist (straight shank), 3mm to 6mm	Set	1
54	working bench, 2400x1200x750mm with 4 voice 125 mm jaws	No.	2
55	Bath tub small size	No.	1
56	Wash Basin Equivalent metric, (16"X14"X10")	No.	2
57	Water Heater, 10 litres	No.	1
58	Water closet (European type p) complete with overhead cistern	Set	1
59	Water closet (Indian type) complete with overhead cistern	set	1
60	Urinal wall type complete with automatic system	set	1
61	Water meter	No.	2
62	Steel lockers, with 8 drawers Metal rack (1800x1500x450mm)	No.	3
63	Metal rack, (1800X1500X450mm)	No.	1
64	Desk	No.	10
65	Board with glass	No.	1
66	Fire Extinguisher	No.	1
67	Fire Buckets with stand	No.	1
68	Steel Almirah (large)	No.	1
69	Hammering drilling machine	No.	1
70	Electric PPR pipe welding machine	No.	1
71	Electric pump, 1 HP	No.	1
72	Hydraulic pressure machine for testing leakage in GI pipe fittings etc.	No.	1
73	Rachet pipe die, 15 mm to 32 mm	No.	1
74	Double face hammers	No.	2
75	Dormat, Pickaxe, Spade, Girmale	set	1
76	Pipe bender (Hydraulic type)	No.	1
77	Instructor table	No.	1
78	Instructor chair	No.	1
79	Solar water heater system	No.	
80	CPVC/UPVC Pipe cutter, Up to 50 mm	No.	5
81	Chase cutter (electric), Blade dia 7 cm to 15 cm	No.	02
82	Caulking Tools, 300 mm 20 mm	No.	05



C. LIST OF CONSUMABLES			
83	M.S FLAT	m	10
84	M.S ROD	m	5
85	GI pipe "B" grade, 1/2"Ø, 3/4"Ø, 1" Ø 1 length each	m	1
86	GI pipe fittings Socket Tee Bend Union Hex Nipple (1/2"Ø, 3/4"Ø, 1" Ø)	set	3
90	PVC pipes heavy duty, (suitable to use dies and tap) ½"Ø, "Ø, 1"Ø, 1½"Ø, 2", 4"Ø, 6" Ø	set	1
91	PVC pipe light duty, ½"Ø, "Ø, 1"Ø, 1½"Ø, 2"Ø	No.	1
92	PVC fittings reducer FTA Reducer, Plain coupling, TEE, Bend, Elbow, MTA, FTA, socket, ½", 3", 1"Ø, 1½"Ø, 2"Ø, 4"Ø, 6" Ø	No.	1
93	C.PVC pipe, 20 mm Ø  • SDR 11 (for hot and cold water)  • Pressure rating: 28 kg/cm² (400 psi)  • Conforms to ASTM D2846	No.	1
94	PPR pipe, 20mm Ø  • PN 20, for hot and cold water  • Conforms to DIN 8077/8078  • Fusion welding compatible	No.	1
95	Wheel valve  • Brass/bronze body  • Size: ½", ¾", 1" (Each)  • Pressure rating: PN16	No.	1
96	Globe valve,	No.	1

	<ul style="list-style-type: none"> <li>• forged brass body</li> <li>• Screwed ends</li> <li>• Size: ½", ¾", 1" (Each)</li> </ul>		
97	PVC ball valve <ul style="list-style-type: none"> <li>• Size: ½", ¾", 1" (Each)</li> <li>• Working pressure: 10 bar</li> </ul>	No.	1
98	Water tap/ PVC, S.S, Brass size, ½", ½", 1" <ul style="list-style-type: none"> <li>• Size: ½", ¾", 1" (Each)</li> <li>• SS grade 304 or Brass IS: 781</li> </ul>	No.	1
99	Non-return valve, Air valve <ul style="list-style-type: none"> <li>• Brass/SS body</li> <li>• Flanged or screwed end</li> <li>• Size: ½" - 2"</li> </ul>	No.	1
100	M.S flange IS: 6392, PN10	No.	1
101	Lubricating oil ISO VG 68 grade	No.	1
102	Lead Industrial grade, used in joining cast iron pipes	No.	1
103	Spum yarn Hemp fiber for joint sealing	No.	1
104	Water meter Multi-jet, dry dial, Class B, IS: 779	No.	1
105	PVC bend, 100 mm <ul style="list-style-type: none"> <li>•</li> </ul> IS: 13592, SWR grade	No.	1
106	PVC Y branch, 100 mm <ul style="list-style-type: none"> <li>• •</li> </ul>	No.	1

	IS: 13592, SWR grade		
	•		
107	PVC Dod bend, 100 mm IS: 13592, SWR grade	No.	1
108	PVC pipe sloe, End cap fitting	No.	1
109	C.P pillar tap, 15 mm	No.	1
110	C.P waste coupling, 35 mm	No.	1
111	PVC waste pipe, 32 mm	No.	1
112	PVC connection flexible tube	No.	1
113	Hot and cold water mixer tap	No.	1
114	PPR pipe fittings, PPR - TEE 20 mm PPR - Elbow 20 mm  • ○ <b>PPR Tee 20 mm and Elbow 20 mm</b> ○ Made from PP-R Type 3 material ○ Thermal fusion fitting	No.	1
115	PVC floor trap	set	1
116	PVC gully trap	set	1
117	PVC multi trap	set	1
118	PVC multi floor trap  • Size: 110 mm x 75 mm  • Anti-odor seal	set	1
121	Push Cock  • CP brass, 15 mm  • Sensor or manual types	set	1
122	<b>Wall mounted water closet, With concealed flushing cistern</b> <b>Vitreous china, with concealed flush cistern (6L/3L)</b> - Type: Wall-mounted water closet, a toilet designed to be mounted on the wall, saving floor space - Material: Vitreous china, a durable and hygienic material	set	1

	<ul style="list-style-type: none"> <li>- Flushing cistern: Concealed flushing cistern with dual-flush functionality (6L/3L), allowing for water conservation</li> <li>- Mounting: Wall-mounted design, providing a sleek and modern appearance</li> <li>- Water efficiency: Dual-flush functionality enables users to choose between a full or partial flush, reducing water consumption</li> </ul>		
123	<b>Wall mounted Bidet, With Hot and cold mixture</b> Type: Wall-mounted bidet, a plumbing fixture designed for personal hygiene <ul style="list-style-type: none"> <li>- Mounting: Wall-mounted design, providing a sleek and modern appearance</li> <li>- Water supply: Hot and cold water mixture, allowing for comfortable temperature control</li> <li>- Features: May include: <ul style="list-style-type: none"> <li>- Adjustable water temperature and pressure</li> <li>- Spray nozzle or jet for effective cleaning</li> <li>- Ergonomic design for user comfort</li> </ul> </li> </ul>	set	1
124	<b>Urinal wall type, With automatic sensor flushing system</b> <ul style="list-style-type: none"> <li>- Type: Wall-mounted urinal, a plumbing fixture designed for efficient and hygienic use</li> <li>- Material: Typically made from vitreous china or other durable materials</li> <li>- Flushing system: Automatic sensor flushing system, which: <ul style="list-style-type: none"> <li>- Detects user presence and activates flushing</li> <li>- Provides touchless operation for improved hygiene</li> <li>- Often features adjustable flush volume and timing</li> </ul> </li> </ul>	set	1
125	Bathroom concealed Diverter, Two way and three way both	set	1
126	Towel Rail (Stainless steel), 600 mm length	set	1
127	C.P Piler tap, Automatic sensor type 15mm	set	1
128	C.P Bib Tap/Cock, 15 mm	set	1
129	C.P Central hole automatic basin mixer, Sensor type 15mm	set	1
130	C.P Shower, 15mm	set	1
132	Plastic water tank, 500/750 liters	set	1
133	Water tank overflow alarm, Automatic sensor type	set	1
134	Butane/Propane disposable Cylinder, 150-200 gm	No.	10

135	Butane/Propane disposable blow torch, 150-200 gm	No.	05
136	Electronic light for Butane cylinder	No.	02
137	Water Hammer Arrestor	No.	1

<b>LIST OF TOOLS AND EQUIPMENT</b> <b>Carpenter Workshop (For Batch of 10 trainees)</b>			
S.N.	Name of the Tools & Equipment	Specification	Quantity
<b>A. TRAINEES TOOL KIT (For each additional unit trainees tool kit s no. 1-19 is required additionally)</b>			
1	Foot rule/steel tape	Two ft. Four-fold/6 mtrs.	(5+1)nos.
2	Steel Measuring Scale	Twelve inches	(5+1)nos.
3	Marking Knife	200 mm length	(5+1)nos.
4	Try Square	200mm	(5+1)nos.
5	Bevel Square	50 mm	(5+1)nos.
6	Carpenter marking gauge		(5+1)nos.
7	Carpenter mortise gauge		(5+1)nos.
8	Hand Saw	450mm	(5+1)nos.
9	Tenon saw	300mm	(5+1)nos.
10	Metal Jack plane	335mmX 50mm cutter	(5+1)nos.
11	Metal smoothing plane	200mm X 50mm cutter	(5+1)nos.
12	Firmer Chisel	Bevel edge 6mm. 10, 15, 20 and 25mm with (5 nos.)	(5+1)nos.
13	Mortise chisel	06, 10, 15mm (3 nos.)	(5+1)nos.
14	Screw driver	300mm	(5+1)nos.
15	Mallet	medium size	(5+1)nos.
16	Claw hammer	500 gm	(5+1)nos.
17	Oil stone	Carborundum universal silicon carbide combination rough and fine.	(5+1)nos.
18	Contraction measuring scale	as per standard size	(5+1)nos.

19	Hand brush for cleaning	450mm	(5+1)nos.
<b>B. INSTUMENT AND GENERAL SHOP OUTFIT INSTRUMENT</b>			
20	Measuring tape	3 meter	5no.
21	Construction scale	1 meter	04 nos
22	Spring caliper (inside)	150 mm	04 nos
23	Spring caliper (outside)	150 mm	04 nos
24	Wing compass	300 mm	02 nos.
25	Trammel	300 mm	02 pair
26	Sprit level	300 mm	02 nos.
<b>C. GENERAL SHOP OUTFIT</b>			
27	Rip saw	600 mm	02 nos.
28	Cross cut saw	250 mm	02 nos.
29	Key hole saw	250 mm	02 nos.
30	Fret saw frame	150 mm	02 nos.
31	Compass saw	350 mm	02 nos.
32	Adze	15 kg	02 nos.
33	Trying plane metal	450 mm X 60 mm Cutter	02 nos.
34	Plane rivet adjustable	250 mm X meters x 9 mm Cutters	02 nos.
35	Plough plane	with set of 8 cutter up to 12 mm Width	02 nos.
36	Spoke shaves	50 mm Cutter	02 nos.
37	Plane adjustable circular	250 mm	02 nos.
38	Router plane	197 X 42 mm	02 nos.
39	Moulding plane set		02 nos.
40	Cabinet scraper	100 mm	02 nos.
41	Gauge chisel, firmer,	6,10,12,16,20mm	02 nos.
42	Gauge chisel, scribing	6,10,12,16,20mm	02 nos.
43	Ball pein hammer	600 grs	02 nos.
44	Cross pein hammer	600 grs	02 nos.
45	Screw driver	450 mm	02 nos.
46	Screw driver	250 mm	02 nos.
47	Screw driver	150 mm	02 nos.
48	Pincer	50 mm	02 nos.
49	File half round	2nd cut 250 mm	02 nos.
50	File half round	Wood rasp bastard250mm	02 nos.
51	File slim taper	100 mm	02 nos.
52	File slim taper	150 mm	02 nos.
53	Card file (steel) wire brush for file	200 mm	02 nos.
54	Hands drill	6 mm Capacities	02 nos.

55	Country drill with bow (ball bearing type)	620 X 726 mm	1 nos.
56	Ratchet brace	250 mm Swap	2 nos.
57	Hand auger	10,12,14,16,18,20,22,25 mm	02 sets
58	Centre bits	6,8,10,12	02 sets
59	Expansion bit sets	218 X 171 mm	02 sets
60	Twist drill bits	6,8,10,12 mm	02 sets
61	Counter sunk bit rose type	12 mm	02 sets
62	Breast drill	6 mm. capacity	02 sets
63	Centre punch	5mm	02 sets
64	Snip straight	200 mm	02 sets
65	Oil cans	225 X 225 mm	02 sets
66	Combination side cutting pliers	250 X 250 mm	02 sets
67	Plunger saw set/ pistol grip type.	300 X 300 mm	02 sets
68	Number punch	12 mm.	02 sets
69	Slip stone	100 mm	04 nos.
70	Round crow bar	with chisel and claw end 1070 x 25mm	02 nos.
71	G' clamp	100 mm	04 nos.
72	G' clamp	150 mm	04 nos.
73	G' clamp	250 mm	04 nos.
74	T' bar cramp	0.6 meter	04 nos.
75	T' bar cramp	1.25 meter	04 nos.
76	T' bar cramp	1.75 meter	02 nos.
77	Carpenter vice	250 mm jaws	04 nos.
78	Saw sharpening vice	250 jaws	02 nos.
79	Carving tools set		02 nos.
80	Goggles pair		11 nos.
81	Glass cutter		02 nos.
82	Nail punch		04 nos.
83	Surface plate	600x 600 mm	01 nos.
84	Carpenter's work bench	2400x920x800 mm Height	02 nos.
85	Blower		04 nos.
86	Grease gun		01 nos.
87	Spanner double ended	set of 14	01 set
88	Fire extinguisher		01 no.
89	Steel lockers, 8 Compartments, with Individual locks	1980 x 910 x 480 mm depth	01 nos.
90	Steel Almirah with shelves	1980 x 910 x 480 mm depth	02 nos.
91	Instructor table (half secretariat)		01 no.
92	Instructor chair		02 nos.

93	Stool		01 no.
94	white board with eraser and stand	4 x 6 feet	01 no.
<b>D. GENERAL MACHINERY SHOPOUTFIT</b>			
95	Portable circular saw machine		02 nos.
96	Portable planing machine		02 nos.
97	Power drill machine		02 nos.
98	Portable sander machine		01 no.
99	Portable jig saw machine		02 nos.
100	Portable router machine		01 no.
101	Power screwdriver		02 nos.
102	Combined surface and thickener		01 no.
103	Circular saw machine	300 mm. dia.	01 no.
104	Lathe, wood turning	150 mm height of centres 1.75- meter bed, motorized complete with a set of turning tools	01 nos.
105	Set of turning tools for above lathe machine		01sets.
108	Bench grinder	200 mm. whole D.E. pedestal	01 no.
109	Drill machine	12 mm. Capacity	01 no.
110	Portable electric drill	6 mm. Capacity (wolf type)	01 no.
111	Drills chuck	12 mm capacities.	01 no.
112	Portable disc sander	200 mm. Dia	01 no.
113	Adjustable saw sharpener		01 no.
114	Electric heater		01 no.
115	Moisture meter		01 no.
116	Universal wood working machine		01 no.
117	Electrical drying oven (small type)		01 no.
118	Band saw machine with provision		01 no.
<b>E. CLASS ROOM FURNITURE</b>			
120	Instructor's table and Chair (Steel)		1 set
121	Students chairs with writing pads		11
122	White-board size 1200mm X 900 mm		01 no.
123	Instructors lap top with latest(vista & above) configuration pre-loaded with operating system. and MS Office package.		01 no.
124	LCD projector/interactive smart board.		01 no.
125	Small type compressor with spray painting system.		01 no.



<b>List of Tools &amp; Equipment</b> <b>Stability and ship models</b>			
<b>S No.</b>	<b>Name of the Tools and Equipment</b>	<b>Unit</b>	<b>Quantity</b>
1	MetaCentric Height Apparatus, A semi- circular sectioned hollow ship model of a ship of cross section 0.45m x 0.45m, Tanks made of 3mm MS sheet with fiberglass lining and outer sides of the tanks shall be powder coated, Sump Tank Size of 900 x 900 x 300mm with drain valve. Provision for loading the ship model with weight. Fine arrangement for accurate angle measurement. Extra weight in metric unit for tilting couple	set	1
3	Ship models, Ship models or 3D photograph frames with labeled parts of different type of vessels (Passengers, ferry, cruise, Ro-Ro, Tug, Dredger, Dumb Barge, survey vessel, cargo, oil tanker and gas tankers (LPG, LNG)	No.	12
4	Ship sections, models, drawings or photographs, Models or drawing/clear pictures (1m x 60cm ) with labeled parts of midship section, (oil tanker, bulk carrier and a container ship), forepeak tank, aft peak tank, stern tube arrangement, longitudinal framing and transverse framing of vessels, Navigation bridge layout and engine room lay out	No.	10

<b>LIST OF TOOLS AND EQUIPMENT</b> <b>Seamanship Laboratory (For Batch of 40 trainees)</b>			
<b>S.N</b>	<b>Items</b>	<b>Unit</b>	<b>Qty.</b>
1	Manila rope, Length Sufficient for each trainee able to carry out rope work and splicing. Diameter 18mm (Pilot Ladder Step rope) and -28 mm (side rope Pilot Ladder) Length 50 m each Bundle weight 15 & 30kg Rope Type Twisted	Kg	45

	Strand Structure 3 Ply Color Natural		
2	Synthetic ropes (20mm and 30mm) Length Sufficient for each trainee able to carry out rope work and splacing. Diameter 20 mm and 30mm Length 50 m each (25Kg & 55kg) Core Type 3 Strand Color Ivory Materials Synthetic Cotton	Kg	80
3	Steel wire ropes (20.0 mm) Non rotating type. Material Steel Usha Martin Diameter 12 mm and 18mm Length 50m each Construction 6x24 Finish Galvanized Core IWRC	m	100
4	Seizing twine Diameter 4 mm Bundles 4 Material Jute Strand Structure 3 Ply Twine Type Twisted	Kg	10
5	Seizing wire Galvanized Wire Roll 18 and 24 Gauge Material: SS Package Contents: Galvanized Steel Binding Wire	Kg	20
6	Heaving lines, 20 Mtr Length, 4 pc. Polypropylene floating line Length 20mtr Thickness 8mm	m	80
7	Kenter shackle for training purpose (Used) Material Mild Steel Design Standard Shape Oval Size min 40mm (Diameter) Usage/Application Anchor Color Sliver	Pcs	4

8	Anchor Shackle Used Type:End Shackle (Anchor Chain Accessory) Dia.: min 40mm Materials:A2, A4 ,304,316 Shape:Bow Shape Surface:Polished, Black Painted	Pcs	4
10	Mooring shackle Material Mild Steel Size/Capacity Min 40mm	Pcs	1
11	Mooring hawser , 2 sets (100m each) Color White Diameter min 50 mm Length 1 coil (220m) Rope Type Braided Strand Structure 8 strand Material PP	Kg	300
12	Mooring wires , 2 sets * 50m = 100m Type 6x19 construction Brand Usha Martin Condition New Twist Type STANDARD Pattern 6X19 Thickness 32mm. Working Temp NORMAL Packing Type WOODEN REELS.	Kg	100
13	Rat guards Material Mild Steel Diameter 15 inch Pattern Plain	Pcs	2
14	Single sheave, double sheave and triple sheave blocks, 2 sets each (Used) Product Type Block Usage/Application Cargo gear Material Mild Steel Capacity min 1 ton Number Of Grooves Single, double, triple Groove  Type Manual Surface Treatment Color Coated Number Of Sheave 1, 2 and 3 Sheave	Pcs	6
15	Cargo block, gin block Lifting cap -2.0 ton, 1sets (used)	Pcs	2

16	Snatch block, (Used) Size/Capacity 2 Ton MOC MS Forged Hook Swivel Type Consist V Grove Pulley	Pcs	1
17	Bottle screws and turn buckles, 2 sets (used) Material Stainless Steel Pattern WELDED FORKS WITH BOTTLE SCREW Buckle Material STAINLESS STEEL Size M6 TO M 30	Pcs	2
18	Bulldog grips, 5.0 mm and 10.0 mm, 2 sets each Material Mild Steel Design Standard Shape U Shape	Pcs	4
19	Differential pulley (Chain block), MS material, cap- 1 & 2.0 T, 1 set each Capacity 1-2 ton Usage/Application Material Handling Material Mild Steel Standard Lift 3-9 meter Finishing Galvanizing Length In Meter 2-4 meter	Pcs	2
20	Container fittings lashings for training purpose, 2 set (Used) Lashing Material Chain binders and container lugs Size/Capacity Upto 100 tons	Pcs	2
21	Long bar container lashing (Eye & Plug type)	Pcs	1
22	Short bar ( Eye & plug type)	Pcs	1
23	Manual twist locks (RHL & LHL), 1 set each Lock Type Twist Lock Suitable For Container Tensile Strength 800 Mpa Material MS	Pcs	2
24	Semi automatic Twist locks, (RHL & LHL) 1 set each Lock Type Twist Lock Tensile Strength 650 Mpa Material Iron Automation Grade Semi Automatic Thickness 10mm	Pcs	2

25	Automatic twist locks, 1 set (Used) Lock Type      Twist Lock Finish Type      Chrome Tensile Strength      1050 Mpa Material      Aluminium Thickness      24mm	Pcs	2
26	Bridge fittings, 4 inch, 2 sets used	Pcs	2
27	Turnbuckles ( Hook & for vplug type ), 1 set each used Material      MS Size      M-06 TO M-8	Pcs	2
28	Lashing turnbuckle tightener ( 2 types), 1 each Used Material      Mild Steel Capacity      1 Ton Size      7 Inch (H)	Pcs	2
29	Actuator pole	Pcs	1
30	One ISO 20' container (Used) Container Type      TEU Load Capacity      20 ton Material      MS Size/Dimension      20x8X8 feet	Pcs	1
31	Chipping hammers , scrapers and wire brushes,                      each 20 pcs Type of Hammer      SS Scaling Hammer Handle Material      Fibreglass Handle Color      Natural Finish Warranty      1 Year Brand      Sparkless	Pcs	20
32	Chipping machine with accessories, 1 set (used and working) Air Inlet      1/8" Brand      Pneumatic Jet Chisel or motor Min. hose size      3/8" ID x 20m or 20 m wire length Standard Needles with Machine      3 pieces of 3 mm x 180 mm or 3 chipping heads	Set	1
33	Marine Pilot ladder, 5 mtr length Length      5m Application      Marine Width      >=115mm Thickness      >=25mm Step Fixing Piece      Wood or Plastic Approval      ISO799-S15-L5, ISO-799: new SOLAS standard of ISO799-2004 S15	Set	1
34	Boson chair with self lowering arrangement, 2 set	Set	2
35	Rope / coolie ladder , 10 mtr in length	Pc	1
36	Overside stage, 2 sq meter with rope length 10m x 2	Pc	1

37	Safety harness, for 100 Kg load capacity,for adult use.	Pc	4
38	Fall arrestor (FPD), adult use. 2 set Load Capacity Max. 150 kg Cable Dia 4 mm Length 2.5 m	Pc.	2
39	Marline spikes for training purpose, 4 Pc Needle Size 300mm x 3/4" Usage/Application Used for Splicing Work (for making Rope Nets & Ladders) Size 300 & 400mm Material MS	Pc	4
40	Wire Slings, snotters, net sling, rope sling, drum clamps, pallet--- 2 set each	Pc	12
41	Scupper plug, 4 pcs Material rubber sealing with steel handle. Diameter 50MM-125MM	Pc	4
42	Ullage tape, 30 mtr length, 2 set	Pc	2
43	Sounding tapes (rope), 30 mtr length, 2 set	Pc	2
44	Teliscopic ladder, Aluminium (5 M), 1 set	Set	1
45	Water finding paste 75gm, 2 tube (KolorKut or Camon)	No.	2
46	De mucking electric winch, (Monkey hoist Machine)1 T lifting capacity, 1 set Power Source Electric Type Electric Winches wire Rope Length 25m Number Of Drum 1	Pcs	1
47	Types of tank vents (various type), free vent, self closing vent, 1 set each (used)	Pcs	2
48	Pilot ladder rubber repair steps, 2 set Color Black Length 525mm Size 525 X 115 X 28 mm Material Rubber	Pcs	2
49	Winnets for pilot ladder, wooden, 10 pcs	Pcs	10
50	Turn buckle with senhouse slip, for training purpose, (used) Material Stainless steel Packaging Type Box Thickness 2 mm Surface Treatment Galvanized Surface Finish Polished	Pcs	3

51	Jubilee clips, 1 ", 2"3" and 4" each 24 pcs each	Pcs	96
52	Hydraulic wire rope cutter, cap- 30 mm dia wire. 1 set Usage/Application Crimping Weight 0.48 kg Material Mild Steel Length 200 mm	Pcs	1
53	Swing derrick/ boom, lifting capacity 1.0 Ton	Pcs	1
54	Masonry punches set, 1 set	Pcs	1
55	Portable electric drill 12 mm, and bits including masonry bits, 2 set Brand Bosch Type Of Power Tool Drill Max. Drill Diameter 12 mm Reverse Rotation Yes	Pcs	1
57	Water tight door rubber pkg (10mtr) Color Black Hardness 45 Shore A Thickness 10mm	m	10
58	Rubber glue (Tin) Brand Fevicol SR505 Packaging Size 5 Litres Packaging Type Tin Can	No.	2
59	Sutli jute in kg, 2 kg Thickness 4 mm Rope Type Twisted Strand Structure 2 Ply	Kg	2
61	Halyard in Kg, 5 kg Flag Rope 50 Feet Flag Pole Halyard Rope And Clips Kit Include Stainless Steel Flag Pole Hook Clips, Flag Pole Halyard Rope For Tie Pull Swing Climb And Knot White Shappy Flag Rope 50 Feet Flag Pole Halyard Rope And Clips Kit Include Stainless Steel Flag Pole Hook Clips, Flag Pole Halyard Rope For Tie Pull Swing Climb And Knot White	Kg	5

**LIST OF TOOLS AND EQUIPMENT**  
**LSA-FFA Workshop (For Batch of 40 trainees)**

S.N.	ITEM	Unit	Qty.
1	<b>Demonstration table for training,</b> <b>Size 3"x6"x3",</b> <b>Material: wooden top with steel framing.</b> <b>Features: legs with lockable wheels</b> - Size: 3 feet x 6 feet x 3 feet (height x length x width) - Material: - Top: Wooden top, possibly made from durable materials like MDF or solid wood - Frame: Steel framing for stability and durability - Features: - Legs: Designed with lockable wheels for easy mobility and stability - Lockable Wheels: Allows for secure positioning and prevents movement during use	No.	2
2	<b>Inflated liferaft on display</b> <b>Color: Orange</b> <b>Capacity: 20 Persons</b> <b>Brand: Lalizas</b> <b>Shape:-Round</b> - Capacity: Designed for 20 persons, providing emergency flotation for a group of individuals - Color: Bright orange, enhancing visibility in emergency situations - Brand: Lalizas, a reputable brand in maritime safety equipment - Shape: Round design, providing stability and buoyancy in water	No.	1
3	Complete set of liferaft equipment (Sample/used) SOLAS B Equipment Pack List: 3 USCG/SOLAS hand flares; 2 USCG/SOLAS parachute flares 1 USCG/SOLAS smoke signals; One flashlight; One flashlight bulb Extra batteries; One signal mirror; One signal whistle One bailer; Two paddles; One topping-up air pump One sea anchor; One spare sea anchor; Two sponges Repair kit (glue, patches); Repair plugs; Rescue quoit and line Survival instructions; First aid kit; Fishing kit; Can openers Floating safety knife; Thermal protective aids; Anti-seasick tablets Seasickness bags; Drinking cup	No.	1



4	<p>Complete set of life boat equipment; (Used and samples)</p> <p>Oars with crutches; 2 Boot Hooks; 1 Buoyant bailer and 2 buckets</p> <p>Survival Manual; Fixed compass; Sea Anchor with hawser</p> <p>2 Painters; 2 Hatchet; 3 L of drinking water per person</p> <p>1 Rustproof dipper with lanyard; 1 Rustproof graduated drinking vessel</p> <p>Food rating of 10,000 Kj /person, lifeboat is permitted to carry 1 Rocket parachute; 1 Hand flare; 1 Buoyant Smoke Signal</p> <p>1 Waterproof torch with spare bulb and batteries</p> <p>1 Day light signaling mirror; Lifesaving signal poster</p> <p>1 whistle; first aid kit; Anti-Seasickness tablet and Sea Sickness bag</p> <p>1 Jack knife; 3 tin opener; 2 buoyant rescue quoits</p> <p>Manual pump for bailing, if lifeboat is not automatically self bailing. 1 set of fishing tackle; Toolbox; Portable fire extinguisher</p> <p>1 Search light; Radar Reflector TPA (1)</p>	set	1
5	<p>Immersion suits, adult</p> <p>Color: Red</p> <p>Product Type: Jackets &amp; Coats</p> <p>Feature: Breathable, Anti-Wrinkle, Acid proof, Anti-Shrink, Waterproof, Disposable</p> <p>Material: Neoprene</p> <p>Size: Medium, Large</p>		2
6	<p>Life Jackets with light,whistle, for adult,</p> <p>Weight 1 to 1.1 kg</p> <p>Floatability 16.5 kg</p> <p>Style Over the head</p> <p>Capacity For use of persons above 43 kg</p> <p>Color Orange</p> <p>Material Polyester</p> <p>Retro Reflective Tape 31 inch</p> <p>Dimensions 45 cm x 68 cm x 8 cm</p>	No.	20
7	<p>Thermal protective aids, for adult</p> <p>Gender Unisex</p> <p>Product Type Overalls</p> <p>Size Free Size</p> <p>Pattern Plain</p> <p>Weight 320 g</p> <p>Length 228 CM</p>	No.	3

8	Retro reflective tapes in roll, 10 mtr length. Color Blue, Yellow and Orange etc Material PVC Usage/Application Traffic signs Roll Length 48"X150FIT Grade A Packaging Type ROLL Reflection Ratio High Reflective Thickness 0.20 mm Width 48 inch Application Outdoor Advertising, Traffic Signs, Warning Marks Length 50 YARDS	No.	10
9	Hydrstatic release unit for life raft. Color Yellow, Black Material Fiber Capacity 25 Person's Life Raft & Above Screen Size Small Brand Hammar	No.	2
10	Life buoy Material : Hard PU Weight : >=2.5kg Description : Low pressure Polyethylene. Additional Information : Outer Diameter: 720mm Inner Diameter : 440mm Thickness : 105mm Buoyancy : >14.5Kg	No.	2
11	Man overboard marker (Light and smoke signal for 15 Min) used/Sample Brand Painswessex Produces dense orange smoke 15 minutes Color Yellow Material Stainless Steel 2 LED lights burn at 2 candela for 2 hours minimum Lithium battery	No.	2
12	Self igniting lights Color Orange Weight 1.05 kg Light Duration 2 Hrs Dimensions 390 x 94 mm	No.	2
13	EPIRB (Model), Brand GME Material -FF- housing UV polypropylene Product Type -Distress beacon. Color -Yellow Is It Water Proof -Water Proof	No.	1

14	SART (model) Battery Lithium with 5 years validity mainatnece kit Indication Visual and Audio Alarm Operating Tempreture Range -20 C to +55C Operating Life 96 hours Weight 500 - 900 g Color Orange,Whiteetc Material Plastic	No.	1
15	Neil Roertson stretcher, for adult Max Load 136kg Strecher Weight 8.3 kgs	No.	1
16	First aid kit, with necessary equipment. Material Polyester Size Medium Packaging Type Bag Type Box A Categories Industrial First Aid Boxes Model Name/Number SJF SBK Color RED Usage/Application Clinic Sterile/ Non Sterile Sterile	No.	2
17	Various splints & bandages	No.	2
18	Resuscitation kit Brand HFMC Weight 3.5 KG Color Silver Silicone Resuscitation Adult (1600 ml) Airways Sizes 2,3,4, No Laryngoscope Mouth (Teeth) Opener Silicone Face Mask 3 & 4 No. Oxygen Reservoir Bag with Valve; Oxygen Tube Hand Suction	No.	1
19	Emergency escape breathing apparatus (EEBD) Type EEBD C15 MINUTE Max Working Pressure 200 BAR Brand: Draeger	No.	2
20	Earmuffs Type Not Foldable Shape Oval Color Black Material Plastic Brand 3M Is It Adjustable Non Adjustable	No.	24

21	Dust mask Type Medical, Respiratory, Anti-Pollution, Disposable Color Yellow Size Free, All Sizes Material Non-Woven Mask Securing Method Earloop	No.	100
22	Explosive meter/ multigas detector Detector Type Portable Multi Gas Name of Gases Detected Ex(LPG/PNG/NH3/H2), O2, H2S, CO Brand AIYI Model H2000 Power Source Battery, Plug-In Display Type Digital Measuring Range 0-10000PPM	No.	1
23	Oxygen analyser Usage/Application Chemical process Industries for processing Product & to improve air quality by scrubber Product Type Panel mount Power Supply 240VAC / 50 Hz, 230VDC (+-10%) Features Provides a fast and reliable output by using Electro Chemical Sensor Technology. = Highly resistant Model GA-3500-Panel Brand Ambetronics Analysis Time Less than 30 Seconds. Automation Grade Semi-Automatic Display Type LED Display Response Time Less than 30 Seconds. Weight Approx 1.4 Kg Temperature : 0 Degree to +50 DegreeC	No.	1
24	Hydrocarbon detector CI-2200 Hydrocarbon gas detector with IP66 rating for enclosure. Gas : Hydrocarbon Range : 0-100%LEL Output : NO/NC Operating voltage:24VDC	No.	1
25	UTI tape HERMETIC UTI TAPES ULLAGE TEMPERATURE INTER MODEL NO-MK3-LBI	No.	2

28	Fire hoses 64 mm Product Type Fire Sprinkler Hose Material Polyester Length 25m Color White	No.	4
29	Nozzles (Jet and Dual purpose) Material Brass Type Thread Type Color Black On-Off, spray-stream-flush with 63mm instantaneous male, flow range about 600-700 LPM @ 7Kg/Cm <sup>2</sup> . Throw 40-45Mtr.	No.	2
31	Pressurized water extinguisher Fire Extinguisher Type Water Capacity 9 Kg Extinguisher Design Portable Discharge Range 2 mtr Type Of Driven Gas Co2 Operating Temperature -30 DegreeC to +55 DegreeC Warranty 5 years Fire Rating 3 A Hose Material Rubber Fire Type A, B, C Approvals ISO, ISI, BIS, CE Expelling Agent CO2	No.	2
32	Foam extinguisher Capacity 9 Litre Operating Temperature +5 DegreeC to +60 DegreeC Fire Class Class A Extinguisher Type Stored Pressure Extinguishing Medium Film-forming fluoroprotein (FFFP) Fire Rating 2 A Fire Type A Cylinder Material Stainless Steel (SS) Brand Capital Fire.Com Design Wall mounted Certifications ISO	No.	4
33	4.5 kg DCP extinguisher Fire Extinguisher Type Multipurpose Dry Powder Fire Class A Class, B Class, C Class Capacity 4.5kg Body Material Mild Steel Usage/Application For Offices Certification ISI, CE Minimum Order Quantity 10	No.	1

34	10.0 kg DCP extinguisher Fire Extinguisher Type    ABC Dry Powder Capacity    10 Kg Extinguisher Design    Wall Mounted Fire Type    C, B, A Approvals    ISI Pressure Type    Stored Pressure Type	No.	1
35	6.8 kg Co2 extinguisher Capacity    6 Kg Fire Class    Class B Operating Temperature    -30 DegreeC to +60 DegreeC	No.	2
36	Refills for all type of extinguisher	No.	10
37	Fire and general alarm model	No.	1
38	SCBA connectors for refilling	No.	2
39	Fire men suit, (4 layer) Usage/Application    Fire Fighting Size    Free Size Brand    HI-CARE Certification    EN Certified Wear Type    Reflective Material    Aluminized Kevlar Number Of Layers    2 Layer,3 Layer,4 Layer OR As per Customer Requirment Color    Silver Gender    Unisex Gsm    460 gsm Temperature Bearing Capacity    1200C Features    Heat Resistant,hot oil steam Protection Wash Care    Handwash Product Type    Pants & Trousers	No.	26
40	Life lines, 30 mtr length, fire resistance.	No.	2
41	Fire axe Material    Mild Steel Usage/Application    Fire Fighting Type Of Axe    Fireman Handle Material    Wooden Hardness    50 HRC Color    Black	No.	2

42	Fire torch Brand Brightstar Battery Type Alkaline Body Material Plastic Certification UL Color Orange	No.	2
43	Dragger pump and tubes (10 Pcs) Type Portable Multi Gas Detector Brand Draeger Temperature Range As Per Tube Dimensions (W x H x D) 170 x 45 x 85 mm (6.7 x 1.8 x 3.3 in) Stroke volume 100 +-5 cm3	No.	1
44	fire wallet	No.	1
45	Hose coupling set male and female Usage/Application Fire Fighting Connection MALE/FEMALE CONNECTION Features 63MM DIA, FIRE HOSE COUPLING Nominal Size 63MM DIA Rubber Washer COUPLING WASHER	No.	1
46	Rescue Quoit Brand SHM Shipcare Material Polyester coated aluminum Color Orange Pattern Plain Rope Length 30 m	No.	10
47	Rocket parachute, 420gm, 12 ft,range 300mtr,30 sec (Model) Material HDPE Usage/Application Marine Safety Size 12 Inch Diameter 2 Inch Burn Time 15 Minutes Burn Colour Red Type Hand Held	No.	5
	LTA ( Line throwing apparatus) (Dummy) Brand PainsWessex Product Life 9 Years Approval SOLAS/MED and USCG compliant Range Between 230m and 250m	No.	1
48	Fire mockup up gradation for Advance firefighting as per DG Shipping (as per drawing)	No.	1

**\*Used- Should be in working condition for demonstration purposes.**

