



Government of West Bengal
DIRECTORATE OF INDUSTRIAL TRAINING
 Karigari Bhawan, B/7, Action Area-III (2nd Floor),
 New Town, Rajarhat, Kolkata-700160.

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Memo No. 5A-1/135/2018/795A

Date - 06/06/2018

Notice Inviting e-TENDER NO: DITWB/HQ (CPC)/NIT-01 (e -Tender)/ 2017-18

Name of the Work: Supply, Testing, Installation & Commissioning of Machinery / Equipment / Instrument etc. for Various Trade Courses at Different New Industrial Training Institutes throughout the state of West Bengal as per Tender Schedule Nos. A .

LIST OF WORKS

DITWB/HQ (CPC)/NIT-01 (e -Tender)/ 2017-18

Sl. No	Name of Work	Tender Inviting Authority	Tender Schedule No	Earnest Money Deposit (Rs)	Cost of Tender Document (`Rs)	Delivery Period	Source of fund
1	2	3	4	5	6	7	8
01	Supply, Testing , Installation & Commissioning of different Instruments, Shop Outfit & Equipment of different trade courses for various ITIs throughout the State of West Bengal.	DIT, West Bengal;	A	1,00,000/-	Nil	60 days	State Plan

1. INVITATION:-

Sealed e-Tenders (Electronic Tenders) are invited under **Two-Bid System** by the Director of Industrial Training, West Bengal, B/7, Action Area-III, 2nd Floor, New Town, Rajarhat, Kolkata-700160 on behalf of the Department of Technical Education, Training & Skill Development, Government of West Bengal for Supply, Testing , Installation & Commissioning of Machinery / Equipment / Instrument etc as indicated in the enclosed tender schedules (Bill of Quantities) for Various Trade Courses at Different New Industrial Training Institutes throughout the state of West Bengal from the manufacturers / their authorized distributors / authorized dealer/ traders etc holding valid licence for supply of equipments, instruments, machineries, etc in the field under the categories of workshop machinery / mechanical / electrical instruments / equipments etc.

Machinery / Equipment etc are to be installed & Commissioned also after supply is made.

The Bids are invited in two parts as under: -

- The Techno Commercial Bid consisting of all **Statutory Documents/Files and Non-Statutory Documents/My Documents and all technical details along with commercial terms and conditions.**
- The Price or Financial Bid (consisting of Bill Of Quantities/BOQ) indicating/offering item-wise price for the items mentioned in the Tender Schedules (containing list of items with detailed

specification).

Both Technical bid and Financial Bid are to be submitted concurrently duly digitally signed in the website <https://wbtenders.gov.in>.

2. INSTRUCTION RELATED TO TENDER DOCUMENTS:-

For participating in the tender the bidders shall not have to pay the cost of tender documents for the purpose of participating in e-tendering. Any bidder willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-Procurement system through logging on to website <https://wbtenders.gov.in> using the option —Click here to Enroll. Possession of Valid Class II/ Class-III Digital Signature Certificate (DSC) in the form of smart card/e -token in the Company's name is a prerequisite for registration and participating in the bid submission activities through this web site. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the website <https://wbtenders.gov.in> under the link—Information about DSC.

3. REQUEST FOR TENDER DOCUMENT:-

Intending Bidders can search and download NIT and other tender documents electronically by logging on to the website <https://wbtenders.gov.in>, using his Digital Signature Certificate (DSC). This is the only mode of collection of tender documents.

4. FOR SPECIAL ATTENTION:-

All Tenderers are to note that tenders containing any deviation from the terms and conditions and other requirement are liable to be rejected. The tender inviting authority reserves all rights to reject any or all the tenders without assigning any reason and split up the supply, if necessary and to accept the tender whole or part. Invitation of the tender shall under no circumstances create any legal right or otherwise in favour of the tenderer in case the tender is closed, withdrawn or cancelled before issuance of purchase order nor shall the inviting authority be liable to explain the reason of such closure, withdrawal or cancellation of the tender. The inviting authority reserves the right at the time of Contract award to increase or decrease the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions. The Bidder may substitute alternative standards with Brand names/models and/or catalogue numbers in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the technical specifications. Purchase will, however, be made following the existing purchase policy of the Govt. of West Bengal and its amendment(s) or addendum made from time to time.

Special Note : Order quantity in respect of issuance of total Purchase Orders may vary 25% (+) / 25%(-) of the tentative quantity as stated in the respective Tender Schedules attached with the Tender Document(NIT) on the basis of receipt of actual requirement of the Institutes. .

5. EARNEST MONEY / BID SECURITY DEPOSIT:-

- i) Earnest money amounting to Rs. 1,00,000/- to be remitted in favour the Director of Industrial Training, Technical Education, Training& Skill Development Department through ICICI Bank Payment Gateway as directed in F.D.'s Memo No: 3975-F(Y) dated 28.7.2016 (annexed with the NIT for kind perusal). The system of "Online receipt and refund of EMD of e-procurement through the State Govt. e-procurement portal" is to be followed mandatorily for deposit of EMD/ BID SECURITY related to e-procurement of the State Govt.
- ii) Also, refund of EMDs will be made as per procedures mentioned in F.D.'s Memo No: 3975-F(Y) dated 28.7.2016 (annexed with the NIT for kind perusal).

- iii) In the case of successful bidder, Earnest Money deposit will be released only after expiry of tender validity period / execution of purchase orders successfully and completely by the Bidder/satisfactory acceptance of the consignment by the consignees.
- iv) Registered S.S.I. Units of the State of WB/SSI units registered in MSME, WB/units having registered in NSIC shall be exempted from payment of earnest money for tenders. Exemption from depositing Earnest Money in terms of existing Govt. order may be considered if the request is uploaded with the copy of necessary valid/current document of original one. If required, Original copy is to be produced to the Tender Inviting Authority. Also, Validity of Registration certificate of SSI units is to be checked/verified with the concerned Govt. Portal. If it is not available through online necessary current certificate regarding validity of SSI Units issued by the concerned Department/Authority is to be produced to the Tender Inviting Authority/Tender Selection Committee.
- v) No interest on E.M.D. is admissible.

6 . STANDARDISATION OF ITEMS/BIS CERTIFICATION/I.S.I. CERTIFICATE:-

- i. Items, for which BIS or other specifications have been mentioned in the Tender Schedules (A & B) should be certified to be of the specified standard by the Bureau of Indian Standards (BIS), engraved in the body of the instruments and have the necessary valid licenses at the time of the supply orders. In cases of non-availability of BIS certification and valid license, a certificate from a Government recognized test house should be attached specifically certifying that the supplied item conforms to the IS standard as specified. If the specified IS/BIS standard has been superseded by a more recent standard, then the more recent standard will be considered by the Tender Selection Committee/Tender Inviting Authority.
- ii. In items requiring mandatory certification under the relevant law, the manufacturer should have the necessary up to date licenses/certifications from BIS and/or other statutory authorities as applicable. Non-compliance, if detected on a later date, will lead to summarily cancellation of the offer and penal provisions for fraudulent submission of tender will be invoked.
- iii. Calibration of equipment, wherever is necessary, must be done from a reputed test house at the expenses of the bidder and to be produced in original at the time of installation.
- iv. **"IMPORT LICENCE"** where it is applicable, duly attested photocopy of the Import Licence with up to date renewal from licensing authority must be submitted in case of Imported Items.

7. LANGUAGE OF TENDER:-

The tender shall be submitted in the prescribed form in English. All papers and correspondences in connection with the tender shall be in English.

8. VALIDITY:-

The validity of the offer shall be up to **365 days** from the last date of tender submission.

9. SCOPE OF WORK: -

Supply, Testing, Installation and commissioning is to be made at the Consignee's place as per Purchase Order.

10. SUBMISSION OF TENDER: -

All tenders must be submitted online as provided in Tender Schedule. Tenders will be opened in

presence of intending tenderers or their authorized representatives, if any.

General process of Submission-Tenders is to be submitted through online to the website stated in Clause- 2 in two folders at a time for each schedule, one is Technical Commercial Proposal/Bid & the other is Financial Proposal/Bid before the prescribed date & time using the Digital Signature Certificate (DSC). Virus scanned copy with duly Digitally Signed of the required documents are to be uploaded. The documents will get encrypted (transformed into non readable formats).

A prospective bidder may offer rate as per his or her choice for the items subject to fulfillment of conditions and conforming to the specification as laid down in the tender paper.

Both Technical bid and Financial Bid are to be submitted concurrently duly digitally signed in the website <http://wbtenders.gov.in>.

I. Technical Proposal:

The Technical Proposal should contain scanned copies of the following documents in further two covers (folders). In order to keep the uploaded file sizes minimum, scanning of the photocopy of the documents is desirable.

a) Statutory Documents/Files containing:

- i) Proof of payment of EMD through online towards Earnest Money Deposit (EMD) as prescribed in the NIT against each schedule (as the case may be). Exemption from depositing Earnest Money in terms of existing Govt. order may be considered if the request be uploaded with the copy of necessary valid/current document of original as mentioned in Clause 5 above along with copy of relevant Government Order in this regard **without fail**.
- i. Duly Filled in Application form as per Format given in Annexure I to be uploaded.
- ii. Notice Inviting Tender (NIT) should be Digitally Signed and Uploaded.
- iii. **“Make/Brand/Model with specification & description of the item for which quotation/offer is submitted by the Bidder”** consisting of all technical details (Information brochure, Product leaflet/catalogue, etc of the quoted items, as the case may be) along with other commercial terms and conditions, if any, should also be uploaded.

Tenders will be summarily rejected, if any item in the statutory documents/files is missing.

b) Non-Statutory Documents/My Documents Containing:

Submission of Non –Statutory Documents are Mandatory for the Tender. The requirements of the NSD/OID (Non Statutory Document/Other Important Documents) are given below in a table Format-A. The Bidders are hereby instructed to submit the NSD/OID Documents while submitting the Tender.

FORMAT-A

THE ABOVE STATED NON-STATUTORY SHOULD BE ARRANGED IN THE FOLLOWING MANNER

No.	Category Name	Sub-Category Name	Sub-Category Description	Format
A	CERTIFICATES	A1. CERTIFICATES	Copies of PAN Card, GST Registration, Professional Tax Registration, (if not applicable, reasons with supporting documents are to be uploaded positively)	PDF
B	SUPPLIER DETAILS	B1. COMPANY DETAILS 1	Copy of valid current TRADE Licence / Registration with the registrar of companies / Valid Authorization of Distributorship / Dealership from Manufacturer (as the case may be)	PDF
		B2. COMPANY DETAILS 2	An Affidavit to be Submitted by the Bidder that a full fledged technically supported Corporate office / field office exists in the State of West Bengal , which may be verified in due course, for providing guarantee service within the defect liability period.	PDF
C	CREDENTIAL	C1. CREDENTIAL 1	Self-Declaration -“Not Black listed by any Govt.(State & Central) organisations or not debaring from participation into Govt. tender”	PDF
		C2. CREDENTIAL 2	Copies of Past Working experience for executing similar type of works (Supply, Testing , Installation & Commissioning of machinery, equipment, Instrument, etc. at ITIs/ Polytechnics/ Engg. Colleges / Engg. establishments) for last three years 2014-15, 2015-16 and 2016-17.	PDF
D	FINANCIAL INFO	D1. P/L & BALANCE SHEET	Copies of Profit & Loss A/C and BALANCE SHEET for the 2014-15, 2015-16 & 2016-17 with duly audited/ certified by Chartered Accountant with valid membership registration No.	PDF
		D2. Turnover Criteria	Copy of a certificate from a registered Chartered Accountant having membership registration number in respect of “Average Annual Turnover for last three Financial Years(i.e. 2014-15, 2015-16 & 2016-17) must be Rs. 1.00 Crore.	PDF
		D3. Bank Solvency Certificate	Copy of proof of the Bank solvency certificate of at least 50.0 lakh in favour the Bidder issued by any Nationalized Bank.	
E	RETURNS	E1. COPY OF RETURNS	Copies of acknowledgement of Income Tax Return for last three Assessment Years 2015-16 & 2016-17 & 2017-18.	PDF
		E2. COPY OF RETURNS	Copies of acknowledgement of FORM 3CB (for Financial Years 2014-15, 2015-16 & 2016-17) & FORM 3CD (for Assessment Years 2015-16 & 2016-17 & 2017-18) issued by Income Tax Deptt., Govt. of India and certified by Chartered Accountant with valid membership registration No.	PDF
		E3. COPY OF RETURNS	Copies of acknowledgement of VAT Return for the FY 2016-17 and GST Return of the FY 2017-18 (last available),	PDF
		E4. COPY OF RETURNS	Copies of acknowledgement of Professional Tax Return for last consecutive three years 2014-15, 2015-16 & 2016-17 (if not applicable, reasons with supporting documents are to be uploaded positively)	PDF

NOTES

i). All copy/copies (as the case may be) should be uploaded by the authorized person/competent authority/proprietor of the Bidding organization.

- ii). If, after opening of the financial bid, it comes to the knowledge of Tender Inviting Authority that the supplier has been Black listed/debarred from participation into Govt. tender by any Govt. (State & Central) organizations, the bid will be **rejected** forthwith.
- iii) Original copy of the said Affidavit is to be submitted as and when required by the Tender Inviting Authority.
- iv) Failure of Submission of Any One of the Above Mentioned Documents Tenders will be summarily rejected.

II. Financial Proposal/ Financial Bid:

The financial proposal should contain the document “Bill of Quantities (BOQ)” in one cover (folder). The Tenderer is to quote the rate online through computer in the space marked for quoting rate in the BOQ only and the same is to be signed digitally by the contractor. Penalty for suppression/distortion of facts: If any tenderer fails to produce the original hard copies of the documents uploaded or any other documents on demand by the Tender Inviting Authority within a specified time frame or if any deviation is detected in the hard copies from the uploaded soft copies or if there is any suppression, the bidder will be suspended from participating in the tenders on e-Tender platform for a period of 03 (Three) years. In addition, his/her user ID will be deactivated and Earnest Money Deposit will stand forfeited. Besides, the Technical Education, Training and Skill Development Department may take appropriate legal action against such defaulting bidder.

During the tender evaluation process, the Technical Bid will be opened first. Whether bidders are technically qualified, will be assessed by the Tender evaluation Committee, Technical Education, Training and Skill Development Deptt. on the basis of mandatory documents (**Statutory Documents & Non-Statutory Documents**) submitted by Tenderer. Those Tenderer who will be qualified in this way and then only their Financial Bid will be opened. The Financial Bid of those Tenderer failing to meet the essential requirements of participating in the tender will not be opened and be rejected.

11. DATE & TIME SCHEDULE

Sl. No.	Items	Date(s)
1.	Date of uploading of N.I.T. Documents (online)	06/06/2018 at 3.00 pm
2.	Documents download start date (Online)	06/06/2018 at 5.00 pm
3.	Date of Pre Bid Meeting with the intending bidders in the Conference Room at Karigari Bhawan, 2 nd Floor, B/7, Action Area-III, New Town, Rajarhat, Kolkata-700160	13/06/2018 at 12.00 Noon.
4.	Bid Submission start date (On line)	15/06/2018 at 11.00 am
5.	Bid Submission closing (On line)	06/07/2018 at 5.00 pm
6.	Bid opening date for Technical Proposals (Online) (Techno Commercial Bid)	09/07/2018 at 11.30 am
7.	Date of uploading list for Technically Qualified Bidder (online) (Financial Bid)	To be notified later
8.	Bid opening date for Financial Proposals (Online)(Financial Bid)	To be notified later

12. OPENING OF TENDER

a. Opening and evaluation of Technical Bid-

- i. Technical Bid will be opened by the Tender Evaluation Committee electronically from the website stated in Clause 2, using their Digital Signature Certificate on the date already mentioned under Clause 12 at the office of the Commissioner, Tech. Edu., Trg. & Skill Dev. Deptt., whose address has been mentioned in Clause 1.

- ii. Intending Bidders may remain present at the venue stated above if they desire so.
- iii. Cover (Folder) for Statutory Documents will be opened first and if found in order, cover (Folder) for Non-statutory Documents will be opened. If there is any deficiency in the Statutory & Non-Statutory Documents, the tender will summarily be rejected.
- iv. Decrypted (transformed into readable formats) documents of the Non statutory Cover will be downloaded, and evaluated for eligibility.
- v. Pursuant to scrutiny and decision after evaluation the summary list of eligible tenders will be uploaded in the web portals.
- vi. While evaluation the tender inviting authority may summon the Bidders and seek clarification/information or additional documents or original hard copy of any of the documents already submitted & if these are not produced within the stipulated time frame, their proposals will be liable for rejection.
- vii. Tender Evaluation Committee will scrutinise the specifications of the quoted items. Specifications as mentioned in NIT will be accepted and then only their "Financial Bid" will be opened.

b. Opening and evaluation of Financial Proposal/ Bid-

- i. Financial proposal/ Bid of the Bidder found technically eligible, will be opened electronically from the web portal stated in Clause 2 on the prescribed date, by the Tender Evaluation Committee.
- ii. The encrypted copies will be decrypted and the rates will be read out before to the contractors remaining present at that time.
- iii. After evaluation of the Financial Proposal/Bid the Tender Evaluation Committee may upload the final summary result containing inter-alia, name of the tenderers and the rates quoted by them against each item provided the said Committee is satisfied that the rates obtained are fair and reasonable and there is no scope of further lowering down of rate.

13. EVALUATION OF TENDER

- i. The purchaser will evaluate and compare the quotations determined to be satisfactorily responsive i.e. the quotations which conform to the laid down terms and conditions and specifications.
- ii. The Bidder shall quote for each item of a tender schedule separately.
- iii. The quotations would be evaluated separately for each item out of at least three quoted rates.

14. DELIVERY & Installation

Delivery and installation of the consignment is to be made at the Consignee's place (list enclosed) within the stipulated date as will be mentioned in the purchase order and the same has to be tested, Installed & commissioned there as the case may be.

Schedule of Delivery/Completion of Commissioning/Installation shall be 60 days from the Date of issue of Purchase Order and further extension of delivery Date, if needed, would be at the discretion of the Tender Inviting Authority.

Tenderers from other state shall therefore be responsible in obtaining relevant permission like Way-Bill etc. from the concerned authority of the Govt. for inter-state movement of their goods and quote price should include all the cost involved for the purpose. Necessary administrative help will be given, if required.

Transit Insurance, if required, will be borne by the supplier till the supply reaches the destination.

15. ELIGIBILITY CRITERIA

(a) Offers for the items will be accepted only from the reputed manufacturers or their authorized distributors/authorized dealers/traders, having credentials of similar work in educational institute within last three financial years, for the tendered item, copy of which must be attached with the quotation and intending tenderer must have to produce the **clientele list he served during last 03(three) financial years** with documentary evidence.

(b) Average annual turnover for last three financial years should be Rs 1.00 crore and certificate from registered Chartered Accountant under his sign & seal must be submitted along with Copies of acknowledgement of FORM 3CB (for **Financial Years 2014-15, 2015-16 & 2016-17**) & FORM 3CD (for **Assessment Years 2015-16 & 2016-17 & 2017-18**) issued by Income Tax Deptt., Govt. of India and certified by **Chartered Accountant with valid membership registration No.**

16. PRICE

All tender prices shall be quoted for delivery up to the consignee's point inclusive of all charges (taxes, freight, duties etc). The percentage of GST to be mentioned separately in the specific cell of BOQ. The rate should be quoted inclusive of packing, installation and commissioning charges also in addition to the above. The evaluation of prices will be made based on the total value quoted inclusive of all charges (GST, taxes, freight, duties, packing, installation, commissioning, entry tax, octroi, etc.). The prices quoted shall be written both in figures and words.

The rates quoted by the Bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account. The prices shall be quoted in **Indian Rupees only**.

Rates shall be valid throughout the period to be covered by the contract to be executed with successful tenderers along with any extensions as may be made by the competent authority from time to time.

Special Note: Rate for Annual Maintenance Contract of three years is to be quoted on per year basis (Financial year is to be mentioned specifically) inclusive of all concerned charges after the guarantee period provided by the bidder in Indian Rupees only. The percentage of GST is to be mentioned separately in the specific cell of BOQ. The rate for Comprehensive AMC as stated above may be restricted to 10% of the cost of purchase / value of the item.

17. ACCEPTANCE OF MATERIAL/INSPECTION/QUALITY ASSURANCE

After issuance of purchase order in favour of successful tenderers, the latter have to make necessary arrangement for inspection and testing of the consignment by the tender inviting authority or his representative, if required, at Govt. selected/ empanelled laboratory, Govt. approved Test Houses, BIS Labs, etc. The Inspected cleared consignment along with the test certificate in original issued by the authority of above mentioned Test House/Labs or original test certificate from the manufacturer, as the case may be, will be accepted by the consignee at the consignee's place.

18. SECURITY DEPOSIT/PERFORMANCE SECURITY

After acceptance of the consignment, **SECURITY DEPOSIT / PERFORMANCE SECURITY @ 5%** of the purchase order value is to be submitted in the form "Performance Bank Guarantee" on any nationalized bank acceptable to the purchaser by all categories of successful Bidder at the time of submission of Bills and the same will be retained as Security Deposit till the end of the Guarantee / Warranty period for smooth performance of the material / item supplied, failing which the Security Deposit will be forfeited. The Security Deposit shall be valid till 90 days after the date of expiry of defect liability period or Guarantee / Warranty period as the case may be. Prescribed format of Security Bank Guarantee will be

supplied at the time of issuance purchase Order. The Security Deposit shall be refunded after the expiry of Guarantee / Warranty period or the defect liability period on request to be made by the successful tenderers in case no defect is reported otherwise it will be forfeited, if defects are not rectified. No interest on security deposit is admissible.

19. PAYMENT

Payment will be made after execution of due supply as ordered subject to:

- i. Supply of the materials as per specification as provided in the tender document or accepted by the Tender Inviting Authority.
- ii. Installation & Commissioning and Testing, if needed, up to the satisfaction of the competent authority.
- iii. Supply of the materials/items within the period as specified in the purchase orders.
- iv. No additional charges will be paid other than the quoted price.
- v. According to West Bengal Govt. Treasury Rules actual payment will be made after successful completion of delivery.

20. GURANTEEE

The guarantee period shall be for a minimum of 12 months or higher period as may be provided by bidder / manufacturer from the date of acceptance. The tenderer shall remain responsible without cost to buyer for all defects in materials/spares and workmanship which may develop in normal use and which have been called to the attention of the successful Tenderers. Prior to expiry of guarantee period, it will be the responsibility of the tenderers to take up the matter with their respective manufacturers for fulfilment of the guarantee provisions. In case of failure on the part of the tenderers to remedy the defects/replace the materials within reasonable period (**seven days**) in spite of due Intimation by the concerned Principal / Superintendent, Industrial Training Institute , Institute Authority reserves the right to remedy the defects / replace the materials at the cost and responsibility of the tenderers without further notice and the same shall be deducted from his security deposit.

In addition, normal warranty as provided by the original equipment manufacturer has to be extended.

21. LIQUIDATED DAMAGES

Liquidated Damages shall be levied in case of delay in the delivery of goods or completion of Works and shall be levied at the rate of 2% per month of delay or part thereof. Liquidated Damages will be subject to a ceiling of 10% of the contract price and shall be levied by way of Pre-estimated damages and not by way of penalty.

The Tender Inviting authority may consider the issue of Liquidated Damages in case of extension of delivery date.

22. INSURANCE

The Goods/Works under supply must be fully insured against any loss or damages during transit or storage or during construction at supplier's cost.

23. FORCE MAJEURE

There could be circumstances/events where the supplier/contractor may not be in a position in spite of his best efforts, to meet the delivery/completion schedule due to events beyond their control and not foreseeable such as wars or revolutions, fires, floods, epidemics, natural calamities, quarantine restrictions and freight embargo etc. In such cases suitable delivery extensions based on merit of the case may be

granted for arranging the delivery of goods or completion of works. Also the supplier shall not be made liable for forfeiture of performance security, liquidated damages or termination of contract as per provisions made in the contract elsewhere.

24. PATENT RIGHTS

The supplier/contractor should have proper and valid license/right to the use of and/or supply the product/services for their design, material or manufacturing and its patent, trademark or industrial design rights in the purchaser's country. The supplier/contractor should safeguard the interest of the purchaser from any third party claim towards the infringement of same and indemnify the purchaser.

25. LAWS GOVERNING THE CONTRACT

- i. The contract shall be governed by the laws of the Union of India in force.
- ii. The courts of the place, from where the acceptance of tender has been issued, shall alone have jurisdiction to decide any dispute arising out of or in respect of the contract.
- iii. Irrespective of the place of delivery, the place of performance or place of payment under the contract or the place of issue of advance intimation of acceptance of tender, the contract shall be deemed to have been made at the place from where the acceptance of the tender has been issued.

26. ARBITRATION

In the event of any question, dispute or difference arising under the contract conditions of Contract, or any special conditions of contract, or in connection with the contract (except as to any matters the decision of which is specially provided for by these or the special conditions) the same shall be referred to the sole arbitration of an officer, from the Government Department other than the department which decided the contract as per prevailing norms of Govt. of West Bengal, having sufficient knowledge of law, appointed to be the arbitrator of the purchaser. The decision of the arbitrator shall be final and binding on both the parties to this contract.

In the event of the arbitrator dying, neglecting or refusing to act or resigning or being unable to act for any reason, it shall be lawful for the purchaser to appoint another arbitrator in place of the outgoing arbitrator in the manner aforesaid.

It is further a term of the contract that no person other than the person appointed by the purchaser as aforesaid should act as arbitrator and if for any reason that is not possible, the matter is not to be referred to arbitration at all. Arbitrator may, from time to time, with the consent of all parties to the contract enlarge the time for making the award. In pursuance of a reference, the assessment of the costs incidental to the reference and award respectively shall be at the discretion of the arbitrator.

Subject to the aforesaid, the Arbitration and Reconciliation Act, amended up to date and the rules there under and any statutory modification thereof for the time being in force shall be deemed to apply to the Arbitration proceedings under the clause. The arbitrator shall be requested to give reasoned award. The venue of arbitration shall be the place from which formal Acceptance of Tender is issued or such other place as the purchaser at his/her discretion may determine.

27. FRAUD AND CORRUPTION

The Bidders, Suppliers, Contractors and Consultants in the contracts require to observe the highest standard of ethics during the procurement and execution of this contract by not being engaged in Corrupt, fraudulent,

collusive, coercive or obstructive practice as generally defined. Non Compliance of the above will lead to rejection of proposal for award/declaring a firm or individual ineligible etc. even for future bidding.

28. AWARD OF CONTRACT

The purchaser shall award the contract, within the validity period of tenders, to the bidder who meets the tender conditions in all aspects, has the necessary technical and production capabilities and financial resources and whose bid is substantially responsive to the tender conditions and has offered the lowest evaluated cost. The purchaser can, if so desired, depute a team of 3-4 technical experts to the premises of manufacturer to whom the contract is proposed to be awarded to satisfy itself that the manufacturer has the capability to produce the required quality. The terms of the accepted offer shall be incorporated in the purchase order.

29. TERMINATION FOR DEFAULT

Tender Inviting Authority may without prejudice to any other remedy or right of claim for breach of contract, by giving not less than 30 days' written notice of default sent to the Successful Tenderer, terminate the Contract in whole or in part if i) the Successful Tenderer materially fails to render any or all the services within the time period (s) specified in the Contract or any extension thereof granted by Tender Inviting Authority in writing and fails to remedy its failure within a period of thirty (30) days after receipt of the default notice from Tender Inviting Authority, ii) the Successful Tenderer in the judgment of Tender Inviting Authority has engaged in corrupt or fraudulent practices in competing or in executing the contract and iii) the project (maintenance support) is not carried out according to specification due to deficiency in service as per terms of the contract. **In such case Tender Inviting Authority shall forfeit the Security Deposit of the Tenderer and may black-list the Successful Tenderer.**

30. PENALTY FOR FORMATION OF CARTEL OR FURNISHING OF FRAUDULENT/MISLEADING DOCUMENTS

If, during the tender process or at any stage during the validity of the tender period, it is found that a tenderer(s) has formed a cartel in whatsoever form or name to fix up the rates or suppliers to the detriment of the fairness of the tender process, penal measures shall be initiated. Similar penal measures shall also be initiated against those tenderers who have submitted false/ misleading/ fraudulent documents or made incorrect declarations. The penal measure will be

Forfeiture of Earnest Money / Forfeiture of Performance Guarantee / Cancellation from the approved list of suppliers and debarment from further supply orders / Black listing from all Departmental tenders (called by the TET & Skill Dev. or others) of the Tenderer, the Principals of the firm(s) and the concerned distributor(s) for a period of five years.

31. APPEAL

Appeal against the decision to impose such a penalty will lie with the Tender Evaluation Committee. Review against the decision of the Tender Evaluation Committee will lie with the Tech. Edn., Trg. & Skill Dev. Deptt., Govt. of WB. The Secretary will be the appellate authority within the Department of Tech. Edn., Trg. & Skill Dev. Deptt., Govt. of West Bengal. Before imposing any penalty as per clauses mentioned above, the concerned supplier may appeal to the Tender Inviting Authority citing the proper reasons for non- imposing the penalty as stated.

32. PENALTY CLAUSE

A. In case of supply of the sub- standard items, any such items determined by the appropriate authority will not be accepted and the payment for such items will not be made to the supplier.

B. Debarment from participation in next tender processes of the Technical Education, Training and Skill Development Department. The tender selection committee reserves the right to declare a firm/Company blacklisted for five years due to the following reasons:

If the supplier

- i. Withdraws from agreement after being the “Lowest Quoted Tenderer”
- ii. Failure in supply within stipulated period.
- iii. For supply of substandard items within tender period as determined by the Competent Authority.
- iv. Submits false or fabricated documents for participating in the tender, if proved later on.
- v. Tenderer who have quoted absurdly high or low rate in the opinion of Tender selection Committee, with the intention to vitiate the tender process.
- vi. Submission of tender for the product(s) for which the concerned company has been blacklisted either by the state Government other State/Central Government Organization.
- vii. Submission of tender during the period of blacklisting of Concern/Company either by Tender Inviting Authority or by any State Government or by other State/Central Government.

C. The following Financial Penalties for deficiencies in services/supplies during the period of validity and its subsequent extensions may be imposed:

Forfeiture of Earnest Money Deposit/Forfeiture of Performance Bank Guarantee.

33. BANKRUPTCY

If the Successful Tenderer becomes bankrupt or has a receiving order made against him or compound with his creditors or being a corporation commences to be wound up, not being a voluntary winding up for the purpose only or amalgamation or reconstruction, or carries on their business under a receiver for the benefit of their creditors or any of them, Tender Inviting Authority shall be at liberty to **terminate the engagement** forthwith without any notice in writing to the Successful Tenderer or to the liquidator or receiver or to any person in whom the Successful Tenderer may become vested and without any compensation to give such liquidator or receiver or other person the option of carrying out the engagement subject to their providing a guarantee for the due and faithful performance of the engagement up to an amount to be determined by Tender Inviting Authority.

34. AMENDMENT OF BID DOCUMENT

At any time before the deadline for submission of bids, Tender Inviting Authority for any reason, whether at its own initiative or in response to the clarifications requested by bidders may modify the bid document by amendment thereto. All bidders who have participated the bid document should follow the notification of the amendment, and such modification will be binding on them.

35. INCIDENTAL SERVICES

The supplier shall be required to provide any or all of the following services, including additional services, if any, free of cost:

- a. Performance or supervision of the 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 detailed ‘Operations and Maintenance Manual’, ‘Spare Parts Manual’, ‘Instruction Manual’, ‘Electrical Circuit Diagram’, ‘Hydraulic Circuit Diagram’ etc. (Two Set Each) for each appropriate unit of supplied goods (especially for Machineries).
- 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, operation, maintenance and/or repair of the supplied Goods.

36. SPECIAL TERMS AND CONDITIONS

While tenders are under consideration, tenderers and their representatives or other interested parties shall refrain from contacting by any means any persons or representatives of the buyer on matters relating to the tender under study. The buyer if necessary may request for clarification of tender in writing. After the public opening of the tenders, information relating to examination, clarification and evaluation of tenders and recommendations concerning awards shall not be disclosed to bidders or other persons not officially concerned with this process until the successful bidder is notified of the award of the contract.

37. SIGNING of CONTRACT/AGREEMENT

- i. At the same time as the Tender Inviting Authority/Purchaser notifies the successful bidder that their bid has been accepted, the Purchaser will send the bidder the Prescribed Contract Form provided in the bidding documents, incorporating all agreements between the parties.
- ii. Within 07 days of receipt of the Contract Form, the successful bidder shall execute an agreement with the Purchaser/Tender Inviting Authority or his representative.

Sd/-

Director of Industrial Training
TET & SD Deptt.

CONTRACT FORM

THIS AGREEMENT made on theday of....., 20..... Between -----
---- (hereinafter called "the Purchaser") of the one part and
..... (*Name of Supplier*) having its
registered office at (Address of the
supplier)..... (hereinafter
called "the Supplier") of the other part:

WHEREAS the Purchaser is desirous of procuring -----
(*Brief Description of the machines and Services*) and has accepted a bid by the Supplier for the supply of
those goods and services in the sum of(*Contract Price in Words and
Figures*) (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 be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) The Tender Schedule submitted by the Bidder
 - (b) The General Technical Specifications
 - (c) The Notice Inviting e-TENDER NO: indicating General& Special Conditions of Contract
 - (d) The Purchaser's Notification of Award
 - (e) The Performance Statement of the Supplier
 - (f) The Earnest Money Deposit / Bid Security
 - (g) The Security Deposit / Performance Security
3. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants 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.

A brief particular of the goods and services which shall be supplied/ provided by the Supplier is as under:

SL NO	BRIEF DESCRIPTION OF GOODS & SERVICES	QUANTITY TO BE SUPPLIED	UNIT PRICE	TOTAL PRICE	DELIVERY TERMS
TOTAL VALUE:					
DELIVERY SCHEDULE:					

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, Sealed and Delivered by the said -----, (For the Purchaser)

In the presence of:.....

Signed, Sealed and Delivered by the said..... (For the Supplier)

In the presence of:.....

ANNEXURE - I

APPLICATION

RE: E-TENDER FOR PROCUREMENT OF Equipment, Machineries, etc. AS PER TENDER SCHEDULE NOS. A & B (CONTAINING LIST OF ITEMS WITH DETAILED SPECIFICATION).

NIT No.

1. Name and address of Bidder/ Firm/ Agency/ :
Company and Telephone/ **Cell phone Number and**
e-mail ID
2. Registration No. with ROC/ Trade Licence No./ :
Distributorship No./ Dealership No./ SSI Unit No.
with Date
3. Category (Manufacturer/ Dealer/ Distributor/ :
Trader/ SSI unit)
4. Name, Designation, Address and Telephone No. of :
Authorized Signatory
5. Please specify as to whether Tenderer/ Bidder is :
sole proprietor/ Partnership firm/ Private or
Limited company
6. Name, Address and Telephone No. of Directors/ :
Partners
7. Name & Address of the Banker :
.....
8. Details of Earnest Money Deposit :

Name of the Tender Schedule applied for participation in the Tender	Details of Earnest Money Deposit through online transfer	Amount (in Rs.)	Date of Issue	Name of issuing Bank & Branch

9. Any other information :
10. Declaration by the Bidder :

This is to certify that I/We before signing this tender have read and fully understood all the terms and condition contained herein and undertake myself/ourselves to abide by them.

Signature of the Bidder

(Name & address of the Bidder with Seal)

Tender Schedule - A

List of Instruments & Equipments of the different Trades

Delivery points: Various Govt. ITIs / ITCs throughout the State of West Bengal

Sl. No.	Name & Specifications of the items	Item Code	Tentative Quantity
1	Combination Set 30 cm. Three measuring heads are attached to the stainless steel rule (blade), allowing versatile measurements on various types of work pieces. Square head — Used to set the rule at 90 degrees or 45 degrees to an edge of a work piece. Center head — Used to locate centres of round work pieces. Protractor head — Used to set the rule at a desired angle to an edge of a work piece. Also used for measuring angles. The measuring heads are hardened. Economy sets not including a protractor head are also available.	FT64	40 Nos.
2	Micrometer 0 – 25 mm outside. Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01 mm of graduation, Accuracy of ± 0.002 mm.	FT65	40 Nos.
3	Micrometer 25 – 50 mm outside. Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01 mm of graduation, Accuracy of ± 0.003 mm.	FT66	60 Nos.
4	Micrometer 50 – 75 mm outside. Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01 mm of graduation, Accuracy of ± 0.003 mm.	FT67	40 Nos.
5	Micrometer inside 25 - 50 mm with extension rods. Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01 mm of graduation, Accuracy of ± 0.003 mm.	FT68	20 Nos.
6	Vernier caliper 15 cm FEATURES : Measures OD (outside diameter), ID (inside diameter), depth, and steps. The small vernier face angle (14°) provides easy reading. Dual reading scales on vernier. (metric/inch and inch models only) Lock screw for holding the sliding jaw position. Carbide-tipped jaw type callipers are also available. Supplied with vinyl holster in fitted carton. Except 600mm / 24" models are carton only. 1000mm / 40" supplied in wooden case. Technical Data Graduation: 0.05mm, 0.05mm (1/128") or .001" (1/128") High accuracy type : 0.02mm or 0.02mm (.001")	FT69	20 Nos.
7	Vernier height gauges 30 cm. FEATURES The Light Weight Height Gage is designed for scribing from a vertical base or for small parts. Stain chrome finished scales for glare-free reading. Beam and slider are made of stainless steel. Carbide-tipped scriber is provided. Standard Scriber Provided Carbide-tipped scriber (900173) and scriber clamp (901338)	FT70	20 Nos.
8	Vernier bevel protractor. FEATURES : High-precision angle gage for accurate angle measurement of	FT71	20 Nos.

	<p>machines, moulds and jigs.</p> <p>Can be attached to height gages.</p> <p>Technical Data</p> <p>Graduation: 5min. (0°- 90°- 0°)</p> <p>Accuracy Vernier: ±5'</p> <p>Straightness $[(.00016" + (.00005 \times L/2))"]$</p> <p>Parallelism $[(.00016" + (.00005 \times L/2))"]$</p> <p>L = Length in inch</p> <p>Diameter : 2.56" / 70mm</p> <p>Universal Bevel Protractor Accessories and Parts</p> <p>187-103 : 12" Blade.</p> <p>187-104 : 6" Blade.</p> <p>187-105 : Acute angle attachment</p> <p>950749 : Clamp box for Inch Height Gages</p> <p>950750 : Clamp box for Metric Height Gages</p>		
9	<p>Slip Gauge as Johnson metric set.</p> <p>Metric Set , 87 pieces in a box with workshop grade</p> <ul style="list-style-type: none"> • Highly accurate, very low deviation from flatness, surface finish & nominal length • High resistance to wear & dimensionally stable • Superior wringing quality • Each gauge block is marked for size & serial number <p>Material- Ceramic/carbide/steel</p>	FTD1.	20 Sets
10	<p>Gauge plug single 3 ended 5 to 55 by 5 mm. Set of 11 pieces.</p> <p>Manufactured according DIN 2245, 2246 and 2247.</p> <p>with Go and No Go on one handle, over 70 mm in two parts. Prices are for H7 plug gauges with Go and No Go ends in hardened steel.</p>	FTD4.	20 Sets
11	<p>Dial test indicator .01 mm on stand</p> <p>FEATURES :</p> <p>Dial gages with a large-diameter (78mm / 3.07") graduation face to ease reading. All types come with limit pins and an outer frame clamp as standard.</p>	FTD6	20 Nos.
12	<p>Dial vernier calliper 0 – 200 mm LCO 0.05 mm. (Universal type).</p> <p>New designed dial movement for ultra smooth sliding and high shock protection.</p> <p>Can measure OD, ID, depth, and steps.</p> <p>Lock screw for dial bezel and for holding the sliding jaw position .</p> <p>Models available with carbide-tipped OD and ID jaws.</p> <p>Supplied in fitted plastic case.</p>	FTD21.	20 Nos.
13	<p>Depth micrometer 0-25 mm. 0.01 mm.</p> <p>Ø4mm measuring rod.</p> <p>With measuring rod clamp.</p> <p>With carbide-tipped measuring rod model is available.</p> <p>With ratchet stop for constant force. Ø4mm measuring rod.</p> <p>With measuring rod clamp.</p> <p>With carbide-tipped measuring rod model is available.</p> <p>With ratchet stop for constant force. Ø4mm measuring rod.</p> <p>With measuring rod clamp.</p> <p>With carbide-tipped measuring rod model is available.</p> <p>With ratchet stop for constant force.</p>	FTD23	20 Nos.
14	<p>Vernier calliper 0-150 mm. L.C. 0.02 mm.</p> <p>FEATURES :</p> <p>Measures OD (outside diameter), ID (inside diameter), depth, and steps.</p> <p>The small vernier face angle (14°) provides easy reading.</p> <p>Dual reading scales on vernier. (metric/inch and inch models only)</p>	FTD24.	20 Nos.

	<p>Lock screw for holding the sliding jaw position. Carbide-tipped jaw type callipers are also available. Supplied with vinyl holster in fitted carton. Except 600mm / 24" models are carton only. 1000mm / 40" supplied in wooden case.</p> <p>Technical Data High accuracy type: 0.02mm or 0.02mm (.001")</p>		
15	<p>Digital Micrometer 0 – 25 mm outside. L.C. 0.001 mm. FEATURES : Technical Data Accuracy : Refer to the list of specifications. Resolution : 0.001mm or .0005"/0.001mm Flatness : 0.3µm/.000012" Parallelism : 2µm/.00008" Measuring faces : Carbide tipped Display : LCD Battery : SR44 (1 pc.), 938882 Battery life : Approx. 3 years under normal use (1 year for 15-30mm / .6 - 1.2" range model)</p>	FTD25.	20 Nos.
16	<p>Comparators stand with dial indicator LC 0.01mm : Standard 0.01mm graduation dial gauges having an outer frame with an outside diameter of 57mm. All types come with limit pins and an outer frame clamp as standard. The outer clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools. Secured adhesion between the outer frame and crystal as well as the use of an O-ring ensure countermeasures against water and oil permeation via the front face. The stem spindle is made of high-strength quench-hardened stainless steel which resists strenuous use. A carbide contact point is used. The grand gear uses stainless steel that is resistant to wear and deformation. Application of a hard coating on the surface of the crystal makes the gauge highly scratch- and chemical-resistant.</p>	FTD26.	20 Nos.
17	<p>Digital Vernier calliper 0-150 mm. L.C. 0.001 mm.(Optional) Technical Data : Resolution : 0.01mm or .0005"/0.01mm Repeatability : 0.01mm / .0005" Display : LCD Length standard : ABSOLUTE electromagnetic induction linear encoder Max. response speed : Unlimited Battery : Solar battery* Dust/Water protection level: IP67 *Can be used continuously above 60 lux ambient illumination. Function Origin-set, inch/mm conversion (inch/mm models) Alarm: Counting value composition error</p>	FTD29	20 Nos.
18	<p>Ohm Meter; Series Type : -50/2000-ohm analog ,Large size precision in wooden housing , accuracy $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment, with knife edge pointer. (Multi range scale)</p>	EL55A	40 Nos.
19	<p>Ohm Meter; Shunt Type : -50/2000-ohm analog, Large size precision in wooden housing ,</p>	EL55B	40 Nos.

	accuracy $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment, with knife edge pointer. (Multi range scale)		
20	Multi Meter (analog) 0 to 1000 M Ohms : (Analog, portable type) AC/DC .O-1000V, 0-10A	EL56	40 Nos.
21	Digital Multi Meter : LCD Digital Multi Meter with leads DC 200mv - 1000v, 0 – 10A & AC 200mv- 750v , 0-10A, resistance 0-20 M Ω with diode test, continuity check and 3.5 digit	EL57	120 Nos.
22	A.C. Voltmeter M.I. 0 –500V A.C : A.C. Voltmeter M.I. 0 –250 - 500V A.C, Analog, portable box type, Large size precision in wooden housing with knife edge pointer and anti parallax mirror scale of 140mm length accuracy $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment.	EL58	20 Nos.
23	Milli Voltmeter centre zero 100 – 0 – 100 m volt : Analog, portable type, Large size precision in wooden housing , with knife edge pointer and anti parallax mirror scale of 140mm length. $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment.	EL59	20 Nos.
24	D.C. Milli ammeter 0 -500m A : 0 - 500 mA, MC Type, Large size precision in wooden housing, $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment.	EL60	20 Nos.
25	Ammeter MC 0-5 A : MC Type, Large size precision in wooden housing, $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment.	EL61A	20 Nos.
26	Ammeter MC 0- 25 A : MC Type, Large size precision in wooden housing, $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment.	EL61B	20 Nos.
27	A.C. Ammeter M I type 0 - 1 A Analog, Large size precision in wooden housing , accuracy $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, with knife edge pointer and anti parallel mirror scale of 140mm length, Horizontal type, for table experiment.	EL62A	20 Nos.
28	A.C. Ammeter M I type 0-5 A Analog, Large size precision in wooden housing , accuracy $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, with knife edge pointer and anti parallel mirror scale of 140mm length, Horizontal type, for table experiment.	EL62B	20 Nos.
29	A.C. Ammeter M I type 0-25 A, Analog, Large size precision in wooden housing , accuracy $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, with knife edge pointer and anti parallel mirror scale of 140mm length, Horizontal type, for table experiment.	EL62C	20 Nos.
30	Kilo Wattmeter 0-1-3 kw : Dynamometer type, 0-1.5-3KW, pressure coil rating- 240v/440v, current rating-5A/10A Analoge, Large size precision in wooden housing , accuracy $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Scale - DPDC , Horizontal type, for table experiment.	EL63	20 Nos.
31	A.C. Energy Meter, Single phase 5 amp. : AC Single Phase, 5 - 10 A, 240 V, 50 Hz, induction type, 900 Rev/Kwh	EL64A	20 Nos.
32	A.C. Energy Meter, Three Phase 15 amp : AC Three Phase, 5 - 15 A, 415 V, 50 Hz, induction type, 900 Rev/Kwh	EL64B	20 Nos.
33	Power Factor Meter : Analog portable box type Electro dynamo meter instruments used in single phase /three phase, current rating 5/10A, voltage rating 125/250/500v. 1-0-1 lead and lag. Horizontal type, for table experiment.	EL65	20 Nos.
34	Frequency Meter : vibrating reed type 40 to 55 Hz, 110/220/440 v Ac ,Large size precision with engineering plastic housing .Horizontal type, for table experiment.	EL66	20 Nos.

35	Flux meter : 0.1 - 200 μ T(micro Tesla), Accuracy : \pm (3% rdg + 3dgt) at 50 Hz/60Hz, Frequency Response : 30Hz - 400 Hz, Max Hold/ Data Hold, Battery : 9 volt X 1, Over range : "OL" display, sampling Rate : 2.5 times/sec.	EL67	20 Nos.
36	Wheat Stone Bridge with galvanometer and battery : Range : 0.001 ohms to 11.11 Mega ohm, provided with manganine / constantan coil with accuracy $\pm 0.05\%$,	EL68	20 Nos.
37	DC Power Supply 0-30V, 2 amp : Input : 200-240AC Volts. continuously variable , digital readout with LED display for current and voltage . Ammeter & Voltmeter provided on both side with sophisticated cabinet consisting of Terminal Box .	EL70	20 Nos.
38	1 Phase Variable Auto Transformer : Input voltage 240 V Ac , 50 Hz , out put Voltage 0 - 270 V Ac , 10Amp & 0-5Amp. (Air cooled).	EL72	20 Nos.
39	Battery Charger : Input : 240 volt , 1phase AC, 50Hz, Output voltage : 12 V ,24 V, 5Amps to 20 Amps . With suitable ammeter , voltmeter , selector switch , Battery connecting Terminals , MCBs.	EL73	20 Nos.
40	Fire Extinguisher CO2 Specification :- Capacity : 22.5Kg, Discharge time : 20sec - 60sec, Gas storage pressure-50kgf/Sq.cm., Operation method : Upright, Tem. Range: 27 \pm 5 degree C, Test pressure : 250 kgf/sq.cm.	EL77	40 Nos.
41	Tachometer : Digital Type, RPM- 2 to 99999 rpm, resolution - 0.1 rpm(2 to 999.9 rpm) and 1 rpm (over 1000 rpm), 5 digit LCD Display , accuracy $\pm 0.05\%$, Detecting distance - 50mm to 500mm, power supply 9 v battery , time base - Quartz crystal.	EL79	20 Nos.
42	Current Transformer - 415 Volt,50 Hz, CT Ratio 150 /5Amp, 5VA : measuring up to 150amps, ratio 150/5A. 5VA/15VA, class-1/0.5 Resin cast type.	EL80	20 Nos.
43	Potential Transformer - 415 Volt, 50Hz, PT Ratio 11KV/ 110V, 10VA	EL81	20 Nos.
44	Growler : 230 V, 50 Hz, Single Phase, Adjustable jaws, Testing armature with ampere meter and testing probes.	EL82	20 Nos.
45	Tong Tester / Clamp Meter 0 – 100 amp. AC : multi function for ACA, ACV, DCA,DCV<OHMS etc, LCD display, Dimension HWD-230 x 70 x 36mm	EL83	20 Nos.
46	Megger 500 volts : Hand driven ,Analog - 500 V/1000 V DC complete with wearing carry case	EL84	20 Nos.
47	Load Bank 5 KW(Lamp / heater Type) : Variable Load Bank 5 KW, 240V (Lamp / heater Type) with controlled switch and main switch	EL89	20 Nos.
48	Brake Test arrangement with two spring balance 0 to 25 kg, 500 gm rating.	EL90	20 Nos.
49	Voltage Stabiliser Input : 150 – 230 volt AC Output : 220 volt AC : capacity : 1KVA, AC Output - 240 V, 50 Hz, 10A, air cooled , Auto/manual selectivity, overload capacity - 110% for 10 minutes, With suitable ammeter , voltmeter , selector switch , Battery connecting Terminals , MCBs.	EL93	20 Nos.
50	3- point D.C. Starter: For 2.5 kw DC motor, 8-10A.220V, DC with sophisticate cabinet. Portable type.	EL94	20 Nos.
51	4- point D.C. Starter : For 2.5 kW DC motor, 8-10A.220V DC. with sophisticated cabinet. Portable type.	EL95	20 Nos.
52	Oscilloscope Dual Trace, 30 MHZ, Band Width :- 30 MHZ, channel :- 2, Time base Range :- 500Ms/s, with Probes, record length 2.5 K USB for storage.	EL107	20 Nos.

53	Function Generator: output frequency range :-1 Hz to 1 MHz, Sine, Square, Triangular wave, output amplitude : 0-20 Volt (Peak to Peak sine ,Triangle) 0-15 V(Peak to Peak for square wave), Display :- LED, DC offset : $\pm 10\%$, 220 V, 50 Hz, Single Phase, output signal impedance -50 Hz,	EL108	20 Nos.
54	Discrete Component Trainer : (for diode and transistor, capacitor circuit) DC Power supply :- $\pm 12\text{V}$, 250 mA, AC Power supply : 9-0-9 V /500 mA	EL109	20 Nos.
55	Linear I.C. Trainer : DC power supply :- 0 to 5V/100mA (Two Nos.) + 12V /250mA + 5 V/250mA, 12V /250mA AC , AC power :- 220Volt, 50Hz, PIC socket 16pin and 20 pin with bread board, LCD display .	EL110	20 Nos.
56	Digital I.C. Trainer consist of 7 segment display and bread board provided with 2 terminal strips & 4 distribution strips, regulated power supply of 5V / 1A ; 12 V / 500mA , logic input switches 12 nos. LED indicator -12 nos. clock generator of 1Hz,10Hz, & 100 Hz & 1KHz,	EL111	20 Nos.
57	Oil Testing Kit : Voltage range :- 0 - 60 KV AC, Trip current : less than 10 mA, Control : HT ON, HT OFF, increase, decrease. Indication : Cover open, wait time, HT on, KV rise & BDV . Accuracy : $\pm 1\%$ FSD, Interlock on High voltage test chamber, zero start protect in. Accessories : Main chord, Oil test vessels with 2 Mushroom electrodes, GO No GO gauge. Input Voltage : 230 V AC ,single phase 50 Hz , 60 VA .	EL112	20 Nos.
58	Relay:-Cut out Relays : - 5 amp, 230 v, Ac ,	EL114A	20 Nos.
59	Relay:-Reverse current:- Normal current -1A, or 5 A from CT, Normal Voltage :- 230 Volt or 400 -415 V, Calibrated scale : 2 -20% reverse current, voltage Burden 3 VA, single Phase / 3 phase 4 wire. LED indication.	EL114B	20 Nos.
60	Relay :- Over current :- Normal current - 5 A, Normal Voltage :- 415 Volt, 50 Hz AC, Over load : 0.3 sec, Aux. supply : 230 V/415 V +-15%, Operating time : 2.5 sec with a 2% over current.	EL114C	20 Nos.
61	Relay :- Under voltage:- Rated voltage 240V/ 415V AC, Rated frequency :- 50 Hz, rely setting : pickup voltage - 95% to 20% of rated voltage, Time multiplier - 0.1 to 1.6 in step of 0.1, Time/Characterises - 5.7 sec , Definite time - 1,10 sec, Accuracy +-5%, reset voltage - 105% to 110% of set voltage.	EL114D	20 Nos.
62	Starters for 2 to 5 H.P. A.C Motors Resistance type dry, metal enclosed 415 volt AC, 50 Hz, 3 HP, slip ring motor starter, current rating 3.8 - 6 Amps.	EL115A	20 Nos.
63	Starters for 2 to 5 H.P. A.C Motors Direct on line Starter: 415 V, 3 phase AC, 50Hz, coil voltage -415 V, OLC relay range- 3.8 Amps to 6.2 Amps.	EL115B	20 Nos.
64	Starters for 2 to 5 H.P. A.C Motors Star Delta Starter- manual, semi-automatic and automatic : Three phase , 16 Amps fully automatic starter, coil voltage - 380 V - 415 V AC, 50 Hz, relay range - 3.8 - 6.2 Amps. Capacity - 2 - 5 HP	EL115C	20 Nos.
65	Starters for 2 to 5 H.P. A.C Motors Auto Transformer type 415 V Ac , 50n Hz , Tapping - 50%, 60% , 70 %	EL115D	20 Nos.
66	Lux meter : Measuring range - 0 lux - 200000 lux, accuracy -+3%, range selection - automatic measurement/ manual measurement , data hold option, lux meter LCD read out 0.05 to 7000 lumens with battery.	EL127	20 Nos.
67	Inverter- 1 KVA with 12 V Battery Input- 12 volt DC, Output- 220 volt AC, Lead Acid Cell With Suitable Ammeter, Volt meter , selector Switch , Fuse And isolating System And indicating Lamp.	EL128	20 Nos.

68	Electric Hot Plate 1500 watt, single phase, 230V,AC 50 Hz,	EL129A	20 Nos.
69	Electric Kettle, 1500 watts, single phase,230V,50 Hz	EL129B	20 Nos.
70	Electric Iron 1500 watts, Automatic - 750 W, single phase, 230 V,50Hz.	EL129C	20 Nos.
71	Immersion Heater 1500 watt, single phase,230V, 50Hz.	EL129D	20 Nos.
72	A.C. Fan, rating : 65 watt, 230v AC , signal phase, 50 Hz , sweep - 1200 mm	EL129E	20 Nos.
73	Geyser (Storage type) 15 litre minimum storage, vertical mounted, capacity -15 litre, power rating - 2000 watt, single phase, 230 volt 50 Hz, AC,	EL129F	20 Nos.
74	Mixture & Grinder, Rating : 500 W, single phase,230 V, Rpm 20000, insulation -class B	EL129G	20 Nos.
75	Compound angle vice (standard sine) Width of jaw 100 mm, Opening of jaw 100 mm with 360 deg swivel, Tilt in Two way, Cast Iron or Cast Steel.	MC72	8 Nos.
76	Micrometer outside 0-25 mm Enamelled frame of nodular cast iron, tapered on the anvil side for hard to reach places, micro-lapped carbide measuring faces, positive locking clamp and ratchet stop for consistent measurement, complete with fitted carrying case and crisp clear graduations on glare-free satin chromed sleeve and thimble	MC1	32 Nos.
77	Micrometer outside 25-50 mm Enamelled frame of nodular cast iron, tapered on the anvil side for hard to reach places, micro-lapped carbide measuring faces, positive locking clamp and ratchet stop for consistent measurement, complete with fitted carrying case and crisp clear graduations on glare-free satin chromed sleeve and thimble	MC2	16 Nos.
78	Micrometer outside 50-75 mm Enamelled frame of nodular cast iron, tapered on the anvil side for hard to reach places, micro-lapped carbide measuring faces, positive locking clamp and ratchet stop for consistent measurement, complete with fitted carrying case and crisp clear graduations on glare-free satin chromed sleeve and thimble	MC3	8 Nos.
79	Micrometer depth gauge 0-200 mm Graduation : 0.01mm Micrometer head accuracy : $\pm 3 \mu\text{m}$. Rod accuracy : $\pm (2 L/75) \mu\text{m}$, L is the measuring range in mm. Rods with flat end Ratchet stop	MC4	8 Nos.
80	Digital micrometer 0-25 mm Resolution 0.001mm/0.00005" Button function: on/off, set, mm/inch, ABS/INC Without data output. SR44 or LR44 battery, automatic power off Carbide measuring faces Ratchet thimble Supplied with spherical anvil Setting standards are included(except 0-25mm/0-1")	MC5	8 Nos.
81	Direct reading vernier caliper 0- 300 (direct reading with dial) Accuracy-0.01mm. Shockproof Dial indicator Made of stainless steel	MC6	8 Nos.
82	Digital vernier caliper 0- 300 mm Button function: on/off, set, mm/inch, ABS/INC Without data output SR44 or LR44 battery, automatic power off .	MC7	8 Nos.
83	Vernier height gauge 250 mm, GENERAL Accuracy : 002 inch, Base Height : 45 mm, Beam Width : 28 mm, Graduation : 001 inch, 0.02 mm, Overall length : 525 mm, Scriber Height : 32 mm . Made of	MC8	8 Nos.

	Stainless steel, Carbide-tipped scribe.		
84	Vernier gear tooth caliper, Range 0- 26 mm Accuracy 0.001inch/ 0.02mm. Tungsten carbide measuring surfaces, Fine adjustment on both axis. Stainless Steel	MC9	8 Nos.
85	Combination set with 300 mm rule 90° Square Head, center Square, Protector head (1degree graduation), Scribe & level	MC10	16 Sets
86	Vernier bevel protractor with 150 mm blade, Accuracy +5/-5 min stainless steel with magnifying glass	MC11	8 Nos.
87	Bevel gauge 200 mm	MC12	8 Nos.
88	Telescopic gauge 13 mm to 300 mm, Spring Loaded Plunger Expands Within The Bore (Or Groove), Allowing Determination Of The Internal Diameter. With a Knurled Clamp	MC13	8 Sets
89	Sine Bar 200 mm, Centre distance between two rollers 200mm. Suitable Size of rollers, Hardened precision ground body, IS 5259-1987	MC14	8 Sets
90	Dial test indicator with magnetic gauge type 1 grade A with magnetic base, Plunger Type, Accuracy 0.01mm.	MC15	8 Sets
91	Planer gauge standard size 3" Extension Nib, Length- 6-3/16" Width- 1-1/8" Height- 3-1/2" Range- 7/16"-10" Accuracy- 0.0002"	MC24	8 Nos.
92	Micrometer Outside 0 to 25 mm Reading 0.01 mm satin chrome finished frame, tapered (on the anvil side) for hard to reach place, measuring faces made from carbide tip, spindle diameter =0.25"/6.35mm, accuracy =0.002mm & graduation=0.01mm	TR35	16 Sets
93	Micrometer Outside 25 to 50 mm Reading 0.01 mm satin chrome finished frame, tapered (on the anvil side) for hard to reach place, measuring faces made from carbide tip, spindle diameter =0.25"/6.35mm, accuracy =0.002mm & graduation=0.01mm	TR36	16 Nos.
94	Micrometer Outside 50 to 75 mm Reading 0.01 mm satin chrome finished frame, tapered (on the anvil side) for hard to reach place, measuring faces made from carbide tip, spindle diameter =0.25"/6.35mm, accuracy =0.003mm & graduation=0.01mm	TR37	16 Sets
95	Micrometer Inside up to 25 mm Reading 0.01 mm Features : With locking clamp. Zero point can be readjusted by twisting the micrometer head sleeve. A key wrench is supplied. Clear, crisp graduations on the satin chrome finished micrometer head. Carbide-tipped measuring faces. Specifications : Material : Stainless Steel, Color : Grey	TR38	16 Nos.
96	Micrometer Inside up to 50 to 150 mm reading 0.01 mm Features: With locking clamp. Zero point can be readjusted by twisting the micrometer head sleeve. A key wrench is supplied. Clear, crisp graduations on the satin chrome finished micrometer head. Carbide-tipped measuring faces.. Specifications : Material : Stainless Steel Color : Grey	TR39	16 Nos.
97	Depth Gauge Micrometer 0 to 150 mm Reading 0.01 mm FEATURES : \varnothing 4mm interchangeable rods, with lapped measuring end, provide a wide measuring range. The rod length can be adjusted in 1" or 25mm increments. With ratchet stop for constant	TR40	16 Nos.

	force. With measuring rod clamp. With SPC output (Series 329). Supplied in fitted plastic case.		
98	Vernier Caliper Outside, Inside and Depth 200 mm /8 inches with metric & inch scale Caliper has a measuring range of 0 to 200mm with 0.02mm graduation and an accuracy of +/- 0.03mm. This is a High Accuracy model. Features a small face angle of 14 degrees which provides easy reading. Measures Outside Diameter, Inside Diameter, depth and steps. Furnished in Satin Stainless Steel with easy reading graduations. Equipped with a lock screw for holding the sliding jaw position allowing the user to get easy measurements.	TR41	48 Nos.
99	Dial Vernier Caliper with metric 200 mm reading 0.05 mm <ul style="list-style-type: none"> • Dial for measuring vernier scale, for ease of reading • Hardened stainless steel construction, for protection of caliper components • Four-way measurement capability, for outside (OD), inside (ID), depth, and step measurements • Titanium nitride (TiN) coating on beam surfaces, for resistance to wear • Metric system of measurement, for high-precision readings 	TR42	48 Nos.
100	Vernier Bevel Protractor 300 mm blade Hardened stainless steel construction	TR43	48 Nos.
101	Vernier Micrometer 0 - 25 mm o/s LC 0.001mm <ul style="list-style-type: none"> • Range = 0-25mm • Accuracy = +/- 2µm • Graduation = 0.01mm • Data Output = No • Flatness = 0.6µm • Measuring Faces = Carbide tipped • Measuring Force = 5-10N • Parallelism = 2µm 	TR44	16 Nos.
102	Vernier Micrometer 25 - 50 mm outside reading 0.001mm• Range = 0-25mm• Accuracy = +/- 2µm• Graduation = 0.01mm• Data Output = No• Flatness = 0.6µm• Measuring Faces = Carbide tipped• Measuring Force = 5-10N• Parallelism = 2µm	TR45	16 Sets
103	Vernier Micrometer 0 inch to 1 inch. Outside Reading 0.0001 inch <ul style="list-style-type: none"> • Range = 0-25mm • Accuracy = +/- 2µm • Graduation = 0.01mm • Data Output = No • Flatness = 0.6µm • Measuring Faces = Carbide tipped • Measuring Force = 5-10N • Parallelism = 2µm 	TR46	16 Nos.
104	Dial Test Indicator 0.01 mm with magnetic base Universal Dial Test indicator- plunger type Range 0 – 10 mm, Graduation 0.01mm complete with clamping devices & magnetic stand Product features <ul style="list-style-type: none"> • 196 series dial indicator measures 0 to 0.2" with 0.001" graduations for precise measurement of rise or drop in work piece • 0 to 100 counter with one revolution equivalent to 0.1" • Plunger-type dial back with three contact point sizes, 1/2", 5/16", and 1/8" diameter • White-face dial with scratch-resistant crystal face for ease of 	TR52	16 Sets

	reading • 1/4" diameter stainless-steel shank for mounting		
105	Vernier Height Gauge with dial 300 mm L.C. 0.01 mm • Zero reference point can be adjusted. • Stain chrome finished scales for glare-free reading. • Extra-large base for rigidity. • Optional magnifier for easier reading • Carbide-tipped scriber is provided	TR53	8 Sets
106	Plain Gauge 12 to 50 mm by 1mm Material- Chrome plated steel	TR56	8 Sets
107	Ring Gauge 12 to 50 mm by 1mm Material- Chrome plated steel	TR56A	8 Sets
108	Plug Gauge 12 to 50 mm by 1mm Material- Chrome plated steel	TR56B	8 Sets
109	Screw Thread micrometer interchangeable • For use with V-anvil and conical spindle inserts for measuring pitch diameter of screw threads (sold separately) • Vernier scale in metric units for taking precise outside diameter (OD) measurements • Ratchet-stop mechanism helps provide uniform pressure for precise, repeatable measurement • Satin chrome finish on thimble and sleeve helps resist rust and reduce glare • Hammertone, baked enamel finish for protection and durability of frame	TR59	8 Nos.
110	Morse Taper Plug & Ring Gauge Nos. 0 to 7 MT Gauges made from a hardened gauge steel	TR 60	8 Sets
111	Slip Gauge metric set (87 pieces in a Box)with workshop grade• Highly accurate, very low deviation from flatness, surface finish & nominal length• High resistance to wear & dimensionally stable• Superior wringing quality• Each gauge block is marked for size & serial numberMaterial- Ceramic/carbide/steel	TR 62	16 Nos.
112	Morse Taper Sleeves Nos. 0-1, 1-2, 2-3, 3-4, 4-5 (Complete one set) Material- Case hardened Hi Tensile steel (20 MnCr5/SAE8620), these are fully hardened and are ground on the inside and outside	TR 63	8 Sets
113	Thread Plug Gauge M-20 & M-21 Material-Chrome plated steel	TR 101	8 Sets
114	Thread Ring Gauge M-20 & M-21 Material- Chrome plated Steel	TR 102	8 Nos.
115	Digimatic Electronic Vernier Caliper inch and mm 8"/200 mm. LCM 0.005"/0.001 mm Inch and mm, 8"/ 200mm,with least count 0.005"/0.001mm Large & clear LCD, Smooth slider movement for comfortable operation, allows steps measurements, carbide tipped jaws for rough finished part, for casting etc.	TR 5	8 Nos.
116	Digimatic electronic outside Micrometer (0 to 25 mm) LC 0.001 mm.	TR 6A	8 Nos.
117	Digimatic electronic outside Micrometer (25 to 50 mm) LC 0.001 mm.	TR 6B	8 Nos.
118	LCD projector - Minimum 2700 Ancilumens with XGA resolution and large type standard quality screen	TRD4	8 Nos.
119	Universal Weld measuring gauge Made:- S.S. Model- fillet measuring gauge 0-50mm and degree upto 90 degree. Fillet and butt both digital based (high Accuracy for inspections).	WL 21	32 Nos.

120	Electrode holder 600 amps Jaws fully insulated with HOFR compound cover. 600Amps.	WL27	96 Nos.
121	Auto Darkening Welding Helmet UV/IR protection : Up to Shade DIN 16 at all times, Light state: Shade DIN 4, Variable shade : From DIN 9 to DIN 13, Power supply : Solar cell & lithium batteries(2pcs CR2032), Power on/off : Fully automatic, Sensitivity : Adjustable, Grinding/Welding : Support, Switching time : 1/25000s, Delay time : 0.2-0.8s adjustable, Operating temperature : -5 to 55 degree Celsius (23 to 131 degree Fahrenheit), Storage temperature : -20 to 70 degree Celsius (-4 to 158 degree Fahrenheit) Helmet material : PP	WL47	32 Nos.
122	Die penetrate testing kit Size of testing table 1000mm L x 900mm H X 750mm W, Table top fabricated by Stainless Steel Sheet of 2.5mm.UV lamp Testing Booth Size-1200mm L x 1500mm H x 900mm W, Booth Should be 3 sided Full ACP Wall Covered, Equipment must have-LED Spot Light arrangement, Solution Dryer and UV Lamp and use friendly control panel. Accessories : DP Testing Solution-02 sets.	WL67	16 Sets
123	Magnetic particle testing Kit, Power source in put – 440 V. 3 ph. 50Hz, input load – 15 Amps. , output type A/C & HWDC, type of control – thyristorised, output 750 amps. Out put Volt.-3 to 15 V. prod cable – 3mtr. Length., locate defects in any direction using prods, central conductor, coil(wrap part with 3-5 turns of cable).Magnetic yoke type Accessories :-Testing table:- 600X600X900mm with rack system 01 Nos. dry visible powder-02 Kg. dryer – 01 Nos. puffer bulb- 01 Nos.	WL68	16 Sets
124	LCD projector - Minimum 2700 Ansilumens with XGA resolution and large type standard quality screen	WL5	8 Nos.
125	Dual DC regulated power supply 30-0-30 V. 2 Amps. DC voltage : 0 to+ 30V, 0 to-30 V,2A with Digital display for voltage & current Best quality with manual	EM C26	48 Nos.
126	DC regulated variable power supply 0-24 V. 1 Amp With Digital display for voltage & current, Best quality with manual	EM C27	24 Nos.
127	LCR meter (Digital) Bench top Type Measurement Modes : Auto/ Manual L, C, R, Z, Q, D Measurement Ranges : Auto or Manual L : 0.1 microH to 9999 H, Resolution 0.1 microH C : 0.1 pF to 9999 microF, Resolution 0.1 pF R : 0.001 ohm to 100 Mohm, Resolution 0.001 ohm Z : 0.001 ohm to 100 Mohm, Resolution 0.001 ohm Q : 0 to 99 D : 0 to 10 theta : -180 to +180 digital Display, Measuring parameter L,C,R,D,Q. Reputed company with manual	EM C28	12 Nos.
128	CRO Dual Trace 20 MHz (component testing facilities) DC to 20MHz Bandwidth, Operating Mode Channel 1, Channel 2, Channel 1 & Channel 2 alternate or chopped, XY Operation, Add / Sub, with Component tester, 1 : 10 probe, manual.	EM C29	24 Nos.
129	Signal generator, 0-100 KHz. Sine, Square, Triangular wave with Digital display, Best quality	EM C30	24 Nos.
130	Battery Charger 6V, 12V, 7.5A lead acid battery Charger	EM C31	12 Nos.

131	Analog multi meter DCV-0.1v/0.5v/2.5v/10v/50v/250v/1000v ACV-10v/50v/250v/1000v DCA-50uA/2.5mA/25mA/0.5A Resistance-2kΩ/20KΩ/2MΩ/20MΩ from any reputed company	EM C32	48 Nos.
132	Function generator (triangular, square & sine wave) Frequency Range 0.3Hz to 10MHz Digital Frequency LCD Readout for frequency & mode Waveforms: Sine, Square, Triangle, DC DC-Offset Adjustment Trigger Output Internal Sweep & External FM-Modulation Square Wave Risetime Typ. 40ns Distortion Factor < 0.5% (upto 100kHz) with Manual	EM C33	24 Nos.
133	Analog component trainer, Onboard Bread Board for circuit design, on board dc power supply, +12Volt 1 Amp,+5 Volt 1 Amp, ± 12 Volt 1 Amp (Variable), On Board AC Power Supply 15Volt-0-15Volt, On Board function generator, Sine, Square, Triangle (1Hz-20KHz), Continuity Tester with beeper.	EM C35	48 Nos.
134	OP Amp trainer, DC Power Supply Fixed : ± 5 Volts @ 1 Amp. , ± 12 Volts @ 1 Amp 1.2v to ±15v @ 1 Amp Variable DC, Function generator, Sine Wave, Square Wave, Triangular Wave (100Hz to 100 KHz, 0-6 Vpp), Variable Resistance 1KΩ, 10KΩ, 100KΩ,1MΩ.	EM C36	36 Nos.
135	Digital IC trainer Regular size of bread board-02 Nos.Bounce less pulser 1Hz to 100KHz TTL Clocks, Logic input switches-10 Nos.Logic Status LED Indicator-10Nos7 Segment Display-02 Nos. on board regulated DC power supply +5V/1A & +12V/1AAC input 230 Volt 50HzMounted in Cabinet. With patch Cord and manual.	EM C37	48 Nos.
136	Digital IC tester Tests most of the 6 to 40 pin ICs in DIP package. The list includes 74/54, 40/45, 93/96 series ICs, EPROMs, RAMs, peripheral ICs, microprocessor (8088/8085/Z80/6502), operational amplifiers, voltage comparators, transistor arrays, opt couplers, analog switches, voltage followers, timers, A to D converters, D to A converters and miscellaneous analog ICs. • Automatic testing of variety of ICs. 40 pin universal ZIF socket	EM C38	12 Nos.
137	Digital and Analog bread board trainer • On platform bread board to circuit design • On board DC power supply: +5V/1A(fixed), ±15V/1A(fixed), ±15V/200mA(variable) • On board AC supply : 5v-0-5v;10v-0-10v(provision for 5v,10v,15v,20vAC & also centre tap) • Sine/square/TTL generator 10 Hz to 1 MHz in 4 steps(variable in between the steps) • Amplitude: sine(0-15v PP),square wave (0-10v pp), TTL -5v (fixed) • Data switch 08 nos. • LED display 08 nos. • 7 segment display • Power supply 220v/50 Hz • Manual • Patch cords	EM C39	72 Nos.
138	Rheostats various values and ratings Hand sliding arm type, Value -50Ω,1.5A	EM C40A	24 Nos.

139	Rheostats various values and ratings Hand sliding arm type, Value - 300Ω,1A	EM C40B	24 Nos.
140	POWER ELECTRONICS trainer with at least 6 no's of onboard applications <ul style="list-style-type: none"> • On platform bread board to circuit design • On board DC power supply : ±5V/500mA, ±12V/500mA, +15V/250mA • On board AC supply : 0-15v;18v-0-18v • On board firing circuit • Amplitude : 12v • SCR assembly 4 SCRs 400v/2A • Power devices : IGBT,MOSFET,UJT,DIAC,TRIAC,PUT-2N6027 • AC power supply 220v/50 Hz • ON board application : i) characteristics of the following: UJT,SCR,MOSFET,TRIAC,DIAC,IGBT,PUT • Manual • patch cords 	EM C41	48 Nos.
141	Electronic circuit simulation software with 6 user licenses <ul style="list-style-type: none"> • Analog, digital, RF, Vhdl, Symbolic & mixed mode Circuit analysis, design, convert into PCB layout. • Real time measurements, lab view interface upload to FPGAs live presentation, multimedia parts, advanced diagrams virtuals instruments • Integrated PCB layout design with 3d view • Test & debug microprocessor & microcontroller applications • Circuit simulation & PCB design • Function to plot the frequency response, Phasor diagram etc. • Virtual measurement: <ul style="list-style-type: none"> o Digital multimeter o DSO o Digital signal generator o Logic analyser o Real time storage oscilloscope o Plug in EXPERIMENTER MODULES Multilayer PCB layouts of circuit *PCB design facility *manual	EM C46	12 Nos.
142	DSO (colour) 70MHz BW , 2 Channel, 7" TFT Color Display or LCD (Color), USB Communication Port with probe, manual.	EM E1	12 Nos.
143	Soldering & De soldering Station, Temperature controlled 60 W, Pointed bit soldering Iron , 70W Desoldering with hot air blower	EM E2	12 Nos.
144	SMD Soldering & De soldering Station with necessary accessories Temperature controlled 60 W, Pointed bit soldering Iron , 70W Desoldering with hot air blower, Stand, Water sponge,	EM E3	24 Nos.
145	DOL starter	EM E4	12 Nos.
146	Electrical trainer fitted with resources (DOL starter, contactors, relays, MCB, motor suitable for electrical control circuit exercises) <ul style="list-style-type: none"> • Provided with DOL Starter single phase, 3 phase. • Inbuilt relay & contactor, MCB • Provided digital tachometer • Main supply three phase 415volt,50Hz • Main supply single phase 230volt,50Hz • Three phase induction motor squirrel cage,1HP,415v. • Digital meter- watt meter, voltmeter, ammeter • Manual • Provided with digital tachometer 	EM E6	24 Nos.

	<ul style="list-style-type: none"> • Single phase ac motor, 1/4 hp • L.T control switch • Over load Relay 		
147	Frequency modulator and Demodulator trainer kit <ul style="list-style-type: none"> • On board audio oscillator, 3 types of FM modulator • 5 different types of demodulator amplitude limiter & filter, • Test points for signal flow & analysis • Modulating signal range : 300Hz to 3.4kHz • FM Modulator Type : Reactance Modulator, Varactor Modulator, VCO Based Modulator • FM Demodulator Type : Detuned Resonant Detector, Quadrature Detector, Foster seeley Detector, Ratio Detector, PLL Detector • manual 	EM E7	24 Nos.
148	PAM, PPM, PWM trainer kit <ul style="list-style-type: none"> • PAM-PPM-PWM Modulation & Demodulation techniques, using Natural & Flat-top sampling • On board filter and AC amplifier • On board sampling 8kHz, 16kHz • Pulse frequency 32kHz, 64kHz • Voice communication using dynamic micro phone and speaker • Selectable four different pulse frequencies on board • Multiple test points • manual 	EM E8	24 Nos.
149	Microcontroller kits (8051) along with programming software (Assembly level programming) <ul style="list-style-type: none"> • 8051 clock frequency 11.0592 MHz • Assembler PC based & assembly level language based software • Programmer (USB connectivity & RS 232C with pc) programming language : assembly level language • Trainer kit • User can write assembly language program in pc & also can enter opcode through trainer • Compatible with different interface • DC power supply as needed • Manual 	EM E10	48 Nos.
150	Application kits for microcontrollers 6 different applications <ul style="list-style-type: none"> • DC, Stepper motor interface • LCD interface • Event Counter interface • ADC & DAC interface • CC & CA seven segment display interface • Traffic light controller interface • manual 	EM E11	12 Sets
151	Sensor trainer kit (containing various sensor like Thermocouple, RTD, thermocouple, load cell, strain gauge, LVDT, smoke sensor, speed sensor) <ul style="list-style-type: none"> • In built with the following sensors • TEMPERATURE SENSORS : Using RTDs, Thermistors, pt 100, Thermocouples • SPEED MEASUREMENT SENSORS: • proximity & Optical Sensor • LOAD MEASUREMENT SENSOR: Using load cell • STRAIN MEASUREMENT SENSOR: Using strain gauge • DISTANCE/DISPLACEMENT MEASUREMENT SENSOR: Using LVDT Sensor • SMOKE SENSOR, CAPACITIVE SENSOR ETC. • On board simulation • Graphical touch LCD with inbuilt processor for viewing the output 	EM E12	24 Nos.

	waveforms• Inbuilt DAQ <ul style="list-style-type: none"> • On board Graph capture & store • Square wave generator: up to 40 KHZ • F/V converter : 1KHZ-1V,10KHZ-10V • V/F converter: 1V-1KHZ,10V-10KHZ • manual 		
152	Fiber optic communication trainerTransmitter : 02 NOS, Fiber optic LED having 660nm & 950 nm wavelength Receiver : Two Nos., Fiber optic photo detectorFM,PWM ,PPM Modulation Driver : Analog & Digital ModeAC amplifier, PLL Detector , Filter, on board Function Generator sine wave(amplitude adjustable),square wave (TTL), Analog Bandwidth 350 kHz, Digital BW ,Fiber optic voice link(in built) using microphone & speaker, RS232C PC to PC serial linkmanual	EM F1	24 Nos.
153	Seven segment DPM, 3½ digit seven segment display, Maximum input : 199.9mv DC, Accuracy : ±0.5% of full scale, Extension of range : upto 500v DCwith Manual	EM F2	72 Nos.
154	LCD based DPM, 3½ digit LCD display, Maximum input :199.9mv DC, Accuracy : ±0.5% of full scale, Extension of range : upto 500v DCwith Manual	EM F3	72 Nos.
155	UPS trainer Input : 190v to 260v , 50 Hz Output : 230v Rechargeable Battery as suitable <ul style="list-style-type: none"> • PWM switching technology • Various test points provided so that user can easily measure the voltages of different sections • To identify different faults & to study the systematic procedure of trouble shooting in UPS circuit • Study the UPS in load condition • Study the transformer section of UPS • Manual 	EM F5	12 Nos.
156	UPS 3 KVA with backup time minimum 30 minutes Including Battery, Best quality with Manual	EM F6	12 Nos.
157	Smart phones of different make(LG / SAMSUNG / NOKIA OR EQUIVALENT) (android) <ul style="list-style-type: none"> • 13MP primary camera with auto mode, beauty face, continuous shot, interval shot, panorama mode and 5MP front facing camera with palm gesture selfie and 120 degree selfie mode • 13.86 centimeters (5.5-inch) TFT capacitive touch screen with 720 x 1280 pixels HD display • Andorid v6.0 Marshmallow operating system with 1.2GHz Qualcomm Snapdragon quad core processor, 2GB RAM, 16GB internal memory expandable up to 128GB and dual SIM (micro+micro) dual-standby (4G+4G) • Removable Li-Ion 3000 mAh battery. • 1 year manufacturer warranty for device and 6 months manufacturer warranty for in-box accessories including batteries from the date of purchase 	EM F7A	8 Nos.

158	<p>Smart phones of different make (LG / SAMSUNG / NOKIA OR EQUIVALENT) (windows)</p> <ul style="list-style-type: none"> • 5MP primary camera with auto focus, LED flash and 5MP front facing camera • 5-inch (12.7 centimetres) qHD IPS LCD multi-touch capacitive touch screen with 960 x 540 pixels resolution, 220 ppi pixel density and 16M color support • Windows Phone v8.1 operating system with 1.2GHz Snapdragon 200 quad core processor, 1GB RAM, 8GB internal memory expandable up to 128GB and dual micro SIM (GSM+GSM) • 1905mAh lithium-ion battery providing talk-time of 11 hours on 2G, 13 hours on 3G networks and standby time of 168 hours • 1 year manufacturer warranty for device and 6 months manufacturer warranty for in-box accessories including batteries from the date of purchase 	EM F7B	8 Nos.
159	Cell phone power source with charger chords for different cell phones ,Power source with Multiple Cell phone Charger chords 6 in 1 like micro usb, mini usb etc of Best quality	EM F11	12 Nos.
160	<p>LCD TV (Trainer kit)</p> <p>Display : LCD, HD ,(Color)</p> <p>Screen Size : 21"(53cm)</p> <p>Video interface: video input/VGA input</p> <p>Audio interface : RCA L & R</p> <p>Connectivity : USB,HDMI,VGA In, VGA Audio in, RF In, AV In, AV out, composite, component</p> <p>Mains Supply : 230v AC, 50 Hz</p> <p>Receiving system PAL</p> <p>Switched Faults & Test Points Provisions,</p> <p>Application : colour TV/PC Monitor connectivity</p> <p>Remote controlled</p> <p>Manual</p>	EM F12	12 Nos.
161	LCD TV (21") : TV with LCD display, 21",HD / Full HD, HDMI,USB,VGA, Composite component	EM F13	24 Nos.
162	<p>LED TV (Trainer kit)Display : LED, full HD/HD ,(Color)Screen Size :20"(50cm) Video interface : video input/VGA inputAudio interface : RCA L & RConnectivity : USB,HDMI,VGA In, VGA Audio in, RF In, AV In, AV out, composite, componentMains Supply : 230v AC, 50 Hz Receiving system PALSwitched Faults & Test Points, Provisions, Application : colour TV/PC Monitor connectivity Remote controlled manual</p>	EM F14	12 Nos.
163	LED TV (21") : TV with LED display, 21", Full HD, HDMI,USB,VGA, Composite component	EM F15	24 Nos.
164	Home theatre system 5.1 channel, Dolby digital, 1000W, HDMI, USB, Optical audio, Analog audio & Composite video, ARC.	EM F16	12 Nos.
165	Solar power inverter 500 VA Solar Panel 250 Wp – 2nos, Battery 100Ah -02 nos, Charge controller-1no, Control panel with inverter 500va.	EM F17	12 Nos.
166	LED lighting system Controller For LED Lights with 12 Volt Rectifier , 100W, LED Stack & protection circuit.	EM F18	24 sets
167	Automotive exhaust 5 gas analyzer(petrol & Diesel) or Diesel Smoke Meter : Operating voltage : 230 V/ 12V DC, Measuring automobile emission gas like CO,CO ₂ , HC, O ₂ and NOS.	MDC3	12 Nos.
168	Multi Scan Tool with oscilloscope	MDC16	12 Sets

169	CYLINDER BORE GAUGE, CAPACITY 20 to 160 mm Capacity 20-160 mm with carbide Tips and Anvils.	MD 28	48 Nos.
170	Depth Micrometer 0-25 mm • Ratchet Stop for consistent and repetitive measurements. • ø4mm (.157" DIAMETER.) measuring face. • Satin-chrome finished throughout. • With spindle locking clamp. • Crisp clear graduations on the thimble.	MD 31	48 Nos.
171	Fuel feed pump for Diesel Fitted with Six Cylinder (Approx 6000CC) Diesel Engine. Plunger type.	MD 52	12 Nos.
172	Fuel Injection Pump (Diesel) In-line Fitted with Six Cylinder (Approx 6000CC) Diesel Engine with mechanical governor.	MD 53	12 Nos.
173	Fuel Injection Pump VE pump/ Distributor fuel rotary pump(DPC) pump/ along with special tools and accessories Fitted with pneumatic governor, with Maximum and minimum speed governor with variable speed flyweight governor, VE pump / Distributor fuel rotary pump (DPC) pumps /Pressure Time (PT) pump along with special tools and accessories. 4 cylinder type, new and branded item - 1 each, fitted in stand with all accessories and connection. Genuine parts.	MD 55	12 Nos.
174	Outside Micrometer 0-25 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation, Accuracy of $\pm 2\mu\text{m}$.	MD 88	48 Nos.
175	Outside Micrometer 25-50 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation, Accuracy of $\pm 2\mu\text{m}$.	MD 89	48 Nos.
176	Outside Micrometer 50-75 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation, Accuracy of $\pm 2\mu\text{m}$.	MD 90	12 Nos.
177	Outside Micrometer 75-100 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation, Accuracy of $\pm 2\mu\text{m}$.	MD 91	12 Nos.
178	Torque Wrenches 5-35 Nm, Material: Chromium vanadium Steel.	MD 147A	12 Nos.
179	Torque Wrenches 12-68 Nm Material: Chromium vanadium Steel.	MD 147B	12 Nos.
180	Torque Wrenches 50-225 Nm Material: Chromium vanadium Steel.	MD 147C	12 Nos.
181	Binocular Magnification 12X maximum, Zoom-7X-12X, Apperture-30mm opening, Field of view-1000 yards, Laser Prism & Suitable focus	SR 5	64 Nos.
182	Dumpy level fitted Erected Image system Blue coated high range lenses. Acrometic Eyepiece in Fibre ABS plastic Deluxe Box in powder coated aluminium tripod stand in cover.	SR17	96 Nos.
183	Auto level Image erect, Magnification-32X, Multiplication Constant- 100, Additive Constant-0, Sensitivity of bubble- 10'/2mm	SR18	80 Nos.
184	Levelling staff - telescopic type Made of aluminium, 4 meter in 3 sections, graduated & marking in both sides with carrying case,	SR30	160 Nos.

	standard type used in survey field.		
185	Planimeter (digital), Planimeter addition measurement in three units (in sq. ft. sq. cm., ---)(digital) Roller type with computing function , LCD display, 8 digits, 10 symbols, maximum value – 10 m ² , accuracy, +2% with AC adapter & carrying case.	SR38	32 Nos.
186	Telescopic alidade, Internal focusing 151 mm completes with trough compass, plumbing fork, plum bob, standard type used in survey field.	SR41	80 Nos.
187	Theodolite transit, Telescope Model-20, Image erect magnification 25X, Vernier reading 20 Sec. , Circle diameter- Hz 113mm, V 100mm.	SR57	80 Nos.
188	Digital Theodolite, latest model With all accessories (Features:- Based on laser technology. Two large LCD panel with easy to read .Automatically compensates tilt in two direction and compensates vertical angles. High integrated electronic board and IC elements)	SR58	32 Nos.
189	Total station, Instrument for Total Station with latest model, with all accessories (Graphic LCD display on both side. Multy function key board on both side. Able to interchange data between GPS and total station without any data conversion. Minimum 8 hours rechargeable li-lion battery. Pols and Prism 2 nos. each.	SR62	32 Nos.
190	Hand GPS latest version capable of showing 1. Instant longitude and latitude 2. Built in Barometric Altimeter and Electronic Compass 3. Battery operated; two AA size battery with 18 hours life typical 4. Colour Display, 256 colour TFT: 2.2x1.6 inch (min) 5. Receiver sensitivity: High 6. Accept Micro SD card (1GB min.) 7. More than 100 plus user datum 8. USB cable and Software for USB and Serial interface, Computer cable (User Manual and other accessories) 9. Carrying case 10. Water proof casing (IPx7)	SR63	32 Nos.
191	Electrical drill portable drill with chuck and key Specifications : capacity 6.4mm, drill chuck ,type- keyed chuck, Motor capacity 1/4 HP	RACA-35	40 Nos.
192	Tong tester (clamp on multi meter) Specifications 0-10-30 amps 0-500 v, AC current accuracy +/- 2%,AC/DC voltage accuracy +/-1.5%,Resistance accuracy +/- 1%, power (KW/HP) +/- 2%	RACA 43	40 Nos.
193	Voltmeter, AC/DC portable precision grade Digital Panel board type Specifications 0 to 500 volt, Measurement range from 50Hz to 60HZ, Accuracy rate of +/- 0.05Hz	RACA 44	40 Nos.
194	Ammeter, AC/DC portable precision grade Digital Panel board type Specifications : 0 to 30 amp, supply 230 Volt, 50HZ AC	RACA 45	40 Nos.
195	Megger, Specifications : 1000v, insulation resistance range 100 G 'Ω	RACA 46	40 Nos.
196	Multi meter digital type Specifications : measurement type -AC , DC, AC/DC, AC current range 10A,DC current range 10A, D voltage range 1000V, AC voltage range 1000v, Capacitance range 50mf,Temperature range -200°C to 1372°C	RACA 48	40 Nos.
197	K.W. meter , Specifications: 0 -1 K.W, Single phase, 220 V.	RACA 52	32 Nos.

198	Fire extinguisher : Specifications : ABC dry powder type 2 kg capacity	RACA-53	8 Nos.
199	Service Oscillator, Specifications : 1Hz to 110MHZ with standard accessories	RACA-58	8 Nos.
200	C.R.O Single beam, Specifications : 5 MHZ with standard accessories	RACA-59	16 Nos.
201	C.R.O Dual trace/ Double beam, Specifications : 60 MHZ with standard accessories	RACA-60	16 Nos.
202	A.F.O Oscillators, Specifications : 20 Hz to 20KHZ band with standard accessories	RACA-61	16 Nos.
203	Pressure gauge Digital type Specifications : Diameter 63mm with recalibration set	RACA 79	40 Sets
204	Compound gauge, Digital type Specifications : Diameter 63mm, with recalibration set screw, scale vacuum 76mm. Pressure 15 Kg/sq.cm	RACA 80	40 Sets
205	Service man thermometer in metal case Specifications : - 30 C to +30 C	RACA 81	40 Sets
206	Vernier calliper, Specifications : Length 300 mm Accuracy 0.001inch/ 0.02mm. Tungsten carbide measuring surfaces, Fine adjustment . Stainless Steel.	RACA 100	16 Nos.
207	Micrometer outside measurement, Specifications : Range 0-25 mm. Enamelled frame of nodular cast iron, tapered on the anvil side for hard to reach places, micro-lapped carbide measuring faces, positive locking clamp and ratchet stop for	RACA 101	16 Nos.
208	Multi meter analogue type, Specifications : 0 to 1000 M Ω , 2.5 to 500V	RACA 104	40 Nos.
209	Tachometer digital, multi range, Specifications: 0 rpm to 3000 rpm. Portable small size in leather case	RACA 105	40 Nos.
210	Micron vacuum gauge, Specifications: Capable of reading up to 20 microns of Hg.	RACA 106	40 Nos.
211	Sensor thermometer (digital)	RACA 107	40 Nos.
212	Dial thermometer remote control, armoured capillary dial Specifications : 75mm - 50C to +50 C	RACA 111	24 Nos.
213	Anemometer Digital type, 0- 44.8 m/S, resolution 0.1m/s, accuracy +/- 3%	RACA 112	8 Nos.
214	Digital thermometer [Treated as consumable] Specifications: Graduated disc analogy type, remote control armoured capillary dial 75 mm, -50 to 150degree C	RACA 115	8 Nos.
215	Temperature & Humidity recorder Specifications : Capacity to record 24 hrs record	RACA 116	8 Nos.
216	Digital weighing machine, Specifications : 100 kg capacity	RACA-118	8 Nos.
217	Star delta starter, Specifications: 2 H.P., 3 phase, 415 V, 50Hz, 3.5Amp.	RACB-4	8 Nos.
218	Auto Transformer starter, Specifications : 3 H.P., CRC/FRP/ Galvanised sheet with powder coated metal box housing, MCB facility, Digital Voltmeter, Digital Ammeter, Over load protection, power & control wiring by copper wire.	RACB-5	8 Nos.
219	D.O.L Starter, Specifications : 2 H.P. Sheet steel enclosure type with MF, MK, MU & MB. Motor rating, 415 V, 50Hz, 3 Phase.	RACB-6	8 Nos.
220	Portable air - LPC brazing kit, Specifications : 2 kg. LPG cylinder, torches, houses,	RACB-7	8 Nos.

221	Refrigerator : Specifications: 165L carrying with HFC-134a	RACB-9A	16 Nos.
222	Refrigerator : Specifications: 165L carrying with HC	RACB-9B	16 Nos.
223	Frost free refrigerator : Specifications: 200L carrying with HC blend	RACB-10	16 Nos.
224	Three/four door refrigerator : Specifications : 300L carrying with HC R-600a	RACB-11	16 Nos.
225	Evacuating and refrigerant charging station, consist of a) Rotary two stage vacuum pump and motor (with gas ballast and anti such back) b) manifold with gauges and valves and capable of pulling vacuum up to 50 microns of Hg and with provision of connecting to a microns level vacuum gauge	RACB-14A	8 Nos.
226	Evacuating and refrigerant charging station, consist of b) Graduated charging cylinder with provision for temperature correction and all necessary isolating valves II) Evacuating and charging station as above but fitted with weighing scale Specifications : (CAP. 2 kg. In lieu of (b) above and with accuracy of +/- 1 g for charging hydrocarbons)	RACB-14B	8 Nos.
227	Dry N2 in cylinder, Specifications : 2 stage regulator or commercial N 2 in cylinder with drier unit and 2 stage regular 7meter cube	RACB 18	8 Nos.
228	Window A.C : Specifications : 1 Ton with R-22 or HFC Blend reciprocating compressor	RACB-19	16 Nos.
229	Split A.C : Specifications : 1.5 Ton with R134a or R-22 reciprocating compressor	RACB-20	16 Nos.
230	Duct able split A.C 1.5 ton : Specifications: 1.5 Ton with R134a or R-22 reciprocating compressor	RACB-21	8 Nos.
231	Cassette Air conditioner : Specifications: 4500 kcal/hr	RACB-23	8 Nos.
232	De scaling pump set : Specifications: Stainless steel impeller and housing complete with motor 1/2 hp and accessories	RACB-24	8 Nos.
233	Fan coil unit : Specifications : Water valves (2 & 3 way)	RACB-25	8 Nos.
234	Shell and tube, DX chillers (small), Specifications: 5 Ton with Cu tubing only	RACB-26	8 Nos.
235	Shell and tube type condenser, Specifications : 5 Ton	RACB-28	8 Nos..
236	Bottle cooler visible, Specifications : 200 L carrying with HFC-134a& reciprocating compressor	RACB-31	8 Nos.
237	Deep freezer, Specifications : 200 L carrying with HFC-134a& reciprocating compressor	RACB-32	8 Nos.
238	Water cooler storage type, Specifications : 200 L carrying with HFC-134a& reciprocating compressor	RACB-33	8 Nos.
239	Ice candy plant Specifications : 2 ton with capacity to make 32 ice candy at a time with Forma tray, stainless steel tank on trolley	RACB-34	8 Nos.
240	Air-conditioning, direct and indirect system. Specifications: Complete with all controls including humidity control capacity 15000Kcal/hr (5 ton)	RACB-35	8 Nos.
241	Package A/C, Specifications : 5 ton capacity, Air cooled type with open type compressor reciprocating type	RACB-36	8 Nos.
242	Car A.C components(full kit) a) Wobble plate compressor with mounting brackets. b) Serpentine Evaporator c) Parallel Flow Condenser d) Hoses, tubes, Receiver, Ex. valve. e) Electrical components & wiring Harness Specifications: a) Wobble plate compressor with mounting brackets. b) Serpentine Evaporator c) Parallel Flow Condenser d) Hoses, tubes, Receiver, Ex. valve. e) Electrical components & wiring Harness	RACB-37	8 Sets

243	CAR AC tutorial model	RACB-38	8 Sets
244	Auto Electrical test bench, Model : Table Top fitted with digital Ammeter/Voltmeter, Power requirement : 220Volt,15 Amps, Motor capacity: 2 HP induction motor protect with circuit breaker	MMV14	8 Nos.
245	Battery charger : 6- 24 Vols,10 Amps, single phase, with connects cables, clips, voltage & current indicator.	MMV15	16 Nos.
246	Demonstration board of 2W Ignition system, Ignition Coil	MMV 46	8 Nos.
247	Demonstration board of Electronic Ignition System, Ignition Coil	MMV 47	8 Nos.
248	Demonstration Board of MPFI system	MMV 48	8 Nos.
249	Depth Micrometer 0-25 mm • Ratchet Stop for consistent and repetitive measurements. • $\varnothing 4\text{mm}$ (.157" DIAMETER.) measuring face. • Satin-chrome finished throughout. • With spindle locking clamp. • Crisp clear graduations on the thimble.	MMV 49	32 Nos.
250	Dial gauge type 1 Gr. A (complete with clamping devices clamping devices Least Count-0.01mm	MMV 50	32 Nos.
251	Outside Micrometer 0-25 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation Accuracy of $\pm 2\mu\text{m}$.	MMV 117	32 Nos.
252	Outside Micrometer 25-50 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation Accuracy of $\pm 2\mu\text{m}$.	MMV 118	32 Nos.
253	Outside Micrometer 50-75 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation Accuracy of $\pm 2\mu\text{m}$.	MMV 119	32 Nos.
254	Outside Micrometer 75-100 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation, Accuracy of $\pm 2\mu\text{m}$.	MMV 120	32 Nos.
255	Starter motor axial type	MMV160A	8 Nos.
256	Starter motor pre-engagement type	MMV160B	8 Nos.
257	Starter motor co-axial type	MMV160C	8 Nos.
258	Air conditioning service Unit Car : Operating voltage : 230VAC $\pm 10\%$, Frequency : 50/60Hz, Refrigerant : R134a, Pressure sensor : 0 to 16 Bar, Refrigerant cylinder capacity : 12 Ltr, Max. System pressure: 20Bar, Power : 900 Watt	MMVC3	8 Nos.
259	Automotive exhaust five (05)gas analyzer(petrol & Diesel) or Diesel Smoke Meter : Operating voltage : 230 V/ 12V DC, Measuring automobile emission gas like CO,CO ₂ , HC, O ₂ and NOS.	MMVC6	8 Nos.
260	Annual Maintenance Contract (AMC) of the Automotive exhaust five (05)gas analyzer(petrol & Diesel) or Diesel Smoke Meter as mentioned at Sl. No. 259 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC6A	For 08 Nos.
261	Multi Scan Tool with oscilloscope of required capacity and	MMVC21	8 Sets

	compatible to the machine.		
262	<p>Annual Maintenance Contract (AMC) of the Multi Scan Tool with oscilloscope as mentioned at Sl. No. 261 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MMVC21A	For 08 sets
263	<p>Ultrasonic Injection cleaning equipment, Basket capacity : 6 Ltr, Tank size : 300x155x150 mm, Ultrasonic Power : 150W, Frequency for effective cleaning : 40 KHz, Inner tank and outer body made of Stainless Steel.</p>	MMVC32	8 Nos.
264	<p>Annual Maintenance Contract (AMC) of the Ultrasonic Injection cleaning equipment as mentioned at Sl. No. 263 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MMVC32A	For 08 Nos.

Tender Schedule - B

List of Machineries, etc. of the different Trades

Delivery points: Various Govt. ITIs / ITCs throughout the State of West Bengal

Sl. No.	Name & Specifications of the items	Item Code	Tentative Quantity
01	<p>SS and SC centre lathe (all geared) with minimum specification as: Centre height 150 mm and centre distance 750 mm along with 3 & 4 jaw chucks, auto feed system, safety guard, taper turning attachment, motorized coolant system, lighting arrangement & standard accessories.</p> <p>Heavy duty high precision quality Norton geared Centre Lathe with all accessories. Back plate, Motor Pulley, Dead centre (MT-4) Square tool post, Thread chasing dial indicator, belt guard, Bed length 1350 mm, Bed type 2V & 2 flat, centre height 150mm (250 mm diameter 4 jaw chuck, 200 mm diameter self centering chuck, 3 H.P AC/440v, 1440 rpm motor with push button starter and V belt. Cooling system with separate motor, Standard tool kit for maintenance, Manuals, taper turning attachment, revolving centre, steady and follower rest, carriers.</p>	FTE1.	40 Nos.
02	<p>Annual Maintenance Contract (AMC) of the Lathe machine as mentioned at Sl. No. 01 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines along with provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	FTE1A	For 40 Nos.
03	<p>Drilling machine pillar sensitive 0-20 mm cap with swivel table motorised with chuck & key.</p> <p>drill Capacity 20 mm Max. drilling, Motor 3.6 H.P. Spindle speed 150 to 700 rpm. drilling depth/vertical travel 175 mm, spindle nose taper MT-4, Machine vice 150 mm jaw, Drill chuck with key & arbour, Reduction sleeves MT4-3MT4-2.MT4-1,0-1,1-2,2-3, Standard tool kit for maintenance, Manuals.</p>	FTE2	20 Nos.
04	<p>Drilling machine bench sensitive 0-12 mm cap motorised with chuck and key.</p> <p>Drilling capacity in steel :-13mm, Morse taper in spindle :- M-1, Spindle traverse :-100mm, Pillar Diameter :- 57.15 mm, Distance between centre of spindle and column front :-149mm, Max. distance between spindle and table :-300mm, Max. distance between spindle and base :-500mm, Table Working surface :- 200 x 200mm (with coolant gutter), Base Working surface :-180 X 210mm, Nos. of spindle speeds :- 4, Range of spindle speeds (rpm) :-480 to 2080, Power of the spindle drive motor :-0.5 H.P, 1425 R.P.M Accessories:</p>	FTE3	40 Nos.

	1. Machine Lamp- 1Nos. 2. Drill chuck with key 12 mm. 3. Machine vice 100 mm, IS 4502:1999		
05	Forge portable hand blower 38 cm to 45 cm. Read input power 350/370 W, No load speed 13000 to 16000 rpm, rated voltage 220/240 V, Frequency 50-60 Hz, Max speed 0-16000, net weight 14 kg	FTE4	2 0 Nos.
06	D.E. Pedestal Grinding machine with 200mm diameter wheels rough and smooth with twist drill grinding attachment. Heavy duty, C.I. body double ended pedestal grinder M/C duly fitted with 0.5 HP motor AC/ 220/230V.R.P.M.;- 2880 with rotary switch, a pair of grinding wheels of size 8"x1"x1/2" (one rough & one smooth) a pair of eye shield for Spark protection & a pair of C.I. brackets as tool rests, duly mounted on M.S. Fabricated pedestal stand. With diamond wheel.	FTE5	20 Nos.
07	ARC welding table (all metal top) 122 cm X 12 cm X 60 cm with positioner. Table top fabricated by 10mm thick plate and having slot for job clamping, Gear box attachment which manually rotate the job up to 180, Equipment should stop at 0 to 90, Maximum job carrying capacity-10Kg, Table stand fabricated by 75ISMC, Table stand chassis fabricated by 100ISMC, Overhead maximum job clamping height-700mm (Adjustable), Reverse forward option must be with the equipment. Accessories : Job clamp-4 nos., Over head-1 nos. Adjustable spanner-4 nos. Ring spanner-4 nos. Nut Bolt-8 nos. (Suitable for the equipment)	FTF5	20 Nos.
08	Portable Electric Drill Machine : 6 -10 mm capacity , no load speed -3150 Rpm 500w, 240v with chuck and key	EL9	20 Nos.
09	Pillar Electric Drill Machine Motorized : 12 -16 mm Capacity, type - desktop, belt Drive, spindle speed - 400 - 2420 or 270 -2880 rpm, motor 370/550 watt, 415V, 3 phase, Induction Motor with DOL starter, Bench Type	EL10	20 Nos.
10	Motorised Bench Grinder : Motor -1 HP. 3 ϕ , 415V AC ,50 Hz, speed - 2850 rpm, with DOL starter, grinding wheel(ϕ x w)- 200 x 32 mm , Double side with smooth and rough wheel with Tool Base	EL15	20 Nos.
11	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 : DC shunt motor coupled with DC Generator, AC Alternator & mechanical load arrangement all the machines are mounted on heavy duty angle iron frame and Ac induction pole changing motor will be supplied separately. DC shunt motor capacity 1 HP ,220 Volt dc, 1500 rpm , terminal marking Armature (A1, A2), field (F1 F2), insulation class F . DC Generator - shunt/compound/ series , capacity - 0.5 HP , rpm- 1500 , terminal marking Armature (A1, A2), field (F1 F2), output voltage- 220 V - 240 V DC, insulation class F . AC Alternator capacity 0.5 KVA, 1500 rpm, 3 phase , 50 Hz, 415 volt, terminal marking R Y B & neutral. Mechanical load arrangement -Spring Balance 2 Nos. (Tubular type), 3 phase induction motor pole changing - capacity - 1HP , 415 V, 50 Hz,	EL96	20 Nos.

	1500/3000 rpm. Instrument - 1 no Voltmeter, MI type, range 0-500 volt. 3 nos. ammeter range - 0-3A , MI type , 1 nos. frequency meter, range -45 -55 Hz, 2 nos. voltmeter range -0 - 300 volt DC , MC type, 1 no ammeter range - 0-10A DC, MC type, 1 no Voltmeter ,MI type, range 0- 300 volt AC , 1 no ammeter range - 0-10A AC MI Type, 1 nos. DOL starter suitable up to 3HP motor, 2 nos. 16 Amps DP MCB, 2 Nos. variac with suitable rating, selector switch. all above instruments are mounted in a panel .		
12	Annual Maintenance Contract (AMC) of the Electrical Machine Trainer as mentioned at Sl. No. 11 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL96A	For 20 Nos.
13	Motor-Generator (AC to DC) consisting of : 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 HP, 400V, 50 cycles, 3 phase DC Shunt Generator rating : 5 KW, 440V: 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, selector switch, Rheostat, knife blade switches and fuses, set with complete panel , fixing bolts, foundation bolts and flexible coupling. Induction Motor rating : 7.5 HP, 415V, AC, 50 Hz, 3 phase. DC Shunt Generator rating : 5 KW, 440V , DC (Output voltage varies 110-440v)	EL97	20 Nos.
14	Annual Maintenance Contract (AMC) of the Motor-Generator (AC to DC) as mentioned at Sl. No. 13 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL97A	For 20 Nos.
15	Used DC Generators-series type for overhauling practice: 2.5 KW 220V DC, (Not more than 5 years old from the date of manufacturing with machine identification no. /Product no. along with supporting documents thereof)	EL98A	20 Nos.
16	Used DC Generators- shunt type for overhauling practice: 2.5 KW 220V DC, (Not more than 5 years old from the date of manufacturing with machine identification no. /Product no. along with supporting documents thereof)	EL98B	20 Nos.
17	Used DC Generators- compound type for overhauling practice : 2.5 KW 220V DC, (Not more than 5 years old from the date of manufacturing with machine identification no. /Product no. along with supporting documents thereof)	EL98C	20 Nos.

18	D.C. Shunt Generator with control panel, 2.5 KW, 220V: including fitted rheostat : 0 - 300 Ohm, 2 Amp - 1nos., voltmeter : 0-300 volt DC , ammeter : 0 -10 Amps MC type -1 no, ammeter : 0 -5 Amps, MC type -1 no, and circuit breaker 16 amps DP MCB - 1no, All the instruments are fitted in single panel board. 3phase Squirrel cage Induction Motor, 5HP, 415V, AC 50Hz with star delta starter coupled with above DC Generator.	EL99	20 Nos.
19	Annual Maintenance Contract (AMC) of the D.C. Shunt Generator as mentioned at Sl. No. 18 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL99A	For 20 Nos.
20	D.C. Compound Generator with control panel including fitted rheostat, 0 - 300 Ohm, 2 Amp - 1nos., voltmeter : 0-500 volt DC ,MC type - 1 nos., voltmeter : 0-300 volt DC ,MC type - 1 no, ammeter : 0 -15 Amps -1 no, ammeter : 0 -5 Amps -1 no, and circuit breaker 16 amps DP MCB -1no, All the instruments are fitted in single panel board, 3phase Squirrel cage Induction Motor, 5HP, 415V, AC 50 Hz with star delta starter coupled with above DC Generator.	EL100	20 Nos.
21	Annual Maintenance Contract (AMC) of the D.C. Compound Generator as mentioned at Sl. No. 20 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL100A	For 20 Nos.
22	Diesel Generator Set with change over switch, over current breaker and water-cooled with armature, star-delta connections AC 3 phase, 5 KVA, 240 volt: Generator rating :-7.5 KVA, 415 volt AC, 50 Hz, 2 pole, voltage regulation \pm 5% - 10%, with exciter, star connection, or higher rating , Engine rating : 11 BHP or 8.1 kw, Water cooled, single cylinder, rpm 3000. 1 nos. control panel consisting of 1 nos. voltmeter 0-500 V MI type, 1 nos. 0-15 Amps MI type ammeter, 1 nos. read type frequency meter, 1 nos. rpm meter, 2 nos. 16 Amps TPN MCB for incomer & outgoing of the panel.	EL101	20 Nos.
23	Annual Maintenance Contract (AMC) of the Diesel Generator Set with change over switch as mentioned at Sl. No. 22 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL101A	For 20 Nos.

24	D C Series Motor coupled with mechanical load : 0.5 HP , 230 Volts DC, RPM -1500, 4 Pole , insulation class -B . With Spring balance load :- 2 Nos. (Tubular type) , 0 - 25 Kg ,	EL102	20 Nos.
25	Annual Maintenance Contract (AMC) of the D C Series Motor coupled with mechanical load as mentioned at Sl. No. 24 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL102A	For 20 Nos.
26	DC Shunt Motor 2 to 2.5 KW, 220 volts RPM 1500, with 4 point DC motor starter For 2.5 kw DC motor, 8-10A.220V, DC. with sophisticate cabinet.	EL103	20 Nos.
27	Annual Maintenance Contract (AMC) of the DC Shunt Motor 2 to 2.5 KW, 220 volts RPM 1500 as mentioned at Sl. No. 26 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL103A	For 20 Nos.
28	DC compound Motor : - 4 pole , 1500 rpm, 2.5 KW ,220 volts DC. STRATER :- 4 point DC motor starter having relay range 8- 10 Amps,	EL104	20 Nos.
29	Annual Maintenance Contract (AMC) of the DC compound Motor as mentioned at Sl. No. 28 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL104A	For 20 Nos.
30	Single phase Transformer, core type, air cooled 1 KVA , 240/415 V, AC, 50 Hz, two winding, core type, air cooled,	EL105	20 Nos.
31	Three phase transformer, shell type oil cooled with all mounting 3 KVA , 415/240 V, 50 Hz , (Delta/Star) shell type, oil cooled, insulation class - A, vector group - Dyn11, winding - copper wire	EL106	20 Nos.
32	Annual Maintenance Contract (AMC) of the Three phase transformer, shell type oil cooled as mentioned at Sl. No. 31 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL106A	For 20 Nos.

33	<p>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. :</p> <p>Shunt Motor rating : 5 HP, 440V , 1500 rpm. AC Generator rating : 3-Phase, 4 wire, 3.5 KVA, 415 Volts, 0.8 pf, 50 Hz, 1500 Rpm, field voltage -200 V Dc . Exciter - Dc shunt Generator , 230 V Dc , 2.1 Amp , 1500 Rpm , 0.5 HP , Insulation class - B with Suitable 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.</p>	EL116	20 Nos.
34	<p>Annual Maintenance Contract (AMC) of the Motor Generator(DC to AC) set as mentioned at Sl. No. 33 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	EL116A	For 20 Nos.
35	<p>AC Squirrel Cage Motor with star delta starter and triple pole iron clad switch fuse. 2 to 3 HP, 3-phase ,400 volts, 50 cycles</p> <p>AC motor : 5 HP, 4 pole,1440 rpm, 3-Phase, 415 V, 50 Hz, insulation class -F. with star delta starter and triple pole MCB.</p>	EL117	20 Nos.
36	<p>Annual Maintenance Contract (AMC) of the AC Squirrel Cage Motor as mentioned at Sl. No. 35 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	EL117A	For 20 Nos.
37	<p>AC phase-wound slip ring Motor with starter and switch 5 HP, 400 volts, 3-phase, 50 cycles 1440 Rpm , full Load Current - 7.5 Amp. Insulation class - B</p>	EL118	20 Nos.
38	<p>Annual Maintenance Contract (AMC) of the AC phase-wound slip ring Motor as mentioned at Sl. No. 37 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	EL118A	For 20 Nos.
39	<p>A.C. Series type Motor with mechanical load ¼ HP, 230V, 50 Hz, 1500 Rpm.</p>	EL119	20 Nos.
40	<p>Annual Maintenance Contract (AMC) of the A.C. Series type Motor as mentioned at Sl. No. 39 for 03 years after the Warranty period as provided by the Bidder.</p>	EL119A	For 20 Nos.

	Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)		
41	Single Phase, Capacitor start capacitor run Motor with starter switch 1HP, 230volt 50 Hz.	EL120	20 Nos.
42	Annual Maintenance Contract (AMC) of the Single Phase, Capacitor start capacitor run Motor as mentioned at Sl. No. 41 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL120A	20 Nos.
43	Universal Motor with starter/switch 0.75 KW / 1 HP, 1425 Rpm, single Phase , 250 V, 50 Hz , Full load Current - 7 Amp. With starter and control panel containing 0 - 300 V volt meter MI type , 0 - 10 Amp MI type Ammeter , With suitable isolating System And indicating Lamp.	EL121	20 Nos.
44	Annual Maintenance Contract (AMC) of the Universal Motor with starter/switch as mentioned at Sl. No. 43 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL121A	For 20 Nos.
45	Stepper Motor with Digital Controller : Uni polar, 12 V Dc , 0.7 Amp , Step angle : 1.8 degree full step / 0.9 degree half step, 200 Step / Rev , Phase/windings : 4/2, Voltage 12 V at 400mA, Resistance / phase : 30 ohm, with microprocessor based controller.	EL122	20 Nos.
46	Annual Maintenance Contract (AMC) of the Stepper Motor with Digital Controller as mentioned at Sl. No. 45 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL122A	For 20 Nos.
47	Shaded Pole Motor 60 W, 240 V	EL123	20 Nos.
48	Synchronous motor 3 Phase, 3 HP, 415V, 50Hz, 4 Pole, with accessories like starter, excitation arrangements	EL126	20 Nos.
49	Annual Maintenance Contract (AMC) of the Synchronous motor 3 Phase as mentioned at Sl. No. 48 for 03 years after the Warranty period as provided by the Bidder.	EL126A	20 Nos.

	Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)		
50	Thyristor /IGBT controlled D.C. motor drive with tacho-generator feedback arrangement 1 HP, DC Motor : 25 watt, 12 Volt DC, 2000 Rpm , insulation class - B.	EL130	20 Nos.
51	Annual Maintenance Contract (AMC) of the Thyristor /IGBT controlled D.C. motor drive as mentioned at Sl. No. 50 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL130A	For 20 Nos.
52	Thyristor/IGBT controlled A.C. motor drive with VVVF control 3 Phase, 2 HP, 3 phase, 415 V AC, 50 Hz, input terminal -6,rpm 1500, 1 n. digital voltmeter range 0-500 volt, 1 nos. digital ammeter 0- 10 A AC, 1 nos. digital RPM meter & 1 nos. 16 Amps TPN MCB all above instruments are in one panel .	EL131	20 Nos.
53	Annual Maintenance Contract (AMC) of the Thyristor/IGBT controlled A.C. motor drive as mentioned at Sl. No. 52 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	EL131A	For 20 Nos.
54	Washing Machine capacity 6.2 Kg (steam), Top loading, 230 volt, 50 Hz, AC, , direct drive, spin speed 1000 - 1600 RPM, energy rating A+++, fully automatic.	EL134	20 Nos.
55	Machine vice 200 mm swivel base Width of Jaws 200 mm, depth of jaw 60 mm, opening of jaw 150mm,with Tenon slot, Cast Iron or Cast Steel. material of box nut Gun metal	MC67	32 Nos.
56	Machine vice 160 mm swivel base Width of 150 mm, depth of jaw 40 mm, opening of jaw 125mm,with Tenon slot, Cast Iron or Cast Steel, material of box nut Gun metal	MC68	16 Nos.
57	Radius turning attachment Turning radius from 0-50 mm, both concave and convex.	MC70	16 Nos.
58	Universal vice 150 mm Width of 150 mm, depth of jaw 48 mm, opening of jaw 150mm, 360 deg swivelling, with Tenon slot, Cast Iron or Cast Steel, material of box nut Gun metal	MC73	8 Nos.
59	Universal table angle plate size -225X175 mm, height-200mm, length -390 mm. Grade 1,IS-623,Cast Iron.	MC74	8 Nos.

60	shaper indexing center Centre height 100mm	MC77	8 Nos.
61	Shaping machine 450 mm stroke (motorized) with all attachments Length of stroke 450 mm standard table with vertical & cross movement, No of stroke Max.140 per minute, Motor AC/440V 5 H.P, vertical travel of tool post slide 150 mm manually, Automatic lubrication for each slide, All moving guide ways shall be hardened and ground , Standard tool kit for maintenance, Manuals.	MC1	16 Nos.
62	Annual Maintenance Contract (AMC) of the Shaping machine 450 mm stroke (motorized) as mentioned at Sl. No. 61 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MC1A	For 16 Nos.
63	Shaping machine 315 mm stroke (hydraulic) with all attachments 315 mm stroke length (hydraulic type) Power operated, Max, horizontal travel of Table 400 mm, Length & Width of table top400X300 mm with all attachments & accessories,2 H.P., Motor AC/440V,1440 rpm Standard tool kit for maintenance, Manuals.	MC2	8 Nos.
64	Annual Maintenance Contract (AMC) of the Shaping machine 315 mm stroke (hydraulic) as mentioned at Sl. No. 63 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MC2A	For 8 Nos.
65	Double column planer 1500 x 1000 x 1000 (motorized) with all attachments : single tool post on cross rail with automatic lubricating system on two V guides with standard accessories and fittings, 1500X1000X1000 mm motorised with all attachments. Standard tool kit for maintenance, Manuals, 7.5 H.P capacity motor, open and cross belt drive	MC3	8 Nos.
66	Annual Maintenance Contract (AMC) of the Double column planer 1500 x 1000 x 1000 (motorized) as mentioned at Sl. No. 65 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MC3A	8 Nos.
67	Slotter 180 mm stroke (motorized) with all attachments Stroke length 200 mm, Rotary table 325 mm diameter, Longitudinal & cross movement 250 mm & 200 mm, cutting speed of Ram 60 - 90 per minute, Motor 5 H.P, Distance from main column to tool 300 mm. Standard tool kit for maintenance, Manuals.	MC4	8 Nos.

68	<p>Annual Maintenance Contract (AMC) of the Slotter 180 mm stroke (motorized) as mentioned at Sl. No. 67 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MC4A	For 8 Nos.
69	<p>SS and SC centre lathe (all geared) with specification as: Centre height 150 mm and centre distance 1000 mm along with 4 jaw chuck, Taper turning attachment, steadies, auto feed system, safety guard, motorized coolant system, with lighting arrangement and set of lathe tools. Heavy duty high precision quality Norton geared Centre Lathe with all accessories. Back plate, Motor Pulley, Dead centre (MT-4) Square tool post, Thread chasing dial indicator, belt guard, Bed length 1350 mm, Bed type 2V & 2 flat, centre height 150mm (250 mm diameter 4 jaw chuck, 200 mm diameter self centering chuck, 3 H.P AC/440v, 1440 rpm motor with push button starter and V belt. Cooling system with separate motor, Standard tool kit for maintenance, Manuals, taper turning attachment, revolving centre, steady and follower rest, carriers</p>	MC5	24 Nos.
70	<p>Annual Maintenance Contract (AMC) of the SS and SC centre lathe (all geared) as mentioned at Sl. No. 69 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MC5A	For 24 Nos.
71	<p>Tool and cutter grinder 250 mm to admit 450 mm between center-fully motorized work head supplied with tool rest of different types table clamps and other attachments.</p> <p>Precision tool & cutter Grinder Machine. Having admit between centre 450 mm, centre height 150mm, swing table diameter 250 mm & Table size 550X150 mm fitted with 1 H.P. Motor AC/440V, 2800 rpm, Rotary switch, Universal work head, Indexing tooth rest, Set of centre heads, Holder for diamond dresser & tool kit, Radius grinding attachment, Tap lead relieving attachment, Chaser grinding attachment, Drill grinding attachment with 3 jaw chuck with all accessories. Standard tool kit for maintenance, Manuals.</p>	MC6	8 Nos.
72	<p>Annual Maintenance Contract (AMC) of the Tool and cutter grinder 250 mm to admit 450 mm as mentioned at Sl. No. 71 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MC6A	For 8 Nos.

73	Pillar Drill machine 20 mm capacity with drill chuck & key. drill Capacity 20 mm Max. drilling, Motor 3.6 H.P. Spindle speed 150 to 700 rpm. drilling depth/vertical travel 175 mm, spindle nose taper MT-4, Machine vice 150 mm jaw, Drill chuck with key & arbour, Reduction sleeves MT4-3MT4-2.MT4-1,0-1,1-2,2-3,Standard tool kit for maintenance, Manuals.	MC7	8 Nos.
74	Annual Maintenance Contract (AMC) of the Pillar Drill machine 20 mm capacity as mentioned at Sl. No. 73 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MC7A	For 8 Nos.
75	Radial drill 1200 mm area motorized with tapping attachment Drill capacity 50 mm, Max. drilling radius /travel of arm 1200 mm, motor 3.6 H.P. Spindle speed 1500 rpm. drilling depth/vertical travel 300 mm, horizontal travel of arm 600 mm, spindle nose taper MT-5, Machine vice 150 mm jaw, Drill chuck with key & arbour, Reduction sleeves(MT) and sockets, cooling arrangement, Standard tool kit for maintenance, Manuals.	MC8	8 Nos.
76	Annual Maintenance Contract (AMC) of the Radial drill 1200 mm area motorized as mentioned at Sl. No. 75 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MC8A	For 8 Nos.
77	Silicon carbide grinder for carbide tipped tools Wheel diameter 200 mmx25X31.75mm,wheel centre distance 650 mm, Base to centre line of spindle 900 mm, C.I. body diamond dresser, brackets for tool rest one set of extra wheel (approx)Motor 1H.P, 2880 rpm, AC/440V,Standard tool kit for maintenance, Manuals.	MC9	8 Nos.
78	Annual Maintenance Contract (AMC) of the Silicon carbide grinder for carbide tipped tools as mentioned at Sl. No. 77 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MC9A	For 8 Nos.
79	Double ended Pedestal Grinder with 178 mm wheels(one fine and one rough wheel) Wheel diameter 200 mmx25X31.75mm,wheel centre distance 650 mm, Base to centre line of spindle 900 mm, C.I. body diamond dresser, brackets for tool rest one set of extra wheel (approx)Motor 1H.P, 2880 rpm, AC/440V,Standard tool kit for maintenance, Manuals.	MC10	8 Nos.
80	Universal Milling machine with minimum specification as: Table	MC11	16 Nos.

	<p>Length x width 1200 x 300 mm having motorized up & down movement along with auto feed arrangement and with following attachments such as:</p> <ol style="list-style-type: none"> Vertical head Slotting attachment Rack cutting attachment Rotary table Dividing head Adaptors, arbors and collects etc. for holding straight shank drills and cutters from 3 mm to 25 mm. with indexing plate and standard sets of gear(B & S) <p>Table length X width 1200X300 mm with T slots, Longitudinal, Cross & Vertical Travel of table 675X440X340 mm power feed, head tilt 45 deg Up & DOWN, head moved 90 deg Left & Right, 250 mm dia rotary table with indexing device, 150 mm jaw swivel base precision machine Vice, collet, Adapter, Reduction sleeve ISO 40, ,Motor 2H.PAC/440, 1440 rpm, Standard tool kit for maintenance, Manuals,</p>		
81	<p>Annual Maintenance Contract (AMC) of the Universal Milling machine as mentioned at Sl. No. 80 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MC11A	For 16 Nos.
82	<p>Horizontal Milling Machine with minimum specification as: Table Length x width 1200 x 300 mm having motorized up & down movement along with auto feed arrangement and 150mm Universal vice. Table length X width 1200X300 mm with T slots, Longitudinal, Cross & Vertical Travel of table 675X440X340 mm power feed, 250 mm diameter rotary table with indexing device, 150 mm jaw swivel base precision machine Vice, collet, Adapter, Reduction sleeve ISO 40, ,Motor 2H.P AC/440,1440 rpm, Standard tool kit for maintenance, Manuals</p> <ol style="list-style-type: none"> Rack cutting attachment Rotary table Dividing head Adaptors, arbors and collects etc. for holding straight shank drills and cutters from 3 mm to 25 mm with indexing plate and standard sets of gear(B & S) 	MC12	8 Nos.
83	<p>Annual Maintenance Contract (AMC) of Horizontal Milling Machine as mentioned at Sl. No. 82 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MC12A	For 8 Nos.
84	<p>Vertical Milling Machine with minimum specification as : Table Length x width 1200 x 300 mm having motorized up & down movement along with auto feed arrangement along with 150mm</p>	MC13	8 Nos.

	<p>universal vice.</p> <p>Heavy duty precision gear head Vertical Milling machine with all accessories. Having longitudinal feed of table 800 mm automatic. cross and vertical movement 225 & 400 mm manually, fitted with electric coolant pump of 0.10 H.P with other standard accessories, Table size 1350X310 mm. 250 mm dia rotary table with indexing device, 150 mm jaw swivel base precision machine Vice, collet, Adapter, Reduction sleeve ISO 40,2 H.P. AC/440 V,1440 rpm Motor with push button starter and V belt, Standard tool kit for maintenance, Manuals,</p> <p>c. Rack cutting attachment</p> <p>d. Rotary table</p> <p>e. Dividing head</p> <p>f. Adaptors, arbors and collects etc. for holding straight shank drills and cutters from 3 mm to 25 mm with indexing plate and standard sets of gear(B & S), collets (5,10,16,20 mm, 3/8,5/8,1/2 inch, stub arbor A,B,C)</p>		
85	<p>Annual Maintenance Contract (AMC) of the Vertical Milling Machine as mentioned at Sl. No. 84 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MC13A	For 8 Nos.
86	<p>Surface Grinding Machine with minimum specification as:</p> <p>Grinding machine plain surface, wheel dia. 175 mm (or near) with reciprocating table having longitudinal table traverse 200 mm (or near) fully automatic and fitted with adjustable traverse stops, machine to be fully motorized and fitted with ace guards and pumps, tank and pump fittings and also to be supplied with magnetic chuck 250 x 112 mm. Diamond tool holder, set of spanners, grease gun, oil-can and spare grinding wheel for general purpose grinding.</p> <p>Surface grinder: wheel dia : 185mm. Magnatic chuck: 250x120 mm, Diamond tool holder. Set of spanner. Table transverse 200mm. Grease gun. Oil can. Spare grinding wheel for general purpose grinding. Vertical feed least count 0.01 mm, Micro feed least count 0.002 mm, Cross feed least count 0.05 mm, Spindle speed 2800 rpm, motor 1 H.P, with balancing stand, Diamond dresser Tool kit.</p>	MC14	8 Nos.
87	<p>Annual Maintenance Contract (AMC) of the Surface Grinding Machine as mentioned at Sl. No. 86 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MC14A	8 Nos.
88	<p>Cylindrical grinder, Max. grinding length 300 mm Height of centre 130 mm Max. distance between centers 340 mm motor capacity 1H.P. in the work head (Morse taper MT 5 Swivel 90 deg.) and</p>	MC15	8 Nos.

	3H.P. in the wheel head,1H.P. in the table drive, Fixed and follower steady rest with internal grinding attachment wheel balance in stand, with arbor wheel flange ,Standard tool kit for maintenance, Manuals.		
89	Annual Maintenance Contract (AMC) of the Cylindrical grinder as mentioned at Sl. No. 88 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MC15A	For 8 Nos.
90	CNC Vertical Machining Centre with minimum specification as: Table: size:500-600 mm x 220-250mm, T-Slot: Standard, Max Load: 120 Kg; Axis: Travel X-axis x Y-axis x Z-axis: 300-350 x 225-250 x 250-300 mm, LM Guideways [X,Y & Z all axis are with Servo Motor with Servo Drive], Feed Rate: 0-10,000 mm/min, Rapid Traverse: 10,000 mm/min, Positioning Accuracy: 0.010 mm, Repeatability: +/- 0.005 mm, Resolution: 0.001 mm; Auto Tool Changer: Automatic, Number of Tool Stations: 8 (Eight), Tool Length (Max): 40 mm, Tool Dia (Max): 16 mm; Spindle; Spindle power: 3.7kW/5.0 HP (continuous rating- Servo Motor with Servo Drive), Spindle Nose Taper: BT-40, Spindle Max. RPM- 4000 (Continuous Variable); CNC System: Fanuc Oi Mate TD / Oi TD along with motorized automatic coolant system, automatic lubrication system and pneumatic Vice [Pneumatic Compressor to be supplied]. Power Supply: 415V, 50 Hz, 3 Phase compatible. One set of hand tools, Two sets each of Electrical Circuit Diagram, Machine Operation Manual, Machine Maintenance Manual, Spare Parts Manual, Fanuc CNC Programming & Operation Manual. Two sets of standard Tools with Tool Holders along with inserts (10 Nos. of each type) where ever applicable.	MC16	8 Nos.
91	Annual Maintenance Contract (AMC) of the CNC Vertical Machining Centre as mentioned at Sl. No. 90 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MC16A	For 8 Nos.
92	Multimedia based simulator for CNC technology and interactive CNC part programming software for turning & milling with virtual machine operation and simulation using popular operation control system such as Fanuc, Siemens, etc. (Web-based or licensed based) (Minimum 11 User.)	MC17	8 Sets
93	LCD projector - Minimum 2700 Ansilumens with XGA resolution and large type standard quality screen	MC20	8 Nos.
94	Lathe S.S & S.C (All gear head stock)with Taper turning attachment & Tailstock. Technical specification- Centre height – 150mm, Distance between centre-1000mm, Spindle bore-53mm, Motor capacity- 5.5 kw, Machine should be motorized as per machine specification 7 supply with coolant installation. 4-jaw	TR1	40 Nos.

	chuck -150mm And 3-jaw self centering chuck-150mm Related steady rest , follower rest , face plate , driving plate & 4 –way tool post. Quick change gear box for metric & british thread, live center, dead center, revolving center and all others related accessories. With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produced at the time of machine delivery. Same or nearest specification available in present market.		
95	Annual Maintenance Contract (AMC) of the Lathe S.S & S.C (All gear head stock) as mentioned at Sl. No. 94 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	TR1A	For 40 Nos.
96	Lathe S.S & S.C (All gear head stock)with Taper turning attachment & Tailstock. Technical specification- Centre height – 200mm, Distance between centre-1500mm, Swing over bed- 400mm, Swing over cross slide -260mm, Swing over gap bed- 600mm, Width of gap bed -175mm, Spindle bore-53mm, Motor capacity- 5.5 kw, Machine should be motorized as per machine specification & supply with coolant installation. 4-jaw chuck - 250mm And 3-jaw self centering chuck-250mm, Related steady rest , follower rest , face plate , driving plate & 4 –way tool post. Quick change gear box for metric & british thread, live center ,dead center, revolving center and all others related accessories. With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produce at the time of machine delivery. Same or nearest specification available in present market.	TR2	8 Nos.
97	Annual Maintenance Contract (AMC) of the Lathe S.S & S.C (All gear head stock) as mentioned at Sl. No. 96 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	TR2A	For 8 Nos.
98	Lathe tool room S.S & S.C (All gear type) with technical specification- Centre height – 150mm, Distance between centre- 1000mm, Motor capacity- 5.5 kw, Machine should be motorized as per machine specification & supply with coolant installation. 4-jaw chuck -250mm And 3-jaw self centering chuck-150mm, Related steady rest , follower rest , face plate , driving plate & 1– way tool post, draw in type collets set upto 25mm, 0.5mm, relieving attachments and all other related accessories. With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produce at the time of	TR3	8 Nos.

	machine delivery. Same or nearest specification available in present market.		
99	<p>Annual Maintenance Contract (AMC) of Lathe tool room S.S & S.C (All gear type) as mentioned at Sl. No. 98 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	TR3A	For 8 Nos.
100	Grinding Machine pedestal type 200 mm diameter of wheel with wheel guard & vision, hand rest and water guard tank fitted with machine. Motor capacity- 0.75kw, With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produce at the time of machine delivery. Same or nearest specification available in present market.	TR4	8 Nos.
101	Drill machine pillar type-motorized up to 12 mm. Cap. Drill machine pillar type motorized up to 12mm cap, Motor capacity-0.75kw , With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produce at the time of machine delivery. Same or nearest specification available in present market.	TR5	8 Nos.
102	Power saw machine – hydraulic feed system – 400 mm. Blade size. Motor capacity-0.75kw. With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produce at the time of machine delivery. Same or nearest specification available in present market.	TR6	8 Nos.
103	<p>CNC turning Centre with minimum specification as : Chuck size : 135mm, Between centre distance : 250mm, Travel in X : 100mm, Travel in Z : 200mm, Nos. of tool stations : 8 station turret, Spindle power : 3.7kW (continuous rating), preferably with popular control system like, Fanuc/Siemens along with motorized coolant system CNC Lathe /turning Centre (2 axis) detailed specification :</p> <p>1. MACHINE CAPACITY</p> <p>A. Swing over bed : 350mm, B. Turning diameter : 135mm, C. Distance between centres : 250mm, D. Maximum turning length: 200mm</p> <p>2. SPINDLE</p> <p>A. Bore through spindle : 35mm, B. Maximum spindle speed: 4000RPM, C. Spindle power : 3.7KW, D. Type of drive : AC servo spindle motor (digital), E. Chuck size : 135mm, F. Chuck type : 3-jaw hydraulic power operated</p> <p>3. AXES</p> <p>A. X- axis travel: 100mm or higher, B. Z -axis : 200mm or higher, C. Type of drive –X & Z: AC servo Motor</p> <p>4. TURRET</p> <p>A. Bi-directional tool turret: Electronic /servo/ hydraulic, B. Nos. of tools : 12 Nos, C. Tool shank size : 20mm x 20mm, D. Maximum boring bar diameter: 25mm</p>	TRD1	8 Sets

	<p>5. TAIL STOCK A. Quill diameter : 65mm, B. Quill stroke : 70mm, C. Quill : MT-4, D. Quill type : Hydraulic</p> <p>6. CNC SYSTEM A. Control system : Fanuc /Siemens, B. System resolution: 0.001mm, C. Motors & Drives : Compatible with CNC controllers mentioned above, D. Tool number display : On machine operator panel, E. MACHINE CONTROL PANEL: FEED RATE, SPINDLE SPEED OVERRIDE knob, F. MPG : On machine operator panel, G. CNC features : Graphic simulation, programming help, tool offset, MDI, Absolute & Incremental positioning</p> <p>7. STANDARD EQUIPMENT A. VOLTAGE STABILISER (15 kva): 1 Nos. B. Operation manual :1 Nos. C. Maintenance manual: 1 Nos. D. Installation kit :1 Nos. E. MAINTENANCE TOOL KIT: 1 Nos.</p>		
104	<p>Annual Maintenance Contract (AMC) of the CNC turning Centre as mentioned at Sl. No. 103 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	TRD1A	For 8 Sets
105	<p>Multimedia teach ware/courseware for CNC technology and interactive CNC part programming software for turning & milling with virtual machine operation and simulation using popular operation control system such as Fanuc, Siemens, etc. (Web-based or licensed based) (11 user)</p>	TRD2	8 Sets
106	<p>Tool holders to suit the CNC machine for turning, threading, grooving (external & internal), parting off operation, boring, under-cutting with 20 inserts of each operation. External turning holder with 20 inserts, insert type MWLNL: 02 Nos. External turning holder with 20 inserts, insert type MVJNL: 02 Nos. External turning holder with 20 inserts, insert type PDJNR : 02 Nos. Threading holder –External with 20 inserts : 02 Nos. Threading holder- Internal with 20 inserts : 02 Nos. Grooving holder –External with 20 inserts : 02 Nos. Grooving holder- Internal with 20 inserts : 02 Nos. Parting off holder for 2mm width insert with 20 inserts : 02 Nos. Boring holder SCLCL for minimum bore dia. 12mm : 02 Nos. Boring holder SCLCL for minimum bore dia. 16mm : 02 Nos.</p>	TRD3	8 Sets
107	<p>Welding Transformer with all accessories (400A, OCV 60–100 V, 60% duty cycle), Input Supply-440V 2Ph.50Hz. +/- 10%, Input KVA-16, No Load Consumption-2Amps, Welding Current range-40-400A, Duty Cycle -60%, O.C.V-90V A/C, Protection Class-IP21, Electrode Size-2-4mm., Type Of Control-Magnetic Moving core type, Type of Cooling-Fan, Class of insulation-Double Fibre Glass With Varnish Covered Flat Conductor, Type Of Core-C.R.N.G.O, M-42 Grade, Nos. Of Output Terminal-3, MCB rating-63Amps , Weight Approx-130Kgs., Chasis Type-tyre wheel mounted. Should Have welding amps & volt analog meter.</p> <p>Accessories 70sqmm. HOFR Welding cable -7.5mtr. 70sqmm. HOFR Earth Cable-5mtr. Welding 400Amps insulated Holder-01 nos. Crocodile</p>	WL40	16 Sets

	type Earth Clamp-01 nos. Welding Hand Screen With Glass-01 set. Welding Cheeping Hammer-01 nos. Wire Brush-01 nos. Lather Hand Gloves-01 pair. Power Connection Cable 4sqmm.3 core - 5mtr.		
108	Annual Maintenance Contract (AMC) of the Welding Transformer as mentioned at Sl. No. 107 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	WL40A	For 16 Sets
109	Welding Transformer (or) Inverter based welding machine with all accessories (300A , OCV 60 – 100 V, 60% duty cycle) Welding Inverter IGBT based Input Supply-440V 3Ph.50Hz. +/- 10%,Input KVA-10,No Load Consumption-0.5 Amps, Duty Cycle -60%,Welding Current range-10-300A,Arc Force Current-5% of welding current O.C.V-70V D/C, Electrode Size-2-4mm., Type Of Control-Microprocessor Based Soft switch digital control & PWM, Type of Cooling-Fan, Class of insulation-“H”,MCB rating-40Amps , Protection Class-IP23,Weight Approx-22Kgs.,Should Have welding amps digital meter, Arc Force Adjustment. Machine Also have over voltage, phase missing, over current and over heat protection. Accessories:- 70sqmm. HOFR Welding cable -7.5mtr.70sqmm. HOFR Earth Cable-5mtr.Welding 400Amps insulated Holder-01 nos. Crocodile type Earth Clamp-01 nos. Welding Hand Screen With Glass-01 set. Welding Cheeping Hammer-01 nos. Wire Brush-01 nos. Lather Hand Gloves-01 pair. Power Connection Cable 4sqmm. core - 5mtr.	WL41	16 Sets
110	Annual Maintenance Contract (AMC) of the Welding Transformer (or) Inverter based welding machine as mentioned at Sl. No. 109 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	WL41A	For 16 Sets
111	D.C Arc welding rectifiers set with all accessories (400 A. OCV 60 – 100 V, 60% duty cycle), Input Supply-440V 3Ph.50Hz. +/- 10%,Input KVA-14,No Load Consumption-1.5 Amps, Duty Cycle - 60%,Welding Current range-10-400A,O.C.V-80V D/C, Hot Start Current-10-120Amps,Electrode Size-2-5mm., Type Of Control-IGBT Inverter Microprocessor Based Soft switch digital control and user parameter saving system upto 25 user's ,Type of Cooling-Fan, Class of insulation-“F”,MCB rating-63Amps, Protection Class-IP21,Weight Approx-30Kgs.,Chasis Type-4”Casting Revolving Wheel mounted. Should Have welding Amps digital meter, Remote control functioned, Hot Start Adjustment. Machine Also have over voltage, phase missing , over current and	WL42	16 Sets

	<p>over heat protection. And anti stick protection.</p> <p>Accessories</p> <p>90sqmm. HOFR Welding cable -7.5mtr. 90sqmm. HOFR Earth Cable-5mtr. Welding 400Amps insulated Holder-01 nos. Crocodile type Earth Clamp-01 nos. Welding Hand Screen With Glass-01 set. Welding Cheeping Hammer-01 nos. Wire Brush-01 nos. Lather Hand Gloves-01 pair. Power Connection Cable 4sqmm.4 core - 5mtr. Remote control unit with 10mtr. Cable assembly.</p>		
112	<p>Annual Maintenance Contract (AMC) of the D.C Arc welding rectifiers set as mentioned at Sl. No. 111 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	WL42A	For 16 Sets
113	<p>GMAW welding machine 400A capacity with air cooled torch, Regulator, Gas preheater, Gas Hose Standard Accessories</p> <p>Input Supply-440V 3Ph.50Hz. +/- 10%,Input KVA-14,No Load Consumption-1 Amps, Duty Cycle -60%,Welding Current range- 20-400A,O.C.V-18-52V D/C, Wire Size-0.8-1.2mm., Type Of Control- Semi Synergic Type & Microprocessor Based ,Type of Cooling-Fan, Class of insulation-"H",MCB rating-63Amps , Protection Class-IP23,Weight Approx-70Kgs.,Chasis Type- 4"Casting Revolving Wheel mounted. Should Have welding amps & volt digital meter ,Remote control functioned with wire speed and welding current adjust regulator, Crater Adjustment, Auto Burn Back Time Will Be Inbuilt In PCB Card Machine Also have over voltage, phase missing ,over current and over heat protection, Wire feeder type-Servo 2roll Drive with euro connector, Welding Torch type-Gas cooled 400Amps ,euro connection type.CO2 Preheater Voltage-110V A/c.</p> <p>Accessories</p> <p>Copper 35sqmm. HOFR Welding cable -7.5mtr. Copper 35sqmm. HOFR Earth Cable-5mtr. Gas Cooled MIG Welding Torch-01 nos. Crocodile type Earth Clamp-01 nos. Remote Control Cable-10mtr. Wire feeder interconnection cable-7.5mtr. Welding Full Helmet With Glass-01 set. Anti Spatter Spray-01 nos. Wire Brush-01 nos. Lather Hand Gloves-01 pair. Power Connection Cable 4sqmm.4 core -5mtr. Flux Cored MIGWire-1.2mm one roll. CO2 Cylinder- 7CuM-01 Pcs.,CO2 SSDG Regulator-01 nos.CO2 Preheater with core assembly-01 set.,CO2 Flowmeter-01 nos.,CO2 Transparent Nylon Hose Pipe-10mtr.CO2 Cylinder Holding Stand, Torch Tips, Holder, Ceramic Diffuser, Front Cap-05 nos. each.</p>	WL43	16 Sets
114	<p>Annual Maintenance Contract (AMC) of the GMAW welding machine 400A capacity as mentioned at Sl. No. 113 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	WL43A	For 16 Sets

115	<p>AC/DC GTAW welding machine with water cooled torch 300 A, Argon regulator, Gas hose, water circulating system and standard accessories.</p> <p>Input Supply-440V 3Ph.50Hz. +/- 10%,Input KVA-10,No Load Consumption-0.5 Amps, Duty Cycle -60%,Welding Current range-20-300A,O.C.V-65V D/C & A/C ,MMA Electrode Size-2-4mm.,Tunsten Electrode Size-2mm-3.15mm. Type Of Control-Microprocessor Based Digital Soft Switch Control & PWM ,Up slope /Down Slope Time-1-10Sec,Gas Pre Flow Time-1-10Sec,Type of Cooling-Fan, Class of insulation-"F",MCB rating-40Amps , Protection Class-IP23,Weight Approxx-32Kgs.,Should Have welding amps digital meter, Remote control functioned, Hot Start / Arc Force /Background Current Adjustment,4T & 2T Switching Function, TIG & MMA Dual Functioned, Water Cooling Unit Inbuilt in Main power source ,Machine Also have over voltage, phase missing ,over current and over heat protection.</p> <p>Accessories</p> <p>Copper 35sqmm. HOFR Welding cable -7.5mtr. Copper 35sqmm. HOFR Earth Cable-5mtr. Water Cooled GTAW Torch-01 nos. Crocodile type Earth clamp -01 nos. Remote Control Cable-10mtr. Welding Full Helmet With Glass-01 set. Wire Brush-01 nos. Lather Hand Gloves-01 pair. Power Connection Cable 4sqmm 4 core - 5mtr. Tungsten Electrode-2mm,2.5mm & 3mm -10nos. Each, Argon Cylinder-7CuM-01 Pcs., Argon SSDG Regulator-01 nos. Argon Flowmeter-01 nos., Argon Transparent Nylon Hose Pipe-10mtr.Argon Cylinder Holding Stand, Torch Collet, 10 nos. Ceramic Nozzle-10 nos. (Suitable for above machine)</p>	WL44	16 Sets
116	<p>Annual Maintenance Contract (AMC) of the AC/DC GTAW welding machine as mentioned at Sl. No. 115 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	WL44A	For 16 Sets
117	<p>Air Plasma cutting equipment with all accessories, capacity to cut 12 mm clear cut, Input Supply-220V 3Ph.50Hz. +/- 10%,Input KVA-6,No Load Consumption-50watt, Duty Cycle -60%,Cutting Current range-20-45 A, Cutting Capacity-15mm Genuine Fine Cut & 20mm Severance Cut , Pierce rating-10mm , O.C.V-280V D/C, Type Of Control-IGBT Microprocessor Based Digital Soft Switch Control with PWM ,Type of Arc Starting-Pilot Arc, Pilot Arc Current-10A,Type of Cooling-Fan, Class of insulation-"H" , , Protection Class-IP23,Weight Approxx-7Kgs.,Should Have in built air regulator & preset air pressure , euro torch connection ,Air Pressure gauge, Machine Also have phase missing and over heat protection, fault indication.</p> <p>Accessories</p> <p>Copper 25sqmm. HOFR Earth Cable -5mtr. Crocodile type earth clamp-01 nos. Hand Cutting plasma Torch model-TRF-45-6-CC1 with 4mtr. air cooled cable assembly-01 nos. Air filter cum regulator-01 nos. Power Connection Cable 6sqmm. 4core-5mtr. Compressor Hose Pipe-5mtr. Cutting Electrode & Nozzles (consumables)-10set. Pliers-01nos. Cutting Green Goggles-01 nos.</p>	WL45	16 Sets

	Lather Hand Gloves-01 pair, Lather Apron-01 Pcs.		
118	<p>Annual Maintenance Contract (AMC) of Air Plasma cutting equipment as mentioned at Sl. No. 117 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	WL45A	For 16 Sets
119	<p>Air compressor suitable for above air plasma cutting system. Input Supply-440V 3Ph.50Hz.+/-10% Input Load-8.5Amps, Motor Rating-5H.P 1440RPM, Tank Capacity-250L, Compressor Type- Double Piston Oil Immersed, Air Flow Rate-90PSI Continuous, Max. Air Flow Rate-125PSI. Overload Trip-85 PSI (Adjustable) Accessories</p> <p>10mm. Transparent Hose Pipe-05mtr. Starter Switch-01 Nos. Over Load Protector Switch-01 Nos. Pressure Gauge-01 Nos. Power Connection Cable 2.5sqmm 4 core-5mtr. Mobil Suitable for piston-as required</p>	WL46	16 Nos.
120	<p>Annual Maintenance Contract (AMC) of Air compressor as mentioned at Sl. No. 119 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	WL46A	For 16 Nos.
121	<p>Spot welding machine to 15 KVA with all accessories Input supply-440V A/c 2Ph.1N,50Hz.+/- 10%, Input Load-15KVA, Welding Current Range-1000-5000A, OCV-3.2V A/c, Type of Control-Thyristorised Digital Soft Switch ,Welding time range(auto mode)-1-10sec. Throat clearance-200mm, Stroke Length-150mm. Transformer Type-Low linkage, Max Thickness Of MS Sheet for welding as lap joint-1.5+1.5mm, Protection Class-IP26, Type of electrode cooling-Water, Type of stroke-pneumatic ,Type of transformer cooling-Fan, Weight-250Kgs. Approx. Machine should have motorized water cooling unit external fitted, input volts and amps display, electronics soft switch timer. Accessories:</p> <p>Pistol type hand welding gun with 3mtr. X 95sqmm. HOFR cable assembly-02 nos. Power connection cable-6sqmm. 3 core-5mtr. Copper welding arm electrode-02 set. Air Compressor-80PSI-01 nos.</p>	WL48	16 Sets
122	<p>Annual Maintenance Contract (AMC) of the Spot welding machine to 15 KVA as mentioned at Sl. No. 121 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to</p>	WL48A	For 16 Sets

	be mentioned specifically)		
123	<p>Portable gas cutting machine capable of cutting Straight & Circular with all accessories Speed range :- 125-400mm/min Cutting capacity:- Square edge 200mm thick steel. 45degree Bevel cutting 150mm thick steel circles from 150mm to 2000mm dia. By using circle cutting attachments. Fuel gas acetylene / LPG by selecting the appropriate nozzle power supply 220 volts A/C 50Hz. Gas connection:- ¼ G. Accessories:- Oxygen SSDG regulator-01 Nos., Acetylene SSDG regulator-01 Nos. Flash back arrestor cylinder side-02 Nos. Oxygen and acetylene hose pipe 10 mtr. Each power connection cable -10 mtr.X2.5 Sq. mtr. 3 core with 15 Amp. Plug top.</p>	WL49	16 Sets
124	<p>Pedestal grinder fitted with coarse and medium grain size grinding wheels diameter 300 mm Pedestal body – made of heavy duty angle frame of 65X65X6 mm with 3mm m/s sheet fabricating. Spindle- is of large diameter, mounted on heavy duty ball bearings. Fitted with one coarse and one medium grain wheel Dia-300mm. input supply -440 Volt. 3 ph. Input load 1.5 KW. Motor rating – 2 H.P. 1500 rpm. Complete with starter and ELCB 25 Amps. & 60 Amps.</p>	WL50	16 Sets
125	<p>Bench grinder fitted with fine grain size silicon carbide green grinding wheel diameter 150 mm 1/2H.P. 415 Volt.3 Phase 50Hz 2850 rpm motor fitted with 2 nos. 150 silicon grinding wheel one rough & one fine , with tools rest.</p>	WL51	16 Sets
126	<p>AG 4 Grinder : 670W, Volt: 220-230V, Amp: 3A, Frequency, 50/60Hz, 11000rpm Wheel Diameter: 4", Applications: cutting, grinding, polishing pads</p>	WL52	32 Nos.
127	<p>Suitable Arc welding table with positioner Size of table-1000mm(L)x900mm(H)x600mm(W), Table top fabricated by 10mm thick plate and having slot for job clamping, Gear box attachment which manually rotate the job up to 180, Equipment should stop at 0 to 90, Maximum job carrying capacity-10Kg, Table stand fabricated by 75ISMC, Table stand chassis fabricated by 100ISMC, Overhead maximum job clamping height-700mm (Adjustable), Reverse forward option must be with the equipment. Accessories: Job clamp-4 nos., Over head-1 nos. Adjustable spanner-4 nos. Ring spanner-4 nos. Nut Bolt-8 nos. (Suitable for the equipment)</p>	WL54	96 Nos.
128	Hand shearing machine capacity to cut 6 mm sheets and flats	WL56	16 Nos.
129	Power saw machine 14" Complete hydraulic system. Good quality.	WL57	16 Nos.
130	Portable drilling machine (Cap. 6 mm)	WL58	16 Nos.
131	Oven, electrode drying 0 to 350°C, 10 kg capacity	WL59	16 Nos.
132	Oxy Acetylene Gas cutting blow pipe, Cutting capacity -300mm thickness MS plate., type-blow pipe mixing, head angle 90degree, torch connection -3/8 BSP RH for oxygen, 3/8 BSP LH flue gas.	WL61	32 Sets
133	<p>Portable abrasive cut-off machine Cutting capacity – at rectangle 100X196mm, squar-119X119mm & L profile- 130X130mm. No load speed 3800 rpm, Saw blade dia. 355mm, blade bore 25.4mm, wat.2000.</p>	WL71	8 Nos.
134	<p>Welding Simulators for MMAW Input supply-220 V 50Hz.welding current-6Amps.Arc Voltage-30-</p>	WL73	8 Nos.

	35VDC,welding speed-1-12mm/s, Arc gap length-0.5-6mm,OCV-55VDC,Angle of inclination of welding tool imitator electrode , deg, within range-45 +/- 5% , Weight-88.35 Kg. Simulator will be virtual type with real arc filling, Support 3 different process of welding (MMAW) , Negligible fumes, Arc length ,welding speed and angles of electrode inclination adjustment, report will be generated-Arc length time graph, welding speed time graph, Time indicator, Error indicator on longitudinal angle of welding tool Accessories: Inter connection cable-3mtr. TIG torch-01 nos. MIG torch-01 nos. MMAW welding torch-01 nos. Standard base plate suitable for 1g-5g & 1f-4f Printer to report pint -01 nos. UPS-01 nos.		
135	Welding Simulators for GTAW, Input supply-220 V 50Hz.welding current-6Amps.Arc Voltage-30-35VDC,welding speed-1-12mm/s, Arc gap length-0.5-6mm,OCV-55VDC,Angle of inclination of welding tool imitator electrode , deg, within range-45 +/- 5% , Weight-88.35 Kg. Simulator will be virtual type with real arc filling, Support 3 different process of welding (GTAW) , Negligible fumes, Arc length ,welding speed and angles of electrode inclination adjustment, report will be generated-Arc length time graph, welding speed time graph, Time indicator, Error indicator on longitudinal angle of welding tool Accessories: Inter connection cable-3mtr. TIG torch-01 nos. MIG torch-01 nos. MMAW welding torch-01 nos. Standard base plate suitable for 1g-5g & 1f-4f Printer to report pint -01 nos. UPS-01 nos.	WL74	8 Nos.
136	Welding Simulators for GMAW, Input supply-220 V 50Hz.welding current-6Amps.Arc Voltage-30-35VDC,welding speed-1-12mm/s, Arc gap length-0.5-6mm,OCV-55VDC,Angle of inclination of welding tool imitator electrode , deg, within range-45 +/- 5% , Weight-88.35 Kg. Simulator will be virtual type with real arc filling, Support 3 different process of welding (GMAW) , Negligible fumes, Arc length ,welding speed and angles of electrode inclination adjustment, report will be generated-Arc length time graph, welding speed time graph, Time indicator, Error indicator on longitudinal angle of welding tool Accessories : Inter connection cable-3mtr. TIG torch-01 nos. MIG torch-01 nos. MMAW welding torch-01 nos. Standard base plate suitable for 1g-5g & 1f-4f Printer to report pint -01 nos. UPS-01 nos.	WL75	8 Nos.
137	AC motor 1/4 HP	EM-5	12 Nos.
138	Portable electric Drill Machine : Input Power- 220-250 V, Max. Drilling Capacity – 13 mm, Full Load Amp. 1.3 A, RPM – 700.	MD102	12 Nos.
139	Air conditioned CRDI Vehicle in running condition (Not more than 05 years old & Maximum running Kilometre upto 60,000 with proper up to date document of Motor Vehicle Tax submission, Insurance certificate, Fitness certificate(if applicable), Pollution certificate, Registration certificate / Blue Book of the Vehicle, Details of previous servicing records)--LMV Length : 3995mm, Width : 1695mm, Height : 1555mm, Engine Displacement1248 cc, BHP74bhp@4000rpm, Torque 190Nm@2000rpm, Nos. of Cylinders : 4.Transfer of ownership / registration to be made in favour of the consignee Institute as per Motor Vehicle Act.	MDC1	12 Nos.
140	Annual Maintenance Contract (AMC) of the Air conditioned CRDI Vehicle in running condition as mentioned at Sl. No. 139 for 03	MDC1A	12 Nos.

	years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)		
141	Bench lever shears 250mm Blade x 3mm Capacity	MDC4	12 Nos.
142	Diesel engine - CRDI- 4 stroke for Dismantling and assembling with swivelling stand. Engine Displacement: 1405 cc, No of cylinder : 4, Max. Power : 76 bhp @ 4500 RPM, Max torque : 135Nm @ 2500 RPM.	MDC5	12 Nos.
143	Annual Maintenance Contract (AMC) of the Diesel engine - CRDI- 4 stroke for Dismantling as mentioned at Sl. No. 142 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MDC5A	For 12 Nos.
144	Diesel engine(Running condition) (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereof) Stationary type Vertical, Double Cylinder, Air-Cooled, Four-Stroke Cycle, Compression, Ignition Diesel Engine. Cylinder : 02, CC: 1.56 LTR, RPM: 1500.	MDC6	12 Nos.
145	Annual Maintenance Contract (AMC) of the Diesel engine(Running condition) as mentioned at Sl. No. 144 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MDC6A	For 12 Nos.
146	Discrete component trainer/ Basic electronics trainer	MDC7	12 Nos.
147	Annual Maintenance Contract (AMC) of the Discrete component trainer/ Basic electronics trainer as mentioned at Sl. No. 146 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MDC7A	For 12 Nos.
148	Drilling machine benchInput power : 680 Watt, Max. drilling capacity : 12mm, Spindle travel: 60mm, Working radius: 143mm, Working size : 205x205mm, column size: 45x500mm.	MDC8	12 Nos.
149	Dual Magnetization Yoke AC / HWDC, 230 VAC, 50Hz	MDC9	12 Nos.
150	Grinding machine (General purpose) D.E. pedestal with 300 mm	MDC11	12 Nos.

	diameter wheel rough and smooth, Motor Power: 1 HP, RPM: 3000, Single phase,		
151	Heavy Commercial vehicle type(without body on frame) Engine Description : BSIV Common Rail Engine Capacity : 5883 cm3 Nos. of Cylinders : 6 Inline Engine Output : 132.5 kW @ 2500 r/min Torque : 700 Nm at 1200 - 1600 r/min Gross Vehicle Weight : 25000 KG Ladder Type Heavy Duty Frame with Riveted/ Bolted Cross Members	MDC12	12 Nos.
152	Annual Maintenance Contract (AMC) of the Heavy Commercial vehicle type as mentioned at Sl. No. 151 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MDC12A	For 12 Nos.
153	Hydraulic jack HI-LIFT type 3 ton and 5 ton capacity	MDC14	12 Nos.
154	Pneumatic rivet gun with standard accessories. Rivet setting capacity : All material rivet, Rivet range : 3.2 mm to 4.8 mm, Min. Pressure : 5Bar, Max. Pressure: 7Bar, Stroke Max. 26mm, Cycle time : 3.9sec, Free air volume required @6Bar- 4.3Ltr.	MDC18	12 Nos.
155	Spring Tension Tester, Capacity : 5Kgf to 200Kgf, Type: Universal Tension Compression, Least count : 0.01mm, Measuring unit : N, Kgf, Lbf, Display: Microcontroller based 6 digit digital display system and LCD, Max. Deflection : 300mm, Power required : 180VAC to 260VAC @ 50Hz.	MDC19	12 Nos.
156	Trolley type portable air compressor : Single Cylinder, Single Stage, Input power: 220 V AC, Motor: 2 HP, Tank capacity: 45 Ltr, Working pressure: 6.5 kg/sq cm. along with accessories.	MDC21	12 Nos.
157	Annual Maintenance Contract (AMC) of the Trolley type portable air compressor as mentioned at Sl. No. 156 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MDC21A	For 12 Nos.
158	Working Condition of Diesel Engine -CRDI - 4 stroke Engine (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereof) Assembled with fault simulation board. Displacement 2179 cc, No of cylinder : 4, Max Power 140 bhp @ 4000 RPM, Max Torque 320 Nm @ 1700 RPM, Fitted with all accessories and Assembly with fault simulation board.	MDC24	12 Nos.
159	Annual Maintenance Contract (AMC) of the Working Condition of Diesel Engine -CRDI - 4 stroke Engine as mentioned at Sl. No. 158	MDC24A	For 12 Nos.

	for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)		
160	Split phase induction motor, Specifications : 1/4 hp, 230 V, Rolled sheet body material, Certified with IEC,IS,NEMA standard and UL, motor with Nema48 Frame, easy to operate even on low voltage, Single phase motor with permanent split capacitor type.	RACB-1	12 Nos.
161	Annual Maintenance Contract (AMC) of the Split phase induction motor as mentioned at Sl. No. 160 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	RACB-1A	For 12 Nos.
162	Capacitor start induction motor, Specifications : 1/2 Hp, 230 V, Rolled sheet body material, Certified with IEC,IS,NEMA standard and UL, motor with Nema Frame; Single phase motor with capacitor start induction type,	RACB-2	8 Nos.
163	Annual Maintenance Contract (AMC) of the Capacitor start induction motor as mentioned at Sl. No. 162 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	RACB-2A	For 8 Nos.
164	AC 3 Phase motor, 400/50 Hz, Specifications : 2 H.P., Number of poles two, speed 3000 rpm, 3 phase, 400 V, 50Hz, Frame size 63-400 for TEFC, Construction : GD ALUMINIUM AND CAST IRON	RACB-3	8 Nos.
165	Annual Maintenance Contract (AMC) of the AC 3 Phase motor as mentioned at Sl. No. 164 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	RACB-3A	8 Nos.
166	Grinding Machine : Specifications: 200mm, 3000rpm, Double ended 1/2 hp	RACB-13	8 Nos.
167	Two stage rotary vacuum pump : Specifications capacity approx. 60 - 100 rmp capable of evacuating to 50 microns of Hg and fitted with gas ballast, anti suck back valve and single phase motor	RACB-15	8 Nos.

168	Air compressor : Specifications Two stage for oil - less dry air, with rush proof tank assembly, heater and controls max. pr. 10 kgs /sq.m Capacity 45 ltr. Motor 1 hp.	RACB-16	8 Nos.
169	Annual Maintenance Contract (AMC) of the Air compressor as mentioned at Sl. No. 168 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	RACB-16A	For 8 Nos.
170	Reciprocating compressor : Specifications provision of capacity control etc. for demonstration. Capacity 2 ton open type.	RACB-17	8 Nos.
171	Annual Maintenance Contract (AMC) of the Reciprocating compressor as mentioned at Sl. No. 170 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	RACB-17A	For 8 Nos.
172	Circulating water pump (small) : Specifications 0.5 H.P with stainless steel tank capacity 20 liters within let/ outlet provision.	RACB-27	8 Nos.
173	Rotary hermetic compressor, Specifications: 2 Ton	RACB-29	8 Nos.
174	Screw compressor, Specifications : 5Ton	RACB-30	8 Nos.
175	Annual Maintenance Contract (AMC) of the Screw compressor as mentioned at Sl. No. 174 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	RACB-30A	For 8 Nos.
176	Air Brake Assembly, Dual circuit full Air "S" cam brake, Brake drum dia. : 408 mm, Lining area : Front : 1410 sq.cm, Rear: 1410 sq.cm.	MMV4	8 Nos.
177	Annual Maintenance Contract (AMC) of the Air Brake Assembly, Dual circuit full Air "S" cam brake as mentioned at Sl. No. 176 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMV4A	For 8 Nos.
178	Fuel feed pump for Diesel, Fitted with Six Cylinder (Approx 6000CC) Diesel Engine. Plunger type.	MMV75	8 Nos.
179	Annual Maintenance Contract (AMC) of the Fuel feed pump for	MMV75A	For 8 Nos.

	<p>Diesel as mentioned at Sl. No. 178 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>		
180	Fuel Injection Pump (Diesel) In-line, Fitted with Six Cylinder (Approx 6000CC) Diesel Engine with mechanical governor.	MMV76	8 Nos.
181	<p>Annual Maintenance Contract (AMC) of the Fuel Injection Pump (Diesel) In-line as mentioned at Sl. No. 180 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MMV76A	For s8 Nos.
182	Fuel Injection Pump Dismantling Tool Kit/ Universal Vice	MMV77	8 Nos.
183	<p>Annual Maintenance Contract (AMC) of the Fuel Injection Pump Dismantling Tool Kit as mentioned at Sl. No. 182 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MMV77A	For 8 Nos.
184	Fuel Injection Pump VE pump along with special tools and accessories : Fitted with pneumatic governor, with Maximum and minimum speed governor with variable speed flyweight governor, VE pump along with special tools and accessories. 4 cylinder type, new and branded item - 1 each, fitted in stand with all accessories and connection. Genuine parts.	MMV78	8 Nos.
185	<p>Annual Maintenance Contract (AMC) of the Fuel Injection Pump VE pump along as mentioned at Sl. No. 184 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	MMV78A	For 8 Nos.
186	Fuel Injection Pump Pressure Time (PT) pump along with special tools and accessories: Fitted with pneumatic governor, with Maximum and minimum speed governor with variable speed flyweight governor, Pressure Time (PT) pump along with special tools and accessories. 4 cylinder type, new and branded item - 1 each, fitted in stand with all accessories and connection. Genuine parts.	MMV78a	8 Nos.

187	Annual Maintenance Contract (AMC) of the Fuel Injection Pump Pressure Time (PT) pump as mentioned at Sl. No. 186 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMV78aA	For 8 Nos.
188	Fuel Injection Pump Distributor fuel rotary pump(DPC) pump along with special tools and accessories : Fitted with pneumatic governor, with Maximum and minimum speed governor with variable speed flyweight governor, Distributor fuel rotary pump (DPC) pumps along with special tools and accessories. 4 cylinder type, new and branded item - 1 each, fitted in stand with all accessories and connection. Genuine parts.	MMV78b	For 8 Nos.
189	Annual Maintenance Contract (AMC) of the Fuel Injection Pump Distributor fuel rotary pump(DPC) as mentioned at Sl. No. 188 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMV78bA	For 8 Nos.
190	Multipoint Fuel injection pump : Fitted with 4 cylinder engine.	MMV112	16 Nos.
191	Annual Maintenance Contract (AMC) of the Multipoint Fuel injection pump as mentioned at Sl. No. 190 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMV112A	For 16 Nos.
192	Portable electric Drill Machine : Input Power- 220-250 V, Max. Drilling Capacity – 13 mm, Full Load Amp. 1.3 A, RPM – 700.	MMV132	8 Nos.
193	Vacuum assisted hydraulics brake assembly with vacuum booster	MMV193	8 Nos.
194	Annual Maintenance Contract (AMC) of the Vacuum assisted hydraulics brake assembly as mentioned at Sl. No. 193 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMV193A	For 8 Nos.
195	Air conditioned CRDI Vehicle in running condition (Not more than 05 years old & Maximum running Kilometer upto 60,000 with proper up to date document of Motor Vehicle Tax submission, Insurance certificate, Fitness certificate(if applicable),	MMVC2	8 Nos.

	Pollution certificate, Registration certificate / Blue Book of the Vehicle, Details of previous servicing records)- LMVLength:3995mm, Width:1695mm, Height:1555mm, Engine Displacement1248 cc, BHP74bhp@4000rpm, Torque190Nm@2000rpm, Nos. of Cylinders : 4Transfer of ownership / registration to be made in favour of the consignee Institute as per Motor Vehicle Act.		
196	Annual Maintenance Contract (AMC) of the Air conditioned CRDI Vehicle in running condition as mentioned at Sl. No. 195 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC2A	For 8 Nos.
197	Arbor press 2 TON Capacity	MMVC5	8 Nos.
198	Diesel engine - CRDI- 4 stroke for Dismantling and assembling with swivelling stand. Engine Displacement : 1405 cc, No of cylinder : 4, Max. Power : 76 bhp @ 4500 RPM, Max torque : 135Nm @ 2500 RPM.	MMVC8	8Nos.
199	Annual Maintenance Contract (AMC) of the Diesel engine - CRDI- 4 stroke as mentioned at Sl. No. 198 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC8A	For 8 Nos.
200	Diesel engine(Running condition) (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereof) Stationary type Vertical, Double Cylinder, Air-Cooled, Four-Stroke Cycle, Compression Ignition Diesel Engine. Cylinder : 02, CC: 1.56 LTR, RPM: 1500.	MMVC9	8 Nos.
201	Annual Maintenance Contract (AMC) of the Diesel engine(Running condition) as mentioned at Sl. No. 200 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC9A	For 8 Nos.
202	Drilling machine bench, Input power : 680 Watt, Max. drilling capacity: 12mm, Spindle travel: 60mm, Working radius: 143mm, Working size: 205x205mm, column size: 45x500mm.	MMVC11	8 Nos.
203	Four stroke petrol engine with CNG setup-working condition Engine (Not more than 5 years old from the date of	MMVC13	8 Nos.

	manufacturing with machine identification nos. / product nos. along with supporting documents thereof) Displacement:796 cc, Nos. of Cylinders : 3, Max. Power : 47 bhp@6000 RPM, Max. torque:69Nm@3500 RPM, Alternate fuel: petrol		
204	Annual Maintenance Contract (AMC) of Four stroke petrol engine with CNG setup as mentioned at Sl. No. 203 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC13A	For 8 Nos.
205	Grinding machine (General purpose) : D.E. pedestal with 300 mm diameter wheel rough and smooth, Motor Power: 1 HP, RPM: 3000, Single phase,	MMVC15	8 Nos.
206	Heavy Commercial vehicle type (without body on frame) Engine Description : BSIV Common Rail Engine Capacity : 5883 cm3 Nos. of Cylinders : 6 Inline Engine Output : 132.5 kW @ 2500 r/min Torque: 700 Nm at 1200 - 1600 r/min Gross Vehicle Weight : 25000 KG Ladder Type Heavy Duty Frame with Riveted/ Bolted Cross Members Transfer of ownership / registration to be made in favour of the consignee Institute as per Motor Vehicle Act.	MMVC17	8 Nos.
207	Annual Maintenance Contract (AMC) of the Heavy Commercial vehicle type as mentioned at Sl. No. 206 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC17A	For 8 Nos.
208	MPFI petrol engine with swivelling stand along with special tools for dismantling and assembly. Engine Displacement : 998 cc, No of cylinder : 3, Max. Power : 67 BHP @ 6200 RPM, Max torque : 90Nm @ 3500 RPM.	MMVC20	8 Nos.
209	Annual Maintenance Contract (AMC) of the MPFI petrol engine with swivelling stand as mentioned at Sl. No. 208 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC20A	For 8 Nos.
210	Petrol engine 2 stroke motor cycle / Scooter along with special tools and accessories. Engine capacity : 175 cc, Max power : 9 BHP @ 5000 RPM, No of cylinder : 1, Air cooled.	MMVC22	8 Nos.

211	Annual Maintenance Contract (AMC) of the Petrol engine 2 stroke motor cycle / Scooter as mentioned at Sl. No. 210 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC22A	For 8 Nos.
212	Trolley type portable air compressorSingle Cylinder, Single Stage, Input power : 220 V AC, Motor : 2 HP, Tank capacity : 45 Ltr, Working pressure : 6.5 kg/sq cm. along with accessories.	MMVC28	8 Nos.
213	Annual Maintenance Contract (AMC) of the Trolley type portable air compressorSingle Cylinder as mentioned at Sl. No. 212 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC28A	For 8 Nos.
214	Tube/ tyre vulcanizing machine, 220V, 500watt, Timer scope: 0min. To 120min. Curing head size: 8cm to 17cm with Truck Valve stem, Depth: 15cm, Temperature Range: 140 - 150 degree centigrade,	MMVC29	8 Nos.
215	Annual Maintenance Contract (AMC) of the Tube/ tyre vulcanizing machine as mentioned at Sl. No. 214 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC29A	For 8 Nos.
216	Two post car lift , capacity 4000 kg	MMVC30	8 Nos.
217	Annual Maintenance Contract (AMC) of the Two post car lift as mentioned at Sl. No. 216for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC30A	For 8 Nos.
218	Tyre Changer Machine, Ring clamping outer : 11" to 19", Inner: 12" to 22", Bead breaker force: 1800Kg, Max. rotation torque : 1100Nm, Max. rim dia.:800mm, Max. rim width : 320mm, Working pressure : 6 to 8 Bar, Motor Power : 0.75/1.0 Kw.	MMVC31	8 Nos.
219	Annual Maintenance Contract (AMC) of the Tyre Changer Machine, Ring clamping outer as mentioned at Sl. No. 218 for 03 years after the Warranty period as provided by the Bidder.	MMVC31A	For 8 Nos.

	Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)		
220	Wheel alignment Machine – computerized 3D Wheel size range : 10" to 20", Total toe : $\pm 20^\circ$ with $\pm 2^\circ$, Individual toe : $\pm 20^\circ$ with $\pm 2^\circ$, Camber : $\pm 18^\circ$ with $\pm 5^\circ$, Castor : $\pm 18^\circ$ with $\pm 5^\circ$, Kingpin inclination : $\pm 18^\circ$ with $\pm 5^\circ$, Wheel set back : $\pm 15^\circ$ with $\pm 2^\circ$, Load capacity of turn cables: 600Kg, Power supply: 200V single phase.	MMVC35	8 Nos.
221	Annual Maintenance Contract (AMC) of the Wheel alignment Machine as mentioned at Sl. No. 220 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC35A	For 8 Nos.
222	Wheel balancing machine, Balancing accuracy : 1g, Cycle time : 5 sec. To 8 sec. Rim width 1.5" to 20", Rim dia. : 10" to 30", Wheel dia. Max.: 850mm, Wheel weight Max.: 65Kg, Power supply : 230V single phase.	MMVC36	8 Nos.
223	Annual Maintenance Contract (AMC) of the Wheel balancing machine, Balancing accuracy as mentioned at Sl. No. 222 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note : Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC36A	For 8 sNos.
224	Working Condition of Diesel Engine -CRDI - 4 stroke Engine (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereof) Assembly with fault simulation board. Displacement 2179 cc, No of cylinder: 4, Max Power 140 bhp @ 4000 RPM, Max Torque 320 Nm @ 1700 RPM, Fitted with all accessories and Assembly with fault simulation board.	MMVC37	8 Nos.
225	Annual Maintenance Contract (AMC) of the Working Condition of Diesel Engine -CRDI - 4 stroke Engine as mentioned at Sl. No. 224 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to	MMVC37A	For 8 Nos.

	be mentioned specifically)		
226	Working Condition of petrol MPFI Engine (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereof) assembly with fault simulation board. Engine Displacement 796 cc, No of cylinder : 3, max Power : 48 BHP @ 6000 RPM, Max Torque: 69 Nm @ 3500 RPM, Valve mechanism: SOHC.	MMVC38	8 Nos.
227	Annual Maintenance Contract (AMC) of the Working Condition of petrol MPFI Engine as mentioned at Sl. No. 226 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC38A	For 8 Nos.
228	Surface plate : Cast iron surface plate shall conform to IS:2285-2003. It shall be made from plain grey iron castings conforming to grade FG:220 of IS : 210-1978. Material test certificates as required by the Indian standard shall be submitted along with the supply. Size :- 400 mm x 400 mm	PL01	8 Nos.
229	Pipe Stock and Die : Pipe stock & die, Size :- 1/2" to 1.5" Materials :- Body- Cast Iron, Cup-S.G. Iron/Ductile Cast Iron, Chaser- H.C.H.Cr, Screw- Harden, Wire-Spring Steel, Bolt-G-8.8, Ring Cast Iron, Handle-S.G. Iron, as per IS:554 1999/ISO 7-1 1994.	PL57	32 Sets
230	Hammering drilling machine : Length -275 mm., Weight-1.8Kg.- 2.0 kg., Optimal range-1/8" to 5/16", R.P.M.-3000, Vibration level drilling-16 to15.5 mm., Max Power-820 W/230v/single phase,	PL86	8 Nos.
231	Electric PPR pipe welding machine : Welding Size 20, 25, 32, 40, 50, 63 mm, Ambient humidity-20-80 degree Cen., Voltage range Ac-180-240 Voltage, 50Hz, The heating head temperature-260 degree centigrade. Wattage - 800-900, Weight -3 - 3.6 kg. Materials:- Cast Iron (Red and gray we offer a high grade range)	PL87	8 Nos.
232	Annual Maintenance Contract (AMC) of Electric PPR pipe welding machine as mentioned at Sl. No. 231 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	PL87A	For 8 Nos.
233	D.E. Pedestal Grinder with two wheels 175 mm rough and smooth. Heavy duty, C.I. body double ended pedestal grinder M/C duly fitted with 0.5 HP motor AC/ 220/230V.R.P.M.:- 2880 with rotary switch, a pair of grinding wheels of size 8"x1"x1/2" (one rough & one smooth) a pair of eye shield for Spark protection & a pair of C.I. brackets as tool rests, duly mounted on M.S. Fabricated pedestal stand. With diamond wheel Dresser & maintenance kit.	PL89	8 Nos.
234	Hydraulic pressure machine for testing leakage in GI pipe fittings etc. Type of pres-Four pillar, Down Stoke double action and PLC	PL90	8 Nos.

	controlled, Capacity-500 Ton, Table Size-2500x2500mm, Bed Size(Working Platform)-2500x2500mm, Working Height-800-1100mm, Pressure-2.5 mpa, Head-35 MTR, Material- Mild Steel.		
235	Bench drilling machine : Drilling capacity in steel :-13mm Morse taper in spindle:- M-1 Spindle traverse :-100mm Pillar Diameter:- 57.15 mm Distance between centre of spindle and column front :- 149mm Max. distance between spindle and table :-300mm Max. distance between spindle and base:-500mm Table Working surface :- 200 x 200mm (with coolant gutter) Base Working surface:-180 X 210mm Nos. of spindle speeds :- 4 Range of spindle speeds (rpm):-480 to 2080 Power of the spindle drive motor :-0.5 H.P,1425 R.P.M Accessories: Machine Lamp- 1Nos.	PL93	8 Nos.
236	Pipe bender(Hydraulic type) : ½"x2" M.S./S.S. pipe bending machine M.S. plate Fabricated body, 2/10 H.P. motor, Power Pack, Revs-Fwd Inching Auto Control Panel,, Hydraulic System Pipe Clamping System, With 1" pipe O.D. ,Radius 10" Die Set.	PL96	8 Nos.

Sd/-
Director of Industrial Training
West Bengal