DIRECTORATE OF TECHNICAL EDUCATION AND TRAINING, ODISHA (DTE&T)

Killa Maidan, Buxi Bazar, Cuttack-753001
Phone No-0671(2301061), Fax-0671(2301961)

NIT No. Date:

File No: DTET-PROC-ET-0002-2025

REQUEST FOR PROPOSAL (RFP)

For

Supply, installation and commissioning of Automobile equipment for different Govt. ITIs & Polytechnics/Engineering Schools of Odisha.

DTE&T under the administrative control of Skill Development & Technical Education Department, Government of Odisha (the Client) invites sealed proposals from the eligible bidders through e-tender process for **"Supply, installation and commissioning of Automobile equipment for different Govt. ITIs & Polytechnics/Engineering Schools of Odisha".** Bidders fulfilling the prescribed eligibility criteria of the RFP can access and download the complete RFP Document and other details from www.dtet.odisha.gov.in/www.tendersodisha.gov.in.
The major events under the bid process are:

Sr. No.	List of Key Events	Critical Dates
1	Date of Issue of RFP	03.06.2026
2	Last date for submission of Pre-Bid Queries	08.06.2026 (by 02:00 PM)
3	Date of Pre-proposal Meeting	12.06.2026 (at 03.00 PM)
4	Due Date for Submission of Proposal	30.06.2026 (by 5:00 PM)
5	Date of Opening of Technical proposal	01.07.2026 (by 11:00 AM)
6	Date of Opening Financial Proposal	Through the e-tender portal to be intimated later by e-mail to the technically qualified bidders.
7	Method of Selection	Least Cost Selection (LCS)

The proposals complete in all respect must be submitted through e-tender process latest by 30.06.2026 before 5:00 PM) clearly mentioning **'Supply, installation and commissioning of Automobile equipment for different Govt. ITIs & Polytechnics/Engineering Schools of Odisha''.** The proposals received beyond the last date and time will be rejected without assigning any reason. Prospective bidders are advised to regularly visit the DTE&T Odisha website (www.dtet.odisha.gov.in/en/tenders) and e-procurement (Tenders Odisha) Portal https://tendersodisha.gov.in for any Updates/Corrigendum/Amendment. Any subsequent updates will be announced on the DTE&T Odisha website and e-procurement Odisha portal. The authority reserves all the rights to reject any/ all proposals at any stage without assigning any reason thereof.

Sd/-
Director
DTE&T, Odisha

Memo No. **Date:**

1. Copy to e-Governance Cell, SD&TE Department, Government of Odisha for publication in the website of the Department for wide publicity.

2. Copy to Smt. Kalpana Panigrahi, I/c S&B Section, for publication in the Website and Notice Board of DTE&T without delay for wide publicity.

Sd/-
Director
DTE&T, Odisha

REQUEST FOR PROPOSAL

FOR

SUPPLY, INSTALLATION, & COMMISSIONING OF AUTOMOBILE EQUIPMENT FOR DIFFERENT GOVT. ITIS & POLYTECHNICS/ENGINEERING SCHOOLS OF ODISHA

Directorate of Technical Education and Training, Odisha
Killa Maidan, Buxi Bazar,
Cuttack-753001
Phone No-0671(2301061),
Fax-0671(2301961)
Email: dtetorissa@gmail.com; dtetodisha.procuremeent@gmail.com

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Disclaimer

The information contained in this Request for Proposal (herein after referred to either "RFP") document or subsequently provided to the Bidders, whether verbally or in documentary or any other form by or on behalf of the Directorate of technical Education and Training, Odisha herein after referred to as DTE&T, or any of their employees or advisors, is provided to the Bidder(s)on the terms and conditions set out in this RFP document and all other terms and conditions subject to which such information is provided.

DTE&T reserves the right to reject any or all of the proposals submitted in response to this RFP document at any stage without assigning any reasons whatsoever. DTE&T, ODISHA also reserves the right to withhold or withdraw the process at any stage with intimation to all who submitted the RFP document response. DTE&T, ODISHA reserves the right to change/ modify/amend any or all of the provisions of this RFP document. Such changes would be posted only in its website (www.dtetodisha.gov.in). Prospective bidders are requested to visit the website frequently to keep them abreast with the latest developments on this tender.

This is not an agreement and is not an offer or invitation to enter into an agreement of any kind with any party. The purpose of this RFP is to provide interested parties with information that may be useful to them in making their technical & financial offers (Bids) pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by the DTE&T, ODISHA in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This RFP document may not be appropriate for all persons, and it is not possible for the DTE&T, ODISHA, their employees or advisors to consider the business/investment objectives, financial situation and particular needs of each Bidder who reads or uses this RFP document.

The assumptions, assessments, statements and information contained in this RFP may not be complete, accurate, adequate or correct. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this RFP document and wherever necessary obtain independent advice from appropriate sources. DTE&T, ODISHA, their employees and advisors make no representation nor warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the RFP document.

1. FACT SHEET

Sl. No.	Particular	Details
1.	**Name of the Client**	Director, Directorate of Technical Education and Training (DTE&T) under the administrative control of Skill Development & Technical Education Department, Government of Odisha.
2.	**Method of Selection**	Least Cost Selection (LCS)
3.	**Mode of Submission**	Online (e-tender) **www.tendersodisha.gov.in**
4.	**Date of Issue of RFP(e-tender)**	03.06.2026
5.	**Deadline for Submission of Pre-Proposal Query**	08.06.2026 (by 2:00 PM) (Through email to: **dtetodisha.procurement@gmail.com**)
6.	**Date of Pre-Proposal Meeting**	12.06.2026 (at 03.00 PM) (Through Hybrid Mode)
7.	**Due date for submission of proposals**	30.06.2026 (by 5:00 PM) (**www.tendersodisha.gov.in**)
8.	**Date of opening of Technical Proposal**	01.07.2026 (at 11:00 AM)
9.	**Date of Technical Presentation**	To be informed to the technically qualified bidders later
10.	**Date of Opening of Financial Proposal**	Through the e-tender portal to be intimated later by e-ma to the technically qualified bidders
11.	**Bid Processing Fee (Non-Refundable)**	Rs. 10,000/- + GST: 18 % = Rs. 11,800/- (through Demand Draft in favour of "DTE&T Odisha" & payable at Cuttack).
12.	**Earnest Money Deposit (EMD) (Refundable)**	Rs.50,00,000/- (Rupees Fifty Lakhs only) valid for minimum 225 days from last date of bid submission (through Online mode)
13.	**Performance Security**	The selected Bidder shall furnish 5% of the total quoted price without tax (through Online mode).
14.	**Address of the Client:**	Director, Directorate of Technical Education and Training (DTE&T) Odisha, Killa Maidan, Buxi Bazar, Cuttack, Pin Code: 753001 **E-mail**:dtetorissa@gmail.com; & dtetodisha.procuremeent@gmail.com **Contact person**: 1. Smt. Rinata Das, Joint Director (Procurement), DTE&T Odisha, Mob. 9861132851

NOTE:

- Amendments/Corrigendum(a) to the RFP document, if any, would be published on the website of DTE&T Odisha and Odisha e-Procurement portal only. Please visit the website: www.dtet.odisha.gov.in/www.tendersodisha.gov.in regularly for the same.
- A bidder may submit their both technical and commercial proposals after fulfilling the minimum eligibility criteria mentioned in Section 4.
- Proposals must be submitted before the date, time and venue mentioned in the Factsheet through Online (e-tender) www.tendersodisha.gov.in. Proposals that are received after the deadline will not be considered.
- The Director, DTE&T reserves all the rights to cancel the Selection Process and reject any or all the proposals at any point of time.
- No contractual obligation whatsoever shall arise from the RFP document unless and until a formal contract is signed and executed between the Director, DTE&T and the Selected Bidder.
- The Director, DTE&T disclaims any factual or other errors in the RFP document (the onus is purely on each Bidder to verify such information) and the information provided therein are intended only to help the Bidder(s) to prepare a proposal in accordance with the terms and conditions as set out in this RFP document.
- **Exemption may be given to the local MSMEs/local Start-Ups (registered in Odisha) for submission of Tender Fee & EMD as per the Odisha Procurement Preference Policy for Micro and Small Manufacturing Enterprises-2023 (MSME Department Notification No. 566/MSME dated 24.01.2024) and Odisha General Finance Rules (OGFR) only after submission of proper documents as proof. An AFFIDAVIT may be submitted as per the TECH-11.**
- **Price Preference is not applicable in this tender.**
- Tender Fee and EMD exemption are not available to any Dealer/ Distributor/ Trader etc., who is not registered as a Manufacturer of similar category of Goods in Odisha.

2. E-TENDERING

Procedure for Participation in e-tendering

1) Web address of E-tendering website: https:// www.tendersodisha.gov.in.
2) The Digital Signature enrollment has to be done with the e-token, after logging into the portal. The e-token may be obtained eMudhraCA/GNFC/IDRBT/MtnlTrustline/SafeScrpt/TCS.
3) Bidder then logs into the portal giving user id / password chosen during enrolment.
4) The e-token that is registered should be used by the bidder and should not be misused by others.
5) DSC once mapped to an account cannot remap to any other account. It can only be inactivated.
6) The Bidders can update well in advance, the documents such as certificates, purchase order details etc., under My Documents option and these can be selected as per tender requirements and then attached along with bid documents during bid submission. This will ensure lesser upload of bid documents.
7) After downloading / getting the tender schedules, the Bidder should go through them carefully and then submit the documents as per the tender document; otherwise, the bid will be rejected.
8) The BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for that tender. Bidders are allowed to enter the Bidder Name and Values only.
9) If there are any clarifications, this may be obtained online through the eProcurement Portal, or through the contact details given in the tender document. Bidder should take into account of the corrigendum published before submitting the bids online.
10) Bidder, in advance, should prepare the bid documents to be submitted as indicated in the tender schedule and they should be in PDF formats. If there is more than one document, they can be clubbed together.
11) Bidder should arrange for the EMD as specified in the tender.
12) The bidder reads the terms and conditions and accepts the same to proceed further to submit the bids
13) The bidder has to submit the tender document(s) online well in advance before the prescribed time to avoid any delay or problem during the bid submission process.
14) There is no limit on the size of the file uploaded at the server end. However, the upload is decided on the Memory available at the Client's System as well as the Network bandwidth available at the Client side at that point of time. In order to reduce the file size, bidders are suggested to scan the documents in 75- 100 DPI so that the clarity is maintained and also the size of file also gets reduced. This will help in quick uploading even at very low bandwidth speeds.
15) It is important to note that, the bidder has to Click on the Freeze Bid Button, to ensure that he/she completes the Bid Submission Process. Bids which are not Frozen are considered as Incomplete/Invalid bids and are not considered for evaluation purposes.
16) The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay, or the difficulties faced during the submission of bids online by the bidders due to local issues.

17) The bidder may submit the bid documents online mode only, through this portal. Offline documents will not be handled through this system.
18) At the time of freezing the bid, the eProcurement system will give a successful bid updating message after uploading all the bid documents submitted and then a bid summary will be shown with the bid no, date & time of submission of the bid with all other relevant details. The documents submitted by the bidders will be digitally signed using the e-token of the bidder and then submitted.
19) After the bid submission, the bid summary has to be printed and kept as an acknowledgement as a token of the
20) The bid summary will act as a proof of bid submission for a tender floated and will also act as an entry point to participate in the bid opening event.
21) Successful bid submission from the system means, the bids as uploaded by the bidder is received and stored in the system.
22) System does not certify for its correctness.
23) The bidder should see that the bid documents submitted should be free from virus and if the documents could not be opened, due to virus, during tender opening, the bid is liable to be rejected
24) The time that is displayed from the server clock at the top of the tender Portal, will be valid for all actions of requesting bid submission, bid opening etc., in the e-Procurement portal. The Time followed in this portal is as per Indian Standard Time (IST) which is GMT+5:30. The bidders should adhere to this time during bid submission.
25) All the data being entered by the bidders would be encrypted at the client end and the software uses PKI encryption techniques to ensure the secrecy of the data. The data entered will not be viewable by unauthorized persons during bid submission and not viewable by any one until the time of bid opening. Overall, the submitted bid documents become readable only after the tender opening by the authorized individual transferred over secured Socket Layer (SSL) with 256-bit encryption technology. Data encryption of sensitive fields is also done.
26) The bidders are requested to submit the bids through online eProcurement system to the TIA well before the bid submission end date and time (as per Server System Clock).

3. SECTION I: Letter of Invitation

RFP No: DTET/2025-26/16934/04 **Date: 23/12/2025**

Name of the Assignment: "RFP for supply, installation and commissioning of Automobile equipment for different Govt. ITIs & Polytechnics/Engineering Schools of Odisha".

1. DTE&T under the administrative control of Skill Development & Technical Education Department, Government of Odisha (The Client) invites online Bids (both Technical & Financial) from the Original Equipment Manufacturer (OEM) or authorised Technology Partner/Channel Partner for **"Supply, installation and commissioning of Automobile equipment for different Govt. ITIs & Polytechnics/Engineering Schools of Odisha".** More details on the proposed assignment are provided at **Section-3: Terms of Reference (ToR)** of this bid document**.**
2. Bidder will be selected under **Least Cost Selection (LCS) method** as prescribed in the RFP Document.
3. The proposal, complete in all respect as specified in the RFP document must be accompanied with a **Non-refundable** amount of **Rs. 10,000/- + Rs. 1800 (GST @18%) = Rs. 11,800 (Rupees Eleven Thousand Eight Hundred)** towards **Tender Processing Fee** and a **refundable amount of Rs.50,00,000/- (Rupees Fifty Lakhs only) towards EMD**, failing which the bid will be rejected.
4. The last date and time for submission of Bid complete in all respects is mentioned as per the data sheet in **www.tendersodisha.gov.in** and the date of opening of the technical proposal, Technical Presentation & financial bid in the presence of the bidder's representative at the specified address as mentioned in the Bidder Data Sheet. Representative of the bidder may attend the meeting with due authorization letter on behalf of the bidder.
5. This RFP includes following sections:
   a. Letter of Invitation **[Section – I]**
   b. Information to the Bidder **[Section – II]**
   c. Terms of Reference [**Section – III]**
   d. Technical Bid Submission Forms **[Section – IV]**
   e. Financial Bid Submission Forms **[Section –V]**
   f. Annexure **[Section – VI]**
6. While all information/data given in the RFP are accurate within the consideration of scope of the proposed assignment to the best of the Client's knowledge, the Client holds no responsibility for accuracy of information, and it is the responsibility of the bidder to check the validity of information/specifications/narrations included in this document. No claim whatsoever shall be admissible for the alleged loss/damage suffered by the bidders on account of such rejection. In case of any dispute/ ambiguity arising in the process relating to documents, the decision of the Tender calling authority shall be final, binding and cannot be challenged.
7. **The Client reserves the right to accept / modify/ reject any/all Bids / cancel the complete tender or part of it at any stage without assigning any reason thereof.**

Sd/-
Director
DTE&T Odisha

4. SECTION II: Information to the Bidders

4.1 Pre-Qualification/Eligibility Criteria:

Before opening and evaluation of the technical proposals, each bidder will be assessed based on the following pre-qualification criteria. The bidder is required to produce the copies of the required supportive documents / information as part of their technical proposal failing which the proposals will be rejected.

Sr. No.	Pre-Qualification Criteria	Specific Requirement	Documents Required
1	**Legal Entity**	The Bidder must be registered as either of the following: a. Company under Companies Act, 1956/2013 or b. Partnership Firm registered under the Indian Partnership Act, 1932 or c. Limited Liability Partnership registered under The Limited Liability Partnership Act, 2008 registered	Registration documents of the Bidder as a duly registered legal entity in India along with: ● Registration document showing incorporation of the Bidder, ● Certified copy of registered Partnership Deed, ● PAN Card of the registered legal entity, ● GST certificate of the registered legal entity (Form GST REG-06), ● Any other supporting document, as may be required.
2	**OEM or Authorised Technology/ Channel Partner**	The bidder should be an original equipment manufacturer (OEM) or Authorised Channel Partner/Technology Partner of the OEM.	• **For Original Equipment Manufacturer (OEM)** - Copy of the manufacturing license, or • **For the Authorized Channel Partner/ Technology Partner:** An undertaking from the OEM is required stating that they would facilitate the Bidder on a regular basis with technology/product updates and extend support for the warranty as well and along with manufacturing license of OEM. (TECH-9)
3	**Operation**	The Bidder Firm should have been in operation in relevant field for the past **07 (seven) years** as on the date of issue of RFP and filed ITRs for the last three FYs (i.e., FYs 2022-23, 2023-24 & 2024-25)	Audited Financial Statements for the last three financial years duly sealed & signed by a Chartered Accountant in practice, along with ITR for the said periods and the latest GST Return (GSTR-3B). **Provisional Audit Report for any of the FYs will not be accepted.**
4	**Financial Capacity**	The Bidder shall have an average annual turnover of at least **Rs.16.00 Crore** over the last three Financial Years i.e., FY: 2022-23, 2023-24 & 2024-25. This must be the Bidder's turnover and not that of group companies/ organizations.	Audited financial statements/CA certified true copy stating the turnover. Financial Details of the bidder (TECH - 3) along with copies of last three FY's Audited Financial

			Statement duly sealed &signed by a Chartered Accountant in practice.
5	**Net Worth**	i) The net worth of the Bidder firm (manufacturer or authorized partner) should not be negative in '**FY 2024-25**' and ii) also should have not eroded by more than 30% (thirty per cent) in the last three years, ending on '31st Mar'2025'.	A Certificate duly sealed & signed by a Chartered Accountant in practice with Registration Number
6	**ISO Certificate**	The Technology Partner/Channel Partner or the OEM company should have ISO 9001, ISO 14001 & ISO 45001 certification.	Copy of valid ISO certificates of the agency/ the OEM must be submitted.
7	**Past Experience**		
7.1	**Similar supply experience**	The bidder, during last 03 (Three) financial years, must have the experience of supply and installation of similar category items/equipment with following minimum order value. **i.** Experience in execution of Single Work Order involving supply of similar category of items/equipment with minimum order value of **Rs.16.00 Crore or above**, Or **ii.** Experience in execution of at least **02 (Two)** Work Orders involving supply of similar category of items/equipment with minimum order value of **Rs.8.00 Crore or above**, **iii.** Experience in execution of at least **03 (Three)** Work Orders involving supply of similar category of items/equipment with minimum order value of **Rs.6.00 Crore or above** at any Government or Private organization/ Government or Private Educational Institute/ Government or Private training institute/ any Industry.	Copies of Relevant Work Orders/Sanction Orders/ Contract or MOUs/MOAs containing value of the supplies/ Work Completion Certificate/ Successful Project Completion and Performance Certificate/Commissioning Certificates or equivalent documentary evidence from the client should be provided as proof (TECH-5)
8	**Quality Certification**	The bidder/vendor should have ISO/ISI Certification with every Machinery Test Certificate Mandatory as applicable.	Copy of valid ISO/ISI certificates along with Machinery Test Certificate as applicable.
9	**Mandatory Documents**	The bidder shall submit the Technical data in compliance with the technical specifications mentioned in the tender document (ToR).	Submission of product wise brochure & catalogues and relevant pages from the website with available technical data in compliance with the technical specifications mentioned in the ToR.
10	**Blacklist**	The Bidder shall not have been blacklisted by any Central / State Government Ministry in India or Public Sector Undertakings or any Government Agencies. Any Bidder that has been barred by the Central Government, any State Government, a statutory authority, or a	Notarized Undertaking by the Authorized Signatory (TECH-6)

		Public Sector Undertaking from participating in any project and the bar subsists as on the date of the Proposal Due Date, would not be eligible to submit a Proposal.	
11	**Consortium/ Joint Venture**	No consortium/ JVs/ associations/ subcontracting shall be allowed under this tender.	Declaration of submitting as independent Bidder from the Authorized Signatory (TECH-7)
12	**Authorized Representative**	A Power of Attorney in the name of the person signing the proposal.	Original Power of Attorney (Notarized on a Rs.100/- Non-Judicial Stamp Paper) (TECH-4)
13	**No failure of performance**	A Bidder including any Associate should, in the last 3 (three) years, have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder, or Associate, as the case may be, nor has been expelled from any project or contract by any public entity nor have had any contract terminated by any public entity for breach by such Bidder, or Associate.	The Director, DTE&T would place sole reliance on the certification provided by the Bidder in this regard in its Cover Letter. Any misrepresentation or concealment of any information in this regard shall render the Bid liable for outright rejection at the sole discretion of the Director, DTE&T.
14	**Bid Processing Fee (Non-Refundable)**	The Bidder shall furnish a Tender Fee of Non-refundable amount of Rs. 10,000/- + Rs. 1800/- (GST @18 %) = Rs. 11,800 (Rupees Eleven Thousand Eight Hundred Only).	Payment to be done through Demand Draft in favour of "DTE&T Odisha" and Payable at Cuttack.
15	**Earnest Money Deposit (EMD) (Refundable)**	The Bidder shall furnish EMD amount equal to Rs.50,00,000/- (Rupees Fifty Lakhs only).	EMD to be submitted in shape of Bank Guarantee/e-Bank Guarantee in favour of "DTE&T Odisha" from any scheduled commercial bank.

4.2 Documents to be submitted along with TECHNICAL BID (PART-A):

The bidder must furnish the following documents duly signed in along with their Technical Proposal:

- Filled in Bid Submission Check List in Original (Annexure-I)
- Covering letter (TECH – 1) on bidder's letterhead requesting to participate in the selection process
- Bid Processing Fee & EMD as applicable
- Copy of Certificate of Incorporation/ Registration
- Copy of PAN
- Copy of Goods and Services Tax Identification Number (GSTIN)
- Copies of IT Return for the last three financial years i.e., FY:2022-23, 2023-24 & 2024-25 and the copy of latest GST Return (in GSTR-3B)
- General Details of the Bidder (TECH – 2)
- Financial Details of the bidder (TECH – 3) along with all the supportive documents such as Balance Sheet and Income/ Expenditure Statement duly signed as per the instruction.
- Power of Attorney (TECH – 4) in favour of the person signing the bid on behalf of the bidder or

Board of Directors.

- List of clients for supply of equipment/machines of same category (Past Experience Details, (TECH – 5) along with copies of contracts / work orders / completion certificate from previous Clients (as provided in the RFP).
- Notarized Undertaking from the Bidder on not blacklisted (TECH - 6)
- No Consortium/Joint Venture Declaration (TECH-7)
- Technical Compliance Sheet (Requirements and specifications as per the ToR) (Tech-8)
- Manufacturing License or the Manufacturer's Authorization Form (TECH-9)
- Declaration regarding "Restrictions on procurement from a Bidder of a country which shares a land border with India" (TECH - 10)
- Bidder's Affidavit for Micro and Small Manufacturing Enterprises to get an exemption as per the Odisha Procurement Preference Policy (TECH - 11).
- Net worth Certificate duly sealed & signed by a Chartered Accountant.
- Copy of valid ISO/ISI certificates along with Machinery Test Certificate as applicable.
- Submission of product wise brochure & catalogues and relevant information on products supplies
- Certification in its Cover Letter by the Bidder regarding non-failure to perform on any contract

Note:

Bidders should submit the required supporting documents as mentioned above. Bids not conforming to the eligibility criteria and non-submission of required documents as listed above will lead to rejection of the bid. Submission of forged documents will also result in rejection of the bid. Bidders are advised to study all instructions, forms, terms & conditions, and other important information as mentioned in the RFP document. The proposal must be completed in all respect, indexed. Each page should be numbered and signed by the authorized representative. Client at its own discretion reserves the right to ask for clarifications/supporting documents at any time during evaluation.

1. **Bid Processing Fee (Non-Refundable):**

   The bidder must furnish as part of technical Bid, the required bid processing fee amounting to **Rs. 10,000/- + Rs. 1800 (GST @18 %) = Rs. 11,800 (**Rupees Eleven Thousand Eight Hundred) through online mode. Proof of submission must be attached with the technical bid. Bids received without bid processing fee will be rejected.

2. **Earnest Money Deposit (EMD):**

   The bidder must furnish, as part of the technical Bid, an Earnest Money Deposit (EMD) amounting to **Rs.50,00,000/- (Rupees Fifty Lakhs only)** through online mode. Bids received without EMD will be rejected. Proof of submission must be attached with the technical bid.

   The EMD amount is interest free and would be refunded through online mode after finalization of the selection process and award of contract. The EMD, for the amount mentioned above, of the successful Bidder would be returned only after furnishing the required Performance Security and signing of the contract. The EMD will be forfeited on account of the following reasons:

   - A Bidder engages in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice as envisaged under this RFP (including the standard form of Work Order); or,
   - If any Bidder withdraws its Proposal during the Bid Validity Period as specified in this RFP and as extended by the Bidder from time to time; or,
   - In the case of the Selected Bidder, if the Selected Bidder fails to accept the Work Order or execute the Contract or fails to furnish the Performance Security within the specified time

limit; or,

- If the Bidder commits any breach of terms of this RFP or is found to have made a false, representation to the client.

3. Performance Security:

a. The successful bidder, within 15 days after the receipt of notification of award of the Contract (LoA) from DTE&T, shall furnish Contract Performance Guarantee to the DTE&T, Odisha which shall be equivalent to 5% of Total Bid Value (excluding taxes) and shall be in the form of a Bank Guarantee /e-Bank Guarantee from any of the commercial banks in India in the Performa given here-in-after in this document valid initially 42 months and may be extended beyond three years of completion of warranty period from the date of award of Contract as specified in the document.

b. The proceeds of the performance guarantees shall be payable to the DTE&T, Odisha as compensation for any loss/ penalties resulting from the Selected Bidders failure to complete its obligations under the Contract.

c. The performance guarantee will be released by DTE&T, Odisha and returned to the Selected Bidder after 60 days of completion of warranty period subject to fulfillment of all obligations on recommendation of respective Principal.

4. Proposal Validity:

Proposal shall remain valid for a period of **180 (One Hundred Eighty) days** from the date of opening of the technical proposal. The Client reserves the right to reject a proposal valid for a shorter period as non-responsive and will make the best efforts to finalize the selection process and award of the contract within the bid validity period. The bid validity period may be extended on mutual consent. If agreed upon, the bid security so deposited shall also be suitably extended.

5. Pre- Proposal Queries and Meeting:

The Bidder may request a clarification of any part of the RFP prior to the last date for submission of queries through email, as indicated in the Bidder's Data Sheet. Bidders are allowed to submit their queries in respect of the RFP and other details if any, to DTE&T in the following format.

Sl	Section/Page No and RFP Clause reference.	Content of RFP requiring clarifications	Queries/ Change/Clarification requested

A Pre-Bid meeting will be organized by DTE&T to address the queries relating to the overall selection process and scope of the work through Hybrid Mode (both **virtual & physical mode) as per the timeline mentioned in the Data Sheet**. The client will address the queries submitted by the bidders.

i. The purpose of Pre-Bid discussion is to provide the Bidders with information regarding the RFP, project requirements, and opportunity to seek clarification regarding any aspect of the RFP and the project. However, DTE&T, Odisha, reserves the right to hold or to reschedule the Pre-Bid meeting.

ii. DTE&T, Odisha shall not be responsible for ensuring that the Bidder's queries have been received by them. Any requests for clarifications received after Pre-Bid meeting will not be entertained.

iii. However, DTE&T, Odisha makes no representation or warranty as to the completeness or accuracy of any response made in good faith, nor does it undertake to answer all the queries that have been submitted by the Bidders

iv. The Client's responses to Bidder queries will be made available to all Bidders and shall be uploaded on the Client's website. It shall be the Bidder's responsibility to check the Client's website for the responses to the queries or requests for clarification.

v. Any such corrigendum shall be deemed to be incorporated into this RFP and binding on all Bidders.

6. Submission of Proposals:

The bid should be submitted through Online mode only in **www.tendersodisha.gov.in**.

The tender is to be submitted electronically in two separate Cover No.1 (Technical Cover) and Cover No. 2 (Financial Cover) and contents as indicated below:

Cover No.1 (Technical Cover)

The bidder must furnish the following documents duly signed in along with their Technical Proposal:

- Filled in Bid Submission Check List in Original (Annexure-I)
- Covering letter (TECH – 1) on bidder's letterhead requesting to participate in the selection process
- Bid Processing Fee & EMD as applicable
- Copy of Certificate of Incorporation/ Registration
- Copy of PAN
- Copy of Goods and Services Tax Identification Number (GSTIN)
- Copies of IT Return for the last three financial years i.e., FY:2022-23, 2023-24 & 2024-25 and the copy of latest GST Return (in GSTR-3B)
- General Details of the Bidder (TECH – 2)
- Financial Details of the bidder (TECH – 3) along with all the supportive documents such as Balance Sheet and Income/ Expenditure Statement duly signed as per the instruction.
- Power of Attorney (TECH – 4) in favour of the person signing the bid on behalf of the bidder or Board of Directors
- List of clients for supply of equipment/machines of same category (Past Experience Details, (TECH – 5) along with copies of contracts / work orders / completion certificate from previous Clients (as provided in the RFP).
- Notarized Undertaking from the Bidder on not blacklisted (TECH - 6)
- No Consortium/Joint Venture Declaration (TECH-7)
- Technical Compliance Sheet (Requirements and specifications as per the ToR) (Tech-8)
- Manufacturing License or the Manufacturer's Authorization Form (TECH-9)
- Declaration regarding "Restrictions on procurement from a Bidder of a country which shares a land border with India" (TECH - 10)
- Bidder's Affidavit for Micro and Small Manufacturing Enterprises to get an exemption as per the Odisha Procurement Preference Policy (TECH - 11).
- Net worth Certificate duly sealed & signed by a Chartered Accountant.
- Copy of valid ISO/ISI certificates along with Machinery Test Certificate as applicable.
- Submission of product wise brochure & catalogues and relevant information on products supplies
- Certification in its Cover Letter by the Bidder regarding non-failure to perform on any contract.

Cover No.2 (Financial Cover)

Price Bid. (Cover -2 in BoQ)

The following supporting documents to be attached (in PDF format) with the seal & signature of the signing authority along with the Price Bid (BoQ) within the Cover-2.

1. FIN-1: Financial Bid covering letter.
2. FIN-2: Equipment wise cost breakup (PDF as well as in Excel Format)

The offer must be submitted in Two Bid - Two covers only though uploading in the eProcuremnet Portal, before the last date & time for bid submission.

Tender document (s) and all enclosures must contain the signature of the competent authority of the firm.

7. Evaluation of Proposals

A Three stage evaluation process will be conducted as explained below for evaluation of the proposals:

A. Preliminary Evaluation (1st Stage):

Preliminary evaluation of the proposals will be done to determine whether the proposal complies with the prescribed eligibility condition and the requisite documents / information have been properly furnished by the bidder or not. Submission of documents/ information as per Pre-Qualification/Eligibility Criteria will be verified.

The bidder is required to produce the copies of the required supportive documents/information as part of their technical proposal failing which the proposals will be rejected.

B. Technical Evaluation (2nd Stage):

Technical proposal will be opened and evaluated for those bidders who qualify the preliminary evaluation stage. Detailed evaluation process as per the following parameters will be adopted for proposal evaluation:

Sl. No.	Criteria	Maximum Mark	Documents Required
1	**Financial Capacity & Experience**	**40 Marks**	
1.1	**Turnover:** The Bidder should have an Average annual turnover of Rs. **16.00 Crore** in the last three financial years **(i.e., FY: 2022-23, 2023-24 & 2024-25).** *Scoring Criteria:* • Greater than or equal to Rs.16 Crore and less than Rs.30 Crore: **05 Marks** • Greater than or equal to Rs.30 Crore: **10 Marks**	**10**	Financial details of the Bidders in TECH-3 duly signed by the CA
1.2	**Past Experience:** The bidder, during **last 03 (Three)** financial years must have experience of supply of equipment/machines from same category at any Government or Private organization/ Government or Private educational institute/ Government or Private training institute/ any Industry with order value as follows. *Scoring Criteria:* • For every work order value of Rs.16 Crore or more: **10 Marks.** • For every work order value more than or equal to Rs.8 Crore but less than Rs.16 Crore: **05 Marks.** • For every work order value more than or equal to Rs.6 Crore but less than Rs.8 Crore: **05 Marks.** (Maximum up to 20 marks)	**20**	Copies of Relevant Work Orders/ Sanction Orders/ Contract, MOUs containing value of the work/ Work Completion Certificate/ Successful Project Completion and Performance Certificate/ Commissioning Certificates or equivalent documentary evidence from the client should be provided as proof (TECH-5)
	Performance Feedback: Performance Feedback/Certificate from the existing client where similar category of	**10**	Performance Certificate/ Performance Feedback or equivalent documentary evidence

1.3	equipment supplied and installed for a work order of value not less than 10 Crore. For every positive performance certificate/feedback, 05 marks will be given. (Maximum up to 10 marks)		from the existing client should be provided as proof with contact details (TECH-5).
2	**Quality, Training & Placement**	**60 Marks**	
2.1	**Quality of proposed equipment/ machines:** Quality of the proposed Equipment/ Machines with respect to the technical specifications offered by the bidder, subjected to adherence of technical specifications asked for	**60**	Technical Compliance Sheet **(Tech-8)** with Submission of product wise brochure & catalogues and relevant pages from the website with available technical data in compliance with the technical specifications mentioned in the tender document.
	Grand Total (1 + 2)	**100**	

- **The minimum qualifying mark is: 70**
- **Bidder has to score at least 50% in each category i.e. (1.1 to 1.3 & 2.1).**
- **Bidder must score at least 70% to qualify for opening of Financial Bid.**
- **The scores provided by the Technical Committee will be considered as final.**
- **The Technical Committee may ask the bidders with prior intimation of at least 3 days for a brief Technical PPT presentation on Bidder's proposals includes description of products make, model & proposed specifications of items in their Technical Proposal, past experience, objective, proposed plan, approach and methodology etc.**

Selection of Bidder

All responsive Bids will be considered for further processing as below:

a. Technical Evaluation Committee will prepare a list of responsive Bidders, who comply with all the Terms and Conditions of the Tender. All eligible bids will be considered for further evaluation by the Committee according to the evaluation process defined in this RFP document. The decision of the committee will be final and binding on all bidders and cannot be questioned at any stage of evaluation.

b. DTE&T reserves the right to ask for a technical elaboration/clarification in the form of a technical presentation from the Bidder on the already submitted Technical Proposal at any point of time before opening the Financial Proposal by providing at least 3 days of advance notice.

c. DTE&T, Odisha also reserves the right to seek confirmation/clarification from the issuing agency for the supporting documents submitted by the bidder. To assist in the examination, evaluation and comparison of the bids, and qualification of bidders, the committee may, at its discretion, ask any bidder for a clarification of its bid. The committee's request for clarification and the response shall be in writing through approved mode only and no other mode shall be entertained. Any clarification submitted by a bidder that is not in response to a request shall not be considered.

d. If any bidder fails to provide the requested presentation/clarification/information within the stipulated date and time given by the DTE&T, Odisha, the bid shall be technically disqualified. The request for clarification and the response shall be in writing, without any alterations regarding the price or substance of the bid submitted.

e. Further the scope of evaluation committee also covers taking any decision regarding the Tender document, execution/ implementation of the project including management period.

f. A detailed evaluation of the bids shall be carried out by the Technical Evaluation Committee in

order to determine whether the Bidders are competent enough and whether the technical aspects are substantially responsive to the requirements set forth in the RFP document. The bidders must submit the Make, Model, Features, and Technical Specifications along with the images of equipment for which they are submitting the bid. Bidders may propose better technical specifications which may fit for the labs.

g. Bidders failing to comply with any of the above then the Bid will be summarily rejected. Bidders who score at least 70% marks in Technical Evaluation criteria set forth in this RFP document will be eligible for opening of their Financial Bid. If a bid does not meet minimum score, it will be deemed technically non-compliant and will not proceed to the financial evaluation.

h. The bidders are expected to provide following details along with their technical bids.

- Detailed requirement of Civil, Electrical, & other works for the installation, commissioning & demonstration of the equipment/machines proposed in their technical bid.
- Required raw material and consumables (if any) for demonstration/testing of the supplied equipment/machines.
- Bidders must proposed required spare parts or tools & tackles (if any) to run the equipment/machines smoothly during the warranty period of 3 years.

C. Evaluation of Financial Proposal (3rd Stage)

The financial proposals shall be opened on the prescribed date in the presence of the bidder/bidder's representative who wishes to attend the meeting with proper letter of authorization. The name of the bidder along with the quoted financial price will be announced during the meeting.

1. The financial bids of bidders whose bids have been technically qualified (i.e., obtained minimum **70 marks** in Technical Evaluation) shall be opened by the Committee on the date and time specified in the RFP
2. Least Cost Selection (LCS) method will be followed during the Financial Evaluation and overall selection process.
3. Price Quoted without tax (as applicable) of the following in the BoQ MS-Excl format will be considered together for Evaluation of the Financial Bid.
   I. Total Cost of the Goods
   II. Total Cost of Comprehensive Annual Maintenance Contract (CAMC) for 03 Years
4. Bidder must submit the Financial Proposal in PDF format (FIN-1 & FIN-2) along with the price quoted in BoQ MS-Excl format.
5. The bidder with Lowest Quoted Base Price (without tax) (L1) will be considered as Final Selected Bidder.
6. In case two or more bidders quoted the same prices, the Committee shall decide on the L1 bidder based on the following tie-breaking criteria:
   i. The bidder's turnover for the financial year 2024-25 will be considered first.
   ii. If the tie persists, the turnover for the financial year 2023-24 will be considered.
   [If further tie-breaking is required, the turnover for the financial year 2022-23 will be considered.
   iii. If the tie remains unresolved after considering the above financial years, the L1 bidder will be determined by a draw, which will take place in the presence of the concerned bidders. The Committee's decision on this matter should be final and binding.
7. If a tenderer submits a bid with what appears to be predatory pricing or an abnormally low bid, the Tender Evaluation Committee may request a written clarification from the bidder. The bidder will be asked to provide a detailed price analysis, price break up, or justification of the quoted price, considering the scope, schedule, risk allocation, and any other requirements outlined in the tender documents.

   If, after reviewing the price analysis or justification, the bidder fails to provide adequate supporting documentation, evidence, or calculations to substantiate the quoted price, the Committee may, at its sole discretion, reject the bid.

8. Contract Negotiations:

Contract negotiation, if required will be held at a date, time and address as intimated to the selected bidder/s. The bidder will, as a pre-requisite for attendance at the negotiations, confirm availability of all the proposed staff or the assignment. Representative conducting negotiations on behalf of the bidder must have written authority to negotiate and conclude a contract.

9. Award of Contract:

a. Being the lowest bidder (L1) is not the sole criterion for the award of the contract. The feasibility of the lowest quoted price will be assessed by the Committee, taking into consideration the relevant rules, terms and conditions outlined in the tender. The Committee's decision in this regard will be final and binding on all parties involved. Upon completion of the evaluation process, the contract will be awarded to the bidder who quoted the lowest base price (L1) and complies with all applicable laws, regulations, and provisions stated in the tender.

b. DTE&T shall inform those Bidders whose Proposals did not meet the requirement or were considered non-responsive, informing them that their Financial Proposals will not be opened after completing the selection process. DTE&T shall simultaneously notify those Bidders who technically qualify on the Technical Evaluation process, informing them of the date and time set for opening of the Financial Proposals.

c. The Bidder's name, the Proposal Price, the total amount of each Proposal and other such details, will be announced and recorded by the DTE&T at the opening of Proposal.

d. After acceptance of LoA (Letter of Award) of Contract, Performance Security has to be deposited as specified in this document for signing an Agreement with DTE&T.

e. The selected Agency shall sign the Agreement within 21 (twenty-one) days from the issuance of LoA (Letter of Award) of Contract:
   i. DTE&T will sign the Agreement with the successful Bidder for a period as mentioned in 'Duration of Contract' in the document.
   ii. DTE&T may extend the Agreement for a time period beyond what has been specified in 'Duration of Contract' in the document.
   iii. DTE&T will also have the right to provide extension/ increase in the scope of work as per the mutually agreed terms and conditions between both the parties.

f. In case of unsatisfactory or rejection of equipment or performance of L1 bidder, only L2 bidder will be invited for negotiation to supply and fulfill the contract at L1 prices.

10. Payment Modalities:

Payment will be made to the selected company as per the schedule mentioned on achieving milestones/agreed work plan as per the ToR (Section-III).

11. Duration of Contract and other timelines:

The contract shall be valid initially for a period of 40 months from the date of issuance of LOA and other timelines are detailed below.

i. **Supply of equipment/machines:** 3 months from the date of signing the Contract.
ii. **Installation & commissioning:** 1 month from the date of receiving site readiness confirmation from the Principal of respective Institute.
iii. **Comprehensive Maintenance Warranty:** 36 months from the date of successful commissioning.

12. Conflict of Interest:

A Bidder shall not have a conflict of interest (the "Conflict of Interest") that affects the Bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification, the Authority shall be entitled to forfeit and appropriate the Bid Security, as mutually agreed genuine pre-estimated loss and damage likely to be suffered and incurred by the Authority and not by way of penalty for, inter alia, the time, cost and effort of the Authority, including consideration of such Bidder's proposal (the "Damages"), without prejudice to any other right or remedy that may be available to the Authority under the Bidding Documents and/ or the Agreement or otherwise. Without limiting the generality of the above, a Bidder shall be deemed to have a Conflict of Interest affecting the Bidding Process, if:

- The Bidder or its Associate and any other Bidder or its Associate thereof have common controlling shareholders or other ownership interests.
- A constituent of such Bidder is also a constituent of another Bidder; or
- Such Bidder or any Associate thereof receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder or any Associate thereof or has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder or any Associate thereof; or
- Such Bidder has the same legal representative for purposes of this Bid as any other Bidder; or
- Such Bidder, or any Associate thereof has a relationship with another Bidder, or any Associate thereof, directly or through common third party/ parties, that puts either or both of them in a position to have access to each other's information about, or to influence the Bid of either or each other; or
- Such Bidder, or any Associate thereof has participated as a consultant to the Authority in the preparation of any documents, design or technical specifications of the Project.

13. Disclosure:

a. Bidders have an obligation to disclose any actual or potential conflict of interest. Failure to do so may lead to disqualification of the bidder or termination of its contract.
b. Bidders must disclose if they are or have been the subject of any proceedings (such as blacklisting) or other arrangements relating to bankruptcy, insolvency or the financial standing of the Bidder, including but not limited to appointment of any officer such as a receiver in relation to the Bidder's personal or business matters or an arrangement with creditors, or of any other similar proceedings.
c. Bidders must disclose if they have been convicted of, or are the subject of any proceedings relating to:
    - Criminal offence or other serious offence punishable under the law of the land, or where they have been found by any regulator or professional body to have committed professional misconduct;
    - Corruption including the offer or receipt of an inducement of any kind in relation to obtaining any contract;
    - Failure to fulfill any obligations in any jurisdiction relating to the payment of taxes or social security contributions.

14. Anti-corruption Measure:

- Any effort by Bidder(s) to influence the Client in the evaluation and ranking of financial Bids, and recommendation for award of contract, will result in the rejection of the Bid.

- A recommendation for award of Contract shall be rejected if it is determined that the recommended bidder has directly, or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the contract in question. In such cases, the Client shall blacklist the bidder either indefinitely or for a stated period of time, disqualifying it from participating in any related bidding process for the said period.

15. Force Majeure

"Force Majeure" means an event which is beyond the reasonable control of a Party, and which makes a Party's performance of its obligations here under impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by government agencies.

Force Majeure shall not include: (i) any event which is caused by the negligence or intentional action of a Party or agent's employees thereof, nor (ii) any event which a diligent Party could reasonably have been expected to take into account or avoid or overcome in the carrying out of its obligations during the subsistence of this Agreement. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

16. Language of Proposals:

The proposal and all related correspondence exchanged between the bidder and the Client shall be written in the English language. Supporting documents and printed literature that are part of the proposal may be in another language provided they are accompanied by an accurate translation of the relevant passages in English with self-certification for accuracy, in which case, for the purposes of interpretation of the Proposal, the translated version shall govern.

17. Cost of bidding:

The Bidder shall bear all costs associated with the preparation and submission of its proposal. The Client shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process. Bidder/s is/are not allowed to submit more than one proposal under the selection process. Alternate bids are also not allowed.

18. Legal Jurisdiction:

All legal disputes are subject to the jurisdiction of competent court of Cuttack /Bhubaneswar only.

19. Governing Law and Penalty Clause:

The schedule given for delivery is to be strictly adhered to in view of the strict time schedule. Any unjustified and unacceptable delay in delivery shall render the bidder liable for liquidated damages and thereafter the Client holds the option for cancellation of the contract for pending activities and complete the same from any other Bidder. The Client may deduct such sum from any money from their hands due or become due to bidder. The payment or deduction of such sums shall not relieve the bidder from his obligations and liabilities under the contract. The rights and obligations of the Client and the bidder under this contract will be governed by the prevailing laws of Govt of India/ Odisha.

i. Notwithstanding the right of DTE&T, Odisha to cancel the order, Delay Charges for late delivery at 0.5% (Half percent) of the undelivered portion of order value per week will be charged for every week's delay in the specified delivery schedule subject to a maximum of 5% of the value of the contract. Delay Charges should be recouped from pending payment or Performance Security as per the payment schedule. No Delay Charges will be charged in case of

circumstances beyond control of the selected Bidder. The decision of the authority placing the contract, whether the delay in delivery has taken place on account of reasons attributed to the bidder shall be final.

ii. Please note that the above Delay Charges for delay in delivery and delay in commissioning are independent of each other and shall be levied as the case maybe.

iii. DTET, Odisha reserves its right to recover these amounts from Performance Guarantee and the payments due to the bidder as per the payment schedule. Delay Charges will be calculated on per week basis.

iv. The cumulative and aggregate limit of Delay Charges for delay in delivery and Delay Charges for delay in commissioning would be limited to maximum of 5% of the total Bid Value. The aggregate liability of the selected Bidder shall in no event exceed the total Bid Value under this Contract.

v. Delay charges shall also be applicable for delay in Comprehensive Warranty (CMC) during the warranty period i.e. 36 months from the date of successful commissioning. For every week's delay, 0.5% (Half percent) of order value (excluding taxes) will be charged for the specified CMC schedule mentioned in the **Section-III, Point No.6**, subject to a maximum of 5% of the value of the contract.

20. Client's right to accept any Bid, and to reject any or all Bid/s

The Client reserves the right to accept or reject any Bid, and to annul or amend the bidding / selection / evaluation process and reject all Bids at any time prior to award of contract award, without assigning any reason there of and thereby incurring any liability to the bidders. Misrepresentation/improper response/ by the bidder may lead to the disqualification of the bid. If such disqualification/rejection occurs after the Bids have been opened and the highest-ranking bidder gets disqualified/rejected, then the client reserves the right to consider the next best bidder, or take any other measure as may be deemed fit in the sole discretion of the Client, including annulment of the selection Process.

21. Number of Bids:

Each Bidder shall submit only one (1) Bid, in response to this RFP. Any Bidder who submits or participates in more than one Bid shall be disqualified. The Bidder shall be responsible for all costs associated with the preparation of its Bid and its participation in the bidding process.

22. Amendment of the RFP Document:

At any time before submission of proposals, the Client may amend the RFP by issuing an addendum through Department website. Any such addendum will be binding on all the bidders. To give bidders reasonable time in which to take an addendum into account in preparing their proposals, the Client may, at its discretion, extend the deadline for the submission of the proposals.

23. Confidentiality:

Information relating to evaluation of proposals and recommendations concerning awards shall not be disclosed to the bidders who submitted the proposals or to other persons not officially concerned with the process, until the publication of the award of contract. The undue use by any Consultant of confidential information related to the process may result in rejection of its proposal and may be subject to the provisions of the Client's antifraud and corruption policy. During the execution of the assignment except with prior written consent of the Client, the consultant or its personnel shall not at any time communicate to any person or entity any confidential information acquired in the course of the contract.

24. Settlement of Dispute:

The Client and the Bidder shall make every effort to resolve amicably, by direct negotiation, any disagreement or dispute arising between them under or arising from or in connection with the contract. All claims and disputes arising under or relating to this Agreement are to be settled by binding arbitration in the state of Odisha. An award of arbitration may be confirmed in a court of competent jurisdiction. Arbitration shall be as per Indian Arbitration Act, 1996.

Disputes not so resolved amicably within 30 days of receipt of notice of such as a dispute shall be resolved by Commissioner –cum-Secretary to Government, SD&TE Department, Government of Odisha which is binding and final.

25. Disqualification of Proposal:

The proposal is liable to be disqualified in the following cases as listed below:

- Proposal submitted without Bid Processing Fee & EMD as applicable
- Proposal not submitted in accordance with the procedure and formats as prescribed in the RFP
- During validity of the proposal, or its extended period, if any, the bidder increases his quoted prices
- Proposal is received in incomplete form
- Proposal is received after due date and time for submission of bid
- Proposal is not accompanied by all the requisite documents / information
- A commercial bid submitted with assumptions or conditions
- Bids with any conditional technical and financial offer
- If the bidder provides any assumptions in the financial proposal or qualifies the commercial proposal with its own conditions, such proposals will be rejected even if the commercial value of such proposals is the lowest / best value
- Proposal is not properly sealed or signed
- Proposal is not conforming to the requirement of the scope of the work of the assignment.
- Bidder tries to influence the proposal evaluation process by unlawful/corrupt/fraudulent means at any point of time during the bid process
- If, any of the bid documents (including but not limited to the hard and soft/electronic copies of the same, presentations during evaluation, clarifications provided by the bidder), excluding the commercial bid, submitted by the bidder is found to contain any information on price, pricing policy, pricing mechanism or any information indicative of the commercial aspects of the bid;
- Bidders or any person acting on its behalf indulges in corrupt and fraudulent practices
- Any other condition / situation which holds the paramount interest of the Client during the overall section process.

26. Fraud and Corrupt Practices

The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process. Notwithstanding anything to the contrary contained herein, Director, DTE&T may reject a Bid without being liable in any manner whatsoever to the Bidder, if it determines that the Bidder, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process. In such an event, Director, DTE&T shall be entitled to forfeit and appropriate the Bid Security or Performance Security, as the case may be, as Damages, without prejudice to any other right or remedy that may be available to Director, DTE&T under the Bidding Documents and/ or the Agreement, or otherwise.

Without prejudice to the rights of the Director, DTE&T herein above and the rights and remedies which Director, DTE&T may have under the RFP, or otherwise if a Bidder is found to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process such Bidder, at the sole and absolute discretion of Director, DTE&T, shall not be eligible to participate in any tender or RFP issued by Director, DTE&T during a period of 2 (two) years from the date such Bidder, is found to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practices, as the case may be. The following terms shall have the meaning hereinafter respectively assigned to them.

5. SECTION III: Terms of Reference (ToR)

"RFP for supply, installation and commissioning of Automobile equipment for different Govt. ITIs & Polytechnics/Engineering Schools of Odisha".

1. Introduction:

The Directorate of Technical Education and Training, Odisha, having its principal office at Killa Maidan, Buxi Bazaar, Cuttack-753001(herein after referred to as the "DTE&T" which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and permitted assigns), looks after technical education at Technical Institutes/Colleges, Diploma and formal CTS training at ITI level. It also provides Dual System Training, On-the-Job Training, Apprenticeship Training in order to prepare the Youth suitable for gainful wage and self-employment through Nano Unicorn Project of OSDA for a decent livelihood.

The goal of the DTE&T is to impart quality skill development training to build a knowledgeable workforce to cater to the demand of the labour market. Additionally, generation of such industry- ready manpower would ensure India's competitiveness in the global market.

DTE&T invites proposals from the leading OEM/Authorised Partner of OEM/Authorised Dealer/Distributors of OEM having experience of supply, installation and commissioning of the lab equipment for several trades of ITIs and Polytechnics.

The project will support the Directorate of Technical Education & Training, Odisha, (herein after called "DTE&T") in training youth in the age group of 18–34 to increase their skills, employability, and income. The project aims to produce appropriately qualified and multi-skilled workers with excellent employment and career prospectus which meet the needs of the economy. The project will benefit youth, women, and disadvantaged groups.

2. Objective:

The objective of this RFP is to select OEMs/Authorised Partners/Authorised Dealers having experience of supply, installation and commissioning of similar category of equipment at any Government or Private organization/ Government or Private educational institute/ Government or Private training institute/ any Industry.

DTE&T will provide the lab infrastructure with required space with electrical power supply (three phase connection) to the nearest distribution panel box, water supply (if required), furniture and other pre-requisite amenities before supply of equipment. The selected bidder will be responsible for supply and installation of equipment/machineries, commissioning & Comprehensive Warranty for 36 months, and provide operational training (as per the requirement) for 03 days to the nominated staff from the consignee institutes.

3. Scope of the Project

A- Scope of DTE&T (the Buyer/Client):

The scope of work of the DTE&T inter alia states that;

I. Consignee Institutes shall provide required space in the lab for the installation & commissioning of the equipment/machines within the lab of the premises of the Govt. ITIs and Polytechnics/Engineering Schools.
II. Facilitate additional space (covered area) if required upon availability at the institute premises at free of cost.
III. Provide basic amenities like approach road and water supply (if required) nearest to the lab for running the machinery/equipment. Three phase electrical connection at nearest distribution/panel board will be provided at the designated labs by the consignee institutes.

IV. Required space, furniture, air conditioners (if required) etc. will be provided by the consignee institutes.
V. Conduct Pre-Delivery Inspection of sample equipment through Physical mode by its own technical experts or 3rd party agency/consultants/advisors appointed by DTE&T before the proposed equipment dispatch by the selected bidder and Post Delivery Inspection of all equipment by its own technical experts or by an independent agency appointed by DTE&T at any point of time. The operational expenses like testing the machines/equipment will be borne by the supplier.
VI. Consignee institutes will be responsible to monitor the performance of the supplied equipment/machineries and progress of the work.

B- Scope of the Successful Bidder:

1. Supply, installation and commissioning of all machines/equipment in compliance to the technical specifications mentioned in Section-III (Point No.6) of the RFP, will be done by the Selected Bidder at the consignee institutes. Partial bidding/supply will not be accepted.
2. After the supply of equipment/machines, the successful bidder has to execute its installation & commissioning in the designated site(s) at the address. No extra cost shall be paid for this purpose.
3. Selected Bidder is responsible for all necessary works including necessary civil works (i.e. earthling/grounding of the machines), electrical connections from nearest distribution panel board to the machines and all type of cables connections, circuit breakers etc. required for connecting power supply point to machines, and other requisite works to complete the installation of the equipment/machines at the Consignee Institutes, falls within the ambit of scope of work of selected bidder.
4. Required Room/space, Furniture (if any), Air Conditioners (if any), Water Supply (if any) etc. will be provided by the Consignee Institutes but Selected Bidder is expected to supply all other installation accessories, facilities and services required for successful installation and smooth operation of the equipment. Bidders may conduct the site survey before installation at no additional cost.
5. Any accessories that must be needed for operation of the equipment but not mentioned in the specification shall also be quoted by the selected bidder.
6. Suitable and essential tool kit is to be supplied by the selected bidder with the equipment for the required maintenance.
7. The equipment/machines should be installed and commissioned at site. Site requirement along with the layout drawing for installation of equipment, electrical & water supply (if any) from main/ nearest sources shall be provided by the selected bidder upon issuance of Letter of Award of Contract (LoA).
8. The bidder shall not charge extra for additional items including fuel & lubricants (if required), Gas Cylinders (if required), raw materials, consumables etc. required to meet the operational requirement during installation, commissioning and hands-on training at consignee institutes.
9. The selected bidder shall provide comprehensive warranty of supplied machineries/equipment for 36 months from the date of successful commissioning. The warranty does not include tools & tackles, consumables, PPE etc (if any).
10. DTE&T Odisha reserves the right to increase/decrease the ordered quantity by up to 25 per cent at any time, till the final delivery date (or the extended delivery date of the contract), by giving reasonable notice to the supplier without any change in the final agreed price.
11. The selected bidder must sign the agreement for Comprehensive Annual Maintenance Contract (CAMC) with DTE&T Odisha for 03 (three) years for the equipment/machines mentioned in **Section-III (Point No.6)**. This CAMC contract must be signed 02 (two) months before expiry of

the comprehensive warranty period i.e. 36 months. A performance security @5% of the Annual awarded Value of Comprehensive Annual Maintenance Cost (CAMC) (without tax) for the respective year must be submitted by the selected bidder and the same will be initially valid for fifteen months and may be extended further, if necessary.

C- Pre-Delivery Inspection and Post-Delivery Inspection of all equipment:

DTE&T may conduct a Pre-Delivery inspection of all equipment/sample equipment through Physical mode by its own technical experts or 3rd party agency/consultants/advisors appointed by DTE&T before the dispatch of the proposed equipment by the selected bidder at the supplier's premises or at the manufacturer's factory site. The operational charges i.e. testing charges for samples, raw material, consumables (if any) etc. shall be borne by the supplier. But, other expenses like travelling, boarding and lodging of the technical experts, will be borne by the Authority.

All tests and inspections of all equipment during Post-Delivery Inspection shall be made at the place of delivery. Officers authorized by DTE&T shall be entitled at all reasonable time to inspect and supervise and test during installation and commissioning. Such inspection will not relieve the selected Bidder of their obligation in the contract.

If the OEM/Technology Partner fails to comply with any of the quality, technical specification or clause mentioned in the RFP, and then the Contract will be terminated by DTE&T Odisha.

4. Special Terms and Conditions:

1. Manufacturer (OEM) / Authorized Channel Partner/ Authorized Technology Partner having valid manufacturing license of OEM/ authorization certificates from OEM are eligible to participate in this tender. OEM must provide necessary documentary evidence of being an Original Equipment Manufacturer of the related equipment. Bid specific authorisation must be submitted in case of participation by channel partner/technology partner of OEM.
2. OEM should be nationally / internationally reputed Company.
3. For Technology Partner/Channel Partner, an undertaking from the OEM is required stating that they would facilitate the Bidder on a regular basis with technology/product updates and extend support for the warranty as well.
4. In this tender, either the authorized channel partner/technology partner on behalf of the OEM or OEM itself can submit bid proposals, but both cannot submit bids simultaneously for the same tender.
5. If authorized channel partner/technology partner submits bid on behalf of the OEM, the same authorized channel partner/technology partner shall not submit a bid on behalf of another OEM for the same tender. Bidder has to quote for all BoQ equipment as per Section-III (Point No.6). Partial bidding is not allowed.
6. In a scenario, if both OEM and or its channel partner/authorized dealer participated in the bidding process, bids of both OEM & an authorized partner/dealer will be technically disqualified and EMD will be forfeited as per prevailing rules. The authorization from OEM should indicate bid reference number.
7. The supplier of the equipment must confirm in writing that the spares for the entire supplied equipment will be available for a period of at least five years after the model of equipment supplied has been phased out. For frequently required spares, there should be adequate inventory with the Indian agency.

8. The successful bidder is responsible for the supply, installation and maintenance of the equipment. Equipment documentation including user manuals and operation and troubleshooting guides to be provided.
9. Comprehensive Warranty period shall specifically be mentioned in the offer. The selected bidder must adhere to the warranty clause mentioned herein.
10. Selected Bidder must sign Comprehensive Annual Maintenance Contract (CAMC) with DTE&T Odisha for at least 03 (three) years for the equipment/machines mentioned here in this RFP.
11. Financial Proposal must be submitted as per the BoQ format shared in FIN-1 & FIN-2 (PDF file).
12. Bidders must submit Technical Specification Compliance sheet within their technical bid. The bidders must be kept in their mind that mere copying of our specifications in the technical specification compliance sheets, shall not make the technical bid eligible for consideration. A bid has to be supported with original catalogue of the quoted item/s duly signed by the authorized person participating in the bid. Non-compliance with the above conditions shall be treated as incomplete/ambiguous and the bid shall be rejected without giving an opportunity to the bidder for further clarification/negotiation etc.
13. The bidder must produce documentary evidence of past supply experience of the offered make & model of the major equipment/machineries to any Govt./Private organization/industry.
14. Details of foundation drawing for instruments and equipment, if any, should be provided.
15. The Bidder shall quote their lowest possible price, and prices quoted by the Bidder shall be "fixed" during the Bidder's performance of the contract and not subject to any variation and/or escalation.
16. Bidder must quote **Cost of the Goods**, which shall indicate clearly the including all taxes and charges towards packing, forwarding, handling, insurance, comprehensive warranty for 36 months, freight, incidental service, civil, electrical and other works, (if any), installation & commissioning of the goods and training to the consignee's personnel at site and **Cost of Comprehensive Annual Maintenance Cost (CAMC) in BoQ (FIN-1 & FIN-2)**, indicating the total cost of Comprehensive Annual Maintenance Cost for the equipment/machines offered for this tender' for 03 Years and applicable after the expiry of comprehensive warranty of 36 months**.** The price shall be quoted in Indian Rupees only.
17. The cost of standard accessories shall be included in basic price and optional accessories shall have to be quoted separately.
18. Any component, fitting etc. which may not have been specifically mentioned in the specifications but which are usual and necessary for the equipment, shall be supplied by the bidder at no extra cost.
19. In case of items of import, the bidder should take full responsibility for customs clearance, handling, tax payment, etc. and same should be inclusive in the financial bid.
20. DTE&T Odisha shall sign a **Comprehensive Annual Maintenance Contract (CAMC)** for 03 (three) years (which may be extended further as per the requirement of DTE&T Odisha) for the equipment/machines mentioned in **'Section-III (Point No.6)'** of the RFP, with the Selected Bidder beyond the warranty period of 36 months and shall be as per the terms and conditions mentioned in Annexure-III. Year wise cost of such maintenance contract (CAMC) shall be quoted**.**

21. Higher technical specifications may be considered subject to competitive price offer.
22. DTE&T Odisha reserves the right to accept, split, divide, negotiate, cancel or reject any bid or to annul and reject all bids at any time prior to the award of the contract without incurring any liability to the affected bidders or any obligation to inform affected bidder, the grounds of such action.
23. Price bid should be submitted in the BoQ format in **FIN-1 & FIN-2**. Price bid should have equipment wise breakup.
24. Performance Security – A performance security in the form of Bank Guarantee/e-Bank Guarantee for 5% of the Awarded Value (excluding taxes) to be submitted within 15 days of issuance of the Letter of Award (LoA). The Bank Guarantee will be valid initially for 42 months and may be extended further if required. The performance guarantee will be released by DTE&T, Odisha and returned to the Selected Bidder after 60 days of completion of warranty period subject to fulfillment of all obligations on recommendation of respective Principal of the institutes.

5. Comprehensive Warranty (36 Months) Clause:

The final selected bidder must provide Comprehensive Warranty Maintenance Services for all supplied equipment/machines (except consumables, PPE and tools & tackles) at the Consignee Institutes for 36 months from the date of successful installation & commissioning. The scope of the bidders is as below.

i. Maintenance Services shall consist of Preventive and Corrective maintenance of equipment specified in **Section-III (Point No. 6)** (excluding consumables, PPE and tools & tackles) & will include repair and replacement of parts free of cost.
ii. Preventive maintenance, half-yearly once, which includes:
    i. Check-up to ensure that device connection is proper; cabling is at proper condition etc.
    ii. Cleaning of the above instruments & equipments and checking the System Performance.
iii. The selected bidder must conduct preventive maintenance services at least twice (2 times) in a year at the Consignee Institute.
iv. The parts replaced must be new parts or equivalent in performance to new parts.
v. Any complaint informed through telephone/email must be acknowledged with a Complaint No. by the Supplier which will be noted by Consignee. All further contact with the Supplier on such complaint will be initiated through that Complaint No. Once rectification done, that No. will be cancelled by both parties. A register is to be maintained by the Supplier where complaints are to be noted along with Complaint No.
vi. The maintenance shall be attended by the service engineer within 3 days of intimation to the Bidder.
vii. The Service Engineer of the Supplier will be allowed to handle the respective plant & machineries only in the presence of the officer in charge at the institute site.
viii. The selected bidder should ensure that maintenance job is not hampered/ delayed due to paucity of spares/inadequate manpower etc.
ix. Minor repair to be done within 3 days of complaint registered and for major breakdown or replacement of parts must be completed by 15 days from the complaint registered to supplier. For imported parts, the replacement should be done within 4 weeks maximum.

6. Comprehensive Annual Maintenance Contract (CAMC):

i. The Selected Bidder shall be under the obligation of entering into a Comprehensive Annual Maintenance Contract (CAMC) with DTE&T Odisha for a minimum period of 03 (three) years, renewable if felt necessary, on mutually acceptable rates, terms, and conditions mentioned herein. CAMC shall start after the completion of Warranty.

ii. The scope of CAMC shall cover maintenance and supply/replacement of materials and components, for smooth and reliable operation of the systems without trouble.

iii. Accordingly, the Bidders has to offer rates in BoQ given **FIN-1 (PDF File),** for the CAMC charges for the proposed equipment.

iv. Selected agency must sign the Comprehensive Annual Maintenance Contract (CAMC) with DTE&T Odisha for 03 (three) years for the equipment/machines supplied at the Consignee Institutes (except tools, tackles, raw materials, PPE etc.). This CAMC contract must be signed before expiry of the comprehensive warranty period i.e. 36 months. A performance security @5% of the Annual cost of CAMC (excluding Taxes) in the form of Bank Guarantee/Fixed Deposit Receipt/Term Deposit Receipt, must be submitted by the selected Agency before signing the CAMC contract for the respective lot and which will be initially valid for 15 months and may be extended further if necessary.

v. The Performance security towards CAMC for the particular year shall be returned only after submission and confirmation of BG/TDR/FD/DD of subsequent years.

6. List of equipment/machines and their Technical Specifications /Compliance Statement (Tentative list subject to change):

List of equipment and consignee institute for Govt. ITIs:

Equipment Name	Govt. ITI Laxmipur	Govt. ITI Boudh	Govt .ITI Phulbani	Govt. ITI Sonepur	Govt. ITI Anandapur	Govt. ITI Balugaon	Govt. ITI Barbil	Govt. ITI Bhanjangar	Govt. ITI Bhawanipatna	Govt. ITI Bheden	Govt. ITI Chatarpur
BLDC Motor	0	10	0	0	0	0	0	0	0	0	0
Automotive Water pump for dismantling and assembling	4	0	0	6	0	0	0	0	0	0	0
Steering Wheel Puller	0	5	0	0	0	0	0	0	0	0	0
Cut Section of Electric Vehicle 4 Wheeler	0	1	0	0	0	0	0	0	0	0	1
Electric Vehicle KIT Chassis	0	1	1	0	0	0	0	0	0	1	1
Instruction Kit for Charging System	0	1	0	0	0	0	0	0	0	0	2
Diesel Engine 6 cylinder, running condition with scanner	1	0	0	1	0	0	1	0	2	0	0
Car lift -4 Ton	0	1	0	0	0	0	0	0	0	0	1
Transmission / Gearbox Demo Kit	0	1	0	0	0	0	0	0	0	0	1
Cut section of 4/6 cylinder diesel engine in moving condition to show movement of internal parts	0	0	0	1	0	1	0	0	1	0	0
Air ratchet with standard accessories	2	0	0	2	0	0	0	0	0	0	0
Dismantling and assembling of BMS Trainer Kit	0	2	0	0	0	0	0	0	0	0	0
Air impact wrench with standard accessories	2	0	0	2	0	0	0	0	0	0	0
2 Wheeler Bike or Scooter Assembly Set	0	1	0	0	0	0	0	0	0	0	1
Working Condition of Diesel Engine – CRDI - 4 stroke Engine, Assembly with fault simulation board	0	0	0	0	0	0	1	0	1	0	0
HVAC Demo Kit	0	1	0	0	0	0	0	0	0	0	1
Lighting and Wiring System mock layout	0	1	0	0	0	0	0	0	0	0	1
Lithium Battery pack tester	0	1	0	0	0	0	0	0	0	0	0
EV motion position sensor test kit	0	1	1	0	0	0	0	0	0	0	0
Multi Scan Tool To scan Engine, ABS & EBD, AT, SRS, Body Control and immobilizer	1	0	0	1	0	0	0	0	0	0	0
Tyre Changer Machine	0	0	0	1	0	0	0	0	0	0	0
Demonstration Board of Working Model MPFI System with Motorized control	0	0	0	0	0	0	1	0	0	0	1
Dual Magnetization Yoke	0	0	0	0	1	0	2	0	1	0	0
Working Model of power windows	0	0	0	1	0	0	0	0	0	0	0
Four stroke petrol engine with CNG setup-working condition	0	0	0	1	0	0	0	0	0	0	0
Spark Spanner plug spanner 14mmx18mm long bit for alto/800	2	0	0	2	0	0	0	0	0	0	0
Functional/ experiment model of Different type of sensors.	0	0	0	1	0	0	0	0	0	0	0
Two post car lift – capacity 4000 kg	1	0	0	0	0	0	0	0	0	0	0
Chain pulley block - capacity with tripod stand	1	0	0	2	0	0	0	0	0	0	0
Demonstration Kit of Electrical Vehicle	0	1	0	0	0	0	0	0	0	0	0
Hydraulic jack HI-LIFT type	1	0	0	1	0	0	0	0	1	0	0
Battery Management System	0	1	0	0	0	0	0	0	0	0	0
BATTERY CHARGER	0	0	0	2	0	0	0	0	0	0	0
Belt tensioner gauge	1	0	0	1	0	0	0	0	0	0	0
Trolley type portable air compressor	0	0	0	1	0	0	0	0	1	0	0
Tin smiths bench folder	0	0	0	0	0	0	2	0	1	0	0
Diagnostic tool for EV	0	1	0	0	0	0	0	0	0	0	0
Air conditioning service Unit (Car)	0	0	0	1	0	0	0	0	0	0	0
Air blow gun With standard accessories	1	0	0	1	0	0	0	0	0	0	0
Cooling System components arranged on a stand with electric motor	0	0	0	0	0	0	0	0	0	0	1
Mini commercial Vehicle Chassis Structure	0	0	0	0	0	0	0	0	0	0	1
Exhaust System	0	0	0	0	0	0	0	0	0	0	1
Engine and Transmission systems on stand (working model)	0	0	0	0	0	0	0	0	0	0	1
Turbocharger cut sectional view	1	0	0	1	0	0	0	0	1	0	0
Arbor press hand operated	0	0	0	0	0	0	0	0	1	0	0
Drum brake assembly in Working Condition	1	0	0	1	0	0	0	0	0	0	0
Cylinder bore gauge capacity	1	0	0	1	0	0	0	0	0	0	0
WORKING MODEL OF TORQUE CONVERTER	0	0	0	1	0	0	0	0	0	0	0
Suspension System-front and rear on stand	0	0	0	0	0	0	0	0	0	0	1

Equipment Name	Govt. ITI Laxmipur	Govt. ITI Boudh	Govt .ITI Phulbani	Govt. ITI Sonepur	Govt. ITI Anandapur	Govt. ITI Balugaon	Govt. ITI Barbil	Govt. ITI Bhanjangar	Govt. ITI Bhawanipatna	Govt. ITI Bheden	Govt. ITI Chatarpur
System Set up and integration with Design.	0	0	0	0	0	0	0	0	0	0	1
Electronic Ignition System of an Automobile 4 Wheeler	0	0	0	0	0	0	0	1	0	0	1
Disc 7 Drum brake systems on stand (working model)	0	0	0	0	0	0	0	0	0	0	1
Automotive exhaust 5 gas analyser and Diesel Smokemeter (for petrol & Diesel)	0	0	0	1	0	0	0	0	0	0	0
Ultrasonic Injection cleaning equipment	0	0	0	1	0	0	0	0	0	0	0
Cut section Model of Mock layout of a motor car –electrical system working model	0	0	0	1	0	0	0	0	0	0	0
Straight Grinder HEAVY DUTY with attachments	0	0	0	0	0	0	1	0	0	0	0
AC ALTERNATOR SLIP RING PULLER	1	0	0	1	0	0	0	0	0	0	0
Auto Electrical test bench	0	0	0	0	0	0	0	0	1	0	0
Air bag simulator	0	0	0	1	0	0	0	0	0	0	0
Working Condition of Petrol MPFI Engine Assembly with fault simulation board	0	0	0	0	0	0	0	0	0	0	0
Gas Welding Table	0	0	0	0	0	0	0	0	2	0	0
Different type of Engine Bearing model	0	0	0	1	0	0	0	0	0	0	0
Liquid penetrate Inspection kit	0	0	0	0	0	0	0	0	1	0	0
DIFFERENT TYPE OF PISTON MODEL	0	0	0	1	0	0	0	0	0	0	0
Diesel Engine – CRDI - 4 strokefor Dismantling and Assembling with Swiveling Stand.	0	0	0	1	0	0	0	0	1	0	0
DISK BRAKE IN WORKING CONDITION WITH CALIPER ASSEMBLY	1	0	0	0	0	0	0	0	0	0	0
Diesel engine (Running condition) Stationary type single cylinder	0	0	0	1	0	0	0	0	0	0	0
Carburetor – Solex, Mikuny for dismantling and assembling	0	0	0	1	0	0	0	0	0	0	0
Pneumatic rivet gun with standard accessories	0	0	0	0	0	0	0	0	2	0	0
Welding plant Oxy-Acetylene complete (high pressure)	0	0	0	0	0	0	1	0	1	0	0
Radiator cut section-cross flow	0	0	0	2	0	0	0	0	0	0	0
Working model of Air Brake Assembly	0	0	0	1	0	0	0	0	0	0	0
Car Jet washer with standard accessories	0	0	0	1	0	0	0	0	0	0	0
Steering Wheel and Tire Systems assembly on stand	0	0	0	0	0	0	0	0	0	0	1
Solar Based Charging	0	0	0	0	0	0	1	1	0	0	0
Portable Single Phase Welding Machine	0	0	0	0	0	0	0	0	0	0	0
Welding Transformer with all accessories including consumables	0	0	0	0	0	0	0	0	1	0	0
Tyre & split rim wheel assembly	0	0	0	1	0	0	0	0	0	0	0
4-Wheeler Buggy cut section model	0	0	0	0	0	0	0	1	0	0	0
Online UPS with battery and accessories	0	0	0	0	0	0	0	0	0	0	0
Rear Axel	0	0	0	0	0	0	0	0	0	0	1
Driving simulater with disply	0	0	0	0	0	0	0	0	0	0	0
Electrical vehicle component checker or Diagnostic	0	0	0	0	0	0	0	1	0	0	0
MPFI petrol engine with swiveling stand along with special tools for dismantling and assembling	0	0	0	0	0	0	0	0	0	0	0
Cut section working model of automatic transmission Gear box	1	0	0	0	0	0	0	0	0	0	0
Wheel balancing machine	0	0	0	1	0	0	0	0	0	0	0
Steering assembly – 1.Rack & pinion 2.Worm & roller 3. Recirculating ball 4.Power steering 5. Electric Assisted Power Steering	0	0	0	0	0	0	0	0	0	0	0
Fuel System and Urea Handling	0	0	0	0	0	0	0	1	0	0	0
Grinding machine (general purpose)	0	0	0	0	0	0	0	0	1	0	0
Drilling machine bench to drill up to 12mm dia along with accessories	0	0	0	0	0	0	0	0	1	0	0
Cylinder liner- Dry & wet liner, press fit & slide fit liner	0	0	0	1	0	0	0	0	0	0	0
Two wheeler scooty cut section model	0	0	0	0	0	0	0	1	0	0	0
Demonstration board of electronic Ignition system, ignition coil	0	0	0	0	0	0	0	0	0	0	0
Fuel injection pump VE pump / Distributor fuel rotary pump (DPC) pumps / along with special tools and accessories	0	0	0	1	0	0	0	0	0	0	0
Alternator assembly used for LMV	0	0	0	1	0	0	0	0	0	0	0
Fuel injection test bench for calibration of fuel pump	0	0	0	0	0	0	0	0	1	0	0
Bench lever shears	0	0	0	0	0	0	0	0	1	0	0
Wheel alignment Machine computerized 3D (Optional)	0	0	0	0	0	0	0	0	0	0	0
Discrete component Trainer/ Basic Electronics Trainer	0	0	0	0	0	0	0	0	1	0	0
Automotive Diesel Smokemeter (for Diesel engine)	0	0	0	0	0	0	0	0	1	0	0
Transfer case with standard for Dismentaling and assembly	0	0	0	1	0	0	0	0	0	0	0
Pipe bending machine	0	0	0	0	0	0	0	0	1	0	0
Cut section working model of Single plate clutch assembly	0	0	0	0	0	0	0	0	0	0	0
Electrical test bench	0	0	0	0	0	0	0	0	1	0	0
3 Wheel Passenger cut section model	0	0	0	0	0	0	0	1	0	0	0
Tube/ tyre vulcanizing machine	0	0	0	1	0	0	0	0	0	0	0
Grand Total	**23**	**30**	**2**	**53**	**1**	**1**	**10**	**7**	**27**	**1**	**20**

Equipment Name	Govt. ITI Cuttack	Govt. ITI Hirakud	Govt. ITI Jharsuguda	Govt. ITI Junagarh	Govt. ITI Mathili	Govt. ITI Dhenkanal	Govt. ITI Jajpur	Govt. ITI Rua	Govt.ITI Balasore	Govt.ITI Rayagada	Madhusudan ITI Choudwar	TTI Takatpur
BLDC Motor	10	0	0	0	0	10	0	0	0	0	0	0
Automotive Water pump for dismantling and assembling	0	0	4	0	0	0	4	0	0	0	0	0
Steering Wheel Puller	0	0	0	0	0	5	0	0	0	0	0	0
Cut Section of Electric Vehicle 4 Wheeler	1	0	0	0	0	1	0	1	1	1	1	0
Electric Vehicle KIT Chassis	1	0	0	0	0	1	0	0	1	1	0	0
Instruction Kit for Charging System	1	0	0	0	0	1	0	0	2	0	0	0
Diesel Engine 6 cylinder, running condition with scanner	0	0	1	0	0	0	1	0	0	0	0	0
Car lift -4 Ton	1	0	0	1	0	1	0	0	1	1	0	0
Transmission / Gearbox Demo Kit	1	0	0	1	0	1	0	0	1	1	0	0
Cut section of 4/6 cylinder diesel engine in moving condition to show movement of internal parts	0	1	1	0	0	0	1	0	0	0	0	0
Air ratchet with standard accessories	0	0	0	0	0	0	2	0	0	0	0	0
Dismantling and assembling of BMS Trainer Kit	2	0	0	0	0	2	0	0	0	0	0	0
Air impact wrench with standard accessories	0	0	0	0	0	0	2	0	0	0	0	0
2 Wheeler Bike or Scooter Assembly Set	1	0	0	1	0	1	0	0	0	1	0	0
Working Condition of Diesel Engine – CRDI - 4 stroke Engine, Assembly with fault simulation board	0	2	1	0	0	0	0	0	0	0	0	0
HVAC Demo Kit	0	0	0	0	0	1	0	0	1	1	0	0
Lighting and Wiring System mock layout	1	0	0	0	0	1	0	0	1	0	0	0
Lithium Battery pack tester	2	0	0	0	0	2	0	0	0	0	0	0
EV motion position sensor test kit	1	0	0	0	0	1	0	0	1	0	0	0
Multi Scan Tool To scan Engine, ABS & EBD, AT, SRS, Body Control and immobilizer	0	0	1	0	0	1	0	0	0	0	0	0
Tyre Changer Machine	0	0	1	0	0	1	1	0	0	0	0	0
Demonstration Board of Working Model MPFI System with Motorized control	0	0	0	0	0	0	1	0	0	1	0	0
Dual Magnetization Yoke	0	0	0	0	0	0	0	0	0	0	0	0
Working Model of power windows	0	0	1	0	0	1	1	0	0	0	0	0
Four stroke petrol engine with CNG setup-working condition	0	0	1	0	0	1	1	0	0	0	0	0
Spark Spanner plug spanner 14mmx18mm long bit for alto/800	0	0	0	0	0	0	0	0	0	0	0	0
Functional/ experiment model of Different type of sensors.	0	0	1	0	1	0	1	0	0	0	0	0
Two post car lift – capacity 4000 kg	0	0	1	0	0	1	1	0	0	0	0	0
Chain pulley block - capacity with tripod stand	0	0	1	0	0	0	0	0	0	0	0	0
Demonstration Kit of Electrical Vehicle	1	0	0	0	0	1	0	0	1	0	0	0
Hydraulic jack HI-LIFT type	0	0	0	0	0	1	0	0	0	0	0	0
Battery Management System	1	0	0	0	0	1	0	0	1	0	0	0
BATTERY CHARGER	0	0	0	0	0	0	2	0	0	0	0	0
Belt tensioner gauge	0	0	0	0	0	0	1	0	0	0	0	0
Trolley type portable air compressor	0	0	0	0	0	0	1	0	0	0	0	0
Tin smiths bench folder	0	0	0	0	0	0	0	0	0	0	0	0
Diagnostic tool for EV	1	0	0	0	0	1	0	0	0	0	0	0
Air conditioning service Unit (Car)	0	0	1	0	0	0	1	0	0	0	0	0
Air blow gun With standard accessories	0	0	0	0	0	0	1	0	0	0	0	0
Cooling System components arranged on a stand with electric motor	0	0	0	1	0	0	0	0	0	1	0	0
Mini commercial Vehicle Chassis Structure	0	0	0	1	0	0	0	0	0	1	0	0
Exhaust System	0	0	0	1	0	0	0	0	0	1	0	0
Engine and Transmission systems on stand (working model)	0	0	0	1	0	0	0	0	0	1	0	0
Turbocharger cut sectional view	0	0	0	0	0	0	0	0	0	0	0	0
Arbor press hand operated	0	0	1	0	0	0	1	0	0	0	0	0
Drum brake assembly in Working Condition	0	0	1	0	0	0	0	0	0	0	0	0
Cylinder bore gauge capacity	0	0	0	0	0	0	1	0	0	0	0	0
WORKING MODEL OF TORQUE CONVERTER	0	0	0	0	0	1	1	0	0	0	0	0
Suspension System-front and rear on stand	0	0	0	1	0	0	0	0	0	1	0	0

Equipment Name	Govt. ITI Cuttack	Govt. ITI Hirakud	Govt. ITI Jharsuguda	Govt. ITI Junagarh	Govt. ITI Mathili	Govt. ITI Dhenkanal	Govt. ITI Jajpur	Govt. ITI Rua	Govt.ITI Balasore	Govt.ITI Rayagada	Madhusudan ITI Choudwar	TTI Takatpur
System Set up and integration with Design.	0	0	0	0	0	0	0	1	1	0	0	0
Electronic Ignition System of an Automobile 4 Wheeler	0	0	0	0	0	0	0	0	0	1	0	0
Disc 7 Drum brake systems on stand (working model)	0	0	0	1	0	0	0	0	0	0	0	0
Automotive exhaust 5 gas analyser and Diesel Smokemeter (for petrol & Diesel)	0	0	0	0	0	0	1	0	0	0	0	0
Ultrasonic Injection cleaning equipment	0	0	0	0	0	0	1	0	0	0	0	0
Cut section Model of Mock layout of a motor car –electrical system working model	0	0	0	0	0	1	0	0	0	0	0	0
Straight Grinder HEAVY DUTY with attachments	0	0	0	0	0	0	0	0	0	1	0	0
AC ALTERNATOR SLIP RING PULLER	0	0	0	0	0	0	0	0	0	0	0	0
Auto Electrical test bench	0	1	0	0	0	0	0	0	0	0	0	0
Air bag simulator	0	0	0	0	0	0	1	0	0	0	0	0
Working Condition of Petrol MPFI Engine Assembly with fault simulation board	0	0	1	0	0	0	1	0	0	0	0	0
Gas Welding Table	0	0	0	0	0	0	0	0	0	0	0	0
Different type of Engine Bearing model	0	0	0	0	0	0	0	0	0	0	0	1
Liquid penetrate Inspection kit	0	0	0	0	0	0	0	0	1	0	0	0
DIFFERENT TYPE OF PISTON MODEL	0	0	0	0	0	0	0	0	0	0	0	1
Diesel Engine – CRDI - 4 strokefor Dismantling and Assembling with Swiveling Stand.	0	0	0	0	0	0	0	0	0	0	0	0
DISK BRAKE IN WORKING CONDITION WITH CALIPER ASSEMBLY	0	0	0	0	0	0	1	0	0	0	0	0
Diesel engine (Running condition) Stationary type single cylinder	0	0	0	0	0	1	0	0	0	0	0	0
Carburetor – Solex, Mikuny for dismantling and assembling	0	0	0	0	0	0	0	0	0	0	0	1
Pneumatic rivet gun with standard accessories	0	0	0	0	0	0	0	0	0	0	0	0
Welding plant Oxy-Acetylene complete (high pressure)	0	0	0	0	0	0	0	0	0	0	0	0
Radiator cut section-cross flow	0	0	0	0	0	0	0	0	0	0	0	0
Working model of Air Brake Assembly	0	0	1	0	0	0	0	0	0	0	0	0
Car Jet washer with standard accessories	0	0	0	0	0	0	1	0	0	0	0	0
Steering Wheel and Tire Systems assembly on stand	0	0	0	0	0	0	0	0	0	1	0	0
Solar Based Charging	0	0	0	0	0	0	0	0	0	0	0	0
Portable Single Phase Welding Machine	0	0	0	0	0	0	0	1	0	0	0	0
Welding Transformer with all accessories including consumables	0	0	0	0	0	0	0	0	0	0	0	0
Tyre & split rim wheel assembly	0	0	0	0	0	0	0	0	0	0	0	0
4-Wheeler Buggy cut section model	0	0	0	0	0	0	0	0	0	0	0	0
Online UPS with battery and accessories	0	0	0	0	0	0	0	0	0	1	0	0
Rear Axel	0	0	0	0	0	0	0	0	0	0	0	0
Driving simulater with disply	0	0	0	0	0	1	0	0	0	0	0	0
Electrical vehicle component checker or Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
MPFI petrol engine with swiveling stand along with special tools for dismantling and assembling	0	0	0	0	0	0	1	0	0	0	0	0
Cut section working model of automatic transmission Gear box	0	0	0	0	0	0	0	0	0	0	0	0
Wheel balancing machine	0	0	0	0	0	0	0	0	0	0	0	0
Steering assembly – 1.Rack & pinion 2.Worm & roller 3. Recirculating ball 4.Power steering 5. Electric Assisted Power Steering	0	0	0	0	0	0	0	0	0	0	0	1
Fuel System and Urea Handling	0	0	0	0	0	0	0	0	0	0	0	0
Grinding machine (general purpose)	0	0	0	0	0	0	0	0	0	0	0	0
Drilling machine bench to drill up to 12mm dia along with accessories	0	0	0	0	0	0	0	0	0	0	0	0
Cylinder liner- Dry & wet liner, press fit & slide fit liner	0	0	0	0	0	0	0	0	0	0	0	0
Two wheeler scooty cut section model	0	0	0	0	0	0	0	0	0	0	0	0
Demonstration board of electronic Ignition system, ignition coil	0	0	0	0	0	0	1	0	0	0	0	0
Fuel injection pump VE pump / Distributor fuel rotary pump (DPC) pumps / along with special tools and accessories	0	0	0	0	0	0	0	0	0	0	0	0
Alternator assembly used for LMV	0	0	0	0	0	0	0	0	0	0	0	0
Fuel injection test bench for calibration of fuel pump	0	0	0	0	0	0	0	0	0	0	0	0
Bench lever shears	0	0	0	0	0	0	0	0	0	0	0	0
Wheel alignment Machine computerized 3D (Optional)	0	0	0	0	0	0	1	0	0	0	0	0
Discrete component Trainer/ Basic Electronics Trainer	0	0	0	0	0	0	0	0	0	0	0	0
Automotive Diesel Smokemeter (for Diesel engine)	0	0	0	0	0	0	0	0	0	0	0	0
Transfer case with standard for Dismentaling and assembly	0	0	0	0	0	0	0	0	0	0	0	0
Pipe bending machine	0	0	0	0	0	0	0	0	0	0	0	0
Cut section working model of Single plate clutch assembly	0	0	0	0	0	0	1	0	0	0	0	0
Electrical test bench	0	0	0	0	0	0	0	0	0	0	0	0
3 Wheel Passenger cut section model	0	0	0	0	0	0	0	0	0	0	0	0
Tube/ tyre vulcanizing machine	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	**25**	**4**	**19**	**9**	**1**	**41**	**35**	**3**	**13**	**16**	**1**	**4**

List of equipment and consignee institute for Govt. Polytechnics/Engineering Schools

Name of Machinery	BOSE, Cuttack	Govt. Polytechnic, Nabarangpur	Govt. Polytechnic, Bolangir	Orissa School of Mining Engineering, Keonjhar	Govt. Polytechnic, Dhenkanal	Govt. Polytechnic, Puri	Govt. Polytechnic, Nayagarh	Govt. Polytechnic, Nuapada	Govt. Polytechnic, Gajapati	Govt. Polytechnic, Sonepur	Govt. Polytechnic, Bargarh
2 wheeler simulator with complete working model and data extraction with 15 Ah Battery and Charger	1	0	0	0	0	0	0	0	0	0	0
2 wheeler e-scooty cut model with training facility	1	0	0	0	0	0	0	0	0	0	0
2 Wheeler Test rig with Driving Cycle (Variable load)	1	0	0	0	0	0	0	0	0	0	0
2-Ton Hydraulic engine crane	1	0	1	0	0	0	0	0	0	0	0
3Wheeler simulator with complete working model and data extraction with 15Ah Battery and Charger	1	0	0	0	0	0	0	0	0	0	0
4 WheelerTransmission Electronics& Electrical Training Model and Test Bench with IoT enabled EV Advanced Feature	1	0	0	0	0	0	0	0	0	0	0
4(FOUR) wheeler buggy simulator with complete working model and data display with battery Pack and charger.	1	0	0	0	0	0	0	0	0	0	0
4-cylinder Diesel engine test rig	1	1	1	0	0	0	0	0	0	0	0
4Wheeler Drive Train with MIDC Cycle and Regenerative System (PMSM Motor Test Bench)	1	0	0	0	0	0	0	0	0	0	0
4Wheeler HIL EV Test Rig with Variable Load (Manual Type)	1	0	0	0	0	0	0	0	0	0	0
Abel Flash Point Tester	1		0	1	0	0	0	0	0	0	0
Automatic car washing machine	1	1	1	1	0	0	0	0	0	0	0
AUTOMOTIVE BATTERY LOAD TESTER	1	1	1	0	0	0	0	0	0	0	0
AUTOMOTIVE ELECTRONIC CIRCUIT	1	1	1	1	0	0	0	0	0	0	0
AUTOMOTIVE ENGINE MANAGEMENT PRINCIPLE EQUIPMENT	1	0	0	0	0	0	0	0	0	0	0
Battery Charge and Discharge Tester with System and Table	1	0	0	0	0	0	0	0	0	0	0
Battery DIY Kit	1	1	0	0	0	0	0	0	0	0	0
Battery Pack Tester (Charging & Discharging)	1	1	0	0	0	0	0	0	0	0	0
Diesel Injector Tester with Injector Tester Kit	1	0	0	0	0	0	0	0	0	0	0
Digital Nitrogen Tyre Inflator Machine	1	0	0	0	0	0	0	0	0	0	0
BENCH DRILLING MACHINE		1	0	0	0	0	0	0	0	0	0
Bernoulli's Apparatus	1	0	1	1	0	0	0	0	0	0	0
BMS CAN protocol	1	0	1	0	0	0	0	0	0	0	0
Bomb Calorimeter(Solid and Liquid Fuel)	1	1	1	1	0	0	0	0	0	0	0
CAM SHAFT GRINDING MACHINE	0	1	0	0	0	0	0	0	0	0	0
Carbon Residue test using Conradson's Apparatus	1	0	0	0	0	0	0	0	0	0	0
Centrifugal Pump Test Rig	1	0	0	1	0	0	0	0	0	0	0
Charging Station Instruction and Training Kit (Basic Model)	1	0	1	0	0	0	0	0	0	0	0
Conradson's apparatus	1	0	1	0	0	0	0	0	0	0	0
COOLING SYSTEM COMPONENTS ARRANGED ON A STAND WITH ELECTRIC MOTOR	1	1	1	0	0	0	0	0	0	0	0
CRANK SHAFT GRINDING M/C	0	1	0	0	0	0	0	0	0	0	0
Cut section & open models for hands-on training of EV equipments with stand, instruction board and table	1	0	0	0	0	0	0	0	0	0	0
Cylinder Bore Gauge	1	0	0	2	0	0	0	0	0	0	0
Cylinder Boring Machine	1	1	0	0	0	0	0	0	0	0	0
CYLINDER HONING MACHINE	0	1	0	0	0	0	0	0	0	0	0
Dead Weight Pressure Gauge Tester	1	0	0	2	0	0	0	0	0	0	0
DEMONSTRATION BOARD OF WORKING MODEL MPFI SYSTEM WITH MOTORIZED CONTROL	1	1	1	0	0	0	0	0	0	0	0
Dent Spoter Machine	1	0	1	0	0	0	0	0	0	0	0
Diesel & Petrol Smoke Meter	1	1	1	1	0	0	0	0	0	0	0
Dye penetrant kit, Magnetic particle tester	1	0	1	1	0	0	0	0	0	0	0
Electric Valve Grinding Machine	1	0		0	0	0	0	0	0	0	0
Engine control system with Customized pannel board for all sensors used in vehicle with testing	1	0	1	0	0	0	0	0	0	0	0
Engine decarbonizing machine	1	1	1	0	0	0	0	0	0	0	0
MULTI CYLINDER DIESEL ENGINE TEST RIG	1	1	1	1	0	0	0	0	0	0	0
FOUR WHEELER DRIVING TRAINING SIMULLATOR	1	1	0	0	0	0	0	0	0	0	0
Francis Turbine Test Rig	1	0	0	1	0	0	0	0	0	0	0
Kaplan Turbine Test Rig	1	0	0	1	0	0	0	0	0	0	0
Fuel Pump Test Bench	0	0	0	1	0	0	0	0	0	0	0
TOOL TROLLEY 6 drawer	1	1	1	1	0	0	0	0	0	0	0
Hybrid EV model	1	0	1	0	0	0	0	0	0	0	0
Impact of Jet Apparatus	1	0	0	1	0	0	0	0	0	0	0
Impact Testing Machine(Combined Izod & Charpy)	1	0	0	1	0	0	0	0	0	0	0
Inside Micrometer & Telescopic Gauge	0	0	0	2	0	0	0	0	0	0	0
INTEL IN BUILT CPU DESKTOP WITH UPS	3	1	0	0	0	0	0	0	0	0	0

Name of Machinery	BOSE, Cuttack	Govt. Polytechnic, Nabarangpur	Govt. Polytechnic, Bolangir	Orissa School of Mining Engineering, Keonjhar	Govt. Polytechnic, Dhenkanal	Govt. Polytechnic, Puri	Govt. Polytechnic, Nayagarh	Govt. Polytechnic, Nuapada	Govt. Polytechnic, Gajapati	Govt. Polytechnic, Sonepur	Govt. Polytechnic, Bargarh
Intigrated EV system	1	0	1	0	0	0	0	0	0	0	0
Junker Gas Calorimeter (Gaseous Fuel)	1	1	1	1	0	0	0	0	0	0	0
Kinematic Models	0	0	0	1	0	0	0	0	0	0	0
Laser welding machine	0	0	1	0	0	0	0	0	0	0	0
Mechanism Model with Tracing Table	0	0	0	1	0	0	0	0	0	0	0
Metallurgical Microscope	1	1	0	2	0	0	0	0	0	0	0
MIG welding machine 100-200 volt	1	0	1	1	0	0	0	0	0	0	0
Morse Test Multi Cylinder Petrol Engine Test	1	0	1	0	0	0	0	0	0	0	0
Motorized Gyroscope Apparatus	0	0	0	1	0	0	0	0	0	0	0
MPFI Injector Tester & Cleaner	1	0	1	0	0	0	0	0	0	0	0
Orificemeter Test Rig	1	0	0	1	0	0	0	0	0	0	0
Painting booth with hot chamber, with all accessories	1	0	1	1	0	0	0	0	0	0	0
COMMERCIL VEHICLE CHASSIS	1	1	0	0	0	0	0	0	0	0	0
Rotating Engine Stand	3	0	0	0	0	0	0	0	0	0	0
Transmission Stand	2	0	0	0	0	0	0	0	0	0	0
Pelton Turbine Test Rig	0	0	0	1	0	0	0	0	0	0	0
Pensky & Martin Apparatus	1	0	1	1	0	0	0	0	0	0	0
4 cylinder PETROL ENGINE (BS-VI)	1	1	1	1	0	0	0	0	0	0	0
4 cylinder DIESEL ENGINE (BS-VI)	1	1	1	1	0	0	0	0	0	0	0
Single cylinder Petrol Engine Cut Model	0	0	0	1	0	0	0	0	0	0	0
Pipe Fittings Loss Apparatus	0	0	0	1	0	0	0	0	0	0	0
Pipe Friction Apparatus	1	0	0	1	0	0	0	0	0	0	0
Pipe Losses Apparatus	1	0	1	0	0	0	0	0	0	0	0
Plastic Fusion Equipment	1	1	0	1	0	0	0	0	0	0	0
PMSM motor training system	1	0	1	0	0	0	0	0	0	0	0
Port timing diagram of Diesel engine Model	3	0	1	0	1	1	1	1	1	1	1
Port timing diagram of Petrol engine Model	1	1	1	0	1	1	1	1	1	1	1
Pouring Equipment Ladles (Hand-held)		0	1	0	0	0	0	0	0	0	0
Reciprocating Pump Test Rig	1	0	0	1	0	0	0	0	0	0	0
Redwood Viscometer	1	0	1	0	0	0	0	0	0	0	0
Rockwell Hardness Testing Machine	1	0	1	1	0	0	0	0	0	0	0
SAYBOLT VISCOMETER APARATUS	1	0	1	1	0	0	0	0	0	0	0
HAND OPERATED SPOT WELDING MACHINE	1	1	1	0	0	0	0	0	0	0	0
Spring Testing Machine	1	0	1	1	0	0	0	0	0	0	0
Super fast EV charging station (30 kw DC)	1	0	1	0	0	0	0	0	0	0	0
SUV for driving practice of students	0	0	1	0	0	0	0	0	0	0	0
Tap & Die Set	2	0	0	2	0	0	0	0	0	0	0
Torsion Testing Machine	1	0	1	1	0	0	0	0	0	0	0
TRANSMISSION/ GEARBOX DEMO KIT	1	2	0	0	0	0	0	0	0	0	0
Try Square, Surface Plate	0	0	0	1	0	0	0	0	0	0	0
Universal Testing Machine (UTM)	1	0	1	1	0	0	0	0	0	0	0
Upholstery Tool Kit	0	0	0	1	0	0	0	0	0	0	0
Valve Refacing Machine	1	1	0	1	0	0	0	0	0	0	0
Vehicle scannar for diagnosis	0	0	1	0	0	0	0	0	0	0	0
Venturimeter Test Rig	1	0	0	1	0	0	0	0	0	0	0
Watt Governor Apparatus	0	0	0	1	0	0	0	0	0	0	0
Porter Governor Apparatus	0	0	0	1	0	0	0	0	0	0	0
Hartnell Governor Apparatus	0	0	0	1	0	0	0	0	0	0	0
Proell Governor Apparatus	0	0	0	1	0	0	0	0	0	0	0
Hydraulic Pipe bending Machine	0	0	1	0	0	0	0	0	0	0	0
Welding Machines	0	0	0	2	0	0	0	0	0	0	0
Whirling of Shaft Apparatus	0	0	0	1	0	0	0	0	0	0	0
Autonotive Battery Charger	1	0	1	0	0	0	0	0	0	0	0
Steering and suspension systems(e.g. Rack and Pinion, Power Steering, Shock Absorbers).	0	0	1	2	0	1	1	1	0	1	0
2 stroke diesel engine test rig	0	0	0	0	0	0	0	0	0	1	1
4 stroke diesel engine test rig	2	0	0	0	0	0	0	0	0	0	0
APPARATUS FOR PERFORMANCE TESTING OF CONVENTIONAL & HYBRID VEHICLE WITH ALL ASSESORIES	0	0	0	1	0	0	1	0	0	0	0
Brake test rig (shoe brake, disc brake)	0	0	0	0	0	0	0	0	0	0	0
Braking System Trainer/Test Bench (Internal Expanding Brakes, Disc Brakes)	0	0	2	2	0	1	0	1	1	2	0
CLUTCH SYSTEM TRAINER(SINGLE PLATE,MULTIPLATE,CENTRIFUHAL)	0	0	0	2	0	0	0	1	0	1	0
Engine Cooling System (Air & Water type)	0	0	0	0	0	0	0	0	0	1	0
EV trainer kit, Motor, Controller, Battery pack	0	0	0	1	0	1	1	1	0	0	0
Fuel Feed System Demonstrator (Carburetor + Fuel Injection Models)	0	0	0	2	0	0	1	0	1	0	0
GEAR BOX TRAINER	0	0	2	2	0	0	0	0	0	1	1
HYBRID POWERTRAIN SYSTEM	0	0	0	0	0	0	1	0	0	1	0
HYBRID VEHICLE SYSTEMS AND COMPONENTS (E.G. BATTERY MANAGEMENT SYSTEMS, REGENERATIVE BRAKING).	0	0	0	0	0	0	0	0	1	0	0

Name of Machinery	BOSE, Cuttack	Govt. Polytechnic, Nabarangpur	Govt. Polytechnic, Bolangir	Orissa School of Mining Engineering, Keonjhar	Govt. Polytechnic, Dhenkanal	Govt. Polytechnic, Puri	Govt. Polytechnic, Nayagarh	Govt. Polytechnic, Nuapada	Govt. Polytechnic, Gajapati	Govt. Polytechnic, Sonepur	Govt. Polytechnic, Bargarh
I.C ENGINE MODEL FOR ASSY AND DISASSEMBLING	0	0	0	0	1	0	1	0	1	0	0
Ignition System Trainer/Test Bench (Battery, Magneto, and Electronic Ignition Systems)	0	0	0	2	0	0	0	0	0	1	0
LEAK DETECTOR OF REFRIGERATION EQUIPMENT	1	0	2	0	1	0	0	1	1	1	0
Lubrication system trainer (wet sump/dry sump)	0	0	0	2	0	0	0	0	0	0	0
MODEL OF CAR ENGINE	0	0	0	0	0	0	0	0	0	0	1
MODELS OF 2S & 4S PETROL & DIESEL ENGINES	5	2	0	2	0	0	0	0	0	0	0
Port timing diagram apparataus for petrol and disel engines	0	1	0	0	0	0	0	0	0	0	0
Port timing diagram of Petrol & Disel engine Model	0	0	0	0	0	0	0	0	0	0	0
Valve timing diagram apparataus of Petrol engine and disel engines	0	0	1	0	0	0	0	0	0	0	0
VALVE TIMING DIAGRAM OF DIESEL ENGINE	2	0	0	0	1	1	1	1	1	1	1
VALVE TIMING DIAGRAM OF PETROL ENGINE	2	0	0	0	1	1	1	1	1	1	1
AIR BAG SIMULATOR WORKING MODEL/ TRAINING MODEL	1	0	0	0	0	0	0	0	0	0	0
Automobile Body Models/Charts	1	0	0	0	0	0	0	0	0	0	0
BATTERY TESTER MACHINE	0	1	0	0	0	0	0	0	0	0	0
Brake Dynamometer	0	0	0	1	0	0	0	0	0	0	0
CASTING EQUIPMENTS	1	0	0	0	0	0	0	0	0	0	0
Crankshaft Measuring Tools	0	0	0	2	0	0	0	0	0	0	0
Cut Section Models / Samples	0	0	0	1	0	0	0	0	0	0	0
Cut section of complete two wheeler	0	0	0	1	0	0	0	0	0	0	0
CYLINDER HONING M/C	0	1	0	0	0	0	0	0	0	0	0
DIGITAL INDUSTRIAL FURNACE	0	1	0	0	0	0	0	0	0	0	0
Double Ended Bench Grinder	0	0	0	1	0	0	0	0	0	0	0
ELECTRIC GOLF KART	0	2	0	0	0	0	0	0	0	0	0
Engine Test Rig (Diesel/Petrol)	0	0	0	1	0	0	0	0	0	0	0
EXHAUST GAS ANALYSER WITH RTO COMPLIANCE SET UP	0	0	1	0	0	0	0	0	0	0	0
Exhaust Gas Analyzer	0	0	0	1	0	0	0	0	0	0	0
HORIZONTAL BORING BAR	0	0	0	1	0	0	0	0	0	0	0
JERK TYPE FUEL PUMP TESTING MACHINE	0	0	0	1	0	0	0	0	0	0	0
Li-ion Battery Characteristics Training System	1	0	0	0	0	0	0	0	0	0	0
Moulding Machine furnesh	0	0	1	0	0	0	0	0	0	0	0
MULTI CYLINDER PETROL/DIESEL ENGINE TEST RIG	1	0	0	0	0	0	0	0	0	0	0
Multi-cylinder Engine Test Rig	0	0	0	1	0	0	0	0	0	0	0
OXY ACETELENE GAS WELDING SET UP	0	1	0	0	0	0	0	0	0	0	0
Painting Booth with Equipment and hot chamber	0	0	1	1	0	0	0	0	0	0	0
PASSENGER VEHICLE CHASSIS	0	1	0	0	0	0	0	0	0	0	0
Pendulum Impact Testing Machine	0	0	1	0	0	0	0	0	0	0	0
PETROL INJECTION TESTING MACHINE	0	0	0	1	0	0	0	0	0	0	0
Petrol/Diesel Engine Cut Models	0	0	0	1	0	0	0	0	0	0	0
Plastic Welding Kit	0	0	0	1	0	0	0	0	0	0	0
Pollution testing machine for Diesel engine	0	0	1	0	0	0	0	0	0	0	0
Pollution testing machine for Petrol engine	0	0	1	0	0	0	0	0	0	0	0
Safety Component Models	0	1	0	0	0	0	0	0	0	0	0
SEMI AUTOMATIC BIKE LIFT	0	1	0	0	0	0	0	0	0	0	0
Shakeout Machine / Vibrator	0	0	0	1	0	0	0	0	0	0	0
Treading Taps	2	0	0	0	0	0	0	0	0	0	0
Trimming and Finishing Machines	0	0	1	0	0	0	0	0	0	0	0
TWIN HEAD M/C	0	1	0	0	0	0	0	0	0	0	0
UTM with shear fixture	0	0	0	1	0	0	0	0	0	0	0
Valve refacer, Cylinder honing, Boring, Grinding machines	0	0	0	1	0	0	0	0	0	0	0
VALVE REFACING M/C	0	1	0	0	0	0	0	0	0	0	0
VERTICAL BORING BAR	0	1	0	0	0	0	0	0	0	0	0
Wallchart for demonstration & training- EV	0	0	0	1	0	0	0	0	0	0	0
Watt/Porter/Proell/Hartnell Governor Apparatus	0	0	0	1	0	0	0	0	0	0	0
Total	**109**	**46**	**62**	**95**	**6**	**7**	**10**	**9**	**9**	**14**	**7**

Name of Machinery	Govt. Polytechnic, Kandhamal	ITT Choudwar	Govt. Polytechnic, Bhubaneswar	UCPS, Berhampur	UGMIT, Rayagada	Govt. Polytechnic, Deogarh	Govt. Polytechnic, Baleswar	UGIE, Rourkela	Govt. Polytechnic, Sambalpur (Rengali)	Govt. Polytechnic, Anugul	Govt. Polytechnic, Koraput
2 wheeler simulator with complete working model and data extraction with 15 Ah Battery and Charger	0	0	0	0	0	0	0	0	0	0	0
2 wheeler e-scooty cut model with training facility	0	0	0	0	0	0	0	0	0	0	0
2 Wheeler Test rig with Driving Cycle (Variable load)	0	0	0	0	0	0	0	0	0	0	0
2-Ton Hydraulic engine crane	0	0	0	0	0	0	0	0	0	0	0
3Wheeler simulator with complete working model and data extraction with 15Ah Battery and Charger	0	0	0	0	0	0	0	0	0	0	0
4 WheelerTransmission Electronics& Electrical Training Model and Test Bench with IoT enabled EV Advanced Feature	0	0	0	0	0	0	0	0	0	0	0
4(FOUR) wheeler buggy simulator with complete working model and data display with battery Pack and charger.	0	0	0	0	0	0	0	0	0	0	0
4-cylinder Diesel engine test rig	0	0	0	0	0	0	0	0	0	0	0
4Wheeler Drive Train with MIDC Cycle and Regenerative System (PMSM Motor Test Bench)	0	0	0	0	0	0	0	0	0	0	0
4Wheeler HIL EV Test Rig with Variable Load (Manual Type)	0	0	0	0	0	0	0	0	0	0	0
Abel Flash Point Tester	0	0	0	0	0	0	0	0	0	0	0
Automatic car washing machine	0	0	0	0	0	0	0	0	0	0	0
AUTOMOTIVE BATTERY LOAD TESTER	0	0	0	0	0	0	0	0	0	0	0
AUTOMOTIVE ELECTRONIC CIRCUIT	0	0	0	0	0	0	0	0	0	0	0
AUTOMOTIVE ENGINE MANAGEMENT PRINCIPLE EQUIPMENT	0	0	0	0	0	0	0	0	0	0	0
Battery Charge and Discharge Tester with System and Table	0	0	0	0	0	0	0	0	0	0	0
Battery DIY Kit	0	0	0	0	0	0	0	0	0	0	0
Battery Pack Tester (Charging & Discharging)	0	0	0	0	0	0	0	0	0	0	0
Diesel Injector Tester with Injector Tester Kit	0	0	0	0	0	0	0	0	0	0	0
Digital Nitrogen Tyre Inflator Machine	0	0	0	0	0	0	0	0	0	0	0
BENCH DRILLING MACHINE	0	0	0	0	0	0	0	0	0	0	0
Bernoulli's Apparatus	0	0	0	0	0	0	0	0	0	0	0
BMS CAN protocol	0	0	0	0	0	0	0	0	0	0	0
Bomb Calorimeter(Solid and Liquid Fuel)	0	0	0	0	0	0	0	0	0	0	0
CAM SHAFT GRINDING MACHINE	0	0	0	0	0	0	0	0	0	0	0
Carbon Residue test using Conradson's Apparatus	0	0	0	0	0	0	0	0	0	0	0
Centrifugal Pump Test Rig	0	0	0	0	0	0	0	0	0	0	0
Charging Station Instruction and Training Kit (Basic Model)	0	0	0	0	0	0	0	0	0	0	0
Conradson's apparatus	0	0	0	0	0	0	0	0	0	0	0
COOLING SYSTEM COMPONENTS ARRANGED ON A STAND WITH ELECTRIC MOTOR	0	0	0	0	0	0	0	0	0	0	0
CRANK SHAFT GRINDING M/C	0	0	0	0	0	0	0	0	0	0	0
Cut section & open models for hands-on training of EV equipments with stand, instruction board and table	0	0	0	0	0	0	0	0	0	0	0
Cylinder Bore Gauge	0	0	0	0	0	0	0	0	0	0	0
Cylinder Boring Machine	0	0	0	0	0	0	0	0	0	0	0
CYLINDER HONING MACHINE	0	0	0	0	0	0	0	0	0	0	0
Dead Weight Pressure Gauge Tester	0	0	0	0	0	0	0	0	0	0	0
DEMONSTRATION BOARD OF WORKING MODEL MPFI SYSTEM WITH MOTORIZED CONTROL	0	0	0	0	0	0	0	0	0	0	0
Dent Spoter Machine	0	0	0	0	0	0	0	0	0	0	0
Diesel & Petrol Smoke Meter	0	0	0	0	0	0	0	0	0	0	0
Dye penetrant kit, Magnetic particle tester	0	0	0	0	0	0	0	0	0	0	0
Electric Valve Grinding Machine	0	0	0	0	0	0	0	0	0	0	0
Engine control system with Customized pannel board for all sensors used in vehicle with testing	0	0	0	0	0	0	0	0	0	0	0
Engine decarbonizing machine	0	0	0	0	0	0	0	0	0	0	0
MULTI CYLINDER DIESEL ENGINE TEST RIG	0	0	0	0	0	0	0	0	0	0	0
FOUR WHEELER DRIVING TRAINING SIMULLATOR	0	0	0	0	0	0	0	0	0	0	0
Francis Turbine Test Rig	0	0	0	0	0	0	0	0	0	0	0
Kaplan Turbine Test Rig	0	0	0	0	0	0	0	0	0	0	0
Fuel Pump Test Bench	0	0	0	0	0	0	0	0	0	0	0
TOOL TROLLEY 6 drawer	0	0	0	0	0	0	0	0	0	0	0
Hybrid EV model	0	0	0	0	0	0	0	0	0	0	0
Impact of Jet Apparatus	0	0	0	0	0	0	0	0	0	0	0
Impact Testing Machine(Combined Izod & Charpy)	0	0	0	0	0	0	0	0	0	0	0
Inside Micrometer & Telescopic Gauge	0	0	0	0	0	0	0	0	0	0	0
INTEL IN BUILT CPU DESKTOP WITH UPS	0	0	0	0	0	0	0	0	0	0	0

Name of Machinery	Govt. Polytechnic, Kandhamal	ITT Choudwar	Govt. Polytechnic, Bhubaneswar	UCPS, Berhampur	UGMIT, Rayagada	Govt. Polytechnic, Deogarh	Govt. Polytechnic, Baleswar	UGIE, Rourkela	Govt. Polytechnic, Sambalpur (Rengali)	Govt. Polytechnic, Anugul	Govt. Polytechnic, Koraput
Intigrated EV system	0	0	0	0	0	0	0	0	0	0	0
Junker Gas Calorimeter (Gaseous Fuel)	0	0	0	0	0	0	0	0	0	0	0
Kinematic Models	0	0	0	0	0	0	0	0	0	0	0
Laser welding machine	0	0	0	0	0	0	0	0	0	0	0
Mechanism Model with Tracing Table	0	0	0	0	0	0	0	0	0	0	0
Metallurgical Microscope	0	0	0	0	0	0	0	0	0	0	0
MIG welding machine 100-200 volt	0	0	0	0	0	0	0	0	0	0	0
Morse Test Multi Cylinder Petrol Engine Test	0	0	0	0	0	0	0	0	0	0	0
Motorized Gyroscope Apparatus	0	0	0	0	0	0	0	0	0	0	0
MPFI Injector Tester & Cleaner	0	0	0	0	0	0	0	0	0	0	0
Orificemeter Test Rig	0	0	0	0	0	0	0	0	0	0	0
Painting booth with hot chamber, with all accessories	0	0	0	0	0	0	0	0	0	0	0
COMMERCIL VEHICLE CHASSIS	0	0	0	0	0	0	0	0	0	0	0
Rotating Engine Stand	0	0	0	0	0	0	0	0	0	0	0
Transmission Stand	0	0	0	0	0	0	0	0	0	0	0
Pelton Turbine Test Rig	0	0	0	0	0	0	0	0	0	0	0
Pensky & Martin Apparatus	0	0	0	0	0	0	0	0	0	0	0
4 cylinder PETROL ENGINE (BS-VI)	0	0	0	0	0	0	0	0	0	0	0
4 cylinder DIESEL ENGINE (BS-VI)	0	0	0	0	0	0	0	0	0	0	0
Single cylinder Petrol Engine Cut Model	0	0	0	0	0	0	0	0	0	0	0
Pipe Fittings Loss Apparatus	0	0	0	0	0	0	0	0	0	0	0
Pipe Friction Apparatus	0	0	0	0	0	0	0	0	0	0	0
Pipe Losses Apparatus	0	0	0	0	0	0	0	0	0	0	0
Plastic Fusion Equipment	0	0	0	0	0	0	0	0	0	0	0
PMSM motor training system	0	0	0	0	0	0	0	0	0	0	0
Port timing diagram of Diesel engine Model	1	1	0	0	0	0	0	0	0	0	0
Port timing diagram of Petrol engine Model	1	1	2	1	1	0	0	0	0	0	0
Pouring Equipment Ladles (Hand-held)	0	0	0	0	0	0	0	0	0	0	0
Reciprocating Pump Test Rig	0	0	0	0	0	0	0	0	0	0	0
Redwood Viscometer	0	0	0	0	0	0	0	0	0	0	0
Rockwell Hardness Testing Machine	0	0	0	0	0	0	0	0	0	0	0
SAYBOLT VISCOMETER APARATUS	0	0	0	0	0	0	0	0	0	0	0
HAND OPERATED SPOT WELDING MACHINE	0	0	0	0	0	0	0	0	0	0	0
Spring Testing Machine	0	0	0	0	0	0	0	0	0	0	0
Super fast EV charging station (30 kw DC)	0	0	0	0	0	0	0	0	0	0	0
SUV for driving practice of students	0	0	0	0	0	0	0	0	0	0	0
Tap & Die Set	0	0	0	0	0	0	0	0	0	0	0
Torsion Testing Machine	0	0	0	0	0	0	0	0	0	0	0
TRANSMISSION/ GEARBOX DEMO KIT	0	0	0	0	0	0	0	0	0	0	0
Try Square, Surface Plate	0	0	0	0	0	0	0	0	0	0	0
Universal Testing Machine (UTM)	0	0	0	0	0	0	0	0	0	0	0
Upholstery Tool Kit	0	0	0	0	0	0	0	0	0	0	0
Valve Refacing Machine	0	0	0	0	0	0	0	0	0	0	0
Vehicle scannar for diagnosis	0	0	0	0	0	0	0	0	0	0	0
Venturimeter Test Rig	0	0	0	0	0	0	0	0	0	0	0
Watt Governor Apparatus	0	0	0	0	0	0	0	0	0	0	0
Porter Governor Apparatus	0	0	0	0	0	0	0	0	0	0	0
Hartnell Governor Apparatus	0	0	0	0	0	0	0	0	0	0	0
Proell Governor Apparatus	0	0	0	0	0	0	0	0	0	0	0
Hydraulic Pipe bending Machine	0	0	0	0	0	0	0	0	0	0	0
Welding Machines	0	0	0	0	0	0	0	0	0	0	0
Whirling of Shaft Apparatus	0	0	0	0	0	0	0	0	0	0	0
Autonotive Battery Charger	0	0	0	0	0	0	0	0	0	0	0
Steering and suspension systems(e.g. Rack and Pinion, Power Steering, Shock Absorbers).	0	0	1	1	0	1	1	1	0	0	0
2 stroke diesel engine test rig	0	0	0	1	0	2	0	0	0	0	0
4 stroke diesel engine test rig	0	0	0	1	0	2	0	0	0	0	0
APPARATUS FOR PERFORMANCE TESTING OF CONVENTIONAL & HYBRID VEHICLE WITH ALL ASSESORIES	0	0	0	0	0	0	1	0	0	0	0
Brake test rig (shoe brake, disc brake)	0	0	0	1	0	0	0	0	0	0	0
Braking System Trainer/Test Bench (Internal Expanding Brakes, Disc Brakes)	1	0	1	1	0	1	2	1	1	0	0
CLUTCH SYSTEM TRAINER(SINGLE PLATE,MULTIPLATE,CENTRIFUHAL)	0	0	1	1	0	1	2	1	1	1	0
Engine Cooling System (Air & Water type)	0	0	1	1	0	1	1	1	0	0	0
EV trainer kit, Motor, Controller, Battery pack	0	1	0	0	0	1	2	0	0	0	0
Fuel Feed System Demonstrator (Carburetor + Fuel Injection Models)	0	0	0	1	0	1	1	1	0	1	0
GEAR BOX TRAINER	0	0	0	1	0	1	1	1	0	0	0
HYBRID POWERTRAIN SYSTEM	0	0	0	1	0	1	1	1	0	1	0
HYBRID VEHICLE SYSTEMS AND COMPONENTS (E.G. BATTERY MANAGEMENT SYSTEMS, REGENERATIVE BRAKING).	0	1	0	0	0	1	1	0	0	0	0

Name of Machinery	Govt. Polytechnic, Kandhamal	ITT Choudwar	Govt. Polytechnic, Bhubaneswar	UCPS, Berhampur	UGMIT, Rayagada	Govt. Polytechnic, Deogarh	Govt. Polytechnic, Baleswar	UGIE, Rourkela	Govt. Polytechnic, Sambalpur (Rengali)	Govt. Polytechnic, Anugul	Govt. Polytechnic, Koraput
I.C ENGINE MODEL FOR ASSY AND DISASSEMBLING	1	0	2	0	1	0	0	0	1	0	0
Ignition System Trainer/Test Bench (Battery, Magneto, and Electronic Ignition Systems)	0	0	1	1	0	1	1	1	0	1	0
LEAK DETECTOR OF REFRIGERATION EQUIPMENT	1	1	0	0	0	0	0	0	0	0	0
Lubrication system trainer (wet sump/dry sump)	0	0	1	1	0	1	1	1	0	1	0
MODEL OF CAR ENGINE	0	0	0	0	0	0	0	0	0	0	0
MODELS OF 2S & 4S PETROL & DIESEL ENGINES	0	0	0	0	0	0	0	0	0	1	2
Port timing diagram apparataus for petrol and disel engines	0	0	0	0	0	0	0	0	0	0	0
Port timing diagram of Petrol & Disel engine Model	0	0	0	0	0	0	0	0	1	0	0
Valve timing diagram apparataus of Petrol engine and disel engines	0	0	0	0	0	0	0	0	0	0	0
VALVE TIMING DIAGRAM OF DIESEL ENGINE	1	1	2	0	1	0	0	0	1	0	0
VALVE TIMING DIAGRAM OF PETROL ENGINE	1	1	2	0	1	0	0	0	1	0	0
AIR BAG SIMULATOR WORKING MODEL/ TRAINING MODEL	0	0	0	0	0	0	0	0	0	0	0
Automobile Body Models/Charts	0	0	0	0	0	0	0	0	0	0	0
BATTERY TESTER MACHINE	0	0	0	0	0	0	0	0	0	0	0
Brake Dynamometer	0	0	0	0	0	0	0	0	0	0	0
CASTING EQUIPMENTS	0	0	0	0	0	0	0	0	0	0	0
Crankshaft Measuring Tools	0	0	0	0	0	0	0	0	0	0	0
Cut Section Models / Samples	0	0	0	0	0	0	0	0	0	0	0
Cut section of complete two wheeler	0	0	0	0	0	0	0	0	0	0	0
CYLINDER HONING M/C	0	0	0	0	0	0	0	0	0	0	0
DIGITAL INDUSTRIAL FURNACE	0	0	0	0	0	0	0	0	0	0	0
Double Ended Bench Grinder	0	0	0	0	0	0	0	0	0	0	0
ELECTRIC GOLF KART	0	0	0	0	0	0	0	0	0	0	0
Engine Test Rig (Diesel/Petrol)	0	0	0	0	0	0	0	0	0	0	0
EXHAUST GAS ANALYSER WITH RTO COMPLIANCE SET UP	0	0	0	0	0	0	0	0	0	0	0
Exhaust Gas Analyzer	0	0	0	0	0	0	0	0	0	0	0
HORIZONTAL BORING BAR	0	0	0	0	0	0	0	0	0	0	0
JERK TYPE FUEL PUMP TESTING MACHINE	0	0	0	0	0	0	0	0	0	0	0
Li-ion Battery Characteristics Training System	0	0	0	0	0	0	0	0	0	0	0
Moulding Machine furnesh	0	0	0	0	0	0	0	0	0	0	0
MULTI CYLINDER PETROL/DIESEL ENGINE TEST RIG	0	0	0	0	0	0	0	0	0	0	0
Multi-cylinder Engine Test Rig	0	0	0	0	0	0	0	0	0	0	0
OXY ACETELENE GAS WELDING SET UP	0	0	0	0	0	0	0	0	0	0	0
Painting Booth with Equipment and hot chamber	0	0	0	0	0	0	0	0	0	0	0
PASSENGER VEHICLE CHASSIS	0	0	0	0	0	0	0	0	0	0	0
Pendulum Impact Testing Machine	0	0	0	0	0	0	0	0	0	0	0
PETROL INJECTION TESTING MACHINE	0	0	0	0	0	0	0	0	0	0	0
Petrol/Diesel Engine Cut Models	0	0	0	0	0	0	0	0	0	0	0
Plastic Welding Kit	0	0	0	0	0	0	0	0	0	0	0
Pollution testing machine for Diesel engine	0	0	0	0	0	0	0	0	0	0	0
Pollution testing machine for Petrol engine	0	0	0	0	0	0	0	0	0	0	0
Safety Component Models	0	0	0	0	0	0	0	0	0	0	0
SEMI AUTOMATIC BIKE LIFT	0	0	0	0	0	0	0	0	0	0	0
Shakeout Machine / Vibrator	0	0	0	0	0	0	0	0	0	0	0
Treading Taps	0	0	0	0	0	0	0	0	0	0	0
Trimming and Finishing Machines	0	0	0	0	0	0	0	0	0	0	0
TWIN HEAD M/C	0	0	0	0	0	0	0	0	0	0	0
UTM with shear fixture	0	0	0	0	0	0	0	0	0	0	0
Valve refacer, Cylinder honing, Boring, Grinding machines	0	0	0	0	0	0	0	0	0	0	0
VALVE REFACING M/C	0	0	0	0	0	0	0	0	0	0	0
VERTICAL BORING BAR	0	0	0	0	0	0	0	0	0	0	0
Wallchart for demonstration & training- EV	0	0	0	0	0	0	0	0	0	0	0
Watt/Porter/Proell/Hartnell Governor Apparatus	0	0	0	0	0	0	0	0	0	0	0
Total	**7**	**7**	**14**	**13**	**4**	**15**	**15**	**9**	**6**	**6**	**2**

Technical Specifications for the equipment of Govt. ITIs and Govt. Polytechnics/Engineering Schools are enclosed as Annexure-IV:

7. Deliverable and Payment Schedule:

The selected company will have the following deliverables: -

SL No	Deliverable	Time Line	Amount Payable
1	**Milestone 1**: i) Pre-Delivery inspection of sample equipment. ii) Delivery of the material, equipment, PPE and Tools &Tackles (if any) in good condition at the Consignee Institutes. iii) Visual inspection of equipment and certify by the Principal of the Consignee Institutes.	Within 3 months of signing the Contract Agreement (MoA)	40% of the 'Total Order Value (Base Price)' with 18% GST on the Total Base Order Value, within 30 days of receipt of the invoices.
2	**Milestone 2**: i) Complete Installation & Commissioning to bedone for all supplied equipment at Consignee Institutes. ii) Post Delivery Inspection and demonstration of the supplied equipment at Consignee Institutes. iii)Operational Training to the staffs nominated by the Principal of the consignee institutes as per the requirement. iv) Stock Entry by the consignee institutes.	Within 4 months of signing the Contract Agreement (MoA)	40% of the 'Total Order Value' within 30 days of complying all terms.
3	**Milestone 3:** Satisfactory maintenance and calibration after installation and commissioning.	Yearly performance and Maintenance after installation and commissioning	20% of the 'Total Order Value' will be released in equal 02 (two) installments.
			10% of the Order Value each for 2nd & 3rd Year of satisfactory maintenance and calibration done and certificate to this effect by the Principal of Consignee Institute.
4	**Milestone 4**: Comprehensive Annual Maintenance Cost (CAMC) (if any) for 3 (three) years immediately after the date of expiry of comprehensive warranty for 36 months for the supplied equipment/machines mentioned in Section-III (Point No.6) of the RFP.	Payment shall be released annually on completion of CAMC subject to satisfactory performance and due recommendation from concerned principal/Head of institute.	100% of the annual awarded value within 30 days of submission of Tax invoice along with certification from the Principal of consignee institute.

Other Conditions:

a) No Advanced Payment will be given to the selected bidder.

b) Payment for 'Milestone 1' & 'Milestone 2' will be done after inspection from nominated technical experts or 3rd Party Agency/consultants/advisors appointed by DTE&T and satisfactory reports from them.

8. SECTION IV: Technical Bid Submission Forms (Cover-1)

TECH -1

COVERING LETTER

(ON BIDDERS LETTER HEAD)

[Location, Date]

To

The Director
Directorate of Technical Educational and Training, Odisha
Killa Maidan, Buxi Bazar, Cuttack– 753001

Sub: "RFP for supply, installation and commissioning of Automobile equipment for different Govt. ITIs & Polytechnics/Engineering Schools of Odisha".[TECHNICAL BID]

Dear Sir,

I/We ……. (Name of the Bidder) hereby submit our Proposal in response to notice inviting RFP date ……. and RFP document no..... and confirm that:

1. With reference to your RFP document dated....., I/we, having examined the Bidding Documents and understood their contents, hereby submit my/our Bid. The Bid is unconditional and unqualified.

2. I/We acknowledge that the DTE&T will be relying on the information provided in the Bid and the documents accompanying the Bid for selection of the Bidder for the aforesaid project(s), and we certify that all information provided therein is true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the Bid are true copies of their respective originals.

3. This statement is made for the express purpose of qualifying as a Bidder for the aforesaid Project.

4. I/ We shall make available to the DTE&T any additional information it may find necessary or require to supplement or authenticate the Bid.

5. I/ We acknowledge the right of the DTE&T to reject our Bid without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.

6. I/ We certify that in the last three years, we have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award, nor been expelled from any project or contract by any public authority nor have had any contract terminated by any public authority for breach on our part.

7. I/ We declare that:

   - I/ We have examined and have no reservations to the Bidding Documents, including any Addendum issued by the DTE&T;
   - I/We do not have any Conflict of Interest in accordance with Clause 12 of the RFP document;
   - I/We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in the RFP document, in respect of any tender or request for proposal issued by or any

agreement entered into with the DTE&T or any other public sector enterprise or any government, Central or State; and

- I/ We hereby certify that we have taken steps to ensure that in conformity with the provisions of Section 14 of the RFP, no person acting for us or on our behalf has engaged or will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice.

8. I/We understand that the DTE&T may cancel the Bidding Process at any time and that the DTE&T is neither bound to accept any Bid that you may receive nor to invite the Bidders to Bid for the Project, without incurring any liability to the Bidders.
9. I/ We agree and undertake to abide by all the terms and conditions of the RFP document.
10. I/ We offer a Bid Security/EMD to the DTE&T in accordance with the RFP document.
11. I/ We agree and understand that the Bid is subject to the provisions of the Bidding Documents. In no case, I/we shall have any claim or right of whatsoever nature if the Project is not awarded to me/us or our Bid is not opened or rejected.
12. I/ We certified that the period of validity of Proposal is till the end of the Contract Agreement period and I/We are quoting for all the services mentioned in the Scope of Work of the RFP.
13. DTE&T, Odisha, may contact the following person for further information regarding this Proposal:

Name and full address of office, Contact No., Email ID, Company Name

In witness thereof, I/we submit this Bid under and in accordance with the terms of the RFP document

Yours sincerely,

Authorized *Signatory with Date and Seal*:

Name and Designation: _____

Address of the Bidder: _____

TECH -2

Bidder's Organisation (General Details)

SL No	Description	Full Details
1	**Name of the Bidder**	
2	**Address for communication:** Tel: E-mail ID:	
3	**Name of the authorized person signing & submitting the bid on behalf of the Bidder:** Mobile No.: Email id:	
4	**Registration / Incorporation Details** Registration No: Date & Year. :	
5	**Local office in Bhubaneswar** **If Yes, please furnish contact details**	Yes / No
6	**Bid Processing Fee Details** Amount:	
7	**EMD Details** Amount:	
8	PAN Number	
9	Goods and Services Tax Identification Number (GSTIN)	
10	Willing to carry out the assignment as per the scope of work of RFP	**YES**
11	Accept all the terms and conditions as specified in the RFP	**YES**

Authorized *Signatory with Date and Seal*:

Name and Designation: _____

Address of the Bidder: _____

TECH -3

Bidder Organisation (Financial Details)

Financial Information in INR			
Details	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**
Annual Turnover in INR			

Supporting Documents:

Audited certified financial statements for the last three (Submission of copies of Income & Expenditure Statement and Balance Sheet for the respective financial years is mandatory along with this form). Provisional Audit report for any of the FYs is not acceptable.

Filled in information in this format must have to be jointly certified and sealed by the CA and the authorized representative of the bidder and to be furnished in original along with the technical Bid failing which the Bid will be out rightly rejected.

_____

Signature and Seal of the Chartered Accountant with Date in original.

Authorized *Signatory with Date and Seal*:

Name and Designation: _____

Address of the Bidder: _____

TECH - 4

FORMAT FOR POWER OF ATTORNEY

(Notarized copy on Rs. 100 Non-Judicial Stamp Paper)

(Required only if the Signatory is not directly authorized by the Company Board/Governing Body, or Partners. Otherwise, the Board Resolution/Partners Resolution would suffice)

Known all men by these presents, we……. (name of the firm and address of the registered office) do hereby irrevocably constitute, nominate, appoint and authorize Mr./ Ms. (name), …… son/daughter/wife of..... and presently residing at ……., who is presently employed with us and holding the position of....., as our true and lawful attorney (hereinafter referred to as the "Attorney") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our tender against the Bid document no. [•] dated [•] published by DTET for the "Procurement of Goods – [•]", including but not limited to signing and submission of all applications, bids and other documents and writings,

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE… ....., THE ABOVE-NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS …… DAY OF..... 20[•].

For
Witnesses
……..
(Signature, name, designation and address)

1.

2.

Accepted

(Signature)
(Name, Title and Address of the Attorney)

Encl: Board resolution for Authorized signatory

TECH - 5

(BIDDER'S PAST EXPERIENCE DETAILS)

(List of orders/assignments only of similar nature)

Sl. No.	Name of Buyer/Client, Address with Telephone No, e-mail, Contact Person, Mobile No.	Name of Project	Nature of Project/Goods/ Services and Brief of Project	Project Start Date and End Date	Project Cost/ Contract Value (In Rs.)	Status (Complete/ In Progress/ Delay)
A	B	C	D	E	F	G
1						
2						
3						
4						
5						

Note: Information not conforming to the above format will be treated as non-responsive. The bidder must enlist their relevant experience for technical marking purpose. Copies of the Work order / Contract Document / Completion Certificate from the previous Clients need to be furnished along with the above information.

Authorized *Signatory with Date and Seal*:

Name and Designation: _____

Address of the Bidder: _____

TECH - 6

Affidavit for not being blacklisted

<< An affidavit on a non-judicial stamp paper of INR 100/- by Company Secretary/ Authorized Representative and Signatory of the Applicant with his/her dated Sign and duly notarized >>

AFFIDAVIT
(to be executed on INR 100 non-judicial stamp paper and to be duly notarized)

Date: _____

Sub: Tender No. _____

In response to the Tender Document above stated, I/We hereby declare and solemnly swear that our Company/ firm _____ is not banned/blacklisted as on date by any competent court of Law, forum or any State Government or Central Government or their agencies or by any statutory entities or any PSUs.

AND, if at any stage the declaration/statement on oath is found to be false in part or otherwise, then without prejudice to any other action that may be taken, I/We, hereby agree to be treated as a disqualified Bidder for the ongoing Contract.

In addition to the disqualification our concern/entity may be banned/blacklisted.

AND, that I/We, shall have no right whatsoever, to claim for consideration of my/our bid at any stage and the money deposited in the form of EMD shall be liable for forfeiture in full, and the tender, if any to the extent accepted, may be cancelled.

Signature of the Deponent

(Authorized signatory of the Bidder with Seal)

Date:

Place:

TECH –7

(To be submitted On Bidders Letter Head)

Non-Consortium Declaration

We, _____ <name of the Organisation>, having our registered office at _____, <HQ address of the Organisation> hereby certify and confirm that in the preparation and submission of our Proposal for _____ (name of the Project) under this RFP Reference No._____, We have not acted in concert or in collusion with any other Bidder or other person(s) and also not done any act, deed or thing, which is or could be regarded as anti-competitive.
We declare that we are submitting this proposal as an independent Bidder, and not as a part of any consortium/Joint Venture/Associations.
We further confirm that we have not offered nor will offer any illegal gratification in cash or kind to any person or organization in connection with the instant proposal.
We also acknowledge that in case of misrepresentation of the information, our proposal / contract shall be rejected / terminated at any stage by the client, which shall be binding on us. Any loss or damage to the client, on this count will be compensated by us.

Dated this _____Day of _____, 2025

Authorized *Signatory with Date and Seal*:

Name and Designation: _____

Address of the Bidder: _____

TECH –8

Technical Compliance Sheet

(To be submitted on Bidder's Letterhead)

Sl. No.	Product Name (As mentioned in ToR)	Technical Specifications (As per ToR)	Compliance (Yes/No)	If No, Reasons of deviations	Remarks (Additional features, if any)

Note:

The Technical compliance sheet shall provide a detailed list of identified requirements and specifications as mentioned in the ToR (Section-III). The bidder should indicate against the requirement in the compliance column to indicate the extent to which their proposals comply with the requirements. Bidder should also fill the details of proposed hardware and provide the necessary information.

The offered product within the scope of this RFP may have some features not contained in the ToR. Bidder may provide these details separately. These will not be part of above evaluation criteria.

Authorized *Signatory with Date and Seal*:

Name and Designation: _____

Address of the Bidder: _____

TECH –9

Manufacturer's Authorization Form

(To be submitted on OEM Letterhead**)**

To,

The Director,
Technical Education and Training, Odisha, Cuttack
Killa Maidan, Buxi Bazar, Cuttack – 753001.

Dear Sir,

We M/s. _____who are established and reputable manufacturers of

_____

do hereby authorize M/s._____(Name and address of Agent / Dealer) to participate in the above tender.

We hereby extend our technical assistance to the bidder during installation and inspection of the product.

We hereby certify that, the equipment being sold would not be declared End of Support (EoS) or become obsolete in the next 5 years. Also, we certify that the products being sold would be covered under Warranty / Support and OEM support will be available for 03 years (as specified in the RFP/ NIT No.) from the date of installation, even in the case, the bidder becomes "Out of service".

We have studied the requirements of the product and confirm that we will adhere to the specifications of the tender and quality plan and extend all support during the inspection and provide documentary evidence at the time of inspection for the verification by the Client/Client's representative.

Date: _____

Yours faithfully,
(Name)

Signature and
Seal of the OEM

For and on behalf of M/s._____

(Name of the manufacturer)

TECH –10

Declaration regarding "Restrictions on procurement from a Bidder of a country which shares a land border with India"

(To be submitted on Bidder's Letter Head)

To,

The Director
Directorate of Technical Education and Training, Odisha
Killa Maidan, Buxi Bazaar, Cuttack- 753001
Phone No-0671 (2301061); Email: dtetorissa@gmail.com

Dear Sir,

In reference to bid submitted by M/s _____against DTE&T Odisha's Tender NIT Number: _____, I/We have read the Order No: 27945 /F; dated: 16-10-2020 from Finance Department, Government of Odisha regarding **restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries.**

I/We certify that M/s_____(name of Bidder) is not from such a country and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I also certify that M/s. _____will not offer any products/services of entity from such countries unless such entity is registered with the Competent Authority.

I/We certify that we/our Collaborator/Tie-Up Partners are/is not from such a country or, if from such a country, have/has been registered with the Competent Authority and we will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

We hereby certify that we fulfill all requirements in this regard and are eligible to be considered.

Authorized *Signatory with Date and Seal*:

Name and Designation: _____

Address of the Bidder: _____

TECH –11

"Bidder's Affidavit for Micro and Small Manufacturing Enterprises to get an exemption as per the Odisha Procurement Preference Policy"

<< An affidavit on a non-judicial stamp paper of INR 10/- by Company Secretary/ Authorized Representative and Signatory of the Applicant with his/her dated Sign and Seal >>

AFFIDAVIT

(Applicable to Bidders who fall under the definition of Odisha Small Manufacturing Enterprises)

I, Shri/ Smt/ Ms……..……(Designation) ..... of (name of the Bidder Enterprise) ..... solemnly state the following.

1. That annual turn-over of my enterprise is less than Rs. 50 Cr.
2. That my enterprise has a valid Udyam Registration bearing No ..... within the jurisdiction of the State of Odisha.
3. That manufacturing plant/unit of my enterprise is located in Odisha in Village/Town/City_____, Block/ULB_____Dist._____.
4. That the goods for which I am submitting this bid are manufactured in the above-mentioned manufacturing plant/unit of my enterprise.
5. That the goods to be supplied by my enterprise shall be its own manufactured goods.
6. That my enterprise shall not supply goods which are not manufactured by my enterprise.
7. That my enterprise has not been blacklisted/debarred by any Government Organization from participating in current procurement process.
8. That my enterprise comes under the definition of Odisha Small Manufacturing Enterprise (OSME), as defined in the Policy, and is, therefore, eligible for preferences and relaxations provided in the Policy for OSMEs.
9. That I am submitting this affidavit in response to the tender No_____dated_____ invited by (Organisation Name) _____for supply of (item name) _____.

I certify that all information furnished by me as above are true and correct. If any information is found to be incorrect, I and my enterprise shall be liable for any punitive action as deemed appropriate by competent authority.

Date: _____ Signature of Bidder _____

Name of the Bidder_____

Address_____

Mobile No.

Email:

9. SECTION V: Financial Bid (Cover-2)

FIN-1

COVERING LETTER
(In Bidders Letter Head)

To *[Location, Date]*

The Director
Directorate of Technical Educational and Training, Odisha
Killa Maidan, Buxi Bazar, Cuttack– 753001
Phone No-0671(2301061), Fax-0671(2301961)
Email-dtetorissa@gmail.com

Sub: RFP for Supply, installation and commissioning of Automobile equipment for different Govt. ITIs & Polytechnics/Engineering Schools of Odisha [FINANCIAL BID]

Sir,

I, the undersigned, offer to provide the Goods/Services for [*Insert title of assignment*] in accordance with your RFP No._____, Dated: _____. Our Financial Bid is for the sum of **[*Insert amount(s) in words and figures**].** This amount is inclusive of all the applicable taxes as per GST Act.

I do hereby undertake that, in the event of acceptance of our bid, the supply/services shall be provided with respect to the terms and conditions as stipulated in the RFP document. Equipment wise cost as per format (FIN-2) given in the RFP documents are mentioned below:

SL No	Particulars	Total Cost (Rs) (Without Tax)	Total Cost (Rs) (With Applicable Taxes)
1	***Total Cost of Goods** [supply of equipment, machinery and software (if any) with their perpetual licenses, tools & tackles, consumables, comprehensive warranty for 36 months and cost of freight, insurance, unloading charges, installation & commissioning charges, civil, electrical and other works (if any) and hand-holding for 36 months (if applicable) etc.] ****The bidder must provide equipment wise cost breakup (In FIN-2) with this section.**		
2	**CAMC Charges for 4th year**		
3	**CAMC Charges for 5th year**		
4	**CAMC Charges for 6th year**		
	GRAND TOTAL		
	****Grand Total (Total Cost without tax) in words (_____)**		

*** DTE&T Odisha reserves the right to increase/decrease the ordered quantity by up to 25 per cent at any time, till the final delivery date (or the extended delivery date of the contract), by giving reasonable notice to the supplier without any change in the final agreed price.**

****Both Price of Goods and CAMC charges in the BoQ will be considered for Financial Bid Evaluation.**

*** If any discrepancy is found in between total figure and words, then the value mentioned in word shall be final.**

Equipment wise cost breakup & rate of GST in tabular format must be submitted in the FIN-2 with this price bid format. The total price of this breakup should match the price at serial -01 of above BOQ.

Yours faithfully,
Authorized Signatory [In full and initials]:

Name and Designation of Signatory with Date and Seal:

FIN-2

Bill of Quantity (BoQ)

(on Bidders Letterhead)

Name of the Bidder: _____

Sub: RFP for Supply, installation and commissioning of Automobile equipment for different Govt. ITIs & Polytechnics/Engineering Schools of Odisha [FINANCIAL BID]

SI No	Item description	Quantity	Price Per Unit without GST	Total Price without GST	Rate of GST (%)	Total Price with GST
1	**Cost of Goods**					
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
1.10						
	*Bidder may add rows here for submission of item wise rate					
	Total of Cost of Goods					

The bidder can add rows below as required.

Notes:

i. Price must be quoted in INR only. Quoted Price must be fixed for the entire contract period.
ii. The quoted price should be inclusive of freight, insurance, comprehensive warranty, unloading charges, installation & commissioning charges, civil, electrical and other works, if any etc.
iii. DTE&T Odisha reserves the right to increase/decrease the ordered quantity by up to 25 per cent at any time, till the final delivery date (or the extended delivery date of the contract), by giving reasonable notice to the supplier without any change in the final agreed price.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from contract negotiations, up to expiration of the validity period of the Proposal.

We solemnly affirm that we will strictly adhere to the laws against fraud, corruption and unethical practices, including but not limited to "Prevention of Corruption Act, 1988", during the Request for Proposal (RFP) process and execution of the Contract, in case we are awarded the work. We understand you are not bound to accept any Proposal you receive.

Yours faithfully,

Authorized Signatory [In full and initials]:

Name and Designation of Signatory with Date and Seal:

10. Section VI: Annexures

Annexure I: Bid Submission Checklist

Sl No	Description	Submitted (Yes/No)	Page No.
Technical Proposal (PART – A)			
1	Filled in Bid Submission Check List **(ANNEXURE I)**		
2	Covering Letter **(TECH -1)**		
3	Bid Processing Fee of **Rs. 11,800**/- (date and online number)		
4	EMD amount of **Rs.50,00,000/-** (date and online number)		
5	Copy of Certificate of Incorporation / Registration of the Bidder		
6	Copy of PAN & Goods and Services Tax Identification Number (GSTIN)		
7	Copies of IT Returns for the last 3 FYs (2021-22, 2022-23 and 2023-24) latest GST Return (in GSTR-3B)		
8	General Details of the Bidder **(TECH - 2)**		
9	Financial details (Turnover) of the bidder **(TECH – 3)** along with all the supportive documents such as copies of Income-Expenditure Statement and Balance Sheet for the concerned period		
10	Power of Attorney **(TECH - 4)** in favour of the person signing the bid on behalf of the bidder		
11	List of completed assignments of similar nature (Past Experience Details) **(TECH – 5)** along with the copies of work orders for the respective assignments		
12	Undertaking for not have been black listed by any Central / State Govt./any Autonomous bodies as on date of bid submission. **(Tech-6)**		
13	No Consortium/Joint Venture Declaration **(Tech-7)**		
14	Technical Compliance Sheet (Requirements and specifications as per the ToR) **(Tech-8)**		
15	Manufacturing License or the Manufacturer's Authorization Form **(TECH - 9)**		
16	Declaration regarding "Restrictions on procurement from a Bidder of a country which shares a land border with India" **(TECH - 10)**		
17	Affidavit for Micro and Small Manufacturing Enterprises (**TECH - 11**)		
18	Net Worth Certificate duly sealed & signed by a Chartered Accountant		
19	Valid ISO/ISI certificates along with Machinery Test Certificate as applicable.		
20	Product wise brochure & catalogues and relevant information on products to be supplied		
21	Certification in its Cover Letter regarding non-failure of performance on any contract		
Financial Proposal (PART -B)			
1	Covering Letter **(FIN-1)**		
2	Bill of Quantity (BoQ) **(FIN-2)**		

Undertaking:

All the information has been submitted as per the prescribed format and procedure.

Authorized Signatory [*In full and initials*]: _____

Name and Designation with Date and Seal: _____

Signature: _____

Annexure II: Performance Bank Guarantee Format

To

Directorate of Technical Education and Training, Odisha,
Killa Maidan, Buxi Bazaar, Cuttack – 753001.

WHEREAS <<Name and address of the supplier>> (hereinafter called "the supplier") has undertaken, in pursuance of contract no……dated ..... to supply..... (description of goods and services) (herein after called "the contract").

AND WHEREAS it has been stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the contract;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of ……(amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show ground or reasons for your demand or the sum specified therein.
We hereby waive the necessity of your demanding the said debt from the supplier before presenting us with the demand.
We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.
This guarantee shall be valid until the…….day of…….,20…...
Our …… branch at ……* (Name & Address of the … .....* branch) is liable to pay the guaranteed amount depending on the filing of claim and any part thereof under this Bank Guarantee only and only if you serve upon us at our ..... * branch a written claim or demand and received by us at our.....* branch on or before Dt .....otherwise bank shall be discharged of all liabilities under this guarantee thereafter.

……..……
(Signature of the authorized officer of the Bank)
……
Name and designation of the officer
……
……..…
Seal, name & address of the Bank and address of the Branch

* Preferably at the headquarters of the authority competent to sanction the expenditure for purchase of goods or at the concerned district headquarters or the State headquarters.

Annexure III: Proforma of the "Comprehensive Annual Maintenance Contract (CAMC) to be Signed between DTE&T, Odisha and the Agency"

This Agreement (hereinafter called the "Agreement") is made on this [•] day of the month of [month], [year].

BETWEEN

Directorate of Technical Education and Training, Odisha having its office at Killa maidan, Buxi Bazar, Cuttack – 753001 (hereinafter referred to as "DTET", which expression shall, unless repugnant to or inconsistent with the context, mean and include its successors and assigns) of the first part.

AND

M/s. [•], a company incorporated under the provisions of the Companies Act, 1956/2013 or a registered partnership firm under the provisions of the Indian Partnership Act, 1932 or a LLP firm registered under LLP Act, 2008 and having its registered office at [•] (hereinafter referred to as the "Service Provider" which expression shall unless repugnant to or inconsistent with the context, mean and include its successors and assigns) of the other part.

WHEREAS

i) the Service Provider, in the ordinary course of its business, is engaged in providing [•] services to its clients, and have represented to DTET through their bid(s), against Bid document No. [•] dated [•] (hereinafter called the "Tender") for the Procurement of Goods and provide Annual Comprehensive Maintenance Services (CAMC) for the equipment/machines supplied at different Consignee Institutes (list attached in Section-III, Point No.6), after completion of warranty period - [•] (through e-procurement tender process);

ii) on the basis of the said Tender, DTET has adjudged the Service Provider as a successful Bidder and issued Letter of Award (LoA) No. [•] dated [•] for the same;

iii) the Service Provider has agreed through their letter of acknowledgement vide letter No. [•] dated [•] to perform and undertake the scope of work as described in the Tender;

iv) the Service Provider is being engaged to provide the required services on the terms and conditions set forth in this Agreement;

NOW THEREFORE THE PARTIES hereby agree as follows:

1. The mutual rights and obligations of the Service Provider and DTET shall be as set forth in this Agreement, in particular:

   - The Service Provider shall provide the services in accordance with the provisions of this Agreement; and

   - DTET shall make payments to the Service Provider in accordance with the provisions of this Agreement.

2. **Conditions of Contract**

   (a) Contract Period: Annual Comprehensive Maintenance Contract (CAMC) initially valid for fifteen months and may be extended further if necessary.

   (b) Payment Terms: 100% of the annual awarded value (final quoted /negotiated prices) within 30 days of submission of Tax invoice along with certification from the Principal of consignee institute.

Payment shall be released annually on completion of CAMC subject to satisfactory performance and due recommendation from concerned Principal/Head of institute.

(c) Other Terms and Conditions:

i. Maintenance services shall consist of Preventive and Corrective maintenance of equipment specified above & will include supply and replacement of parts free of cost.

ii. Preventive maintenance, half-yearly once to be done, should include:
   a. Check-up to ensure that device connection is proper; cabling is at proper condition etc.
   b. Cleaning of the above equipment & checking the system performance.

iii. The Supplier is to furnish the tentative schedule of the preventive maintenance for the equipment mentioned above of Comprehensive Annual Maintenance Contract (CAMC) to be carried out.

iv. The parts replaced must be new parts or equivalent in performance to new parts.

v. All software updates should be provided free of cost during CAMC period

vi. The Supplier will also provide the same maintenance service in case of the movement of equipment from the place of original installation to a different place or lab within the consignee institute's premises.

vii. Any complaint informed through telephone/e-mail must be acknowledged with a Complaint No. by the Supplier which will be noted by Consignee. All further contact with the Supplier on such complaint will be initiated through that Complaint No. Once rectification is done, that No. will be cancelled by both parties. A register is to be maintained by the Supplier where complaints are to be noted along with Complaint No.

viii. The maintenance shall normally be done during working hours of the customer i.e. from 10 AM to 5 PM. However, in case of emergency, maintenance may have to be done beyond office hours and even on holidays. Prior arrangement through proper communication should be worked out in all such cases by the Supplier and the Consignee.

ix. The Service Engineer of the Supplier will be allowed to handle the respective equipment only in presence of the officer in charge at the Consignee site.

x. The Supplier should ensure that maintenance job is not hampered / delayed due to paucity of spares/ inadequate manpower, etc.

xi. The Supplier should submit the service call report to the Consignee for each and every service call without fail.

xii. In case of delay / lack of communication, penalty will be calculated as mentioned below in CAMC Clause.

COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT CLAUSE

Category of Maintenance	Response Time	Penalty/Delay Charges
Minor faults	Immediately with telephonic or email support or maximum within 48hrs from the actual time of reporting of the problem to the Supplier.	0.5% (Half Percent) of the total contract value (without tax) shall be deducted for every week's delay. The delay charges will be deducted from the pending payment or Performance Security submitted by the Supplier. In no context the total delay charges will exceeds 5% of the total Contract Value (excluding taxes).

Minor repair which requires visit to the Consignee Institute	Within 7 days of complaint registered.	
Major breakdown or replacement of parts	Within 15 days from the complaint registered to supplier.	

xiii. A logbook shall be maintained in which the vendor shall record all the complaints made and parts taken out of branches/office for repair. The vendor shall submit copy of consolidated complaint reports furnishing the details of institute-wise breakdown calls lodged/attended and its status on quarterly basis to Purchaser's office at Cuttack.

xiv. Repair and servicing of equipment shall be carried out at consignee institute sites, in case the equipment is required to be transported to the Supplier's/manufacture's service workshop for repairs, the same shall be undertaken at the risk and cost of the Supplier. Moreover, the Supplier may furnish Security Amount in form of Demand Draft (equal to the cost of the equipment/machine) to the Principal of the Consignee Institute before the equipment taken out from the consignee institute.

xv. After completion of the work/repair/maintenance, the Principal of the consignee institute shall issue a certificate of completion to the supplier.

(d) The Agreement shall be governed by the laws of India and the courts of Bhubaneswar/Cuttack shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with this Agreement

(e) This Agreement has been executed in English, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Agreement

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective authorized representatives on the day and year first before written.

For and on behalf of Directorate of Technical Education and Training, Odisha
(Authorized Representative)
Name:
Designation: Director
DTE&T Odisha
Killa Maidan, Buxi Bazaar, Cuttack-751001, Odisha

For and on behalf of M/s.

(Authorized Signatory)
Name:
Designation:
Name of the Service Provider:
Address:

In presence of the following witnesses

Name:
Designation:
DTE&T Odisha
Killa Maidan, Buxi Bazaar, Cuttack-751001, Odisha.

Name:
Designation:
Name of the Service Provider:
Address:

Annexure-IV

LIST OF EQUIPMENT (AUTOMOBILE) - ITI

SL No	Name of Product (Tools & equipment,Machinery,IT items)	Specification of Product (Tools & equipment,Machinery,IT items)
1	Cut section of 4/6 cylinder diesel engine in moving condition to show movement of internal parts	6 cylinder diesel engine in working condition to show movement of internal parts
2	Functional/ experiment model of Different type of sensors.	With Different type of sensors like Throttle Position sensor, Mainfold Absolute Pressure Sensor, Engine Coolant Temprerature Sensor, Vehicle Speed Sensor, Ixygen Sensor, Crankashaft Position Sensor, Crankashaft Position Sensor, Camshaft Position Sensor, Intake Air Temperature Sensor, Mass Air Flow Sensor Knock sSensor with ECU
3	Different type of Engine Bearing model	10 different types on board
4	DIFFERENT TYPE OF PISTON MODEL	5 different types on board
5	Carburetor – Solex, Mikuny for dismantling and assembling	solex, mikuny
6	Steering assembly – 1.Rack & pinion 2.Worm & roller 3. Recirculating ball 4.Power steering 5. Electric Assisted Power Steering	Steering assembly – 1.Rack & pinion 2.Worm & roller 3. Recirculating ball 4.Power steering 5. Electric Assisted Power Steering Technical Specifications: — Technical parameter: —Dimension: 2000x1150x1350mm（LxWxH） — Product description —This training module adopts the original power steering system of electric vehicles, which truly demonstrates the composition and structure of the front axle and power steering system of electric vehicles. It needs to be connected to the EVM06 module to demonstrate the working process of the pure electric vehicle power steering system. It is equipped with an intelligent fault module, — which can provide training on fault setting and troubleshooting. —Steering wheel —Steering column —Steering machine —Front axle —Tire —Brake claw assembly —Steering sensor —Steering motor — Low voltage connection cable —Color Circuit Schematic Panel —Fault setting module : Swivel caster with brake
7	Air blow gun With standard accessories	Trigger operated with interchangeable nozzles
8	Air ratchet with standard accessories	with standard accessories
9	Air impact wrench with standard accessories	with standard accessories.

10	BATTERY CHARGER	Capable to charge batteries from 5AH 150AH.
11	Belt tensioner gauge	ADJUSTABLE replacement adjustable wheel servicing tool V-belts up to, and including, 7/8" top widths. Instructions for Product use. Scale to reads in pounds and kilograms. Measures tension from 30 to 160 lbs., and 15 to 75 kg.
12	Car Jet washer with standard accessories	Minimum3 Phase 1HP 1400RPM Motor, 3 Reciprocating Plungers with pressure regulator & gauge. 8m Water hose with pressure adjustable brass nozzle.
13	Cylinder bore gauge capacity	20 to 160 mm
14	Automotive Water pump for dismantling and assembling	ehicle Type Car Max Flow Rate 10 LPM
15	Automotive Water pump for dismantling and assembling	Water Pump of any LMV Genuine parts
16	Cut section working model of Single plate clutch assembly	Centrifugal Clutch sectioned to show the internal details
17	Demonstration board of electronic Ignition system, ignition coil	With HT coil, HT wires, Spark Plugs, ignition switch, coil, distributor, battery, and wiring.
18	Demonstration Board of Working Model MPFI System with Motorized control	With injectors, rail, inlet manifold, throttle body, distributor, ECU, purge valve, sensor, crank pulley, fuel tank module.
19	DISK BRAKE IN WORKING CONDITION WITH CALIPER ASSEMBLY	Exhibiting Brake disc, Caliper assembly, tandem master cylinder, brake hoses, oil bottle, pedal, etc.
20	Functional/ experiment model of Different type of sensors.	With Different type of sensors like Throttle Position Sensor, Manifold Absolute Pressure Sensor, Engine Coolant Temperature Sensor, Vehicle Speed Sensor, Oxygen Sensor, Crankshaft Position Sensor, Camshaft Position Sensor, Intake Air Temperature Sensor, Mass Air Flow Sensor, Knock Sensor with ECU.
21	Working Model of power windows	Showing parts like door, glass with motor and its gear arrangement and operating switch.
22	WORKING MODEL OF TORQUE CONVERTER	Model of LMV
23	Arbor press hand operated	2 ton capacity
24	Automotive exhaust 5 gas analyser and Diesel Smokemeter (for petrol & Diesel)	Exhaust 5 Gas Analyzer Petrol ARAI approved to check CO, CO2, O2, and HC& NO. Diesel Smoke Meter ARAI approved.
25	Trolley type portable air compressor	Belt driven compressor along with accessories
26	Cut section of 4/6 cylinder diesel engine in moving condition to show movement of internal parts	6 cylinder diesel engine in working condition to show movement of internal parts
27	Diesel Engine 6 cylinder, running condition with scanner	Latest Diesel Engine CRDI 4 Stroke 6 Cylinders, Turbocharged Engine in running condition. All sensors, wiring, fuel feed, cooling system & instrument cluster

28	Air bag simulator	Driver & Co Driver Air Bags, Seat belts with front seats, crash sensors, air bag ECU, Wiring Harness
29	Air conditioning service Unit (Car)	Suitable for R134A. Recovery with vacuum pump, automatic drain & stop after recovery.
30	Four stroke petrol engine with CNG setup-working condition	Latest 4 Stroke 3/4 cylinder MPFI Engine in running condition 800-1600cc with ECM, BCM (optional) and all sensors, wiring, fuel feed system, cooling system& instrument cluster with CNG/ Petrol selection switch on Panel. N.B.: If ECM and BCM are available as one control unit can be purchased instead ECM, BCM as separated.
31	MPFI petrol engine with swiveling stand along with special tools for dismantling and assembling	Latest 4 Stroke 3/4 cylinder MPFI Engine in running condition 800-1600cc with ECM, BCM (optional) and all sensors, wiring, fuel feed system, cooling system & instrument cluster. N.B.: If ECM and BCM are available as one control unit can be purchased instead ECM, BCM as separated.
32	Two post car lift – capacity 4000 kg	Hydraulic Type with Mechanical Arms Locking.
33	Tyre Changer Machine	Motorized Pneumatic Type, Rim clamping facility, and bead breaking facility with air inflating device.
34	Ultrasonic Injection cleaning equipment	Flow analysis & spray pattern test, leak test, auto programming mode, ultrasonic test with timer, Min 500 ML Lit SS Tank with Lid, SS Stand.
35	Wheel alignment Machine computerized 3D (Optional)	Latest machine for four wheel alignment. With connected camera , IR Lighting Source min. 8mm, Reflector metal based, should work in sunlight
36	Working Condition of Petrol MPFI Engine Assembly with fault simulation board	Latest 4 Stroke 3/4 cylinder MPFI in running condition,800-1600cc with ECM, BCM and all sensors, wiring, fuel feed system, cooling system & instrument cluster with Fault setting bank for minimum 6 sensors with diagnostic socket&Scanner to read the faults. Engine management circuit diagram to be printed on the panel board.
37	AC ALTERNATOR SLIP RING PULLER	Variable
38	Air blow gun With standard accessories	Trigger operated with interchangeable nozzles
39	Air ratchet with standard accessories	with standard accessories
40	Air impact wrench with standard accessories	with standard accessories.
41	BATTERY CHARGER	Capable to charge batteries from 5AH – 150AH.
42	Belt tensioner gauge	Belt tensioner gauge Measurement Range (Force): 0 to 150 Newtons (or 0 to 30 lbs / 0 to 15 kg).Scale / Graduation:Mechanical: Clear, easy-to-read laser-etched scale with graduations of 10 N (or 1 lb) increments.Compatibility: Universal application. Must be capable of testing all types of automotive belts, including V-belts, Ribbed/Serpentine belts, and Timing belts.Belt Thickness Capacity: Suitable for belts up to 12 mm (0.5 inches) in thickness and up to 50 mm in width.
43	Car Jet washer with standard accessories	Minimum3 Phase 1HP 1400RPM Motor, 3 Reciprocating Plungers with pressure regulator & gauge. 8m Water hose with pressure adjustable brass nozzle.

44	Chain pulley block - capacity with tripod stand	3 ton
45	Cylinder bore gauge capacity	20 to 160 mm
46	Cylinder liner- Dry & wet liner, press fit & slide fit liner	Cylinder liner- Dry & wet liner, press fit & slide fit liner
47	Different type of Engine Bearing model	10 Different types on board
48	DIFFERENT TYPE OF PISTON MODEL	5 Different Typeson board
49	Fuel injection pump VE pump / Distributor fuel rotary pump (DPC) pumps / along with special tools and accessories	Fuel injection pump VE pump / Distributor fuel rotary pump (DPC) pumps / along with special tools and accessories
50	Automotive Water pump for dismantling and assembling	Automotive Water pump for dismantling and assembling MS stand, Automotive water pump for engine With required tools for assembly and disassembly
51	Radiator cut section-cross flow	Radiator with sectioned side tanks, radiator core.
52	Radiator cut section-cross flow	Radiator with sectioned upper & lower tanks, radiator core and cap.
53	Spark Spanner plug spanner 14mmx18mm long bit for alto/800	Long bit for Alto/800
54	Turbocharger cut sectional view	Latest WGT type to show turbine, impeller and compressor wheels.
55	Automotive Water pump for dismantling and assembling	Automotive Water pump for dismantling and assembling MS stand, Automotive water pump for engine With required tools for assembly and disassembly
56	Working model of Air Brake Assembly	Two brake drums, vehicular air compressor driven by suitable Electric Motor, air dryer, brake chamber . stop light, different valves, air pressure gauges. With all accessories.
57	Alternator assembly used for LMV	Alternator (>50 Amp)
58	Carburetor – Solex, Mikuny for dismantling and assembling	Solex, Mikuny for dismantling and assembling
59	Chain pulley block - capacity with tripod stand	3 ton capacity with tripod Stand
60	Cut section Model of Mock layout of a motor car –electrical system working model	Wiring with parts and accessories of a car to be arranged according to the electrical circuit of a car. Working of Self-starter, Alternator, Wiper Motor, Horn, lighting system, sparks from plug to be shown with Distributor & battery. Should be mounted on suitable table
61	Drum brake assembly in Working Condition	Brake drum, tandem master cylinder, oil container, brake hose, brake pedal.
62	Functional/ experiment model of Different type of sensors.	With Different type of sensors like Throttle Position Sensor, Manifold Absolute Pressure Sensor, Engine Coolant Temperature Sensor, Vehicle Speed Sensor, Oxygen Sensor, Crankshaft Position Sensor, Camshaft Position Sensor, Intake Air Temperature Sensor, Mass Air Flow Sensor, Knock Sensor with ECU.
63	Tyre & split rim wheel assembly	Tyre & split rim wheel assembly
64	Working Model of power windows	Showing parts like door, glass with motor and its gear arrangement and operating switch.
65	WORKING MODEL OF TORQUE CONVERTER	Model of LMV
66	Automotive exhaust 5 gas analyser and Diesel Smokemeter (for petrol & Diesel)	Exhaust 5 Gas Analyzer Petrol ARAI approved to check CO, CO2, O2, and HC& NO. Diesel Smoke Meter ARAI approved.

67	Diesel Engine – CRDI - 4 strokefor Dismantling and Assembling with Swiveling Stand.	Latest 4 Stroke 4 cylinder turbo charged CRDI Engine, 800-1600cc, in running condition, with ECM, BCM (optional), and all sensors, wiring, fuel feed & cooling system & instrument cluster.
68	Diesel engine (Running condition) Stationary type single cylinder	Single Cylinder, OH valves, fuel tank with handle, fuel feed, water cooling, oil pump.
69	Hydraulic jack HI-LIFT type	3 ton capacity, and 5 Ton capacity
70	Multi Scan Tool To scan Engine, ABS & EBD, AT, SRS, Body Control and immobilizer	Should perform automotive sensor simulation test specially designed to diagnose and simulate vehicle sensor
71	Trolley type portable air compressor	Belt driven compressor along with accessories
72	Cut section of 4/6 cylinder diesel engine in moving condition to show movement of internal parts	6 cylinder diesel engine in working condition to show movement of internal parts
73	Diesel Engine 6 cylinder, running condition with scanner	Latest Diesel Engine CRDI 4 Stroke 6 Cylinders, Turbocharged Engine in running condition. All sensors, wiring, fuel feed, cooling system & instrument cluster
74	Air bag simulator	Driver & Co Driver Air Bags, Seat belts with front seats, crash sensors, air bag ECU, Wiring Harness
75	Air conditioning service Unit (Car)	Suitable for R134A. Recovery with vacuum pump, automatic drain & stop after recovery.
76	Four stroke petrol engine with CNG setup-working condition	Latest 4 Stroke 3/4 cylinder MPFI Engine in running condition 800-1600cc with ECM, BCM (optional) and all sensors, wiring, fuel feed system, cooling system& instrument cluster with CNG/ Petrol selection switch on Panel. N.B.: If ECM and BCM are available as
77	Transfer case with standard for Dismentaling and assembly	To show the gear mechanism of forward and reverse speeds.
78	Tube/ tyre vulcanizing machine	220 V , Heater Capacity 400W x 2 With different types of Die &Mould
79	Tyre Changer Machine	Motorized Pneumatic Type, Rim clamping facility, and bead breaking facility with air inflating device.
80	Ultrasonic Injection cleaning equipment	Flow analysis & spray pattern test, leak test, auto programming mode, ultrasonic test with timer, Min 500 ML Lit SS Tank with Lid, SS Stand.
81	Wheel balancing machine	For wheel balancing of LMV. Motor
82	Cut section Model of Mock layout of a motor car –electrical system working model	Wiring with parts and accessories of a car to be arranged according to the electrical circuit of a car. Working of Self-starter, Alternator, Wiper Motor, Horn, lighting system, sparks from plug to be shown with Distributor & battery. Should be mounted on suitable table
83	Working Model of power windows	Showing parts like door, glass with motor and its gear arrangement and operating switch.
84	WORKING MODEL OF TORQUE CONVERTER	Model of LMV
85	Diesel engine (Running condition) Stationary type single cylinder	Single Cylinder, OH valves, fuel tank with handle, fuel feed, water cooling, oil pump.
86	Hydraulic jack HI-LIFT type	3 ton capacity, and 5 Ton capacity
87	Two post car lift – capacity 4000 kg	Hydraulic Type with Mechanical Arms Locking.
88	Tyre Changer Machine	Motorized Pneumatic Type, Rim clamping facility, and bead breaking facility with air inflating device.
89	Multi Scan Tool To scan Engine, ABS & EBD, AT, SRS, Body Control and immobilizer	Loncher Stand tool for Automobile

90	Four stroke petrol engine with CNG setup-working condition	Working Condition model of 4 strock Petrol Engine of Suzuki Ecoo
91	Driving simulater with disply	Driving Simulator pertable type
92	AC ALTERNATOR SLIP RING PULLER	Variable
93	Air blow gun With standard accessories	Trigger operated with interchangeable nozzles
94	Air ratchet with standard accessories	with standard accessories
95	Air impact wrench with standard accessories	with standard accessories
96	Belt tensioner gauge	Belt tensioner gauge Measurement Range (Force): 0 to 150 Newtons (or 0 to 30 lbs / 0 to 15 kg).Scale / Graduation:Mechanical: Clear, easy-to-read laser-etched scale with graduations of 10 N (or 1 lb) increments.Compatibility: Universal application. Must be capable of testing all types of automotive belts, including V-belts, Ribbed/Serpentine belts, and Timing belts.Belt Thickness Capacity: Suitable for belts up to 12 mm (0.5 inches) in thickness and up to 50 mm in width.
97	Chain pulley block - capacity with tripod stand	3 ton
98	Cylinder bore gauge capacity	20 to 160 mm
99	Automotive Water pump for dismantling and assembling	Automotive Water pump for dismantling and assembling MS stand, Automotive water pump for engine With required tools for assembly and disassembly
100	Spark Spanner plug spanner 14mmx18mm long bit for alto/800	14mm x 18mm x Size Long bit for Alto/800
101	Turbocharger cut sectional view	Latest WGT type to show turbine, impeller and compressor wheels.
102	Automotive Water pump for dismantling and assembling	Automotive Water pump for dismantling and assembling MS stand, Automotive water pump for engine With required tools for assembly and disassembly
103	Cut section working model of automatic transmission Gear box	Sectioned to show the internal mechanism of forward and reverse speeds.
104	DISK BRAKE IN WORKING CONDITION WITH CALIPER ASSEMBLY	Exhibiting Brake disc, Caliper assembly, tandem master cylinder, brake hoses, oil bottle, pedal, etc
105	Drum brake assembly in Working Condition	Brake drum, tandem master cylinder, oil container, brake hose, brake pedal.
106	Hydraulic jack HI-LIFT type	3 ton capacity, and 5 Ton capacity
107	Multi Scan Tool To scan Engine, ABS & EBD, AT, SRS, Body Control and immobilizer	diagnose and simulate vehicle sensor faults for sensors like MAP sensor, Intake air temperature sensor, TP sensor etc.
108	Diesel Engine 6 cylinder, running condition with scanner	Latest Diesel Engine CRDI 4 Stroke 6 Cylinders, Turbocharged Engine in running condition. All sensors, wiring, fuel feed, cooling system & instrument cluster
109	Two post car lift – capacity 4000 kg	Hydraulic Type with Mechanical Arms Locking.
110	Automotive Water pump for dismantling and assembling	Automotive Water pump for dismantling and assembling MS stand, Automotive water pump for engine With required tools for assembly and disassembly
111	Working model of Air Brake Assembly	Two brake drums, vehicular air compressor driven by suitable Electric Motor, air dryer, brake chamber . stop light, different valves, air pressure gauges. With all accessories.
112	Drum brake assembly in Working Condition	Brake drum, tandem master cylinder, oil container, brake hose, brake pedal.
113	Arbor press hand operated	2 ton capacity

114	Working Condition of Diesel Engine – CRDI - 4 stroke Engine, Assembly with fault simulation board	Latest 4 Stroke 4 cylinder turbo charged CRDI Engine, with ECM, BCM and sensors, wiring, fuel feed, cooling system& instrument cluster. Fault setting bank for minimum 8 sensors and with diagnostic socket &Scanner to read the faults. Engine management circuit diagram to be printed on the panel board.
115	Cut section of 4/6 cylinder diesel engine in moving condition to show movement of internal parts	6 cylinder diesel engine in working condition to show movement of internal parts
116	Diesel Engine 6 cylinder, running condition with scanner	Latest Diesel Engine CRDI 4 Stroke 6 Cylinders, Turbocharged Engine in running condition. All sensors, wiring, fuel feed, cooling system & instrument cluster
117	Air conditioning service Unit (Car)	Suitable for R134A. Recovery with vacuum pump, automatic drain & stop after recovery.
118	Two post car lift – capacity 4000 kg	Hydraulic Type with Mechanical Arms Locking.
119	Tyre Changer Machine	Motorized Pneumatic Type, Rim clamping facility, and bead breaking facility with air inflating device.
120	Multi Scan Tool To scan Engine, ABS & EBD, AT, SRS, Body Control and immobilizer	Should perform Automotive sensor simulation test specially designed to diagnose and simulate vehicle sensor faults for sensors like MAP sensor, Intake air temperature sensor, TP sensor etc.
121	Working Model of power windows	Showing parts like door, glass with motor and its gear arrangement and operating switch.
122	Chain pulley block - capacity with tripod stand	3 ton capacity with tripod stand
123	Four stroke petrol engine with CNG setup-working condition	Latest 4 Strock 3/4 cylinder MPFI Engine in running condition 800 1600cc with ECM (optional) and all sensore, wiring, fule feed system colling system& instrument cluster with CNG/ Petrol selection switch on Panel.
124	Working Condition of Petrol MPFI Engine Assembly with fault simulation board	Latest 4 Stroke 3/4 cylinder MPFI in running condition, 800-1600cc with ECM, BCM and all sensors, wiring, fuel feed system, cooling system & instrument cluster with Fault setting bank for minimum 6 sensors with diagnostic socket&Scanner to read the faults. Engine management circuit diagram to be printed on the panel board.
125	Functional/ experiment model of Different type of sensors.	With Different type of sensors like Throttle Position Sensor, Manifold Absolute Pressure Sensor, Engine Coolant Temperature Sensor, Vehicle Speed Sensor, Oxygen Sensor, Crankshaft Position Sensor, Camshaft Position Sensor, Intake Air Temperature Sensor, Mass Air Flow Sensor, Knock Sensor with ECU.
126	Electric Vehicle KIT Chassis	i) 3 Wheel Passenger full vehicle for assembly & disassembly ii) 4-Wheeler full vehicle for assembly & disassembly iii) Electrical vehicle component checker/ Diagnostic Kit iv) Solar Based Charging System v) Safety Tool Kit
127	Two wheeler scooty cut section model	scooter type, BLDC motor,250-1500 W with 48 -60 V DC, lithium battery,standard time charging,with dashboard
128	Fuel System and Urea Handling	Fuel System and Urea Handling (Petrol)
129	Electronic Ignition System of an Automobile 4 Wheeler	Electronic Ignition System of an Automobile four Wheeler
130	3 Wheel Passenger cut section model	rear wheel drive with BLDC MOTOR Dc, with lithium io battery, standard time of charging,,mechanical drum barkes, max speed 40 km/h

131	4-Wheeler Buggy cut section model	2-4 seating capacity,BLDC DC motor, with 60-72 VDC , lithium ion,standard charging time,with hydraulic brakes and 100km/h max speed
132	Electrical vehicle component checker or Diagnostic	diagnosis of ev componenets with led display and software
133	Solar Based Charging	wiring system with 1 nos outlet DC-DC CONVERTER slow charging monitoring panel showing current, battery, charge status Mounting structure for ev vechicles
134	Cut Section of Electric Vehicle 4 Wheeler	4 Wheeler
135	Solar Based Charging	Solar Based Charging
136	Straight Grinder HEAVY DUTY with attachments	No-Load Speed: 10000 – 30000 rpm, Rated power output: 380W
137	Demonstration Board of Working Model MPFI System with Motorized control	Demonstration Board of Working Model MPFI System with Motorized control Technical Specifications: The instruction board must be connected to a 220V AC socket, which internally converts to 12V DC, enabling the board to function without a battery. The board features actual components from the electronic fuel injection system to demonstrate the structure and functionality of the engine's fuel system. Instruction board designed for the electronic fuel injection system of gasolineengines (MPFI) Components are integrated into a color-coded circuit diagram, making it operational. Afully functional engine fuel injection system is mounted on a color-printed board to showcase its structure and operational process. Detection terminals are available for operators to assess various sensors, actuators, and electrical signals for the engine control unit. These signals include resistive, voltage, current, frequency, and waveform signals, all represented on the printed circuit diagram. The instructional board serves as a practical tool for understanding the electronic fuel injection system. It enhances learning by providing a hands-on experience with real components. Students can engage with the system, fostering a deeper understanding ofengine control mechanisms. Users can induce faults such as line breaks, grounding short circuits, impropercontacts, or open circuit faults, with the ability to adjust the quantity and type offaults. Components in good working condition will be supplied, including a fuel
138	Car lift -4 Ton	Hydraulic Lift Model with Lifting Capacity 4 Ton
139	Transmission / Gearbox Demo Kit	Transmission system for EV

140	HVAC Demo Kit	HVAC Demo Kit Technical Specifications Demonstration board showcasing the air conditioning system of a four-wheeled vehicle. Constructed using genuine new components, arranged on a metal frame with a navopan board. Designed to illustrate the details of piping connections and wiring circuits. Includes all essential accessories such as the cooling coil, compressor, evaporator, and necessary hoses. The model operates using a fractional horsepower (FHP) motor. Allows for demonstration of the AC panel's operation and cooling effects. Equipped with a power supply to power the blower and magnetic clutch. The entire system will be appropriately painted for visual appeal. A Colour full printed Schematic diagram and Circuit diagram with Part naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on a good quality painted Metal structure provided with caster wheels with brakes for easy movement of the same. Power Requirement : 220VAC +10% , 50 Hz Standard Accessories: Instruction manual HVAC Demo Kit Technical Specifications Demonstration board showcasing the air conditioning system of a four-wheeled vehicle. Constructed using genuine new components, arranged on a metal frame

141	Instruction Kit for Charging System	Instruction Kit for Charging System Technical Specifications: The instructional board utilizes actual components from the charging system to demonstrate its structure and operational principles. These components are integrated into a color-coded circuit diagram. The setup is designed to be functional and interactive. A fully operational charging system, including an alternator and meters, is assembled on a color-printed board to showcase its structure and functionality. The alternator is connected to an electric motor, with essential electrical circuitryincluded. Additional elements such as a warning lamp, ignition switch, and voltage metersare incorporated to illustrate the charging system's operation. An exploded view of the alternator assembly is presented on the board for clarity. A fault-setting switch bank is included to simulate faults within the trainingmodule, aiding in fault diagnosis. A Colour full printed Schematic diagram and Circuit diagram with Part naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on agood quality painted Metal structure with caster wheels with brakes foreasy movement of the same. These components are integrated into a color-coded circuit diagram. Power Requirement: 220VAC +10% , 50 Hz Standard Accessories: Instruction manual

142	Demonstration Kit of Electrical Vehicle	Demonstration Kit of Electrical Vehicle The Entire Electrical System Module Technical Specifications Dimensions Test panel :1800x700x1800mm（LxWxH） Product description This training module is based on the original electrical system of electric vehicles. By dissecting the vehicle body, it comprehensively displays the composition structure of the vehicle's instrument system, lighting system, wiper system, horn system, electric window system, and electric door lock etc. It needs to be connected to all the5othermodules to demonstrate the working process of the pure electric vehicle electrical system. It is equipped with a testing panel and can provide various electrical signal measurement training. It is equipped with an intelligent fault module, which canprovide training on fault setting and trouble shooting. Product composition Cutaway car body Left headlights — Right headlights
143	Lighting and Wiring System mock layout	Lighting and Wiring System Mock Layout Technical Specifications: This model showcases the electrical system of a vehicle. It features a comprehensive layout of the car's wiring The arrangement includes actual components and accessories. Terminals are available for battery connections. Individual components can be demonstrated when connected. Demonstrable parts include the self-starter and alternator. Other components include wiper motors, horns, and headlights The model also illustrates tail lamps, parking lamps, and side indicators Internal construction details of the parts are visible. Acolorful schematic and circuit diagram will accompany the model. A Colour full printed Schematic diagram and Circuit diagram with Part namingwith explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on a goodquality painted Metal structure. Standard Accessories: Instruction manual

144	Battery Management System	BMS System Module Technical Specifications: Dimension: Product description This training module is based on EV power batteries and management systems, can truly demonstrates the structural composition of electric vehicle batteries and management systems; It needs to connect EVM03 and EVM06 modules to demonstrate the working process of a pure electric vehicle battery management system. It is equipped with intelligent fault modules and can provide training on fault setting and troubleshooting. Product composition Battery pack Battery management ECU High voltage connection cable Low voltage connection cable : According to car model : According to car model : According to car model : According to car model —Test panel with color circuit Schematic : According to car model —Fault setting module — Intelligent type Training Courses: : Swivel caster with brake

145	Instruction Kit for Charging System	Instruction Kit for Charging System Technical Specifications: The instructional board utilizes actual components from the charging system to demonstrate its structure and operational principles. These components are integrated into a color-coded circuit diagram. The setup is designed to be functional and interactive. A fully operational charging system, including an alternator and meters, is assembled on a color-printed board to showcase its structure and functionality. The alternator is connected to an electric motor, with essential electrical circuitryincluded. Additional elements such as a warning lamp, ignition switch, and voltage metersare incorporated to illustrate the charging system's operation. An exploded view of the alternator assembly is presented on the board for clarity. A fault-setting switch bank is included to simulate faults within the trainingmodule, aiding in fault diagnosis. A Colour full printed Schematic diagram and Circuit diagram with Part naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on agood quality painted Metal structure with caster wheels with brakes foreasy movement of the same. These components are integrated into a color-coded circuit diagram. Power Requirement: 220VAC +10% , 50 Hz Standard Accessories: Instruction manual

146	System Set up and integration with Design.	System Set up and integration with Design. EV virtual simulation test and teaching software Technical Specifications: Product description: This virtual simulation software based on Windows system, and has independent software copyright. — It can be installed on module GTEV01-06 and GTEV01-07. The software can achieve virtual detection of electric vehicle motor drive control systems. The detection content includes the signal voltage and waveform of each control line. — It is a good solution to the teacher's "one-to-many" demonstration problem. The software operation interface is simple and the steps are clear. — The system is based on the logical architecture of three-layer interfaces: main interface/system selection interface/and detection interface. The control circuit diagram of the detection interface is clear, and the pin definitions of the control terminals are clearly marked, which is conducive to students conducting various circuit electrical signal simulation tests. — Product features: 1. The software can test the pins of the air conditioning control unit, MCU motor controller, on-board charger, BMS control unit, steering system, and all vehicle electrical appliances;
147	Cut Section of Electric Vehicle 4 Wheeler	4 wheeler
148	Electric Vehicle KIT Chassis	i) Solar Based Charging ii) Safety Tool Kit

149	EV motion position sensor test kit	EV motion position sensor test kit EV Drive Motor and Control System Training Module Technical Specifications: Product description: — This module consists of electric vehicle drive axle, drive motor, vehicle controller, detection panel and test bench. Through the display of the physical structure of the drive axle assembly and controller, practical skills training on structural cognition, control principles, component detection, and common fault diagnosis of pure electric vehicle power drive motors and controllers can be completed. Connect with module GTEV01-01 to complete dynamic data detection and experimental data analysis of power battery modules and drive motor control. Product composition: Electric drive axle vehicle 1 Vehicle grade, rated voltage 96V, rated power 13KW, maximum speed 7500rpm — Motor Controller Vehicle grade, rated voltage 96V, three phase Vehicle controller Vehicle grade, vehicle data communication Wheel Vehicle grade, matched with vehicle controller Gear switch Vehicle grade, matched with vehicle controller Accelerator pedal Vehicle grade, matched with vehicle controller
150	Car lift -4 Ton	Hydraulic Lift Model with Lifting Capacity 4 Ton
151	2 Wheeler Bike or Scooter Assembly Set	Assembly Training Kit consisting of chassis, battery pack(48-60V,20-30Ah),BLDC motor(1000-1500W)controller,charger,suspension,brakes,wheels,lighting,wiring harness and suitable instrumentation.
152	Mini commercial Vehicle Chassis Structure	MCV chassis structure with ladder frame(0.5-1.5 Ton), front &rear suspension,steering system,braking system,front& rear axle assemblies,wheel wwith tyres(12"-14")
153	Engine and Transmission systems on stand (working model)	BLDC/PMSM motor(1000-3000w,48/60V)lithium-ion batery pack with BMS,compartible controller,charger,reduction gearbox with differential/axle,insrumentation panel with speed & SOC displayand complete wiring harness.
154	Electronic Ignition System of an Automobile 4 Wheeler	4-wheeler petrol engine), complete with ECU, ignition coil, crank/cam sensors,spark plugs,wiring harness,fault switches, test points mounted on portable stand.
155	Demonstration Board of Working Model MPFI System with Motorized control	MPFI system with motorized control,complete with ECU, injectors,throttle body ,sensors,ignition system, fuel supply system,motorized crank drive with variable speed,wiring harness,fault switches, test points mounted on portable stand.
156	Cut Section of Electric Vehicle 4 Wheeler	4 Wheeler
157	Electric Vehicle KIT Chassis	i) 3 Wheel Passenger full vehicle for assembly & disassembly ii) 4-Wheeler Buggy iii) Electrical vehicle component checker/Diagnostic iv) Solar Based Charging v) Safety Tool Kit

158	Transmission / Gearbox Demo Kit	with 4/5 speed manual gearbox cut section on stand,painted & labelled parts,gear lever shifting arrangement.
159	Cooling System components arranged on a stand with electric motor	consisting of radiator(2/3 core type),water pump,thermostat,cooling fan, coolant reservoir, piping &hoses,temperature gauge,driven by electric motor(0.25-0.5 HP) with belt drive with stand.
160	Exhaust System	radiator,cooling fan,coolant pump,hoses, reservoir, temperature sensors and BMS interface, mounted on portable stand.
161	Suspension System-front and rear on stand	front suspension (MacPherson strut with control arms,stabilizer bar, joints) and rear suspension(coil spring with damper/leaf spring assembly) both mounted on heavy duty portable steel stand.
162	Steering Wheel and Tire Systems assembly on stand	consisting of steering wheel, column, gear box, linkages,steering knuckles, tie rods and wheel-tyre assemblies, all mounted on heavy duty portable steel stand.
163	Disc 7 Drum brake systems on stand (working model)	Consisting of Disc brake (Caliper Pads, Disc, Hub), Drum brake, Master Cylinder with brake pedal & Hydraulic lines, cut sectioned and colour coaded for teaching purpose
164	HVAC Demo Kit	Consisting of heating cycle with compressor, condenser, Evaporator, Expansion valve, blower, Ducts, Heater Coar, Control Panel with pressure gauges & Portable stand
165	Instruction Kit for Charging System	Alternator with drive mechanism (12v or 24v) IC voltage regulator, Battery 12v, Ignition switch, meters
166	Instruction Kit for Charging System	Consisting of starter motor with solenoid, ignition switch battery, wiring harness, meters, bendix drive demonstration
167	Lighting and Wiring System mock layout	Consisting of complete vehicle lighting circuits (head lamp, tail / brake, indicators parking, dome light) Switches, fuses, Relays, Battery, wiring harness arrangement
168	System Set up and integration with Design.	Consisting of power supply, starting & charging system, lighting and wiring, dashboard instruments, braking and suspansion demo units, E.V. motor with controller & BMS.
169	Rear Axel	cut section / working demonstration type, mounted on portable steel stand, complete with differential gears, axle shaft, hub assembly & hub motor, with acrylic safety covers
170	Car lift -4 Ton	Hydraulic Lift Model with Lifting Capacity 4 Ton
171	2 Wheeler Bike or Scooter Assembly Set	(Fuel Type: Electric(Battery) along with accessories Max Power 11KwH, Charging Time 6.5H, 5.5 kW (10-100%) Charging Port: Das 6 Connector Battery Capacity: 4.0 kWh, Torque (Motor): 58 Nm, Suspension Front-Single ForkSuspension Rear-Mono Shock, Brakes –Front Disc, Body Type: Electric Bikes. Range (Eco Mode)170 km/charge

172	Transmission / Gearbox Demo Kit	Transmission / Gearbox Demo Kit Technical Specifications: Acutaway model of a synchronous gearbox Demonstrating the working principle Installed on a demonstration bench Functioning to illustrate the movement of all components Effectively showcasing the operation of the gearbox. AColour full printed Schematic diagram and Circuit diagram withPart naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted ona good quality painted Metal structure. Standard Accessories: Instruction manual
173	HVAC Demo Kit	HVAC Demo Kit Technical Specifications Demonstration board showcasing the air conditioning system of a four-wheeled vehicle. Constructed using genuine new components, arranged on a metal frame with a navopan board. Designed to illustrate the details of piping connections and wiring circuits. Includes all essential accessories such as the cooling coil, compressor, evaporator, and necessary hoses. The model operates using a fractional horsepower (FHP) motor. Allows for demonstration of the AC panel's operation and cooling effects. Equipped with a power supply to power the blower and magnetic clutch. The entire system will be appropriately painted for visual appeal. A Colour full printed Schematic diagram and Circuit diagram with Part naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on a good quality painted Metal structure provided with caster wheels with brakes for easy movement of the same. Power Requirement : 220VAC +10% , 50 Hz Standard Accessories: Instruction manual HVAC Demo Kit Technical Specifications Demonstration board showcasing the air conditioning system of a four-wheeled vehicle. Constructed using genuine new components, arranged on a metal frame

174	Instruction Kit for Charging System	Instruction Kit for Charging System Technical Specifications: The instructional board utilizes actual components from the charging system to demonstrate its structure and operational principles. These components are integrated into a color-coded circuit diagram. The setup is designed to be functional and interactive. A fully operational charging system, including an alternator and meters, is assembled on a color-printed board to showcase its structure and functionality. The alternator is connected to an electric motor, with essential electrical circuitryincluded. Additional elements such as a warning lamp, ignition switch, and voltage metersare incorporated to illustrate the charging system's operation. An exploded view of the alternator assembly is presented on the board for clarity. A fault-setting switch bank is included to simulate faults within the trainingmodule, aiding in fault diagnosis. A Colour full printed Schematic diagram and Circuit diagram with Part naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on agood quality painted Metal structure with caster wheels with brakes foreasy movement of the same. These components are integrated into a color-coded circuit diagram. Power Requirement: 220VAC +10% , 50 Hz Standard Accessories: Instruction manual
175	Lighting and Wiring System mock layout	Lighting and Wiring System Mock Layout Technical Specifications: This model showcases the electrical system of a vehicle. It features a comprehensive layout of the car's wiring The arrangement includes actual components and accessories. Terminals are available for battery connections. Individual components can be demonstrated when connected. Demonstrable parts include the self-starter and alternator. Other components include wiper motors, horns, and headlights The model also illustrates tail lamps, parking lamps, and side indicators Internal construction details of the parts are visible. Acolorful schematic and circuit diagram will accompany the model. A Colour full printed Schematic diagram and Circuit diagram with Part namingwith explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on a goodquality painted Metal structure. Standard Accessories: Instruction manual
176	Cut Section of Electric Vehicle 4 Wheeler	4 wheeler
177	Electric Vehicle KIT Chassis	i) 3 Wheel Passenger full vehicle for assembly & disassembly

178	Demonstration Kit of Electrical Vehicle	Demonstration Kit of Electrical Vehicle The Entire Electrical System Module Technical Specifications Dimensions Test panel :1800x700x1800mm（LxWxH） Product description This training module is based on the original electrical system of electric vehicles. By dissecting the vehicle body, it comprehensively displays the composition structure of the vehicle's instrument system, lighting system, wiper system, horn system, electric window system, and electric door lock etc. It needs to be connected to all the5othermodules to demonstrate the working process of the pure electric vehicle electrical system. It is equipped with a testing panel and can provide various electrical signal measurement training. It is equipped with an intelligent fault module, which canprovide training on fault setting and trouble shooting. Product composition Cutaway car body Left headlights — Right headlights

179	Battery Management System	BMS System Module Technical Specifications: Dimension: Product description This training module is based on EV power batteries and management systems, can truly demonstrates the structural composition of electric vehicle batteries and management systems; It needs to connect EVM03 and EVM06 modules to demonstrate the working process of a pure electric vehicle battery management system. It is equipped with intelligent fault modules and can provide training on fault setting and troubleshooting. Product composition Battery pack Battery management ECU High voltage connection cable Low voltage connection cable : According to car model : According to car model : According to car model : According to car model —Test panel with color circuit Schematic : According to car model —Fault setting module — Intelligent type Training Courses: : Swivel caster with brake
180	Lithium Battery pack tester	Lithium Battery pack tester
181	Steering Wheel Puller	Steering Wheel Puller
182	Diagnostic tool for EV	Diagnostic tool for EV
183	Dismantling and assembling of BMS Trainer Kit	Dismantling and assembling of BMS Trainer Kit
184	BLDC Motor	BLDC Motor

185	EV motion position sensor test kit	EV motion position sensor test kit EV Drive Motor and Control System Training Module Technical Specifications: Product description: — This module consists of electric vehicle drive axle, drive motor, vehicle controller, detection panel and test bench. Through the display of the physical structure of the drive axle assembly and controller, practical skills training on structural cognition, control principles, component detection, and common fault diagnosis of pure electric vehicle power drive motors and controllers can be completed. Connect with module GTEV01-01 to complete dynamic data detection and experimental data analysis of power battery modules and drive motor control. Product composition: Electric drive axle vehicle 1 Vehicle grade, rated voltage 96V, rated power 13KW, maximum speed 7500rpm — Motor Controller Vehicle grade, rated voltage 96V, three phase Vehicle controller Vehicle grade, vehicle data communication Wheel Vehicle grade, matched with vehicle controller Gear switch Vehicle grade, matched with vehicle controller Accelerator pedal Vehicle grade, matched with vehicle controller
186	Car lift -4 Ton	Hydraulic Lift Model with Lifting Capacity 4 Ton
187	2 Wheeler Bike or Scooter Assembly Set	(Fuel Type: Electric(Battery) along with accessories Max Power 11KwH, Charging Time 6.5H, 5.5 kW (10-100%) Charging Port: Das 6 Connector Battery Capacity: 4.0 kWh, Torque (Motor): 58 Nm, Suspension Front-Single ForkSuspension Rear-Mono Shock, Brakes –Front Disc, Body Type: Electric Bikes. Range (Eco Mode)170 km/charge

188	Transmission / Gearbox Demo Kit	Transmission / Gearbox Demo Kit Technical Specifications: Acutaway model of a synchronous gearbox Demonstrating the working principle Installed on a demonstration bench Functioning to illustrate the movement of all components Effectively showcasing the operation of the gearbox. AColour full printed Schematic diagram and Circuit diagram withPart naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted ona good quality painted Metal structure. Standard Accessories: Instruction manual
189	Cooling System components arranged on a stand with electric motor	Cooling System Components Arrangement on a Stand with Electric Motor Technical Specifications: Cutaway Model of Cooling System Constructed from authentic used components Appropriately sectioned to reveal internal structures Features include radiator, fan blade, water pump, and hoses Showcases intricate details and functionality Amotor is connected to the water pump Demonstrates fluid flow within the system Includes a water heater for heating purposes A Colour full printed Schematic diagram and Circuit diagram with Part namingwith explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on agood quality painted Metal structure provided with caster wheels with brakes for easy movement of the same. Power Requirement: 220VAC +10% , 50 Hz Standard Accessories: Instruction manual

190	Exhaust System	Exhaust Gas Analysis of an IC Engine 4/5 Gas Nalyzer Gas Measured CO2,CO2,HC (NDIR) 02 (Electrochemical)NOX (optional) Measurement Span CO : 0 to 15% HC : 0 to 15000 PPM CO2 : 0 to 20% vol Resolution CO: 0.001 % HC 1PPM, CO2 : 0.1 % O2 : 0.01% NOX : 1ppm Accuracy % CO : ± 3,HC +5, Co2 +4, O2+3 NOX ±5 Lambda 0-9.999 Fuel Type Petrol CNG,LPG Magnetic RPM 400-6000 10 RPM Optional Oil Temp 0-120 C 1C optional Power Supply 12V DC 5Amp adapter Software Version : Ver 1.0 WarmUP Time 1ess than 360 sec Sample Flow Rate 3.51/min Response Time 10 sec Auto Zeroing <15sec Operating Temp 0-50deg c Display 128*64 GLCD
191	Mini commercial Vehicle Chassis Structure	Should be electric vehicle type loading carriage Motor: 2000 W,60V PMSM Controller: 2000 W,60V PMSM Battery Type: Lead acid 12V, 88 Ah (5Nos) Converter DC: DC 12V Throttle: Hand Throttle Ignition Type: DC Drive: Rear Wheel Drive Transmission: Differential Drive Front Suspension: Helical coil spring Shock absorber Rear Suspension: Leaf Spring Rear brake: Available Loading capacity: 1 Ton Seating Capacity 1(including driver) Tyre Size (Front / Rear): 4.00x12 / 5.00x12 Max Speed in Km: 10 - 15 max Mileage 45 - 50 Km /charge Charger Transformer / SMPS Type Battery Indication Meter: Available Auto Tripp switch: Available Battery Charger: Available Frame Assy: Quality pipes & sheet metals fabricated for heavy load.

192	Suspension System-front and rear on stand	Suspension System Front and Rear on Stand Technical Specifications: Cutaway Model of a Complete Leaf Spring Suspension System Featuring the Rear Axle. This model is constructed from authentic used components, carefully sectioned to reveal internal structural details. It showcases intricate information, with the leaf spring positioned handle alongside the shock absorber, demonstrating their functionality. The assembly includes a steering wheel and tire systems on a stand. A colorful printed schematic diagram and circuit diagram, complete with part names and explanations, will be affixed to the board alongside the model. This educational tool provides a clear view of the suspension system's workings. The design emphasizes both aesthetic appeal and educational value. It serves as an excellent resource for understanding automotive suspension mechanics. The model is ideal for demonstrations and educational purposes. The whole set-up is well designed and the entire model is mounted on a good quality painted Metal structure provided with caster wheels with brakes for easy movement of the same. Standard Accessories: Instruction manual
193	Disc & Drum brake systems on stand (working model)	Disc & Drum brake systems on stand (working model) Technical Specifications: Current design of the hydraulic brake system. Features 2 disc brakes and 2 drum brakes, accompanied by a master cylinder and brake booster. Includes pipelines and a hydraulic pressure gauge to monitor brake fluid pressure. One brake drum is sectioned to illustrate the operation of brake liners and the wheel cylinder. Brake lights are installed on the board, complete with wiring and a switch. The entire setup will be securely mounted on the board. This model serves as an educational tool for understanding hydraulic brake systems It combines practical components with visual aids for enhanced learning A Colour full printed Schematic diagram and Circuit diagram with Part naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on a good quality painted Metal structure provided with caster wheels with brakes for easy movement of the same. Power requirement : 220VAC +10% , 50 Hz Standard Accessories: Instruction manual

194	Engine and Transmission systems on stand (working model)	Engine and Transmission Systems on Stand (Working Model) Technical Specifications: The assembly features a full-scale replica of an MPFI four-cylinder car engine. It includes essential components such as the gearbox and clutch. — Key parts like the cylinder block and four cylinders are fully represented The model showcases cylinder heads and valve ports for educational purposes. Internal elements like pistons and connecting rods are clearly visible. Inlet and exhaust manifolds are included to illustrate airflow dynamics. The throttle body and MPFI fuel system are part of the assembly. A lubrication system, water pump, and radiator are also featured. The oil pump, oil pan, and air filter are integrated into the design. — The assembly features a full-scale replica of an MPFI four-cylinder car engine. The self-starter and alternator are operational components of the model. The gearbox will be appropriately sectioned to illustrate the gear mechanism and shifter mechanism. Shifting the gear lever will allow for a complete demonstration of the gearbox's operation. It will be connected to the engine assembly through the clutch. This setup will enable the demonstration of the entire system from the motor driven engine to the clutch and gearbox in action. ME 7749 - Engine and Transmission Systems on Stand (Working Model) — The entire system will be mounted on a robust iron frame
195	Car lift -4 Ton	HydraulicLiftModelwithLi ftingCapacity4 Ton
196	2 Wheeler Bike or Scooter Assembly Set	(Fuel Type: Electric(Battery) along with accessories Max Power 11KwH, Charging Time 6.5H, 5.5 kW (10-100%) Charging Port: Das 6 Connector Battery Capacity: 4.0 kWh, Torque (Motor): 58 Nm, Suspension Front-Single ForkSuspension Rear-Mono Shock, Brakes –Front Disc, Body Type: Electric Bikes. Range (Eco Mode)170 km/charge
197	Transmission / Gearbox Demo Kit	Transmission system for EV

198	Instruction Kit for Charging System	Instruction Kit for Charging System Technical Specifications: The instructional board utilizes actual components from the charging system to demonstrate its structure and operational principles. These components are integrated into a color-coded circuit diagram. The setup is designed to be functional and interactive. A fully operational charging system, including an alternator and meters, is assembled on a color-printed board to showcase its structure and functionality. The alternator is connected to an electric motor, with essential electrical circuitryincluded. Additional elements such as a warning lamp, ignition switch, and voltage metersare incorporated to illustrate the charging system's operation. An exploded view of the alternator assembly is presented on the board for clarity. A fault-setting switch bank is included to simulate faults within the trainingmodule, aiding in fault diagnosis. A Colour full printed Schematic diagram and Circuit diagram with Part naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on agood quality painted Metal structure with caster wheels with brakes foreasy movement of the same. These components are integrated into a color-coded circuit diagram. Power Requirement: 220VAC +10% , 50 Hz Standard Accessories: Instruction manual
199	Lighting and Wiring System mock layout	Lighting and Wiring System Mock Layout Technical Specifications: This model showcases the electrical system of a vehicle. It features a comprehensive layout of the car's wiring The arrangement includes actual components and accessories. Terminals are available for battery connections. Individual components can be demonstrated when connected. Demonstrable parts include the self-starter and alternator. Other components include wiper motors, horns, and headlights The model also illustrates tail lamps, parking lamps, and side indicators Internal construction details of the parts are visible. Acolorful schematic and circuit diagram will accompany the model. A Colour full printed Schematic diagram and Circuit diagram with Part namingwith explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on a goodquality painted Metal structure. Standard Accessories: Instruction manual
200	Cut Section of Electric Vehicle 4 Wheeler	4 wheeler

201	Electric Vehicle KIT Chassis	i) 3 Wheel Passenger full vehicle for assembly &disassembly ii) 4-WheelerBuggy iii) Electrical vehicle component checker/Diagnostic iv) Solar Based Charging v) Safety Tool Kit
202	Demonstration Kit of Electrical Vehicle	Demonstration Kit of Electrical Vehicle The Entire Electrical System Module Technical Specifications Dimensions Test panel :1800x700x1800mm（LxWxH） Product description This training module is based on the original electrical system of electric vehicles. By dissecting the vehicle body, it comprehensively displays the composition structure of the vehicle's instrument system, lighting system, wiper system, horn system, electric window system, and electric door lock etc. It needs to be connected to all the5othermodules to demonstrate the working process of the pure electric vehicle electrical system. It is equipped with a testing panel and can provide various electrical signal measurement training. It is equipped with an intelligent fault module, which canprovide training on fault setting and trouble shooting. Product composition Cutaway car body Left headlights — Right headlights

203	Battery Management System	BMS System Module Technical Specifications: Dimension: Product description This training module is based on EV power batteries and management systems, can truly demonstrates the structural composition of electric vehicle batteries and management systems; It needs to connect EVM03 and EVM06 modules to demonstrate the working process of a pure electric vehicle battery management system. It is equipped with intelligent fault modules and can provide training on fault setting and troubleshooting. Product composition Battery pack Battery management ECU High voltage connection cable Low voltage connection cable : According to car model : According to car model : According to car model : According to car model —Test panel with color circuit Schematic : According to car model —Fault setting module — Intelligent type Training Courses: : Swivel caster with brake
204	Lithium Battery pack tester	Lithium Battery pack tester
205	Diagnostic tool for EV	Diagnostic tool for EV

206	EV motion position sensor test kit	EV motion position sensor test kit EV Drive Motor and Control System Training Module Technical Specifications: Product description: — This module consists of electric vehicle drive axle, drive motor, vehicle controller, detection panel and test bench. Through the display of the physical structure of the drive axle assembly and controller, practical skills training on structural cognition, control principles, component detection, and common fault diagnosis of pure electric vehicle power drive motors and controllers can be completed. Connect with module GTEV01-01 to complete dynamic data detection and experimental data analysis of power battery modules and drive motor control. Product composition: Electric drive axle vehicle 1 Vehicle grade, rated voltage 96V, rated power 13KW, maximum speed 7500rpm — Motor Controller Vehicle grade, rated voltage 96V, three phase Vehicle controller Vehicle grade, vehicle data communication Wheel Vehicle grade, matched with vehicle controller Gear switch Vehicle grade, matched with vehicle controller Accelerator pedal Vehicle grade, matched with vehicle controller
207	BLDC Motor	BLDC Motor
208	Dismantling and assembling of BMS Trainer Kit	Dismantling and assembling of BMS Trainer Kit
209	Car lift -4 Ton	HydraulicLiftModelwithLi ftingCapacity4 Ton
210	2 Wheeler Bike or Scooter Assembly Set	(Fuel Type: Electric(Battery) along with accessories Max Power 11KwH, Charging Time 6.5H, 5.5 kW (10-100%) Charging Port: Das 6 Connector Battery Capacity: 4.0 kWh, Torque (Motor): 58 Nm, Suspension Front-Single ForkSuspension Rear-Mono Shock, Brakes –Front Disc, Body Type: Electric Bikes. Range (Eco Mode)170 km/charge
211	Transmission / Gearbox Demo Kit	Transmission system for EV

212	HVAC Demo Kit	HVAC Demo Kit Technical Specifications Demonstration board showcasing the air conditioning system of a four-wheeled vehicle. Constructed using genuine new components, arranged on a metal frame with a navopan board. Designed to illustrate the details of piping connections and wiring circuits. Includes all essential accessories such as the cooling coil, compressor, evaporator, and necessary hoses. The model operates using a fractional horsepower (FHP) motor. Allows for demonstration of the AC panel's operation and cooling effects. Equipped with a power supply to power the blower and magnetic clutch. The entire system will be appropriately painted for visual appeal. A Colour full printed Schematic diagram and Circuit diagram with Part naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on a good quality painted Metal structure provided with caster wheels with brakes for easy movement of the same. Power Requirement : 220VAC +10% , 50 Hz Standard Accessories: Instruction manual HVAC Demo Kit Technical Specifications Demonstration board showcasing the air conditioning system of a four-wheeled vehicle. Constructed using genuine new components, arranged on a metal frame

213	Instruction Kit for Charging System	Instruction Kit for Charging System Technical Specifications: The instructional board utilizes actual components from the charging system to demonstrate its structure and operational principles. These components are integrated into a color-coded circuit diagram. The setup is designed to be functional and interactive. A fully operational charging system, including an alternator and meters, is assembled on a color-printed board to showcase its structure and functionality. The alternator is connected to an electric motor, with essential electrical circuitryincluded. Additional elements such as a warning lamp, ignition switch, and voltage metersare incorporated to illustrate the charging system's operation. An exploded view of the alternator assembly is presented on the board for clarity. A fault-setting switch bank is included to simulate faults within the trainingmodule, aiding in fault diagnosis. A Colour full printed Schematic diagram and Circuit diagram with Part naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on agood quality painted Metal structure with caster wheels with brakes foreasy movement of the same. These components are integrated into a color-coded circuit diagram. Power Requirement: 220VAC +10% , 50 Hz Standard Accessories: Instruction manual
214	Lighting and Wiring System mock layout	Lighting and Wiring System Mock Layout Technical Specifications: This model showcases the electrical system of a vehicle. It features a comprehensive layout of the car's wiring The arrangement includes actual components and accessories. Terminals are available for battery connections. Individual components can be demonstrated when connected. Demonstrable parts include the self-starter and alternator. Other components include wiper motors, horns, and headlights The model also illustrates tail lamps, parking lamps, and side indicators Internal construction details of the parts are visible. Acolorful schematic and circuit diagram will accompany the model. A Colour full printed Schematic diagram and Circuit diagram with Part namingwith explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on a goodquality painted Metal structure. Standard Accessories: Instruction manual

215	Electric Vehicle KIT Chassis	i) 3 Wheel Passenger full vehicle for assembly &disassembly ii) 4-WheelerBuggy iii) Electrical vehicle component checker/Diagnostic iv) Solar Based Charging Safety Tool Kit
216	Demonstration Kit of Electrical Vehicle	Demonstration Kit of Electrical Vehicle The Entire Electrical System Module Technical Specifications Dimensions Test panel :1800x700x1800mm（LxWxH） Product description This training module is based on the original electrical system of electric vehicles. By dissecting the vehicle body, it comprehensively displays the composition structure of the vehicle's instrument system, lighting system, wiper system, horn system, electric window system, and electric door lock etc. It needs to be connected to all the5othermodules to demonstrate the working process of the pure electric vehicle electrical system. It is equipped with a testing panel and can provide various electrical signal measurement training. It is equipped with an intelligent fault module, which canprovide training on fault setting and trouble shooting. Product composition Cutaway car body Left headlights — Right headlights

217	Battery Management System	BMS System Module Technical Specifications: Dimension: Product description This training module is based on EV power batteries and management systems, can truly demonstrates the structural composition of electric vehicle batteries and management systems; It needs to connect EVM03 and EVM06 modules to demonstrate the working process of a pure electric vehicle battery management system. It is equipped with intelligent fault modules and can provide training on fault setting and troubleshooting. Product composition Battery pack Battery management ECU High voltage connection cable Low voltage connection cable : According to car model : According to car model : According to car model : According to car model —Test panel with color circuit Schematic : According to car model —Fault setting module — Intelligent type Training Courses: : Swivel caster with brake
218	Lithium Battery pack tester	Lithium Battery pack tester
219	Steering Wheel Puller	Steering Wheel Puller
220	Diagnostic tool for EV	Diagnostic tool for EV
221	Dismantling and assembling of BMS Trainer Kit	Dismantling and assembling of BMS Trainer Kit
222	BLDC Motor	BLDC Motor

223	EV motion position sensor test kit	EV motion position sensor test kit EV Drive Motor and Control System Training Module Technical Specifications: Product description: — This module consists of electric vehicle drive axle, drive motor, vehicle controller, detection panel and test bench. Through the display of the physical structure of the drive axle assembly and controller, practical skills training on structural cognition, control principles, component detection, and common fault diagnosis of pure electric vehicle power drive motors and controllers can be completed. Connect with module GTEV01-01 to complete dynamic data detection and experimental data analysis of power battery modules and drive motor control. Product composition: Electric drive axle vehicle 1 Vehicle grade, rated voltage 96V, rated power 13KW, maximum speed 7500rpm — Motor Controller Vehicle grade, rated voltage 96V, three phase Vehicle controller Vehicle grade, vehicle data communication Wheel Vehicle grade, matched with vehicle controller Gear switch Vehicle grade, matched with vehicle controller Accelerator pedal Vehicle grade, matched with vehicle controller
224	Cut Section of Electric Vehicle 4 Wheeler	4 wheeler
225	Cut Section of Electric Vehicle 4 Wheeler	4wheeler
226	Portable Single Phase Welding Machine	Portable Single Phase Welding Machine

227	System Set up and integration with Design.	System Set up and integration with Design. EV virtual simulation test and teaching software Technical Specifications: Product description: This virtual simulation software based on Windows system, and has independent software copyright. — It can be installed on module GTEV01-06 and GTEV01-07. The software can achieve virtual detection of electric vehicle motor drive control systems. The detection content includes the signal voltage and waveform of each control line. — It is a good solution to the teacher's "one-to-many" demonstration problem. The software operation interface is simple and the steps are clear. — The system is based on the logical architecture of three-layer interfaces: main interface/system selection interface/and detection interface. The control circuit diagram of the detection interface is clear, and the pin definitions of the control terminals are clearly marked, which is conducive to students conducting various circuit electrical signal simulation tests. — Product features: 1. The software can test the pins of the air conditioning control unit, MCU motor controller, on-board charger, BMS control unit, steering system, and all vehicle electrical appliances;
228	Car lift -4 Ton	Lift Width 3425mm Lift Height 3630mm Lifting Height 1910mm Motor 2.2 KW / Power supply 380V AC /3Phase Weight- Net Weight 605Kg / Gross Weight-620Kg
229	Straight Grinder HEAVY DUTY with attachments	with attachment Arbor Size: 15 Maximum Speed: 5000 RPM Cordless: No Wheel Diameter: 150 mm
230	Transmission / Gearbox Demo Kit	The trainer allows the instructor to demonstrate the following:- The position and mounting of all manual gearbox components Gear selection using selector lever and selector forks Reverse gear selection using selector lever and selector fork Differential Clutch housing Speedo drive

231	2 Wheeler Bike or Scooter Assembly Set	(Fuel TypeElectric(Battery)Max Power 11KwH,Body TypeSUVAc,Charging Time 6.5H, 5.5 kW (10-100%)Charging PortCCS-IIDc ,Battery Capacity4.0 kWh,Torque (Motor)58 Nm,Suspension Front-Single Fork-Suspension Rear-Mono Shock,Brakes -FrontDisc,Body TypeElectric Bikes.Range (Eco Mode)170 km/charge
232	Cooling System components arranged on a stand with electric motor	arranged on a stand with electric motor 85kW e-motor within 1500s run time
233	Exhaust System	Model is made out of full size original exahaust system The model is made out of full size original Exhaust system. The Exhaust system Demonstration Board will have Exhaust manifold, Turbocharger, Catalytic convertor/SCR, complete silencer unit with pipes and tail pipe all suitably sectioned to show the internal constructional details different colour painting will be done to highlight different parts.
234	Engine and Transmission systems on stand (working model)	Material Mild Steel Height 900 mm Length 700 mm Width 500 mm Flange Diameter 200 mm,360 degree rotation with load upto 500kg
235	Mini commercial Vehicle Chassis Structure	Structure wheelbase of 2250 mm and an overall length of 4075 mm,ground clearance of 160 mm
236	Suspension System-front and rear on stand	stand Suspension System- fornt and rear on stand- This model is made out of original used parts, will be suitably sectioned and arranged to demonstrate the internal construction details showing the minute information with suspension strut with spring and shock absorber disc.
237	Steering Wheel and Tire Systems assembly on stand	stand Signs of bad shocks, struts or worn springs include a bouncy or uncomfortable ride, the front end of the vehicle diving or loss of control while making a sudden stop, the vehicle swerving more than normal while changing lanes, and a vehicle that sags in the front or the rear. Beside pulling and bouncing, signs include uneven or excessive tyre wear and poor steering control.
238	HVAC Demo Kit	Gauge manifold (with 60" hose, 800PSI-R404A,R410A,R22) C180 - Portable tool bag ST1012 - Clamp meter with temperature ST34 - 6" Long nose pliers ST20 - Safety goggles ST30Y - Deluxe wire stripper ST59 - 8" Adjustable wrench ST97 - 10" locking pliers ST70 - Linesman Pliers ST85 - 6-in-1 Driver set ST125 - 6pc. Screwdriver set ST136 - Ratchet wrench ST-137 - Tube Bender ST142 - Mini tubing cutter TK300 - Tube working kit
239	Electronic Ignition System of an Automobile 4 Wheeler	an Automobile 4 Wheeler 6 or 12 volt battery, ammeter, ignition switch, auto-transformer (step up transformer), contact breaker, capacitor, distributor rotor, distributor contact points, spark plugs, etc

240	Demonstration Board of Working Model MPFI System with Motorized control	Motorized control Material -Aluminium Alloy Phase- Single Phase Model Name/Number- MPFI Board Size -1200 x 900 x 1200 Color- White Automation Type -12v Features- Injection Working Accuracy- 65% Capacity -Training Dimensions -1200 x 900 x 1200 Grade Standard- Ni3
241	Cut Section of Electric Vehicle 4 Wheeler	(Fuel TypeElectric(Battery)Max Power 142.68bhp,Max Torque 215Nm,Body TypeSUVAc,Charging Time 6H, 7.2 kW (10-100%)Charging PortCCS-IIDc ,Charging Time56 Min-50 kW(10-80%)Battery Capacity40.5 kWhRange465 kmNo Of Airbags)6
242	Electric Vehicle KIT Chassis	3 Wheel Passenger full vehicle for assembly & disassembly ii) 4-Wheeler Buggy iii) Electrical vehicle component checker/Diagnostic iv) Solar Based Charging v) Safety Tool Kit
243	Online UPS with battery and accessories	10kVA/9kW 3-Phase Input / 3-Phase Output,Battery Capacity 12V 9Ah
244	Electric Vehicle KIT Chassis	i) 3 Wheel Passenger full vehicle for assembly & disassembly ii) 4-WheelerBuggy iii) Electrical vehicle component checker/Diagnostic iv) Solar Based Charging v) Safety Tool Kit

245	EV motion position sensor test kit	EV motion position sensor test kit EV Drive Motor and Control System Training Module Technical Specifications: Product description: — This module consists of electric vehicle drive axle, drive motor, vehicle controller, detection panel and test bench. Through the display of the physical structure of the drive axle assembly and controller, practical skills training on structural cognition, control principles, component detection, and common fault diagnosis of pure electric vehicle power drive motors and controllers can be completed. Connect with module GTEV01-01 to complete dynamic data detection and experimental data analysis of power battery modules and drive motor control. Product composition: Electric drive axle vehicle 1 Vehicle grade, rated voltage 96V, rated power 13KW, maximum speed 7500rpm — Motor Controller Vehicle grade, rated voltage 96V, three phase Vehicle controller Vehicle grade, vehicle data communication Wheel Vehicle grade, matched with vehicle controller Gear switch Vehicle grade, matched with vehicle controller Accelerator pedal Vehicle grade, matched with vehicle controller
246	Auto Electrical test bench	for checking dynamo, alternator, startor motor,with minimum 2hp AC motor ,digital volt meter and ameter
247	Turbocharger cut sectional view	Turbocharger cut sectional view
248	Arbor press hand operated	2 ton capacity

249	Automotive Diesel Smokemeter (for Diesel engine)	Exhaust Gas Analysis of an IC Engine 4/5 Gas Nalyzer Gas Measured CO2,CO2,HC (NDIR) 02 (Electrochemical)NOX (optional) Measurement Span CO : 0 to 15% HC : 0 to 15000 PPM CO2 : 0 to 20% vol Resolution CO: 0.001 % HC 1PPM, CO2 : 0.1 % O2 : 0.01% NOX : 1ppm Accuracy % CO : ± 3,HC +5, Co2 +4, O2+3 NOX ±5 Lambda 0-9.999 Fuel Type Petrol CNG,LPG Magnetic RPM 400-6000 10 RPM Optional Oil Temp 0-120 C 1C optional Power Supply 12V DC 5Amp adapter Software Version : Ver 1.0 WarmUP Time 1ess than 360 sec Sample Flow Rate 3.51/min Response Time 10 sec Auto Zeroing <15sec Operating Temp 0-50deg c Display 128*64 GLCD
250	Bench lever shears	Bench lever shears
251	Diesel Engine – CRDI - 4 strokefor Dismantling and Assembling with Swiveling Stand.	Diesel Engine – CRDI - 4 strokefor Dismantling and Assembling with Swiveling Stand. Engine Type: 4-Stroke, 4-Cylinder, Liquid-Cooled Diesel EngineFuel System: Common Rail Direct Injection (CRDI)Capacity: 1200cc to 2000ccValve Mechanism: Overhead Cam (OHC or DOHC) Swiveling Stand: Heavy-duty Mild Steel tubular frame allowing ** \(360^{\circ }\) rotation to provide easy access for overhauling and assembly training.Movement: Mounted on castor wheels with heavy-duty brakes/stoppers for stability. Safety: Fitted with an oil collecting tray at the bottom to catch spills and maintain workshop cleanliness.
252	Diesel Engine 6 cylinder, running condition with scanner	Diesel engine Engine Type: 4-Stroke, Multi-cylinder Inline Diesel Engine.No. of Cylinders: 6 Cylinders.Fuel Injection System: Modern Common Rail Direct Injection (CRDI) with Electronic Control Unit (ECU).Aspiration: Turbocharged with Intercooler.Displacement Capacity: 4500 CC to 6000 CC.Power Output: 100 kW to 150 kW (approx. 130–200 BHP) @ 2000 to 3000 RPM.Torque Rating: 450 Nm to 600 Nm @ 1200 to 2000 RPM.Cooling System: Water-cooled setup with heavy-duty radiator, thermostat, coolant reservoir, and protective fan guard.Starting System: 12V / 24V DC Starter Motor coupled with an alternator and compatible battery system.Exhaust Assembly: Exhaust manifold integrated

253	Discrete component Trainer/ Basic Electronics Trainer	Discrete Component Trainer Objective : -To study the characteristics and applications of the basic semiconductors. -More than 15 experiments can be performed to plot characteristics of PN Junction Diode, Zener Diode , LED, experiments based on Transistor Amplifiers, LCR resonance circuits, Rectifier Circuits, Clipping & Clamping circuits, Resistance in series & parallel circuits, charging & discharging of a Condensor, RC circuits & Filter circuits etc. Technical Specifications: - Output voltages (Regulated) : 0-3V DC, 0-30V DC,5V DC - Output voltage (AC) : 10- 0-10V AC/ 500mA - Housed in ABS cabinet, symbol diagram printed, connections of various components (PN Junction Diodes, Zener Diodes, Resistances, Potentiometers, Capacitors & Transistors etc.), all important outputs & test points brought at Glass epoxy (PCB) front panel. - Also provided with patch chords & instruction manual
254	Drilling machine bench to drill up to 12mm dia along with accessories	Drilling machine bench to drill up to 12mm dia along with accessories
255	Dual Magnetization Yoke	Dual Magnetization Yoke
256	Gas Welding Table	HVAC Demo Kit Technical Specifications Demonstration board showcasing the air conditioning system of a four-wheeled vehicle. Constructed using genuine new components, arranged on a metal frame with a navopan board. Designed to illustrate the details of piping connections and wiring circuits. Includes all essential accessories such as the cooling coil, compressor, evaporator, and necessary hoses. The model operates using a fractional horsepower (FHP) motor. Allows for demonstration of the AC panel's operation and cooling effects. Equipped with a power supply to power the blower and magnetic clutch. The entire system will be appropriately painted for visual appeal. A Colour full printed Schematic diagram and Circuit diagram with Part naming with explanation will be printed on to board and fixed along with the Model. The whole set-up is well designed and the entire model is mounted on a good quality painted Metal structure provided with caster wheels with brakes for easy movement of the same. Power Requirement : 220VAC +10% , 50 Hz Standard Accessories: Instruction manual
257	Grinding machine (general purpose)	D.E. pedestal with 300 mm dia. wheels rough and smooth
258	Hydraulic jack HI-LIFT type	Hydraulic jack HI-LIFT type
259	Liquid penetrate Inspection kit	Liquid penetrate Inspection kit
260	Pipe bending machine	Hydraulic
261	Pneumatic rivet gun with standard accessories	Pneumatic rivet gun with standard accessories

262	Tin smiths bench folder	Tin smiths bench folder
263	Trolley type portable air compressor	Trolley type portable air compressor
264	Welding plant Oxy-Acetylene complete (high pressure)	Welding plant Oxy-Acetylene complete (high pressure)
265	Welding Transformer with all accessories including consumables	Welding Transformer with all accessories including consumables
266	Working Condition of Diesel Engine – CRDI - 4 stroke Engine, Assembly with fault simulation board	Working Condition of Diesel Engine - CRDI - 4 stroke Engine Assembly with fault simulation board Technical Specifications Diesel Engine CRDI Type 4 Stroke Setup Consist Of Bakelite Front Panel with all controls and Fault Points with Block Diagram Printed. STRUCTURE OF COMMON RAIL DIRECT INJECTION SYSTEM Injection nozzle: Fuel Supply Pump: Fuel Filter: The Rail of Common Rail Injection System: High-pressure Line: Injector: Solenoid Valve Injector: Electronic Control Unit: An Engine Control Unit (ECU), also known as Engine Management System (EMS) is an electronic device, fundamentally a computer, that is part of an internal combustion engine, which reads several sensors in the engine and uses the information to control the ignition systems of the engine. This approach allows an engine's operation to be controlled in great detail, allowing greater fuel efficiency, better power and responsiveness, and much

267	Cut section of 4/6 cylinder diesel engine in moving condition to show movement of internal parts	Cut Section Model 6 Cylinder 4 Stroke Diesel (CI) Engine Cur Section of 4/6 Cylinder Diesel Engine in moving condition to show movement of moving condition to show movement of internal part Technical Specifications: Drive Motor Geared motor Base Frame Fabricated Steel frame for mounting the engine, provided with caster wheels for mobility The demonstration system consists of a sectioned DIESEL(CI) engine of a Truck (TATA or equivalent). The engine is cut at different locations in order to display its components like the piston, cylinder, crankshaft, camshaft etc. Auxiliary systems like the oil pump, starter, alternator, radiator, air cleaner etc. are also cut in order to show their construction details. The engine operation can be visualized by running it at low speeds using a drive motor connected to the flywheel. All the engine assemblies are repainted using automotive grade paints & color coded in order to make students understand the sectioned parts. The engine assembly along with drive system is mounted on a sturdy steel frame, fitted with Castor wheels for mobility
268	Fuel injection test bench for calibration of fuel pump	Fuel injection test bench for calibration of fuel pump
269	Electrical test bench	Auto Electrical Test Bench Objective: Auto Electrical Test Bench, designed to ensure the testing of alternators, is loaded with safety features. Technical Specification Test bench is a table model designed for testing of alternator, regulators and starter motors. This is equipped with AC Motor mounted on a steel cabinet (table top model) For Testing of :-Alternator Rheostat provided to control the field current of the dynamo. 110 volts AC power source corporate to carry out insulation test. A table model easy to operate with a single phase A/C power. motor with digital voltmeter, Ohmmeter, Ammeter, field ammeter for easy reading. Digital ammeter - 5-0-5 A DC, field current Digital ammeter-0-200 A DC Test Bench will be consisting of following Items :- Digital voltmeter -0-200 V DC Digital ammeter-0-200 A DC Digital ammeter - 5-0-5 A DC, field current Digital ohmmeter - 0-200 Ohms. Load resistance Field rheostat Growler

270	Diesel Engine 6 cylinder, running condition with scanner	Diesel engine Engine Type: 4-Stroke, Multi-cylinder Inline Diesel Engine.No. of Cylinders: 6 Cylinders.Fuel Injection System: Modern Common Rail Direct Injection (CRDI) with Electronic Control Unit (ECU).Aspiration: Turbocharged with Intercooler.Displacement Capacity: 4500 CC to 6000 CC.Power Output: 100 kW to 150 kW (approx. 130–200 BHP) @ 2000 to 3000 RPM.Torque Rating: 450 Nm to 600 Nm @ 1200 to 2000 RPM.Cooling System: Water-cooled setup with heavy-duty radiator, thermostat, coolant reservoir, and protective fan guard.Starting System: 12V / 24V DC Starter Motor coupled with an alternator and compatible battery system.Exhaust Assembly: Exhaust manifold integrated
271	Auto Electrical test bench	for checking dynamo, alternator, startor motor,with minimum 2hp AC motor ,digital volt meter and ameter
272	Working Condition of Diesel Engine – CRDI - 4 stroke Engine, Assembly with fault simulation board	Diesel Engine – CRDI - 4 stroke 4 cylinder , for dismantling and assembling with swivelling stand. latest turbo charged crdi engine , 800-1600 cc, in running condition with ecm, bcm, and all sensors, wiring, fuel feed and cooling system and instrument cluster
273	Cut section of 4/6 cylinder diesel engine in moving condition to show movement of internal parts	Cut section of 4/6 cylinder diesel engine with moving condition to show momentum of internal parts
274	Dual Magnetization Yoke	AC / HWDC, 230 VAC, 50Hz
275	Tin smiths bench folder	600 x 1.6mm
276	Dual Magnetization Yoke	AC / HWDC, 230 VAC, 50Hz
277	Tin smiths bench folder	600 x 1.6mm
278	Diesel Engine 6 cylinder, running condition with scanner	BRAND NEW SIX CYLINDER DIESEL ENGINE IN RUNNING CONDITION Latest BSVI Diesel Engine CRDI- 4 Stroke 6 Cylinders, Turbocharged Engine in running condition. All sensors, wiring, fuel feed, cooling system & instrument cluster. Technical Specifications: • Fuel Type: Diesel • Fuel Injection System: CRDI, Turbocharged • Cycle: Four Stroke • No. of Cylinders: 6 The Diesel Engine shall be in running condition with ECM, Ignition Switch and Keys, All sensors (Coolant temperature sensor, Nox Sensor, Crankshaft Sensor, Camshaft sensor, Fuel Pressure Sensor, Boost pressure sensor, Throttle position sensor etc.), Wiring, Fuel feed system, Cooling system, Instrument cluster, Radiator with Intercooler and Cooling Fan, Water pump, Air Filter Assembly, Fuse Box, Fuel Filter, Engine Oil Pressure Switch, Silencer, Alternator, Starter Motor, Battery etc. • Engine starting system shall be with compatible new battery. (Standard Make: Exide/Amaron / Bosch with warranty card) • The assembly shall be mounted on iron frame powder coated for testing and demonstration accompanied with suitable safety guards. • Engine set up must accompanied with instrument cluster displaying fuel level, Engine Coolant Temperature, Engine oil pressure, Battery charging light. • Engine shall be complete with air filter, alternator, self-starter and accelerator pedal. Engine with following parts shall be provided: • Wiring, fuel feed & cooling system, Radiator with Intercooler and Cooling Fan

279	Working Condition of Diesel Engine – CRDI - 4 stroke Engine, Assembly with fault simulation board	DIESEL ENGINE-CRDI-4STROKE DISMANTLING AND ASSEMBLING WITH SWIVELLING STAND MAKE-UEEC, MODEL- Diesel Engine-Crdi-4stroke: Dismantling And Assembling With Swivelling Stand Technical Specifications: • Diesel Engine CRDI 4 Cylinder, Turbocharged, • Displacement: 1500 - 2500 cc • Minimum power: 70-85 BHP@ 2500 ~ 4250 RPM • Fuel Tank 10 Litre, • Engine Accessories- Consisting of air filter, Silencer, alternator,self starter, BATTERY with clamp & warranty card fitted in frame on box, Safety Guard for Silencer & Radiator, Intercooler. • Engine shall be in running condition with speed controlled. engine shall be accompanied with all types of nozzles & sensors .Ignition switch with keys • Demo shall be provided. • Attach catalogue/ Original Service manual of product. • Engine shall be accompanied with Panel board ignition system, collesteral meter along with RPM meter, speed control foot padel, all warning light. • Instrument Cluster should display fuel level, battery charging light, oil pressure. Note Engine shall slowly rotating the handle provided can be rotated & locked on any position with gears for slow speed rotating 360 degrees. Set shall accompanied with caster wheels for movement. (Coolant temperature sensor, Mass Air Flow Sensor, Manifold absolute pressure sensor, Nox Sensor, Crankshaft Sensor, Camshaft sensor, Fuel Temperature Sensor, Fuel Pressure Sensor, Boost pressure sensor, Throttle position sensor etc.), wiring, fuel feed & cooling system &
280	Welding plant Oxy-Acetylene complete (high pressure)	STANDARD SIZE with Brand New Industrial Grade Cylinder along with Test certificates
281	Liquid penetrate Inspection kit	Liquid penetrate Inspection kit
282	Dual Magnetization Yoke	AC/HWDC 230 VAC 50 Hz
283	3 furrow discplough	3 furrow discplough

284	Automotive exhaust 5 gas analyser and Diesel Smokemeter (for petrol & Diesel)	Exhaust Gas Analysis of an IC Engine 4/5 Gas Nalyzer Gas Measured CO2,CO2,HC (NDIR) 02 (Electrochemical)NOX (optional) Measurement Span CO : 0 to 15% HC : 0 to 15000 PPM CO2 : 0 to 20% vol Resolution CO: 0.001 % HC 1PPM, CO2 : 0.1 % O2 : 0.01% NOX : 1ppm Accuracy % CO : ± 3,HC +5, Co2 +4, O2+3 NOX ±5 Lambda 0-9.999 Fuel Type Petrol CNG,LPG Magnetic RPM 400-6000 10 RPM Optional Oil Temp 0-120 C 1C optional Power Supply 12V DC 5Amp adapter Software Version : Ver 1.0 WarmUP Time 1ess than 360 sec Sample Flow Rate 3.51/min Response Time 10 sec Auto Zeroing <15sec Operating Temp 0-50deg c Display 128*64 GLCD
285	Discrete component Trainer/ Basic Electronics Trainer	Discrete Component Trainer Objective : -To study the characteristics and applications of the basic semiconductors. -More than 15 experiments can be performed to plot characteristics of PN Junction Diode, Zener Diode , LED, experiments based on Transistor Amplifiers, LCR resonance circuits, Rectifier Circuits, Clipping & Clamping circuits, Resistance in series & parallel circuits, charging & discharging of a Condensor, RC circuits & Filter circuits etc. Technical Specifications: - Output voltages (Regulated) : 0-3V DC, 0-30V DC,5V DC - Output voltage (AC) : 10- 0-10V AC/ 500mA - Housed in ABS cabinet, symbol diagram printed, connections of various components (PN Junction Diodes, Zener Diodes, Resistances, Potentiometers, Capacitors & Transistors etc.), all important outputs & test points brought at Glass epoxy (PCB) front panel. - Also provided with patch chords & instruction manual
286	Grinding machine (general purpose)	D.E. pedestal with 300 mm dia. wheels rough and smooth

287	Multi Scan Tool To scan Engine, ABS & EBD, AT, SRS, Body Control and immobilizer	Multi Scan Tool with Oscilloscope Multi Scan Tool To scan Engine, ABS & EBD, AT, SRS, Body Control and immobilizer Should perform automotive sensor simulation test specially designed to diagnose and simulate vehicle sensor faults for sensors like MAP sensor, Intake air temperature sensor, TP sensor etc. Technical Specification o Android OS, prevailing panel pc configuration o CPU: Dual core 1GHz o Polymer lithium-ion battery, 3000mA o Extended memory card, support 32G Micro SD (TF) card o Storage capacity: 2GB o Internal Memory: 512MB o Screen Size: 7.0 inch o Screen Resolution: 1024 * 600 o Touch Screen: Multi-touch capacitor screen o Cameras: 2 mega rear and 0.3 mega front o Wireless Communication: WIFI, Bluetooth o Working Temperature:-10 C-55 C (14 F to 131 F) o Storage Temperature:-20 C-70 C (-4 F to 158 F)
288	P.T.O. oporated rotary lawn mower	P.T.O. oporated rotary lawn mower
289	Tractor Diesel Engine 4 stroke for Dismantling and assembling with	Tractor Diesel Engine 4 stroke for Dismantling and assembling with
290	Wheel type tractor fitted with diesel engine with standard accessories	Wheel type tractor fitted with diesel engine with standard accessories
291	Auto Electrical test bench	for checking dynamo, alternator, startor motor,with minimum 2hp AC motor ,digital volt meter and ameter
292	Cut section model of fuel filter	Cut section model of fuel filter
293	Multi Scan Tool To scan Engine, ABS & EBD, AT, SRS, Body Control and immobilizer	Multi Scan Tool with Oscilloscope Multi Scan Tool To scan Engine, ABS & EBD, AT, SRS, Body Control and immobilizer Should perform automotive sensor simulation test specially designed to diagnose and simulate vehicle sensor faults for sensors like MAP sensor, Intake air temperature sensor, TP sensor etc. Technical Specification o Android OS, prevailing panel pc configuration o CPU: Dual core 1GHz o Polymer lithium-ion battery, 3000mA o Extended memory card, support 32G Micro SD (TF) card o Storage capacity: 2GB o Internal Memory: 512MB o Screen Size: 7.0 inch o Screen Resolution: 1024 * 600 o Touch Screen: Multi-touch capacitor screen o Cameras: 2 mega rear and 0.3 mega front o Wireless Communication: WIFI, Bluetooth o Working Temperature:-10 C-55 C (14 F to 131 F) o Storage Temperature:-20 C-70 C (-4 F to 158 F)
294	Turbocharger cut sectional view	Turbocharger cut sectional view

LIST OF EQUIPMENT (AUTOMOBILE) - POLYTECHNIC		
Sl No	**Name of Machinery**	**SPECIFICATION**
1	2 wheeler simulator with complete working model and data extraction with 15 Ah Battery and Charger	BLDC Out-Runner Motor (Hub Motor) - 1KW / 48V Smart Controller -48V/60V WireHarness - 6 mm DC/DC Converter - 48V/60Vto12V Instrument Cluster- DigitalwithProblemDetection FrontLight -12V LED Back Light -12V LED Indicators -LED Anti-TheftSystem -12VwithKeylessSystem Flashers - 12V Breaking System - Drum Suspension Front:-Telescopic Fork Rear-Coil Accelerator Withforward /reverseand- 3Speed
2	2 wheeler e-scooty cut model with training facility	Voltage-48V Test Component-3-Phase Outrunner Motor Corrosion Resistance-Yes Motor -BLDC Outrunner Hub Motor, 1KW, 48V Controller-Smart Controller (Compatible with 48V/60V) Wire Harness-6mm EV-grade Harness with Connectors DC-DC Converter-48V/60V Input to 12V Output Instrument Cluster-Digital Display with Fault/Problem Detection-Front and Back Light 12V LED Headlamp Anti-Theft System-12V Anti-Theft with Keyless Start Flashers-12V Relay-Based Flasher Unit Braking System-Mechanical Drum Brakes (Front & Rear) Accelerator-Twist-Grip Throttle with Forward/Reverse & 3-Speed Modes
3	2 Wheeler Test rig with Driving Cycle (Variable load)	Roller based variable load system capable of running on multiple drive cycles for real-world testing. • Field-programmable data acquisitions system for real-time monitoring and analysis. • Field-programmable Battery Management System (BMS) supporting Li-Ion, Lead Acid, and other battery types. • Automated motor loading system that adjusts to different load conditions dynamically. • Full-size vehicle load simulation on a test bed for comprehensive performance evaluation. • Interactive and user-friendly UI for seamless operation and data management. • UI functionalities include saving, analyzing, calculating, exporting, and plotting data for in- depth analysis. • Experimental setup execution via UI, ensuring flexibility in test configurations. • Supports code uploads from MATLAB, Mathematical, Python, and other programming plat forms for custom analysis. • Motor loading setup available for 900W, 1200W and 1500W motors for various testing applications. • Heat analysis of different components to study thermal behavior under load conditions. • Auto/manual acceleration and cutoff functionality for precise control and safety. • Supports standard test cycles including WHTC, WHVC, FTP 72, FTP 75, MIDC, and others for regulatory and performance assessments. • Built in interactive Python IDE within the UI for custom script execution and automation. • Expandable UI with additional features as per user requirements.

4	2-Ton Hydraulic engine crane	Load carrying Capacity- 2 Ton Boom Length - 40 m Product Type- Hydraulic Floor Cranes Finish-Paint Coated Material- Mild Steel
5	3Wheeler simulator with complete working model and data extraction with 15Ah Battery and Charger	Display System-Single Screen Motion System- 3 DOF Installation Service Needed-Yes Voltage-220V Test Component-Smart Indicator, Wiring Components Usage- 3 Wheeler Frequency-50 Hz Chassis-Bare body chassis suitable for training Motor Type-3-phase Inrunner BLDC Motor Motor Rating-1000 W Battery Type-Li-ion / Lead Acid (depending on build) Battery Capacity -15 Ah Battery Voltage-48 V
6	4 WheelerTransmission Electronics& Electrical Training Model and Test Bench with IoT enabled EV Advanced Feature	Drive Wheels-4 Wheel Drive Usage/Application- Training in EV Passenger Car Voltage-220V Frequency-50 Hz Corrosion Resistance Application-Training in EV drivetrain, motor control, and transmission systems-Controller/Inverter EV-grade controller with programmable drive modes Transmission- Single-speed / reduction gear unit (EV-specific transmission)
7	4(FOUR) wheeler buggy simulator with complete working model and data display with battery Pack and charger.	Motor Power Rating-2 – 5 kW Rated Voltage-48 V / 60 V / 72 V (configurable) Peak Torque-50 – 100 Nm Battery Capacity-15 Ah Li-ion / Lead Acid Charger Specification-Compatible Smart Charger (48–72 V), 4–6 hrs charging time
8	4-cyIinder Diesel engine test rig	Max.Power: 74 BHP @ 4000 rpm,Max.Torqe :190Nm @ 2000 rpm,Fuel: diesel,No of cylinders: Four,Bore: 69.9 mm,Stroke length: 82 mm,Starting: Self-start,Working stroke: Four strokes,Cooling: Water-cooled,Capacity: 1248 cc,Battery: 12V, 45A,Alternator: 12V, 45A,Engine oil: SAE 5W-30,Power required :230V, 50Hz, 1 phase DIMENSIONS AND WEIGHT:,Lx W x H: 1200x Go toowebsite Weight (approx.): 410kg
9	4Wheeler Drive Train with MIDC Cycle and Regenerative System (PMSM Motor Test Bench)	Motor Type - Permanent Magnet Synchronous Motor (PMSM) Rated Power-2 kW (customizable as per requirement) Operating Voltage-48V - 96V (as per motor specification) Cooling Method-Air-cooled Drivetrain Layout-Complete 4-Wheeler Powertrain with motor, differential, shafts, and transmission (if applicable) Regenerative Braking-Dynamic regenerative braking with energy feedback to simulated battery Energy Dissipation- Load bank/electronic load for excess regeneration Data Acquisition- USB/PC interface with logging of speed, torque, voltage, current, temperature

10	4Wheeler HIL EV Test Rig with Variable Load (Manual Type)	Type- Hardware-in-the -Loop (HIL) EV Test Rig for 4-Wheeler Test Component - BLDC Inrunner Motor Material - MS Voltage-220V Phase- Single Phase• Includes 1000W BLDC motor, controller, and wire harness for a complete EV power train setup, enabling hands-on training and testing. • Supports IoT-enabled remote monitoring and control, allowing advanced experimentation in EV diagnostics and performance analysis. • Features auto braking, anti-theft braking and remote lock/on functionalities for enhanced security and automation. • Incorporates distance sensing and IoT integration for real-time monitoring, data acquisition, and optimized vehicle control. • Comes with labeled primary and secondary wire harnesses for clear understanding and structured learning. • Facilitates component trouble shooting and diagnostics, enabling -depth study of vehicle components, fault detection, and repair techniques. • Provides hands-on experience in 4-wheeler drive train operations, wiring configurations, and system integrations for comprehensive EV training.
11	Abel Flash Point Tester	Type: Closed-cup Abel Flash Point Tester (Semi-Automatic) Standards: Conforms to ISO 13736, IP 170, IS:1448 (Part 20) Measuring Range: −10 °C to +110 °C (or wider depending on model) Sample Cup Capacity: ~70 ml (standard Abel test cup, brass/stainless steel) Ignition Source: Electric igniter (with option for gas ignition) Temperature Sensor: PT-100 / Digital thermometer, calibrated Heating System: Controlled heating rate per standards; provision for cooling coil/external chiller Stirring: Manual or motorized stirrer as per test method Display / Control: Digital display of temperature and flash point, with safety alarms (auto shut-off on over-temp) Power Supply: 220–240 V AC, 50 Hz, single-phase Safety Features: Over-temperature protection, flame arrestor lid, ignition safety interlock Accessories: Standard Abel test cup with lid, stirrer, igniter,
12	Automatic car washing machine	DIMENSIONS (L X W X H)-WITHOUT RAMP FOR STANDARD TYPE:7000 X 3800 X 3500 (MM),WATER CONSUMPTION:110-120 LTR/CAR,WATER PRESSURE:20-22 BAR AT PUMP DELIVERY,AIR PRESSURE:6 BAR COMPRESSED AIR,POWER:415 V +/- 10 V, 50 Hz 63 AMP MCB,CONTROL PANEL:PLC (PROGRAMMABLE LOGIC CONTROLLER). Pre-installation Requirements: 3 Phase electric supply (4Sq. mm X 4 C) : 415 V +/- 10 V, 50 Hz Up to our control panel.63 Amp, 4 Pole MCB just before the control panel.Overhead water tank from ground level to 15ft height . The min. size of water tank should be 3000 Ltrs. Pipeline from Overhead tank to inlet of Pump should be 2″.6 bar compressed air connection upto our control panel.Y Shape Strainer in the inlet line before our pump (Y-Strainer size- 1 ¼”).Covering / Shed for the entire system(Including pump & Panel, Shed Height- Above 5 Mtr. from ground level to top).Incoming Cable 4 Sq. mm X 4 Core + Earthing.PCC -6″ (150 mm –Thickness).Clear floor area for installation & Underbody pit.We needed Proper drainage line.FRL Unit in pneumatic inlet line.
13	AUTOMOTIVE BATTERY LOAD TESTER	Power Source- Battery Powered Min. Operating Voltage- 12 Volts Measurement Type- Voltmeter Special Features- led Voltage 12 Volts Item Weight- Max 8Kg

14	AUTOMOTIVE ELECTRONIC CIRCUIT	Base Station features 2mm circuit matrix, 12VDC source with battery symbol, 500mA fuse, 1A fuse, push to make switch, push to break switch, 2 position on/off switch, 2 position changeover switch (SPDT), 3 position on-off-on switch, 2 pole changeover (DPDT) switch, Power Switch with indicator. Plug-in Component Resistor 5 Ohm 5 Watt (2pcs), Resistor 10 Ohm 2 Watt (4pcs), Resistor 100 Ohm 2 Watt (4pcs), Resistor 1 kilo Ohm 1 Watt (2pcs), NPN Transistor 2N3904 (2pcs), PNP Transistor 2N3905 (2pcs), NPN Transistor BD139 (2pcs), PNP Transistor BD140 (2pcs), Diode 1N4002 (4pcs), Lamp 1 Watt (2pcs), Lamp 3 Watt (2pcs). Accessories: a.) Experiment manual. b.) Power cord. c.) RED Jumper wire : 25 cm long (3 pcs), 50 cm long (4 pcs) d.) GREEN Jumper wire: 20 cm long (3 pcs), 40 cm long (4 pcs) e.) BLUE Jumper wire: 20 cm long (3 pcs), 40 cm long (4 pcs) f.) BLACK Jumper wire: 25 cm long (4 pcs), 30 cm long (4 pcs) g.) Include Additional Items: h.) Computer Aided Instruction software which should be compatible with Class Room Management System. The CAI contains theory, presentation, workshop job-sheet and student activities with assessment questions. i.) Digital Multimeter
15	AUTOMOTIVE ENGINE MANAGEMENT PRINCIPLE EQUIPMENT	The trainer should be neatly laid out to represent the typical automobile engine with sensors actuators, fuel system, ignition system, emission system and engine control unit. The unit should contains a circuit board with electronics components and micro-controller systems, system diagrams, power supply, electrical test leads, and student experiment manual presented in hard copy and pdf format. The experiment exercise starts with relevant theory of engine management systems and proceed to practical activities using the circuit board, multimeter and oscilloscope for observation, measurement and troubleshooting. Circuit board features: Exhaust gas analyzer and OBDII diagnostic with LCD display, knock sensor, intake air temperature sensor, throttle position sensor, coolant temperature sensor, O2 sensor, MAP sensor, canister purge solenoid, ignition coils, spark plug indicators, fuel injectors indicators, camshaft sensor, crankshaft sensor, idle air valve, EGR solenoid, Engine Control Unit, Ignition switch, engine speed indicator. Accessories: Experiment-manual. Power cord.
16	Battery Charge and Discharge Tester with System and Table	• Battery Charge-Discharge Cycle Test: Facilitates testing of battery performance through multiple charge-discharge cycles. • Battery Protection: Includes charging protection voltage, discharge protection voltage, and capacity settings to safe guard the battery during testing. • Test Steps: The device supports four test phases: charging, discharging, shelving, and cycling. • Charge and Discharge Functions: Equipped with constant current and constant voltage charging and constant current discharge functions for precise control over the process. • Voltage Protection Check: Ensures safe operation by monitoring voltage protection during both charging and discharging. • Safety Features: Includes anti-reverse connection protection to prevent damage from incorrect battery connections.

17	Battery DIY Kit	• One set for complete assembly and testing of battery pack, including all necessary components for hands-on training. • Two sets of soldering rods, soldering irons, and wires for practice and skill development in electrical assembly. • Two sets of BMS (Battery Management Systems) for practical applications and learning about battery management. • Wrapping material and hot gun for insulation and sealing of battery packs. • Two sets of multi meters for measuring and testing electrical parameters during practical exercises. • Two sets of Lithium-Ion Phosphate batteries (one set for demonstration and one set for practice)to cover both theoretical and hands- on aspects. • Additional cells to accommodate replacements in case of damage during practical exercises. • Table-based work station (6ft with racks) for organized and efficient working space during battery packs assembly and testing. • Two movable chairs for comfortable and flexible seating during training sessions.
18	Battery Pack Tester (Charging & Discharging)	• AC 220V±10%, 50/60Hz for stable operation. • Includes charge, discharge, auto-cycle, test data analysis, and the ability to import/export test data. • Compatible with Lead-acid and Li-ion battery packs. • Supports battery packs with voltage ranging from 12V to 84V. • Enables testing of battery performance over multiple charge-discharge cycles. • Includes charge protection voltage, discharge protection voltage, and capacity settings to ensure safe testing. • The device operates through four test phases: charging, discharging, shelving, and cycling. • Features constant current and constant voltage charging, as well as constant current discharge functions for precise control. • Monitors and protects the battery during both charging and discharging processes. • Equipped with anti-reverse connection protection to prevent damage from incorrect battery connections.
19	Diesel Injector Tester with Injector Tester Kit	PRECISION TESTING - Accurately assess injection nozzle performance with advanced testing capabilities.The Injector Tester Kit CR-C is a multifunctional tool designed for testing common rail diesel injectors from leading brands like bos-ch, Den-so, and Del-phi. It includes a main machine, fuel bars, and essential connectors, enabling comprehensive assessments of nozzle performance, including opening pressure, leakage, and spray patterns. Perfect for professionals seeking reliable and efficient testing solutions.
20	Digital Nitrogen Tyre Inflator Machine	Voltage - 230 V Nitrogen Purity -95-99% Display Type - Digital Model Name/Number Nitrogenex Weight - 120 Kg approx Frequency - 40- 50 Hz Output Pressure - 7- 8.5 Kg/cm2 Storage Tank -50- 60 Ltr Suitable For- All vehicle Input Pressure - 8- 10 Kg/cm2 N2 Generating Capacity - 3000- 3500 LPH

21	BENCH DRILLING MACHINE	Bench Drilling Machine- Drilling Capacity: The maximum diameter of the hole the machine can drill, often listed for steel (e.g., 13mm, 20mm, 25mm). Motor Power: The strength of the motor, typically ranging from 1/2 HP to 1 HP. Spindle Speed: The range of rotational speeds, often expressed in RPM. Higher speed ranges are for lighter materials and smaller bits, while lower speeds are for harder materials and larger bits (e.g., 85 to 3224 RPM, 500 to 2800 RPM). Spindle Travel: The distance the spindle can move up and down (e.g., 130mm). Spindle Taper: The type of internal taper for holding the drill bit, commonly MT-2 or MT-3.
22	Bernoulli's Apparatus	Test section: Transparent duct with piezometer tubes - Sump tank: ~50 liters - Pump: 0.5 HP centrifugal pump - Measuring tank: Graduated, 25 liters - Manometer: Differential type - Flow range: 0.5 – 5 LPS - Accuracy: ±1%
23	BMS CAN protocol	• Prevents over-charge and over-discharge, significantly extending the battery pack's cycle life. • Includes over-temperature and under- temperature protection with fan controls for efficient cooling or heating. • Provides multiple methods for controlling chargers, motor controllers, and other external devices, ensuring system compatibility. • Utilizes passive balancing to maximize the usable capacity of the battery pack, improving overall efficiency. • Internal Resistance Monitoring: Monitors the internal resistance of individual cells and measures the capacity of the battery pack for optimal performance. • Uses Coulomb counting and dynamic drift correction to accurately monitor the state of charge (SoC). • Supports a broad cell voltage range, compatible with most lithium-ion batteries and even some Ni MH batteries. • Voltage ranges, current limits, and other settings are easily adjustable in the field for flexibility. • Designed with automotive-grade electrical noise immunity for stable performance in challenging environments. • Features dual programmable CAN interfaces for advanced communication capabilities. • Includes specialized features for Hybrid, Plug-in Hybrid Electric Vehicles (PHEV), and Electric Vehicles (EV). • Comes with software for data logging and programming, enabling efficient system monitoring and updates. • Incorporates programmable thermal compensation to adjust for temperature variations and optimize performance
24	Bomb Calorimeter(Solid and Liquid Fuel)	Working principle: Dynamic and time – controlled External power supply: Voltage rating 115-230 V Input power maximum: 120 W Measurement frequency: 60/50 Hz Calorimeter: Rated Voltage: 24 V DC 5A Fuse: 3 Amp On-time: Continuous Operation Temperature measuring resolution: 0.0001° Measuring accuracy: ± 0.1% Type of bomb: removable O2 filing of decomposition vessel: manual using oxygen filling station Venting of decomposition vessel: manual Water handling: manual Interface: RS – 232C Auxiliary energy: oxygen (purity 99.95%) Operating oxygen pressure: 0 to 55 atm Cooling medium chilled water: cooling water upto 35°C.

25	CAM SHAFT GRINDING MACHINE	CAM shaft grinding Machine-Max. workpiece lengthVaries by model, for example, 600 mm or 800 mmMax. swing diameter70 mm or 228 mmDistance between centers250 mm or 300 mmGrinding wheel sizeE.g., \(304\times 25.4\times 127\) mm or \(500\) mm diameterMax. grinding wheel speedE.g., \(2100\) RPM or \(1650\) RPMControl systemCNC (e.g., Sinumerik 840C) or PLCAxis feed speed (CNC)E.g., \(10\) m/min for X, Y, and Z axesMotor powerE.g., \(7\) HP for the grinding wheel/spindleWeightCan range from approximately \(6,500\) kg to over \(6,100\) kg for universal CNC models
26	Carbon Residue test using Conradson’s Apparatus	It is useful to determine amount of carbon residue when oil is evaporated underspecified Condition. The Apparatus consist of spun sheetironcrucible 25cc capacity, sheetironhoods and sheetironblock on a stand gas burner.
27	Centrifugal Pump Test Rig	Pump: Single stage centrifugal - Capacity: 1–2 LPS - Head: 10–20 m - Motor: 1 HP, 1440 rpm - Measuring tank: 50 liters - Energy meter: Digital/analog - Accuracy: ±1%
28	Charging Station Instruction and Training Kit (Basic Model)	Combo DC Quick Charger Bharat DC Charger Electric Vehicle Charger APP Scan Code / RFID Card Charging. Robust, all weather enclosure for indoor and outdoor use: Ip54. 10kW Model with three 3.3 kW IEC 60309 Socket. DC Rapid Chargers-10kW to 120kW and DC Fast/Ultra Fast Chargers-90kW to 350 kW
29	Computer for Department	Processor: Intel Core i9-13900HK (14 cores, up to 5.4GHz) Memory: 16GB DDR5 RAM Storage: 1TB SSD Graphics: Integrated Intel UHD Graphics Operating System: Windows 11 Pro Connectivity: Wi-Fi 6E, Bluetooth 5.2, USB4, HDMI 2.0 Included Accessories: Wireless keyboard & mouseMonitor Specification Size: 24 inches Resolution: Full HD (1920x1080)
30	Conradson's apparatus	Standard Compliance ASTM D189: Standard Test Method for Conradson Carbon Residue of Petroleum Products ISO 6615: Petroleum products — Determination of carbon residue — Conradson method IS 1448 (Part 122): Indian Standard for carbon residue determination Key Components Porcelain Crucible: Approximately 30 mL capacity Skidmore Crucible with Monel Cover: For intermediate heating Monel Crucible with Cover: For final heating stage Monel Hood with Bridge: To contain fumes and direct heat Refractory Block Insulator Ring: To support crucibles and minimize heat loss Meker-Type Gas Burner: For controlled heating Tripod Stand: With nickel-chrome wire triangle for burner support Technical Specifications Sample Heating: Subjected to high temperature for a fixed period

31	COOLING SYSTEM COMPONENTS ARRANGED ON A STAND WITH ELECTRIC MOTOR	CUTSECTIONWORKINGMODELOF COOLING SYSTEM: This model is made out of original used parts, will be suitably sectioned to demonstrate the internal construction details like radiator, fan blade, water pump and hose showing the minute information, and working of the same, the model will be suitably painted and mounted on a Paint finished metal stand. A motor will be coupled to the water pump, so that the flow of fluid within the System can be demonstrated.
32	CRANK SHAFT GRINDING M/C	Crank Shaft Grinding Machine-Maximum grinding length: The maximum length of the crankshaft that can be ground (e.g., 1050 mm to 3150 mm). Maximum grinding diameter: The maximum diameter of the workpiece that can be ground (e.g., 250 mm to 400 mm). Swing over table: The maximum workpiece diameter that can be swung over the table (e.g., 480 mm to 950 mm). Center height: The height from the table to the center of the workpiece (e.g., 240 mm to 490 mm). Max. distance between centers: The maximum length between the headstock and tailstock centers (e.g., 1100 mm to 3000 mm). Max. weight between centers: The maximum weight of the workpiece that can be handled (e.g., 175 kg to 750 kg). Grinding wheel motor: The power of the motor driving the grinding wheel (e.g., 5 HP to 10 HP). Headstock spindle motor: The power of the motor for the headstock spindle (e.g., 0.75 HP to 2 HP). Hydraulic power motor: Often includes a motor for the hydraulic system, which can control features like the grinding wheel slide
33	Cut section & open models for hands-on training of EV equipments with stand, instruction board and table	•Provides a detailed open section view of a BLDC in-runner motor for understanding internal components and operation. •Features an open section model of a hub motor, allowing for an in-depth exploration of its structure and working mechanism. •A cut model of the differential for a clear understanding of its components and operation in the drivetrain. •An open section of the controller to examine the internal circuitry and working principles. •Provides an open section of the DC-DC converter to understand voltage conversion and power management. •A transparent open model of the instrument cluster for a detailed examination of its features and functionality. •Cutaway models of various battery cells to study their construction and internal components. •An open model of an SMPS charger for exploring its design and working mechanism. •A cut model of the Battery Management System (BMS), displayed with a table for easy access to key features and data.
34	Cylinder Bore Gauge	Operating distance 50-160mm Item Weight 450 g Item model number 2322-160A Included Components 2322-160A Are batteries included? No Lithium battery energy content 1 Watt Hours Lithium Battery Packaging Batteries packed with equipment Lithium battery weight 1 Grams
35	Cylinder Boring Machine	Electric Motor 1440 RPM Voltage- 220 V Power - 3/4 HP Machine Type - Automatic model Cylinder Reboring Machine
36	CYLINDER HONING MACHINE	CYLINDER ENGINE HONE MACHINE KIT-45mm to 65mm Honing Machine + 8Set Stones

37	Dead Weight Pressure Gauge Tester	Pressure gauge range: 0–7 kg/cm² - Weights: 0.5–5 kg - Plunger dia: 10–20 mm - Accuracy: ±0.25% of FS
38	DEMONSTRATION BOARD OF WORKING MODEL MPFI SYSTEM WITH MOTORIZED CONTROL	INSTRUCTION BOARD FOR ELECTRONICFUELINJECTION SYSTEM OF GASOLINE ENGINE.(MPFI)MOTORISED The Instruction board adopts the real components of electronic fuel injection system to illustrate engine fuel system structure and working principle. The components are rigged onto colour circuit diagram. And made functional for the demonstration purpose.
39	Dent Spoter Machine	Dent Puller Spot Welder Machine Single Phase 110V 220V 380V 3800A Output Variable Pulse Frequency Control Power Supply : 110V / 220V / 380V Maximum Current : 3800A Output Voltage : 6.8V Welding Thickness : 0.8 + 1.2 mm Cable : 2 × 2m × 70mm² Input Power : 2 KW Input Current : 16A Power Control : Variable frequency pulse
40	Diesel & Petrol Smoke Meter	NOx* Electrochemical 0-5000pm 1ppm +-5% Sox* Electrochemical 0-5000pm 1ppm +-5% Lambda 0.2-2.0 0.001 AFR Light absorption 0-30% 0.01% HU Light absorption 0.99.99% 0.01% K Battery/Magnetic 0-21.439m 0.001m RPM Battery/Magnetic 400-10000 10 +-2% Piezo/OBD 400-10000 1 +-2% OT RTD 0-1500 C 10 C +-30C Operating Temperature 0-500 C Measuring Gas Intake 1 Ltr/min Response Time <5sec Linearity/Repeatability /Drift +-0.1m Warm-up Time (>-250c) <3min Zero/Gas Span Calibration Automatic Display Type LCD Keyboard Membrane keypad(3X4) Power Supply 12VDC+_1.2V or 230VAC +_20% Power 75W Dimension 480x170x260mm(L x B x H) Weight 8kg Parameter Range Resolution Accuracy co NDIR 0-15% 0.001% +-5% HC NDIR 0-20000ppm 1ppm +-5% CO2 NDIR 0-20% 0.01% +-5% O2 Electrochemical 0-25% 0.01% +-5%
41	Dye penetrant kit, Magnetic particle tester	To perform the experiment Crack detection . DPT: Cleaner, penetrant,developer sprays; Magnetic tester: 230 V AC, 1000–2000 A
42	Electric Valve Grinding Machine	CUSTOM SPEED CONTROL - Two-speed settings (200 & 300 rpm) POWER PACKED EFFICIENCY - 150W motor delivering consistent grinding power for professional results. PRECISION ENGINE REVIVAL - Restore engine valves with surgical accuracy for peak performance. STABLE PORTABLE DESIGN - Lightweight max 4kg-6kg build with rubber suction pads ensures steady operation anywhere. VERSATILE VALVE COMPATIBILITY - Handles valves up to 130mm-150mm, fitting a wide range of car engines effortlessly. The 220V Electric Valve Grinding Machine corded electric tool designed for precise valve maintenance in car engines. Special Featuring a 150W motor, adjustable dual-speed settings, and a 130mm valve capacity,

43	Engine control system with Customized pannel board for all sensors used in vehicle with testing	•Uses OEM components for easy, safe, and realistic training that builds confidence. •Learn about multipoint petrol(gasooline) injection systems and understand the interaction between fuel supply, exhaust and ignition systems. Analyze the electrical circuits of electrical components for multipoint petrol(gasoline) injection system engines, understand about the wiring diagrams and presented components on it. .Understand and analyze high and low-pressure fuel supply systems, injected fuel quantity, spray pattern quality. .Understand the operation and troubleshooting of modern ignition systems. •Demonstrate and understand the synchronization between crankshaft and camshaft in engine operation •Monitor and measure electrical parameters with a real-time data oscilloscope, multimeter, scan tool, or display parameters on voltmeter installed on the stand panel
44	Engine decarbonizing machine	1. Operation type - Automatic 2. Power sources - Electricity 3. Carbon Cleaning Time - 20-30 Minute 4. Operating Temperature - Under 40 Degree 5. Usage/Application - Cleaning Carbon of Any Engine 6. Work Engine Capacity - Upto 8000 CC 7. Different detachable adapters for connecting machine with vehicle make it much easier for operation. 8. Digital timer is provided for easy operation / controls of machine. 9. Machine can be operated either on 230 vac ± 10% or 12 vdc @ 10 Amp Battery supply. 10. Heavy duty pressure regulator is provided to decarbonize vehicle at desired pressure. 11. Heavy duty operating switches given for maintenance free operation. 12. Quick release couplers (qrc) are provided at the end of connecting pipes to avoid chemical spillage. 13. Machine will sounds up buzzer at the end of decarbonizing process 14. Transparent oil level indicators available on each tank. 15. Machine will stop pump in case of low chemical level for pump safety. 16. Engine decarbonizing machine should decarbonize any petrol and diesel engine of

45	MULTI CYLINDER DIESEL ENGINE TEST RIG	1. Operation type - Automatic 2. Power sources - Electricity 3. Carbon Cleaning Time - 20-30 Minute 4. Operating Temperature - Under 40 Degree 5. Usage/Application - Cleaning Carbon of Any Engine 6. Work Engine Capacity - Upto 8000 CC 7. Different detachable adapters for connecting machine with vehicle make it much easier for operation. 8. Digital timer is provided for easy operation / controls of machine. 9. Machine can be operated either on 230 vac ± 10% or 12 vdc @ 10 Amp Battery supply. 10. Heavy duty pressure regulator is provided to decarbonize vehicle at desired pressure. 11. Heavy duty operating switches given for maintenance free operation. 12. Quick release couplers (qrc) are provided at the end of connecting pipes to avoid chemical spillage. 13. Machine will sounds up buzzer at the end of decarbonizing process 14. Transparent oil level indicators available on each tank. 15. Machine will stop pump in case of low chemical level for pump safety. 16. Engine decarbonizing machine should decarbonize any petrol and diesel engine of all type of Vehicle.
46	FOUR WHEELER DRIVING TRAINING SIMULLATOR	System Version i5 system 980 graphics card Application/Usage Driver Training FEATURES: 1. 3 in 1 in built simulator - Truck, Bus and Car 2. Vibrated Electronic Power Steering / Manual Power Steering 3. Virtual Reality of Yaw, Roll and Pitch at cornering and braking 4. HD Resolution with wide angle of 210deg 5. Step by Step Voice command/ Guidance 6. Turn by Turn Navigation with Bird"s eye view camera 7. Automatic and 5 - speed Mechanical gearbox 8. Multi Language Voice commanding - Tamil, English, Hindi, Malayalam, Guajarati, Marathi, etc.. 9. Real function of Wiper, Horn and low/high beam 10. 2.1 sound system 11. Real circumstance display on IVRM/OVRM"S (mirrors -internal and external) 12. Scenario"s - Day, Night, ECO mode, Traffic, City, Highway, Rain , Snow, Fog, Day-Night intermediate, etc… 13. 3nos of 24 -inch Full HD LED monitors 14. i5 CPU with industrial cabinet and 980 graphics card 15. 40 Driver Training Lessons with auto report generation. 16. 3-year warranty on Computer 17. 5- year warranty on Cabin and Auto parts 18. 1- year warranty on Drive unit and Display unit 19. Life time software license with Key and free updation 20. Life time online support and updation 21. Wireless keyboard and mouse 22. Zero Maintenance Simulator - no mechanical parts, no wear
47	Francis Turbine Test Rig	Turbine type: Francis, reaction - Output: 1–2 kW - Head: 10–20 m - Pump: 3 HP centrifugal - Dynamometer: Mechanical/Electrical - Sump: 100 liters - Accuracy: ±1%

48	Kaplan Turbine Test Rig	Turbine type: Kaplan, axial flow - Output: 1–2 kW - Head: 10–15 m - Pump: 3 HP centrifugal - Dynamometer: Mechanical/Electrical - Sump: 100 liters - Accuracy: ±1%
49	Fuel Pump Test Bench	Material-Steel Torque-15 ft.lbs Power-5 HP RPM-3000 RPm Clockwise and anto clockwise strokes- 100-1200 strokes
50	TOOL TROLLEY 6 drawer	Product Type Tool Trolley Load Capacity 150kg Product Dimension (LxBxH) 625mmx450mmx985mm Item Weight 45kg
51	Hybrid EV model	1. Engine works properly and smoothly, it can show the structures and work processes of hybrid gasoline engine; 2. It can clearly show the working process of the gasoline engine and three-phase AC motor. 3. The test panel is printed with complete electrical control system schematics and mounted with test terminals, the signal parameters such as voltage, resistance, frequency, etc. of the sensors and actuators can be tested by multimeter or oscilloscope. 4. The trainer is equipped with diagnosis seat, it can be connected to scanner to read or clear fault codes, and read data stream and can be used for other engine self-diagnosis function. 5. The trainer is equipped with fault setting module: manual fault set module. Training courses Function introduction of main components of hybrid engine; Demonstration of hybrid engine running, starting, accelerating etc; Measurement of the signals of the sensors and actuators by multimeter or oscilloscope; Read fault code, data stream and remove faults through the scanner; Fault set and troubleshooting.
52	Impact of Jet Apparatus	The setup consists of a two sided clear fabricated section Water is fed through a nozzle and discharged vertically to strike a target carried on a stem which extends through the cover. A weight carrier is mounted on the upper end of the stem. The dead weight of the moving parts is counter balanced by a compression spring. The vertical force exerted on the target plate is measured by adding the weights supplied to the weight pan until the mark on the weight pan corresponds with the level gauge. A total of two targets are provided, a flat plate and a hemispherical cup.

53	Impact Testing Machine(Combined Izod & Charpy)	Electronic digital display Simple construction of pendulum izod so that izod or charpy machine, machine can build at sight Interchangeable stickers for izod & charpy positions Positive pendulum lock in izod & charpy positions Safety guard for protection A braking arrangement for stopping the pendulum Optional printer interface Impact Testing Machine-Digital FEATURES: Suitable for Charpy & Izod Impact tests on various materials. Works on Pendulum principle. Rigid designs of machine frame & other parts assure minimum energy absorption during fracture, which results in improved test accuracies. The highly stressed & wearing parts like support blocks & strikers are of special alloy steels duly heat-treated. Safety guard for the operator is provided. Initial potential energy for Charpy is 300 Joules & for Izod is 170 Joules with a resolution of 0.5 Joules Pendulum drop angle for Charpy is 140° & for Izod is 90°. OPTIONAL ACCESSORIES: Caliper gauge for checking V notch for Izod & Charpy. Templates for checking 10 x 10 mm cross-section of Izod / Charpy test specimen. Depth notch gauge including V & U notch gauges for checking depth below V/U notch, angle and radius. Izod support for 0.450″ dia Izod round specimen. Self centering tong for quick and accurate setting of Charpy test specimen
54	Inside Micrometer & Telescopic Gauge	The instrument consists of calorimeter with burner on tripod stand gas flow meter and Pressure governor. The Calorimeter Measure the Calorific value of Gaseous Fuel From 120B.Th.u to 300 B.Th.u(1000to 2600 K.Cal/CuMeter). It Also consist of Measuring jar 2lit capacity and 50 ml capacity with rubber tubing of gas water connection.
55	INTEL IN BUILT CPU DESKTOP WITH UPS	Processor: Intel Core i9-13900HK (14 cores, up to 5.4GHz) Memory: 16GB DDR5 RAM Storage: 1TB SSD Graphics: Integrated Intel UHD Graphics Operating System: Windows 11 Pro Connectivity: Wi-Fi 6E, Bluetooth 5.2, USB4, HDMI 2.0 Included Accessories: Wireless keyboard & mouseMonitor Specification Size: 24 inches Resolution: Full HD (1920x1080)
56	Intigrated EV system	EV Systems Integration Frequency (in Hz): 0 – 3000 Hz Testing Current Means:Eddy Current Voltage Measurement Accuracy: ±0.01% Load Capacity (in kg): upto 1000 kg Feature: Reliable and Safe Performance Application: Industrial, electric vehicles
57	Junker Gas Calorimeter (Gaseous Fuel)	The instrument consists of calorimeter with burner on tripod stand gas flow meter and Pressure governor. The Calorimeter Measure the Calorific value of Gaseous Fuel From 120B.Th.u to 300 B.Th.u(1000to 2600 K.Cal/CuMeter). It Also consist of Measuring jar 2lit capacity and 50 ml capacity with rubber tubing of gas water connection.
58	Kinematic Models	Wooden/acrylic models of 4-bar, slider crank

59	Laser welding machine	Laser Welding Machine(1500w) Material-Mild Steel Frequency-50 Hz Automation Grade-automatic Phase-1 Phase Voltage-220 V
60	Mechanism Model with Tracing Table	For graphical method demonstration
61	Metallurgical Microscope	50x–1000x magnification, trinocular, LED, digital camera
62	MIG welding machine 100-200 volt	Voltage : 230V +/- 10% Phase : 1 phase Frequency : 50HZ +/- 2.5% Cooling : Forced Air Welding Current : 20-160 minimum Amps Open Circuit voltage : 80-90 V maximum.
63	Morse Test Multi Cylinder Petrol Engine Test	Petrol Engine Test Rig (Computerized) Fuel type- Petrol/Diesel Number of cylinder -4 Engine Size -1200cc Cooling type- Liquid Ignition – CRDI/ GDI/Spark Ignition. Temperature Indicator-Digital Speed measurement –Digital RPM indicator Dynamometer type –Electric Brake Phase-Single/three phase Voltage -220v Material –Mild steel Specially for Morse Test The equipment is instrumented so that the engine could be performed. 1.BHP Measurement 2.IHP Measurement(by Morse test) 3. Fuel Consumption Measurement 4.Air tank Measurement 5.Measurement of Heat Rejected to water jacket 6.Heat balance Sheet 7. Plotting of torque and power curves 8. Determination of volumetric efficiency and lambda (fuel-air ratio) 9.Overall engine efficiency A solid welded frame on rollers carries the entire setup. Hazardous areas such as hot surfaces and rotating parts are covered with perforated plates. The connection to the brake is made via a rotationally elastic coupling with a jointed shaft. The engine is attached to the load unit by fasteners. The engine is fitted with sensors that measure the temperatures and the cooling water flow rate. The switch cabinet contains all of the electronic equipment for managing the engine (factory set). On the switch cabinet are an ignition key, an operating time counter and warning lamps. Data is transferred between the load unit and the engine via a data cable connecting the switch cabinets for the two units. A starter battery is also housed in the frame. Four Stroke Four Cylinder Diesel Engines Test Bench
64	Motorized Gyroscope Apparatus	0–2000 rpm, digital tachometer

65	MPFI Injector Tester & Cleaner	Weight 15kg Height 508.0mm Width 381.0mm Depth 304.8mm Timer Automatic Digital Pressure Control Regulator Type Switches Digital Keypad Controls Specific To Operation Warning buzzer Siren/Whistle Power Source 220V AC/12V DC (Vehicle Battery) Features: Real RPM Digital Display upto 3100 rpm Tests Available - Leak Test, Flow Test, Pulse Flow Open Flow & Equalisation test Only machine with Back Light System for better visualization Highly Precise "per hole" Spray Pattern Visibility CNC made Universal Aluminum Injector Rail for Rust free finish It cleans all European and Japanese MPFI (Top Fed) Systems Unique borosil glass made funnels with Stop Cock Spray quantity measurement from 0 - 25ml Fluid Pressure Control Regulator Max. Pressure 0 to 60 pounds for faster & efficient cleaning Storage compartment bucket for wet injectors Easily changeable filter fitted outside the machine
66	Orificemeter Test Rig	Orifice diameter: 10–20 mm - Material: Brass/SS - Manometer: U-tube, differential - Pump: 0.5 HP centrifugal - Measuring tank: 25 liters - Sump tank: 50 liters - Accuracy: ±1%
67	Painting booth with hot chamber, with all accessories	1. Overall dimension approx. (L x B x H) – Without Ramp mm 6865 x 5260 x 3130 7115 x 5260 x 3130 3 Internal dimension (L x B x H) mm 6750 x 3720 x 2430 7000 x 3720 x 2430 4 Type – Direct Drive Centrifugal Backward Curved Direct Drive Centrifugal Backward Curved 5 Air flow volume m3/ hr ≥ 21,000 ≥ 21,000 6 Motor power rating kW/hp 3.7 / 5 3.7 / 5 7 Mounting position – Inside blower box Inside blower box 8 Average Illuminance inside Booth lx > 1000 > 1000 9 No. of Tube Lights Nos. 32 32 10 Air velocity m/s > 0.2 > 0.2
68	COMMERCIL VEHICLE CHASSIS	Category of Vehicle for which Chassis to be used Light Commercial Vehicle Type of Chassis- Chassis without Face Cowl Type of Fuel-Diesel Vehicle Emission Compliance-BS VI Total Number of Rear Tyres-4 Maximum Engine Power Range (in KW) - >100 ≤ 200 Front Vehicle Brake-Drum Brake Rear Vehicle Brake-Drum Brake Vehicle Transmission System-Manual Type of Steering-Power Vehicle Air Intake System-Turbocharge Intercooled Axle Configuration-4 X 2 Gross Vehicle Weight (Kg) (Kerb Weight of the Vehicle + Payload)- 9500 kilogram (Approx)

69	Rotating Engine Stand	Load carrying capacity - 1000Kg Rotating Engine Stands are heavy-duty supports designed to hold and rotate engines safely during repair, rebuilding, or maintenance. Constructed with a strong steel frame and adjustable mounting arms, they allow 360° rotation for easy access to all sides of the engine. Ideal for automotive workshops, garages, and engine rebuilding shops, these stands provide stability, convenience, and efficient workflow.
70	Transmission Stand	Base Dimensions- 600mm x 600mm (Approx) Load Capacity - 500kg Lowered Height - 1100mm(Aprox) Raised Height - 1800mm(Aprox)
71	Pelton Turbine Test Rig	1–2 HP motor, 10–15 m head, digital load measurement
72	Pensky & Martin Apparatus	Type: Closed Cup Flash Point Tester (Manual / Semi-Automatic / Automatic) Standards: Conforms to ASTM D93, ISO 2719, IP 34, IS:1448 (Part 21) Measuring Range: Ambient to 400 °C (typical) Sample Cup Capacity: ~75 ml (standard brass/stainless steel test cup with cover) Ignition Source: Electric igniter (with option for gas flame) Temperature Sensor: PT-100 / Digital thermometer, calibrated Heating System: Electrically heated metal block or oil bath with controlled heating rate (as per method) Stirring: Motorized stirrer with variable speeds (per A/B/C test procedures) Display / Control: Digital display of sample temperature & flash point; programmable heating rate; auto detection in automatic models Power Supply: 220–240 V AC, 50 Hz, single-phase Safety Features: Over-temperature protection, flame arrestor lid, ignition safety interlock Accessories: Standard test cup with lid, stirrer, igniter, thermometer/sensor, calibration certificate, operation manual
73	4 cylinder PETROL ENGINE (BS-VI)	Engine Displacement: 1493 cc Engine Type: Petrol engine Cylinders: 3 Max Power: Approx value 70 bhp @ 3500 rpm or Torque: 210 Nm @ 1600-2200 rpmFuel Type: Petrol Fuel Tank Capacity: 50 Liters Emission Compliance: BS VI 2.0
74	4 cylinder DIESEL ENGINE (BS-VI)	Engine Displacement: 1493 cc Engine Type: diesel engine Cylinders: 3Max Power: Approx value 70 bhp @ 3500 rpm or Torque: 210 Nm @ 1600-2200 rpmFuel Type: Diesel Fuel Tank Capacity: 50 Liters Emission Compliance: BS VI 2.0
75	Single cylinder Petrol Engine Cut Model	•Type: 4-Stroke Spark Ignition (SI) Engine, Air-cooled •Construction: Precisely sectioned (cut-open) model with all major components visible •Surface Finish: Color-coded internal parts for easy identification and learning •Major Components Displayed: Cylinder, piston, piston rings, crankshaft, connecting rod, camshaft, valves, rocker arm, carburetor, spark plug •Operation: Hand operated and/or electrically motorized for continuous demonstration •Mounting: Rigid Mild Steel fabricated frame with anti-vibration base •Safety Features: Transparent protective guard for rotating components •Educational Features: Demonstrates complete suction, compression, power, exhaust strokes •Utility: Suitable for ITI/Polytechnic engine fundamentals training
76	Pipe Fittings Loss Apparatus	Sudden expansion/contraction/bends setup

77	Pipe Friction Apparatus	Galvanized pipe setup with manometers Pipe sizes: 12 mm, 18 mm, 25 mm, 32 mm , 40mm, 45mm, 50mm dia - Length: 3-8 m each - Pump: 0.5 – 1 HP centrifugal - Manometer connections at intervals - Sump: 50 liters - Flow range: 0.5 – 5 LPS - Accuracy: ±1%
78	Pipe Losses Apparatus	Fittings: Sudden contraction, enlargement, bends, elbows - Pipe diameters: 12–25 mm - Pump: 0.5 HP centrifugal - Sump tank: 50 liters - Manometers provided - Flow range: 0.5 – 5 LPS
79	Plastic Fusion Equipment	Repairs vehicle plastic parts like, Bumpers,Grills,Head light repair. Integrated staples Adjustment of power settings for different hard plastics Different staples for reinforcing plastic High profitability – avoids replacement by repairing plastic parts Approximate Parameters 1Dimensions 180 x 90 x 90 mm 2 Power supply 230 V , 50 Hz 3 Amperes 1 Amp 4 Weight 2 kg
80	PMSM motor training system	Power Supply- 230v IoT Connectivity-Wi-Fi / Ethernet Data Interface-Web Dashboard / App Dimensions- 1500 × 900 × 1200 mm The E-Vehicle Drivetrain Trainer equipped with a Permanent Magnet Synchronous Motor (PMSM) integrates advanced electric propulsion technology with IoT-enabled real-time monitoring. Designed for modern electric vehicle training, it provides hands-on experience in motor control, power electronics, and data analytics. The system supports remote diagnostics and performance tracking, making it perfect for automotive engineering labs and research centers. Key Features High-efficiency PMSM motor with precise speed and torque control Integrated IoT module for remote monitoring and data logging Real-time performance dashboard accessible via PC/tablet Modular drivetrain including inverter, battery simulator, and motor Fault simulation and troubleshooting features Compact, safe, and rugged training setup Suitable for EV design, testing, and maintenance courses Supports CAN bus communication for real vehicle integration

81	Port timing diagram of Diesel engine Model	• Combined demonstration apparatus suitable for both Spark Ignition (SI)- 01 no. • Compression Ignition (CI) engines- 01 no. • Precision-engineered rotating disc mechanism with clearly engraved crank angle markings from 0° to 720° • Accurate indication of inlet valve/port opening & closing, exhaust timing, ignition timing (petrol engine) and fuel injection timing (diesel engine) • Equipped with fixed pointer/indicator for precise crank position tracking • Front side provided with transparent acrylic/plexiglass cover for safe and clear visualization • Smooth manual rotation with provision for optional low-speed geared motor operation • Disc and markings made of corrosion-resistant material with long-lasting print/engraving • Mounted on heavy-duty powder-coated Mild Steel frame with proper base support • Suitable for classroom demonstration and laboratory practical training
82	Port timing diagram of Petrol engine Model	• Combined demonstration apparatus suitable for both Spark Ignition (SI)- 01 no. • Compression Ignition (CI) engines- 01 no. • Precision-engineered rotating disc mechanism with clearly engraved crank angle markings from 0° to 720° • Accurate indication of inlet valve/port opening & closing, exhaust timing, ignition timing (petrol engine) and fuel injection timing (diesel engine) • Equipped with fixed pointer/indicator for precise crank position tracking • Front side provided with transparent acrylic/plexiglass cover for safe and clear visualization • Smooth manual rotation with provision for optional low-speed geared motor operation • Disc and markings made of corrosion-resistant material with long-lasting print/engraving • Mounted on heavy-duty powder-coated Mild Steel frame with proper base support • Suitable for classroom demonstration and laboratory practical training • Clearly labeled components for easy understanding by students
83	Pouring Equipment Ladles (Hand-held)	Material: Typically constructed from mild steel or stainless steel for durability and heat resistance. Capacity: Ranges from ¼ lb to 30 lb of aluminum capacity, suitable for various metal pouring needs. Design: Conical Shape: Facilitates controlled pouring and minimizes spillage. Handle: Equipped with a heat-resistant handle to ensure operator safety during use. Applications: Ideal for sampling, pouring, and metal transfer in non-ferrous foundries.
84	Reciprocating Pump Test Rig	- Pump: Single/Double acting - Capacity: 0.5 – 1 LPS - Head: 10–15 m - Motor: 1 HP, 1440 rpm - Pressure gauges: 0–10 kg/cm² - Sump: 50 liters - Accuracy: ±1%

85	Redwood Viscometer	Redwood Viscometer No. 1 – for liquids having low viscosity (Redwood seconds < 2000). Redwood Viscometer No. 2 – for liquids having high viscosity (Redwood seconds > 2000). Measuring Range: Redwood No. 1: For fuels, oils, and liquids with flow times up to 2000 seconds. Redwood No. 2: For lubricating oils and viscous liquids with flow times above 2000 seconds. Conformance Standard IS:1448 (P: 25) / IP 70 / ASTM D445 equivalents. Construction Details: Oil Cup: Brass, precision machined, with an orifice at the bottom. Orifice: No. 1: 1.70 mm diameter. No. 2: 3.80 mm diameter. Jet (Nozzle): Hardened steel, replaceable. Receiver Flask: Graduated, 50 ml capacity (to collect efflux). Bath: Copper bath for heating medium (water, glycerin, or oil depending on test temp). Heating: Electrically heated with immersion heater or gas burner. Temperature Control: Thermometer provision; bath temp controllable up to 95°C (with water) and up to 150°C (with oil). Stirring: Manual or mechanical stirrer for uniform bath temperature. Dimensions: Compact bench-top design, approx. 350 × 350 × 600 mm (varies by manufacturer). Accessories: Two thermometers: Bath thermometer (up to 100/150°C), Oil cup thermometer Stopwatch for efflux time measurement
86	Rockwell Hardness Testing Machine	Test Scales: HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRR, HRP, HRS, HRV, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T Test Forces: Minor Load: 10 kgf (98.07 N) Major Load: 60 kgf (588.4 N), 100 kgf (980.7 N), 150 kgf (1471 N Indenter Types: Diamond cone (120°), 1/16" (1.5875 mm) carbide ball, 1/8" (3.175 mm) carbide ball metallographic.com Display: Digital LCD with backlight Data Output: RS-232C, USB Dwell Time: Adjustable (1–99 seconds) Maximum Specimen Height: Up to 180 mm Dimensions: Approximately 523 mm (W) × 235 mm (D) × 780 mm (H) Power Supply: 120V AC (±10%), 60Hz
87	SAYBOLT VISCOMETER APARATUS	Accurate viscosity determinations of petroleum liquids at temperatures from ambient to (250°C) PID controller maintains (±0.03 to 0.05°C) temperature uniformity while protecting from over-heating Built-in cooling coil consistently circulates tap water or refrigerated coolant Capacity: 4-6 viscometer tubes. Electrical Requirements: 220-240 V 50/60 Hz, single phase Overall Dimensions (Approx.) - 280 X 220 X 480(L X W X D) mm Weight (Approx.) - 3.250 Kg
88	HAND OPERATED SPOT WELDING MACHINE	Hand Operated Spot Welding Machine Voltage -415V to 420V Operation - Automation Grade/ Semi-Automatic Material Thickness - upto 4 mm Current Control Regulator Cooling Air Cooled Cable Length - minimum 3 meters

89	Spring Testing Machine	Ram Stroke(mm) 200 millimeter Pair of compression plated diameter(mm) 250 millimeter Distance between trolleys adjustable (mm) 500-2150 Measuring Range 0-100 Load range with accuracy of measurement +/-1 percentage (kN) 2-100 Vertical travel of table 0-400 Maximum Capacity (KN) 200 Standard IS:1135-1984 Straining/speeds (mm/min) 0 - 125 Resolution of piston movement (Displacement) 0.1 millimeter Load Resolution (20000 counts full scale)(N) 5 Width of recorder chart (mm) 150 millimeter Table size(mm) 250@2400
90	Super fast EV charging station (30 kw DC)	Combo DC Quick Charger Bharat DC Charger Electric Vehicle Charger APP Scan Code / RFID Card Charging. Robust, all weather enclosure for indoor and outdoor use: Ip54. 10kW Model with three 3.3 kW IEC 60309 Socket. DC Rapid Chargers-10kW to 120kW and DC Fast/Ultra Fast Chargers-90kW to 350 kW
91	SUV for driving practice of students	Diesel engine, approx 2.2 L displacement Power output around 170 hp Torque approx 300 Nm 6-speed manual transmission Seating capacity: 7-seater Fuel tank capacity: 60 litres Suspension: Double-wishbone (front), Multi-link (rear) Tyres: 235/65 R17 Dimensions approx: 4450 mm (L) × 1820 mm (W) × 1995 mm (H) Wheelbase approx: 2680 mm Brakes: Front disc, rear drum
92	Tap & Die Set	Metric M6–M20 set
93	Torsion Testing Machine	Capacity: 40–100 kN; Accuracy: ±1%; Crosshead travel: 600–800 mm; Attachments: shear, extensometer Fully digital testing system with high precision control and accuracy, includes automated computer control of test methods giving simplicity of operation. High resolution load cells with accuracies better than +/-0.5% down to 1/1000th of the load cell capacity. Automatic recognition of load cells and extensometers, with instant calibration check facility. 800% overload capability of load cells without damage. High efficiency pre-loaded self cleaning ballscrews for fast, quiet testing. Fitted with sealed for life lubricated end bearings. Crosshead guidance system providing precise alignment and smooth running.
94	TRANSMISSION/ GEARBOX DEMO KIT	Cut section (Running model) of synchromesh gear box to show Working principle mounted on a demonstration bench in working condition to show motion of all parts with motorized.

95	Try Square, Surface Plate	Cast iron plate 600x600 mm
96	Universal Testing Machine (UTM)	Load Capacity: Ranges from 5 kN to 2000 kN, depending on testing needs. Test Types: Tensile, compression, bending, shear, peel, tear, and cyclic tests. Frame Construction: Robust, dual-column design with precision alignment for superior axial stiffness. Crosshead Speed: Typically ranges from 1 mm/min to 1000 mm/min, allowing precise control over loading rates. Accuracy: Load Measurement: ±0.5% of reading down to 1/1000 of load cell capacity. Displacement: Resolution of 0.01 mm. Power Supply: Usually operates on 220V/50Hz or 440V/60Hz, depending on the model and region. Control System: Digital controllers with software interfaces for data acquisition and analysis.
97	Upholstery Tool Kit	Sewing machine, foaming tools
98	Valve Refacing Machine	Valve stem capacity- 6 to 14 mm Valve angle adjustment range - 0 to 90 degree Valve head capacity -Up to 90 mm Grinding wheel size (in mm) - Minimum@ 127 x 12.5 x 15.5 Grinding wheel spindle- Minimum @4000 RPM Work head spindle -175 RPM Power required - Max @ 0.5H.P.200/220 Votls A.c
99	Vehicle scannar for diagnosis	High quality Advanced ECU Diagnostic Tools supported with ESI(tronic) software for vehicle diagnosis and troubleshooting. Features: Simpler, easier Bluetooth connectivity Integrated wireless interface for connecting to a PC/ laptop Single Channel Multimeter function (Yellow/ Blue) Supports Windows XP/Vista/7 Connects to all current laptops/ PCs via USB interface Quickly and easily adaptable Case and connector cables suited to a workshop environment Integrated replaceable ISO-CAN exchange adaptor Interfaces - SD, Diagnostic cable - Multimeter - USB interface Scope of Supply: Device with integrated exchange adaptor (IBox01) Bluetooth USB adaptor OBD diagnostic cable Uni 4 adaptor cable Network component with network connector cable 2x measuring cable Ground cable USB cable Carry case
100	Venturimeter Test Rig	Venturimeter: 25 mm diameter throat Material: Acrylic/Brass Manometer: U-tube, differential Pump: 0.5 – 1 HP centrifugal pump Sump tank: 50 liters Flow range: 0.5 – 5 LPS Accuracy: ±1%
101	Watt Governor Apparatus	Spring controlled, variable speed motor

102	Porter Governor Apparatus	Sleeve: A movable sleeve that connects to the arms and is linked to the fuel supply mechanism .Power Supply: Typically 230V AC, single phaseSpeed Range: Variable, often up to 3000 RPMControl: Can be manual or electrical, depending on the modelDisplay: Digital RPM indicatorHumidity: Up to 85% RHTemperature: \(5^{\circ }C\) to \(45^{\circ }C\)
103	Hartnell Governor Apparatus	Motor: A variable-speed DC or AC motor, often with a capacity of around \(0.25\) hp and speeds up to \(1500\) rpm, is used to drive the main spindle.Governor mechanism:Bell crank levers: Pivoted levers that connect the flyballs to the sleeve.Flyballs: The balls that move outward due to centrifugal force.Sleeve: Connected to the bell crank levers; its vertical movement regulates the engine's fuel supply.Spring: A helical spring, often with adjustable compression, provides the restoring force.Frame: The main structure that supports the other components.
104	Proell Governor Apparatus	Centrifugal Governor Apparatus with a Proell governor modificationProell governor:Sleeve mass: \(3\times 100\)gCentrifugal mass: \(2\times 150\)gDC motor:Maximum power: \(35\)WMaximum speed: \(6000\) rpmSpeed regulation: \(60-400\) rpmSpeed measurement range: \(0-600\) rpm
105	Hydraulic Pipe bending Machine	Weight-(Approx)-117KG Material-Mild steel Size- 1/2" to 3"
106	Welding Machines	Input Voltage: \(415V\) AC, 3-phase, with a typical range like \(\pm 15\%\).Frequency: \(50/60\) Hz.Input Power (KVA): Varies based on the model and current output. For example, a \(400\) A machine might have a maximum input KVA of \(14\) kVA at \(100\%\) duty cycle
107	Whirling of Shaft Apparatus	Shaft length 0.5–1.0 m, motor drive
108	Autonotive Battery Charger	Weight (Approx.) : Max 20 kg Voltage : 12-72V Power Source : Battery Powered Charging Current : DC 10A Suitable For : 1 To 6 Batteries Application : Industrial, Automotive Mains Supply : 230V Dimension : 47x26x42 cm (Approx)