



MANGALAM
COLLEGE OF ENGINEERING
Inspire | Imbibe | Innovate



Accredited B.Tech
Programmes in
CE CSE
ME ECE
Valid upto 30/06/2026

Approved By AICTE & Directorate of Technical Education Kerala. | Affiliated to APJKTU University.

TENDER NOTICE

Tender No. MLM AICTE/IDEA LAB/2025-26/01

Date: 26.08.2025

Mangalam College of Engineering hereby invites tenders through a two-bid system (technical and commercial) from qualified and reliable suppliers and vendors for the supply and installation of machinery and equipment for the Establishment of a AICTE IDEA (Idea Development, Evaluation & Application) LAB at Mangalam College of Engineering under the All India Council for Technical Education (AICTE).

Prospective suppliers and vendors are requested to download the tender documents from our official website at <https://www.mangalam.ac.in>. Completed tenders, along with the requisite credentials, must be submitted in hard copy format, enclosed in a sealed cover, to the Principal, Mangalam College of Engineering, Ettumanoor, Kottayam – 686631, Kerala, or through email at principal@mangalam.in, on or before 15th September 2025, by 5:00 pm.

विश्वं शास्त्रे प्रतिष्ठितम्।




Chief Mentor

AICTE IDEA LAB

Contact Info
Mangalam Campus,
Mangalam Hills,
Vettimukal P.O.,
Kottayam, Kerala - 686 631

General Enquiry
+91 481 2710120
+91 481 2537053
+91 481 2533711
+91 481 2533700

Admission Helpline
+91 98950 10120
info@mangalam.in
www.mangalam.ac.in



1) OFFLINE SUBMISSION

- a. The bid should be submitted only in OFFLINE mode. The cover should contain all the prime eligibility documents along with all pages of the tender document duly signed by the tenderer, and it should be tightly sealed.
- b. The envelope should be superscribed at the top of the cover as: "Establishment of a AICTE IDEA (Idea Development, Evaluation & Application) LAB at Mangalam College of Engineering under the All India Council for Technical Education (AICTE)"
- c. The financial bid document should be removed from the tender document and enclosed in a separate sealed envelope with the name of the tenderer, superscribed at the top as: "Establishment of a AICTE IDEA (Idea Development, Evaluation & Application) LAB at Mangalam College of Engineering under the All India Council for Technical Education (AICTE)"
- d. The completed tender forms, along with the enclosures and the sealed cover containing the financial bid, should be submitted in ONE single cover and addressed to:

Dr. Vinodh P Vijayan
Principal
Mangalam College of Engineering
Ettumanoor, Kottayam – 686631, Kerala
E-Mail: info@mangalam.ac.in

- e. Technical Bids will be opened as per the schedule given in the “Critical Dates” section in the presence of bidders or their authorized representatives. If the opening date happens to be a holiday/closed day, the tender will be opened on the next working day. Only one authorized representative from each firm shall be allowed to participate in the opening of technical bids/price bids.

2) ACCEPTANCE AND REJECTION

Mangalam College of Engineering reserves the right to accept or reject any or all tenders and to accept the whole or any part of the tender without assigning any reason. A tender that does not fulfil any of the terms and conditions of the tender, or is incomplete in any respect, will be summarily rejected.

3) TECHNICAL BID QUALIFYING CRITERIA

- a) The Bidder should be a registered Company/Manufacturer/OEM or their Authorized Dealer with relevant work experience.
- b) The Bidder must have a valid License/Registration, GSTIN, PAN, Bank Account, and a Registered Office in India.
- c) The Bidder should not have been blacklisted by any Government / Semi-Government Department or Organization.

- d) The Bidder should provide documentary evidence (Purchase Orders, Completion Certificates, etc.) to prove prior experience in the Supply & Installation of similar Machinery & Instruments in India.
- e) The Bidder must have sufficient manufacturing capacity/tie-ups and should maintain after-sales support infrastructure.
- f) If the Bidder is not the manufacturer, they must be duly authorized by the OEM (Original Equipment Manufacturer) to supply the Machinery & Instruments. The relevant authorization documents should be submitted in the prescribed Mangalam College format (to be informed in advance with at least 15 days' notice). Supply shall proceed only after approval of the same.
- g) Preference will be given to Manufacturers or Authorized Dealers having more than 3 years of association with the same manufacturer, ensuring effective after-sales service support.
- h) If the Bidder has already supplied similar Machinery & Instruments to a Government Organization, the performance, timeliness, and quality of supply & services will be considered as qualifying criteria.
- i) If the Bidder is not an OEM, the Authorized Dealer must submit necessary OEM authorization documents.
- j) Selection will be based on multiple parameters fixed by the Committee/Competent Authorities, such as:
- Past service to Government/Institutional Clients
 - After-sales service support
 - Warranty Period
 - AMC (Annual Maintenance Contract) Support

4) EVALUATION CRITERIA AND FINAL SELECTION

1. The Committee constituted by the Principal, Mangalam College of Engineering, will examine the technical documents and assess the suitability as per the requirements and tender terms & conditions. Only the Technical Bids meeting the criteria will be considered for detailed evaluation.
2. The Technical Committee may also visit the bidder's site to verify their capacity, capability, and the performance of the Machinery & Instruments already supplied.

5) SELECTION OF BIDDERS

Selection of the bidders shall be based on a weighted criteria system, derived from the submitted tender documents, experience, and other relevant factors. In case of non-fulfilment of the minimum pre-qualification criteria in the technical bid, the bid of the respective bidder shall be rejected. The Competent Authority shall take the final decision regarding the selection of contractors.

6) AGREEMENT

The successful tenderer will be required to execute an agreement on a non-judicial stamp paper of appropriate value within the time frame stipulated by Mangalam College of Engineering, Ettumanoor, Kottayam – 686631.

Mangalam College of Engineering reserves the right to add, delete, or modify any clauses in the agreement as deemed necessary.

7) PERIOD OF CONTRACT

- a) The supply of the Machinery & Instruments should be completed within 45 days from the date of issue of the purchase order.
- b) Extension / non-extension of the contract period will be at the sole discretion of the authority. The contractors cannot assume extension as a matter of right.

8) TERMINATION OF CONTRACT

- a) The Competent Authority reserves the right to terminate the contract at any time without assigning any reason if, at any point, the quality of the Machinery & Instruments or services is found unsatisfactory.
- b) If it comes to the notice of Mangalam College of Engineering at any stage during the contract period that the contractor has misled by submitting false/incorrect information which influenced the award of the contract, the contract shall be terminated without any notice, in addition to other legal action as per law.
- c) In case of any breach of contract, termination may be carried out without any prior notice.

9) GENERAL TERMS & CONDITIONS

- a) The Bidder can apply for one or more Machinery & Instruments as per their expertise and capabilities. However, only one tender document should be submitted.
- b) The technical specifications of the Machinery & Instruments should be of recent model & make, with spares available in the market for at least 3 years. The product details should be supported with complete specifications, authorized leaflets, catalogues, literature, and test reports.
- c) As per Government of India guidelines (Make in India Policy), relaxation of norms for Start-ups and Micro & Small Enterprises (MSEs) in public procurement will be followed. Mangalam College of Engineering reserves the right to relax the conditions of prior turnover and prior experience for start-ups, subject to meeting quality and technical specifications. The decision of the College in this regard shall be final.
- d) The rates quoted shall be inclusive of all charges, such as insurance, transportation, installation, training for staff, and all other applicable taxes (excluding GST). Nothing extra shall be paid over and above the quoted rates.

- e) It is the responsibility of the tenderer to check for any corrections, addendums, or modifications published subsequently on the official website and take them into account while submitting the tender.
- f) Submission of the tender shall be deemed as acceptance of all terms and conditions of the contract. No verbal or written queries will be entertained regarding the acceptance or rejection of the tender.

10) RESTRICTIONS ON PARTICIPATION

- a) Bidders having close relatives working at Mangalam College of Engineering are not permitted to participate in the tender. An affidavit confirming the same should be submitted in original to Mangalam College of Engineering.
- b) The contractor shall not sublease the contract in full or in part. If found subleased, it will lead to blacklisting of the vendor and penal action by the Institute. Subletting of construction or installation work is not permissible under any circumstances.
- c) Canvassing, whether directly or indirectly, in connection with the tender is strictly prohibited. Tenders submitted by contractors who resort to canvassing will be summarily rejected.

11) SPECIAL TERMS & CONDITIONS

- a) The contractor shall take all precautionary measures to avoid any damage to adjoining property while installing the Machinery & Instruments. Any arrangements required for this shall be made at the contractor's own cost.
- b) Mangalam College of Engineering reserves the right to make changes, omissions, additions, or alterations to the original specifications of the Machinery & Instruments. Such modifications shall be deemed to form part of the original tender, and the contractor shall be bound to comply accordingly.
- c) The warranty period for the Machinery & Instruments shall be two (3) years from the date of installation and acceptance.
- d) The Contractor shall extend post-supply support to the Institute in maintaining the Machinery & Instruments, ensuring effective service during and after the warranty period.

12) PENALTY CLAUSES

- a) Failure to supply/install Machinery & Instruments as per the required quality, quantity, or specifications will attract penalty. For non-adherence to contractual conditions, Mangalam College of Engineering shall be free to impose a monetary fine as deemed fit. Fines imposed shall be remitted by the contractor to the Institute's account, or otherwise, adjusted from the Security Deposit.
- b) If any consequential damages occur during installation, the contractor shall bear the full cost of such damages. The quantum of liquidated damages, as assessed by Mangalam College of Engineering, shall be final and binding.

c) Penalty for Delay in Supply: The supply of Machinery & Instruments must be completed within the stipulated schedule. For every week of delay, or part thereof, a penalty of 0.5% of the contract value shall be imposed, subject to a maximum of 12% of the total contract value. The penalty amount will be deducted from payments due to the contractor.

d) The Principal, Mangalam College of Engineering, shall be the Competent Authority for imposing penalties and deciding their quantum. The decision of the Principal shall be final and binding.

Specification List

Sr. No	Equipments	Preferred brands if any	Specifications	Qty
1	Single Nozzle 3D printer	Branded Company Product with at least three years product warranty	<p>Printing Technology: Fused Filament Fabrication (FFF) or Fused Deposition Modeling (FDM).</p> <p>Printable Area: The minimum printable area should be at least 310 x 310 x 310 mm or above</p> <p>Printer Design: Core XY or Cartesian.</p> <p>Temperature Range:</p> <p>Hot end: Up to 300°C or above</p> <p>Heat bed: Up to 120°C. or above.</p> <p>Nozzle: Compatible with All polymers, 0.4, 0.6 and 0.8mm</p> <p>Steel Sheet: Provided with satin or smooth PEI surface.</p> <p>Filament Diameter: 1.75mm (supports PLA, PETG, ASA, ABS, etc.).</p> <p>Extruder: Gearbox with 1/10 ratio,</p> <p>Speed : 550 MM/Sec or above</p> <p>Stepper Drivers for smooth motion. or equivalent</p> <p>Stepper Motors: Choose between 1.8° or precise 0.9° X, Y stepper motors.</p> <p>LCD Screen: 3.5" graphic 65k color screen or larger.</p> <p>Connectivity: USB drive, LAN, or internet.</p> <p>Supported Materials: PLA, PETG, ASA, ABS, PP, PC, flexible filaments, and more.</p> <p>Wi-Fi Module: Built-in (network connectivity not required for setup or operation).</p> <p>Compatibility: Windows, macOS, Linux.</p> <p>Printer Dimensions: The maximum physical dimensions of the system 700 X 700 X 700 or above. Fully enclosed Machine.</p>	1

2	PCB Milling Machine	Branded Company Product with at least three years product warranty	<p>Cuttable Materials: Modeling Wax, Chemical Wood, Foam, Acrylic, Poly Acetate, ABS, PCB, Copper glad, etc Table Size: 225 (X) × 150 (Y) mm or more</p> <p>Drive System: Stepping Motor (X, Y, Z Axis) Operating Speed: 800 mm/min Software Resolution: 0.01 mm/step Position accuracy : 0.01 to 0.02 mm Max Travel Speed (mm/sec)-58 (2.28 ") Drilling (mm)-0.2 -3.175 (8-125 mil) Maximum Drilling Cycles/ Min-50</p> <p>Spindle Motor: DC Motor Type 380 or More Spindle Speed: Adjustable 20,000 and above rpm or more Tool Chuck Type: Collet Interface: USB or cable Control Commands: RML-1, NC code Power Supply: DC 24V, 2.5A (via AC 100–240V, 50/60Hz adapter) Power Consumption: Approx. 50 W or more</p>	1
3	CO2 Laser Cutting Machine	Branded Company Product with at least three years product warranty	<p>Working Area: Min 600 x 900 mm or above Laser Type: CO2 DC Glass Laser Tube/RF Metal Laser Tube Laser Power: 80/100W Wave Length: Upto 10.6 Micrometer Cutting Speed: 30000 mm/min or more Engraving Speed: 64000 mm/min or more XY Axis: LM Guide Rail or equivalent Cooling: Air/ Water Cooling Supply Voltage: 230V/415 V Accessories: CO2 Focus Lens: 1 No. Mirror 25mm: 3 Nos. Acetone: 1 litre Acrylic sheet: 2 Nos</p>	1
4	Vinyl Printer	Branded Company Product with at least Two years Warranty	<p>Dimensions: 50 cm x 15 cm x 15 cm or above Weight: 15.4 lbs or less Max cut size using machine mat: 11.5 inch x 23.5 inch or more Cut speed: up to 14.1 ips</p>	1
5	3D Scanner	Branded Company Product with at least three years product warranty	<p>Technology: Stereo camera structured light with focusable cameras or equivalent CPU: Quad-core 64-bit SoC, 1.5GHz with integrated GPU RAM: 4 GB Projector: DLP MEMS mirror or equivalent Camera Sensor: Sony 13 MP or better Scan Speed: 4 seconds or more Working</p>	1

			<p>Distance : Effective Working Distance: 160mm-1400mm Scan Speed : 980,000points/s, up to 14FPS</p> <p>Align Modes : Feature Alignment, Hybrid Alignment, Texture Alignment, Global Markers</p> <p>Safety : Eye-safe</p> <p>Texture Scan : Yes</p> <p>Interface : USB2.0 or above</p> <p>Outdoor Scanning : Yes</p> <p>Output Formats : OBJ; STL; PLY; P3; 3MF</p> <p>Scanning Environment: Indoor and outdoor (shaded) Texture / Color Scanning: Yes Minimum Capturable Feature Size: 0.2 mm or less</p> <p>Scanner Weight: 500 grams or less Scanner Dimensions: upto 240 × 60 × 60 mm Compatible OS: Any OS supporting a modern web browser</p>	
6	Lathe Machine cum milling	Branded Company Product with at least three years product warranty	<p>Centre Width: Up to 400 mm or better Height of Centers: Up to 88 mm Maximum Workpiece Diameter: Up to 100 mm Machine Base: Cross-ribbed surface, high- quality cast iron with ground prismatic guide, capable of fitting milling/drilling attachment Spindle: Supported with adjustable taper roller bearings Spindle Receiver: MK3 or compatible Spindle Drill Hole: Up to 22 mm or better Spindle Concentricity: Up to 5 microns or better Chuck: 3-jaw chuck as per DIN 6386, centrically clamped, 100 mm diameter or better Run Out (without Chuck): Up to 10 microns Sleeve Receiver: MK2, retractable sleeve with scale Spindle Speed Range: Between 50 to 2500 rpm Speed Stages: 6-8 Motor Rating: 550W or better, induction motor, single phase 230V</p>	1

			<p>Traverse Cross: Up to 70 mm or better Traverse Longitudinal: Up to 300 mm or better Weight (Complete): Up to 55 kg or more</p> <p>Additional Accessories: Splash guard and chip collecting tray: 1 No. Cutter set with tungsten inserts: 2 Nos. Milling Attachment: 1nos Tungsten disposable tips ten-piece set: 1 No. Sample workpieces (Nylon Rod, Aluminium Rod) Desktop: 1 No.</p>	
7	CNC Router	Branded Company Product with at least three years product warranty	<p>Working Area: Min 1300 x 2500 mm Z Axis Working Area: 200 or above Resolution: $\pm 0.03/300$mm or more CNC Spindle: 3KW or more Lathe Structure : Welding Steel Structure or equivalent XYZ Structure: Rack Pinion , Ball Screw Linear Rails Max Spindle Speed : Min 18000RPM Table: T-Slot/Vacuum Bed/Water Bed Repeatability: ± 0.03 Working Mode: Stepper Motor/Servo Motor Dust Collector : To be included by Vendor Voltage: AC 220V/415V, 50/60 Hz, 3 Phase</p>	1
8	Belt and Disc Sanding Machine	Branded Company Product with at least three years product warranty	<p>Motor: 230V 50Hz Power: 380W S2 30min No-load Speed: 1450rpm or more Belt Size: 100x914mm or less Disc Size: 150mm or better Table Titing Range: 0°-45° Belt Titing Range: 0°-90° Table Size: upto 190x125mm</p>	1
9	Scroll Saw	Branded Company Product with at least three years product warranty	<p>Power input: 50 Watt Thickness of Cut: 50 mm (2 inch) Throat: 406 mm (16 inch) Length of Stroke: 18 mm (11/16 inch) Strokes Per Minute: 400-1,600 SPM Overall Length: 600 mm (23-5/8 inch)</p>	1
10	Wood Turning Lathe	Branded Company Product with at least three years product warranty	<p>Motor: 230V~50Hz, 550W, S2:15min or above Max. Disc Diameter: min 75 mm Max. Cutting Length: 450 mm or more Spindle Speed: 5 speeds such as 1600 / 2600 / 3200 RPM etc Material: Cast Iron Bed Height: 0.2 m Cable Length: 0.850 m</p>	1

11	Bench Top Drill Machine	Branded Company Product with at least Three to Five years Warranty	Continuous rating input: Max. 250 W Capacity: Steel: Min 13 mm (1/2") Wood: Min 24 mm (15/16") No Load Speed (RPM): 570, 890, 1,300, 1,900, 2,670(50 Hz), 690, 1,070, 1,560, 2,280, 3,200(60 Hz) Net weight: Max. 20 kg (44.1 lbs.) Power supply cord: 1.75 m (5.7 ft) Additional Accessories: Bench Vise: 1 No., Drill Bit Set 10 Pcs: 1 No	1
12	Portable Welding Machine	Branded Company Product with at least Three to Five years Warranty	Welding Current (at 40°C, 10 min cycle): 120A @ 100%, 150A @ 60%, 200A @ 35% Supply Voltage: 240V +10%, -15%, 1 Phase, 50/60 Hz Open Circuit Voltage: 55V DC ±5V Welding Current Range: 15–200 Amps DC Insulation Class: F Type Ingress Protection: IP21 Dimensions (L×W×H) with Handle: upto 320×120×195 mm Weight (Approx.): 4.3 kg or less	1
13	Computerized Sewing Machine	Branded Company Product with at least three years product warranty	Motor: 120 W Max Sewing Speed: 860 SPM Power: 220 - 240 V Automation Grade: Automatic Max Stitch Length: 4mm Thread Type: Computerized Weight: 7.6 kg Number of Stitches: 120 Size/Dimension: 50.8 cm x 29.464 cm x 40.64 cm Maximum Stitch Width: 7 mm Number of Buttonhole Styles: 7 LCD Screen Display: Yes Bed Type Free Arm/Flatbed convertible Bobbin Type Drop & Sew Bobbin System	1
14	Filament Dehydrator	Branded Company Product with at least three years product warranty	Operating Temperature Range: Min 45°C–70°C Drying Time Setting: 0–48 hours or higher Hot-Air Heating: upto 360° circulation Moving Speed: 300 mm/s or more Power Rating: 160 W Shipping Weight: 2.5 kg	1
15	Reflow Oven	Branded Company Product with at least three years product warranty	No. of Waves: 7 or higher Heating Type: Infrared IC Heater Max. PCB Width: 300×320 mm or more Power Supply: AC 220V / 50Hz Peak Power: 1500W Cycle Time: 1–8 min or less Temperature Range: 0°C–280°C	1

			Overall Dimensions: min 350×450 mm Machine Weight: upto 25 kg	
16	Digital multimeter	Branded Company Product with at least three years product warranty	Display Count: Up to 4000 DC Voltage Range: Up to 1000 V AC Voltage Range: Up to 1000 V DC Voltage Accuracy: $\pm 0.5\%$ or ± 3 digits, whichever is higher AC Voltage Accuracy: Within $\pm 1\%$ + 3 digits DC Current Measurement: Up to 10 A AC Current Measurement: Maximum 10 A DC Current Accuracy: $\pm 1.5\%$ + 3 digits (approximate) AC Current Accuracy: $\pm 1.5\%$ + 3 digits (typical) Resistance Measurement: Up to 40 M Ω Resistance Accuracy: Estimated at $\pm 1.5\%$ + 3 digits Capacitance Measurement: Up to 1000 μ F Capacitance Accuracy: $\pm 5\%$ or ± 5 digits Operating Temperature Range: From 0°C up to approximately 40°C Storage Temperature Range: Between -30°C and 60°C Overall Dimensions (H×W×L): Approximately 183×91×49.5 mm Unit Weight: Around 455 grams Safety Compliance: As per IEC 61010-1 & IEC 61010-2-030 standards, suitable for CAT III 600V and CAT II 1000V environments with Pollution Degree 2 classification	5
17	MSO 100 MHz	Branded Company Product with at least three years product warranty	Bandwidth: Up to 100 MHz Analog Channels: 4 or more Real-Time Sampling Rate: Maximum 1 GSa/s per channel Memory Depth: 10 Mpts per channel Waveform Update Rate: Approximately 120,000 wfms/s Vertical Resolution: 8 bits Vertical Scale: Ranging from 1 mV/div to 10 V/div Horizontal Scale: Spanning 1 ns/div to 100 s/div Spectrum Analyzer Frequency Range: DC to 500 MHz FFT Points: Up to 1M points for enhanced frequency domain resolution Waveform Math Functions: Includes addition, subtraction, multiplication, division, minimum, maximum, root, square, absolute, inverse, derivative, integral, and low-pass filter Trigger Types: Edge, Pulse Width, Video, Pulse Runt, Rise & Fall (slope), Alternate,	1

			<p>Timeout, Event-Delay, Time-Delay, and Bus Arbitrary Waveform Generator (AWG): Dual-channel, 25 MHz, supporting various waveforms such as sine, square, pulse, ramp, DC, noise, sinc, Gaussian, Lorentz, exponential rise/fall, haversine, and cardiac</p> <p>AWG Sample Rate: 200 MSa/s</p> <p>AWG Vertical Resolution: 14 bits</p> <p>Display: 8-inch WVGA TFT LCD (800 × 480 pixels)</p> <p>Data Logging Capability: Up to 1000 hours</p> <p>Segmented Memory: Supports up to 29,000 segments for efficient waveform storage and retrieval</p> <p>Connectivity: USB 2.0 (host and device), Ethernet (RJ45), and Go-NoGo BNC</p> <p>Dimensions (W × H × D): 380× 200× 125 mm or above</p> <p>Weight: 2 Kgs or above</p> <p>Safety Compliance: Conforms to IEC 61010-1 and IEC 61010-2-030 standards, suitable for CAT III 600V and CAT II 1000V environments with Pollution Degree 2 classification</p>	
18	Digital oscilloscope	<p>Branded Company</p> <p>Product with at least three years product warranty</p>	<p>Number of Channels: Up to 2 independent analog inputs</p> <p>Memory Record Length: Up to 10 Mpts for extended waveform capture</p> <p>Bandwidth Limiting: Selectable 20 MHz bandwidth filter</p> <p>Sampling Rate: Maximum of 1 GSa/s real-time equivalent per channel</p> <p>Rise Time: ≤ 3.5 ns depending on probe and settings</p> <p>Display: 7" TFT color LCD with 800×480 resolution</p> <p>Time Base Range: From 5 ns/div to 100 s/div, user-adjustable</p> <p>Vertical Resolution: 8-bit digital resolution</p> <p>Trigger Modes: Automatic, Normal, and Signal-dependent triggering</p> <p>Maximum Input Voltage: 300 Vrms (within safety limits)</p> <p>Input Sensitivity: Within the range of 1 mV/div to 10 V/div</p> <p>Input Coupling Options: Selectable among AC, DC, and Ground</p> <p>Trigger Coupling Modes: Configurable as AC, DC, High-pass, or Low-pass</p> <p>Physical Dimensions: Approximately 350 × 200 × 120 mm or above</p> <p>Unit Weight: 2.5 kg or above</p> <p>Input Impedance: Nominal 1 MΩ // 16 pF</p> <p>Measurement Capabilities: Equipped for automatic parameter extraction, background</p>	1

			<p>noise filtering, and AUTOSET configuration for display scaling (time base/gain)</p> <p>Protocol Decoding Support: Capable of analyzing I2C, SPI, UART, CAN, and LIN communication protocols</p> <p>Standard Accessories: Includes mains power cable, user manual (digital format), and one GTL-16E probe per input channel</p>	
19	Power supply	<p>Branded Company Product with at least three years product warranty</p>	<p>Output Configuration: 4-channel design with independent electrical isolation across all outputs</p> <p>Channel Output Ranges:</p> <ul style="list-style-type: none"> • CH1 & CH2: Adjustable output voltage from 0 to 32V with a current delivery capacity up to 3A • CH3: Variable range 0 to 5V supporting up to 1A • CH4: Output adjustable from 0 to 15V with a load current of up to 1A <p>Constant Voltage Operating Mode</p> <p>Line Regulation: $\leq 0.01\% + 3 \text{ mV}$ (approximate value within rated voltage range)</p> <p>Load Regulation: $\leq 0.01\% + 3 \text{ mV}$ (across rated load variation)</p> <p>Ripple & Noise: $\leq 1 \text{ mVrms}$ across full bandwidth</p> <p>Constant Current Operating Mode</p> <p>Line Regulation: $\leq 0.2\% + 3 \text{ mA}$</p> <p>Load Regulation: $\leq 0.2\% + 3 \text{ mA}$</p> <p>Ripple Current: $\leq 3 \text{ mArms}$ (typical)</p> <p>Safety & Operational Features</p> <p>Output Control: Independent output ON/OFF switching functionality is required</p> <p>Voltage Resolution: Approximately 100 mV (*1)</p> <p>Current Resolution: Approximately 10 mA (*1)</p> <p>Display Parameters</p> <p>Display Units: Four separate displays required for individual channel status visualization</p> <p>Display Type: 4.3-inch LCD (color or monochrome as applicable)</p> <p>Functional Features</p> <p>Tracking Operation: Supported (required for synchronizing output behavior)</p> <p>Auto Series/Parallel: Supported (automatic internal reconfiguration required)</p>	1

			<p>Power Requirements Supply Input: 230V AC $\pm 10\%$, 50 Hz</p> <p>Mechanical Specifications Maximum Dimensions (W \times H \times D): Within 200 mm \times 100 mm \times 200 mm Maximum Weight: 10 kg or less</p>	
20	Function Generator	Branded Company Product with at least three years product warranty	<p>Output Function: The equipment shall provide output waveforms including sine, square, triangle, and TTL signals as required.</p> <p>Frequency Range: For sine and square waveforms: approximately 0.1 Hz up to 3 MHz. For triangle waveform: approximately 0.1 Hz up to 1 MHz.</p> <p>Frequency Resolution: Frequency resolution shall be maintained within a maximum of 0.1 Hz.</p> <p>Frequency Stability: The frequency stability shall be within ± 20 ppm (parts per million).</p> <p>Frequency Accuracy: The frequency accuracy shall be maintained within ± 20 ppm.</p> <p>Frequency Aging: Frequency aging shall not exceed ± 5 ppm per annum.</p> <p>Amplitude Range: Output amplitude shall be up to 10 V peak-to-peak (Vp-p) into a 50 Ω load.</p> <p>Amplitude Accuracy: Amplitude accuracy shall be within $\pm 20\%$ at maximum amplitude setting.</p> <p>Output Impedance: Nominal output impedance shall be 50 Ω with a tolerance of $\pm 10\%$.</p> <p>Attenuator: A single-step attenuator of -40 dB ± 1 dB shall be provided.</p> <p>Display: A 6-digit LED display shall be incorporated for parameter indication.</p> <p>Output Control: Output shall be controlled via an ON/OFF selector switch.</p> <p>Power Source: The device shall operate on an AC supply of 240 V, 220 V, or 110 V $\pm 10\%$, with frequency 50/60 Hz.</p> <p>Ambient Operating Temperature: Normal operation shall be ensured within the ambient temperature range of 0 $^{\circ}$C to 40 $^{\circ}$C.</p> <p>Dimensions: Maximum dimensions shall not exceed 255 mm (W) \times 95 mm (H) \times 295 mm (D).</p> <p>Weight: Maximum device weight shall be within 2.5 kg.</p>	1
21	Bench Top Multimeter	Branded Company Product with at	<p>DC Voltage: Range: 500 mV to 1000 V across 5 ranges. Accuracy: $\pm (0.03\% \text{ rdg} + 4 \text{ digits})$.</p> <p>Input impedance: 10 MΩ.</p>	1

		least three years product warranty	<p>AC Voltage (True RMS): Range: 500 mV to 1000 V across 5 ranges. Accuracy: $\pm(0.5\%-5\% \text{ rdg} + \text{digits})$ depending on frequency and range. Input impedance: 10 MΩ.</p> <p>DC Current: Range: 500 μA to 20 A across 6 ranges. Accuracy: $\pm(0.02\%-0.3\% \text{ rdg} + 2 \text{ digits})$ depending on range.</p> <p>AC Current (True RMS): Range: 500 μA to 20 A across 6 ranges. Accuracy: $\pm(0.5\%-1\% \text{ rdg} + \text{digits})$ depending on frequency.</p> <p>Resistance: Range: 500 Ω to 20 MΩ across 6 ranges. Accuracy: $\pm(0.1\%-0.3\% \text{ rdg} + \text{digits})$ depending on range.</p> <p>Diode Test: Max forward voltage 1.5 V, open voltage 2.8 V.</p> <p>Capacitance: Range: 5 nF to 50 μF. Accuracy: $\pm(2\% \text{ rdg} + 4 \text{ digits})$.</p> <p>Frequency: Input level varies by range; functions include Auto/Manual Range, Max, Min, dBm, Rel, Hold.</p> <p>Continuity Beep: Threshold $<5 \Omega$.</p> <p>Display: Dual 7-segment LED, 0.4" and 0.5".</p> <p>Power Source: AC 100/120/230 V $\pm 10\%$, 50/60 Hz.</p> <p>Dimensions & Weight: Approximately 251 \times 91 \times 291 mm; 2.6 kg.</p>	
22	Non-Contact Voltage Tester	Branded Company Product with at least three years product warranty	<p>Function: Non-contact AC voltage detection tester.</p> <p>Voltage Detection Range: Approximately 90 V to 1000 V AC.</p> <p>Detection Method: Capacitive, with visual and audible indication.</p> <p>Sensitivity: Adjustable sensitivity for different voltage ranges.</p> <p>Response Time: Instantaneous detection within standard operating conditions.</p> <p>Indicators: Bright LED indicators and audible beep for voltage presence.</p> <p>Operating Environment: Suitable for use in ambient temperatures from 0 $^{\circ}\text{C}$ to 40 $^{\circ}\text{C}$.</p> <p>Power Source: Powered by standard batteries (typically 2 \times AAA or equivalent).</p> <p>Safety Standards: Complies with IEC/EN 61010-1 CAT III 1000 V safety standards.</p> <p>Dimensions: Compact, handheld design suitable for field use (approx. 150 mm \times 30 mm \times 25 mm).</p> <p>Weight: Lightweight, approximately 150 g for ease of portability.</p>	5
23	LCR Meter	Branded Company Product with at least three	<p>Display: Approximately 2.8" TFT touch LCD screen.</p> <p>Resolution: 25,000 or above counts resolution on both primary and secondary</p>	1

		years product warranty	<p>displays.</p> <p>Basic Accuracy: Within $\pm 0.2\%$ under standard conditions.</p> <p>Test Frequencies: Six or eight selectable frequencies depending on model variant.</p> <p>Measurement Combinations: Up to 15 different measurement combinations available.</p> <p>Test Level: Selectable AC test levels approximately 0.3 V, 0.7 V, and 1 V rms; DC test level selectable at ± 1 V.</p> <p>Measurement Speed: Selectable measurement speeds of approximately 10 measurements per second (fast) and 2.5 measurements per second (slow).</p> <p>Auto LCR Mode: Automatic identification and measurement of component types within supported ranges.</p> <p>Data Hold: Feature available to hold measured data on display.</p> <p>Interface: USB virtual COM port provided for remote communication capabilities.</p> <p>Software: Datalogging software available for data capture and analysis.</p>	
24	Soldering Station	Branded Company Product with at least three years product warranty	<p>Power Rating: Approximately 60 W maximum output power.</p> <p>Temperature Range: Adjustable from approximately 200 °C up to 480 °C.</p> <p>Temperature Stability: Within ± 2 °C under normal operating conditions.</p> <p>Heating Element: Ceramic heating element for rapid heat-up and efficient temperature maintenance.</p> <p>Display: Digital or analog temperature display (depending on variant) for precise temperature control.</p> <p>Temperature Control: Adjustable via knob or digital interface with fine resolution.</p> <p>Power Supply: AC 220 V $\pm 10\%$, 50/60 Hz.</p> <p>Safety Features: Thermal cutoff and overload protection within required standards.</p> <p>Dimensions: Compact design with 100 mm \times 100 mm \times 90 mm (W \times H \times D) or above</p> <p>Weight: Approximately 1.5 kg for ease of portability and bench use.</p>	3
25	Digital Microscope	Branded Company Product with at least three years product warranty	<p>Specification: Magnification: 1600X</p> <p>Light source: 8 LED lights</p> <p>Resolution: 1920\times1080, 640*480</p> <p>Pixel: 30W</p> <p>Focal length: 3-40mm manual adjustment</p> <p>Support Android 4.2 or above/widows/Mac system</p>	1

26	Soldering Rework Station	Branded Company Product with at least three years product warranty	<p>Soldering Iron Power: Up to approximately 60 W output power with temperature adjustable within approximately 200 °C to 480 °C range.</p> <p>Heating Element: Needle bit with MCH heater providing rapid heat-up and stable temperature control within ± 2 °C.</p> <p>Hot Air Blower Power: Up to approximately 500 W output power with temperature adjustable within approximately 200 °C to 450 °C range, multiple nozzles included.</p> <p>Hot Air Features: Auto-pause function on placement in cradle, airflow adjustable within operational limits.</p> <p>DC Power Supply: Provides output voltage approximately 15 V up to 2 A maximum current plus 5 V USB output for auxiliary power.</p> <p>Control: Microcontroller-based system with LED indicators for temperature and mode selection.</p> <p>Safety: ESD-safe design compliant with applicable standards.</p> <p>Build: Metallic body with powder coating, approximate dimensions 280 mm \times 180 mm \times 140 mm (W \times H \times D).</p> <p>Weight: Approximately 3.5 kg.</p> <p>Power Source: AC 220 V $\pm 10\%$, 50/60 Hz.</p> <p>Accessories: Includes soldering iron with needle bit, hot air blower with 3 nozzles, iron stand with sponge, hot air cradle, patch cord, and power cord.</p> <p>Operating Temperature: Suitable for ambient temperature approximately 0 °C to 40 °C</p>	1
27	Hand Drill Machine	Branded Company Product with at least three years product warranty	<p>Rated Input Power: Approximately 500 W or above maximum power consumption.</p> <p>Bit Holder: Standard 1/2"-20 UNF thread type.</p> <p>No-Load Speed (1st Gear): Adjustable from 0 up to approximately 3,000 rpm.</p> <p>Power Output: Approximately 300 W continuous output power.</p> <p>Weight: Approximately 1.7 kg total device weight.</p> <p>Impact Rate at No-Load Speed: Variable from 0 up to approximately 48,000 bpm.</p> <p>Rated Torque: Approximately 1.4 Nm maximum torque output.</p> <p>Drill Spindle Connecting Thread: Standard 1/2"-20 UNF thread.</p> <p>Chuck Capacity (Min/Max): Approximately 1.5 mm minimum to 13 mm maximum.</p>	2
28	Cordless drill	Branded Company Product with at	<p>Torque (soft/hard/max.): Min 21/50/- Nm</p> <p>No-load speed (1st gear / 2nd gear): Min 0 – 500 / 0 – 1,900 rpm</p>	2

		least three years product warranty	Weight incl. battery: 1.3 kg or less Max. impact rate: 27,000 bpm Battery type: Lithium-Ion or equivalent Chuck capacity, min./max.: 1.5 / 13 mm Weight excl. battery: 0.99 kg Torque settings: 20+2 or better	
29	Jig Saw	Branded Company Product with at least three years product warranty	Rated Input Power: Approximately 500 W maximum power consumption. Voltage, Electrical: Nominal 230 V AC supply. Saw Stroke Length: Approximately 20 mm stroke length. Stroke Rate at No Load: Adjustable within approximately 800 to 3,100 spm (strokes per minute). Weight: Approximately 2.08 kg total weight. Bevel Angle: Adjustable within approximately -45° to 45° range.	1
30	Miter Saw	Branded Company Product with at least three years product warranty	Rated Input Power: Approximately 1,750 W maximum power consumption. Saw Blade Diameter: Approximately 254 mm nominal diameter. Mitre Setting: Adjustable up to approximately 47° left and 52° right. Bevel Setting: Adjustable up to approximately 45° left and 0° right. Saw Blade Bore Diameter: Approximately 25.4 mm standard bore. Cutting Capacity at 0°: Approximately 90 mm × 130 mm maximum cross-section. Cutting Capacity at 45° Mitre: Approximately 90 mm × 91 mm maximum cross-section. Cutting Capacity at 45° Bevel: Approximately 60 mm × 130 mm maximum cross-section. Tool Dimensions (W×L×H): Approximately 477 mm × 559 mm × 567 mm. No-Load Speed: Fixed at approximately 5,000 rpm. Weight: Approximately 11.1 kg.	1
31	Hot air gun	Branded Company Product with at least three years product warranty	Rated Input Power: Approximately 1,800 W maximum power consumption. Voltage, Electrical: Nominal 230 V AC supply. Weight: Approximately 0.75 kg. Working Temperature Range: Adjustable within approximately 60 °C to 550 °C. Heat-Up Time: Approximately 1 second to reach target temperature. Airflow: Adjustable within approximately 350 to 550 liters per minute. Airflow Control: Three selectable airflow settings.	2

32	Table saw	Branded Company Product with at least three years product warranty	Rated input power: Max 1800 W Incline setting: 45 ° L / 0 ° R Table size: Up to 555 x 555 mm Saw blade diameter: 254 mm Cutting height 90°: 80 mm Cutting height 45°: 55 mm Saw blade bore diameter: 30 mm Weight 24.4 kg or less Max. cutting capacity on the right: 545 mm No-load speed: 4300 rpm Cutting height 90°: 80 mm Cutting height 45°: 55 mm	1
33	Bench grinder	Branded Company Product with at least three years product warranty	Grinding wheel diameter: min 150 mm Rated input power: 350 W or more Grinding wheel widths: 20 mm or more No-load speed: upto 3,000 rpm Grinding wheel bore: 20 mm/2cm Grit 24, 60 or more Weight: 10 kg or less	1
34	Angle Grinder	Branded Company Product with at least three years product warranty	Rated Input Power: Approximately 670 W maximum power consumption. No-Load Speed: Approximately 11,000 rpm. Disc Diameter: Approximately 100 mm nominal diameter. Grinding Spindle Thread: Standard M10 thread. Weight: Approximately 1.5 kg. Switch: Lockable switch for operational safety.	1
35	Straight Grinder	Branded Company Product with at least three years product warranty	Rated Input Power: Max 300 W power consumption. No-Load Speed: Up to 28,000 rpm. Voltage, Electrical: Nominal 230 V AC supply. Spindle Collar Diameter: Approximately 41 mm. Weight: Around 1.4 kg. Maximum Grinding Tool Diameter: Up to 25 mm. Maximum Collet Diameter: Up to 8 mm. Switch: Lockable switch for enhanced safety.	1
36	Circular Saw	Branded Company Product with at least three years product warranty	Rated Input Power: Approximately 1,400 W maximum consumption. Saw Blade Diameter: Nominal 184 mm diameter. Saw Blade Bore Diameter: About 20 mm standard bore size. Guide Rail Compatibility: Not compatible with guide rails. No-Load Speed: Typically 5,200 rpm. Weight: Around 4.1 kg	1

37	Blower	Branded Company Product with at least three years product warranty	Rated Input Power: Max 650 W power consumption. Weight: Approximately 1.7 kg. Voltage, Electrical: Nominal 230 V AC supply. Sound Pressure Level: Around 103 dB(A). Sound Power Level: Approximately 95 dB(A). Uncertainty (K): Within ± 3 dB	1
38	Cordless Screw Driver	Branded Company Product with at least three years product warranty	Battery Capacity: Around 1.5 Ah nominal capacity. Torque (Soft/Hard/Max): Approximately 14 Nm / 30 Nm / Maximum not specified. No-Load Speed (1st Gear / 2nd Gear): Ranges from 0 up to 400 rpm and 0 up to 1,500 rpm respectively. Battery Type: Rechargeable Lithium-Ion battery. Chuck Capacity (Min/Max): From approximately 0.8 mm up to 10 mm. Weight (Excluding Battery): About 0.8 kg. Torque Settings: 20 plus 1 adjustable settings.	1
39	Vacuum Cleaner	Branded Company Product with at least three years product warranty	Rated Input Power: Approximately 1,100 W maximum power consumption. Weight: Around 6 kg total weight. Container Volume (Net): Approximately 10 liters capacity. Voltage, Electrical: Nominal 230 V AC supply. Container Volume (Gross): Approximately 15 liters total volume. Container Volume (Net, Water): About 8 liters capacity for water. Filter Surface Area: Around 2,300 cm ² effective filtration area. Airflow Rate (Turbine): Approximately 53 liters per second. Vacuum Pressure (Turbine): Up to 270 mbar vacuum pressure. Number of Wheels: Four wheels for mobility.	1
40	Random orbit sander	Branded Company Product with at least three years product warranty	Rated Input Power: Up to 280 W maximum consumption. Sanding Pad Diameter: Nominal 125 mm diameter. Orbit Diameter: Approximately 2.6 mm orbital diameter. Weight: Around 1.4 kg. No-Load Speed: Adjustable within 7,500 to 12,000 rpm range. Orbital Stroke Rate: Between 15,000 and 24,000 orbits per minute (opm). Eccentricity: Approximately 1.3 mm.	1

41	Planer	Branded Company Product with at least three years product warranty	Rated Input Power: Not exceeding 710 W under nominal operating conditions. Planing Width: Approximately 82 mm effective width capacity. Planing Depth: Within the range of up to 2.6 mm maximum depth per pass. Weight: Circa 2.8 kg total unit mass. Adjustable Rebating Depth: Maximum adjustable depth of approximately 9 mm. No-Load Speed: Operating speed typically around 18,000 rpm.	1
42	Cordless Vacuum Cleaner with Starter kit	Branded Company Product with at least three years product warranty	Battery Voltage: Rated at approximately 18.0 V nominal voltage. Weight Excluding Battery: Around 1.3 kg without battery attached. Container Volume: Approximately 0.7 liters net capacity. Filter Surface Area: Roughly 55 cm ² filtration surface. Maximum Airflow Rate (Turbine): Up to 10 liters per second. Maximum Vacuum Pressure (Turbine): Not exceeding 60 mbar under standard conditions. Operating Time (18 V Battery): Typically 7 minutes per Ah of battery capacity.	1
43	Rotary Tool Kit	Branded Company Product with at least three years product warranty	Rated Power Input: Approximately 175 W within nominal voltage range. Voltage: Operates within 220 to 240 V AC supply. Weight: Around 0.66 kg total mass. Length: Approximately 24 cm overall length. Width: About 4.1 cm nominal width. Depth: Roughly 4.3 cm depth dimension. No-Load Speed: Variable speed ranging from 5,000 up to 35,000 rpm. Battery Technology: Not applicable (n.a.). Speed Setting: Fully variable speed control as required. Accessory Quick Change System: Equipped with multi chuck for rapid accessory interchange. Vibration Level: Approximately 18 m/s ² measured vibration	2
44	Rubber Grip Hacksaw	Very Good Quality	Depth of Throat: Approximately 98 mm (3.85 inches) nominal depth. Blade Length: Around 254 mm (10 inches) standard length.	2
45	Hacksaw Mini	Very Good Quality	Blade Length: Approximately 10 inches nominal length. Handle Material: Constructed from metal as	2

			standard. Overall Length: Around 11 inches total length.	
46	Claw Hammer Steel Shaft	Very Good Quality	Weight: Approximately 8 oz (220 grams) nominal weight. Dimensions: Around 27.8 cm × 12.4 cm × 3.6 cm (L × W × H) overall size	2
47	Ball Pein Hammer	Very Good Quality	Weight: Approximately 110 grams nominal weight. Dimensions: Around 32.6 cm × 10 cm × 2 cm (L × W × H) overall measurements.	2
48	Rubber mallet	Very Good Quality	Weight: Approximately 450 grams nominal weight. Dimensions: Around 33.6 cm × 9.6 cm × 6.2 cm (L × W × H) overall size.	2
49	Ring spanner set 12Pcs	Very Good Quality	Weight: 3.08 Kg nominal weight. Quantity: 12 pcs per set. Size: 6 mm to 32 mm overall range.	1
50	Open end spanner set 12Pcs	Very Good Quality	Weight: Approx1.74Kg nom.wt. Qty: 12pcs/set. Size: 6mm-32mm overall dims.	1
51	Combination Spanner set 8Pcs	Very Good Quality	Weight: Approx649g nom.wt. Qty: 8pcs/set.	1
52	Allen key set 10pcs	Very Good Quality	Hex Key Size: 1.5,2,2.5,3,4,5,5.5,6,8,10mm; Qty:10pcs/set	2
53	Allen key set 12pcs	Very Good Quality	BallKeySize:1/16",5/64",3/32",7/64",1/8",9/ 64",>5/32",3/16",7/32",1/4",5/16",3/8" Qty:12pcs/set	2
54	Combination plier	Very Good Quality	Weight: Approx422g nom.wt. Size: 8"/200mm nominal	2
55	Long nose plier	Very Good Quality	Weight: Approx399g nom.wt. Size:180mm/6" nominal	2
56	Circlip straight 5"	Very Good Quality	Weight: Approx399g nom.wt. Size:130mm/5" nominal	2
57	Circlip bent	Very Good Quality	"Weight: Approx399g nom.wt. Size:130mm/5"" nominal"	2
58	Diagonal Cutter	Very Good Quality	"Weight: Approx239g nom.wt. Size:180mm nominal"	2
59	Wire Stripper	Very Good Quality	Weight: Approx281g nom.wt. Size:130mm nominal	2

60	Adjustable spanner	Very Good Quality	Size: Upto 150 mm	2
61	Pipe wrench	Very Good Quality	Size: Max 300 mm	2
62	C – clamp	Very Good Quality	Size: Upto 75 mm	4
63	C-clamp	Very Good Quality	Size: Upto 150 mm	4
64	Snap- off Knife	Very Good Quality	Size:18 mmm	2
65	16pcs screw driver set	Very Good Quality	Pieces Per Set: 16 pcs	1
66	6pcs precision screw driver set	Very Good Quality	Pieces Per Set: 16 pcs	2
67	Max steel snip cutter	Very Good Quality	Length: 250 mm	2
68	PVC Pipe cutter	Very Good Quality	Length: 42 mm	2
69	Hot Glue Gun	Very Good Quality	Power: 40 W	4
70	Small file set	Very Good Quality	Length: 160 mm	2
71	Big file set	Very Good Quality	Length: 200 mm	2
72	Chisel set	Very Good Quality	Weight: 340 gm	2
73	Punch set	Very Good Quality	Weight: 390 gm	2
74	Bench wise	Very Good Quality	Base Type: Fixed Size:2–3½" nominal JawWidth:60mm	2
75	Router Bit Starter Kit	Very Good Quality	Pieces Per Set: 15 pcs	1
76	Drill bit set	Very Good Quality	WAF(mm):1,1.5,2,2.5,3,3.5,4,4.5,5,5.5,6,6.5,7,7.5,8,8.5,9,9.5,10,10.5,11,11.5,12,12.5,13 Wt:~1.3Kg nom.wt Sz(mm):205×115×55 overall	2

77	Baby wise	Very Good Quality	Vice Type: Bench Size:2" nominal JawWidth:50mm	2
78	Ratchet Set	Very Good Quality	Vice Type: Bench Sz:2" nominal; Jaw:50mm	2
79	Pegboard	Very Good Quality		5
80	Digital Vernier Caliper	Very Good Quality	Product Type: Digital Calliper Meas.Range:0–150mm / 0–6" Resolution:0.01mm	2
81	Micrometer	Very Good Quality	Resolution:0.001mm/0.00005" Meas.Range:0–25mm/0–1"	1
82	Steel Rule 300mm	Very Good Quality	Product Type: Steel Rule ScaleSize:12"/300mm Material: Stainless Steel	5
83	Steel Rule 600mm	Very Good Quality	Product Type: Steel Rule ScaleSize:24"/600mm Material: Stainless Steel	5
84	Engineering Square	Very Good Quality	Size:150×80mm nominal Material: Carbon Steel	2
85	Meter Tape 30m	Very Good Quality	Length: 30 m	1
86	Measuring Tape 3M	Very Good Quality	Length: 3 m	3
87	Measuring Tape 5M	Very Good Quality	Length: 5 m	3
88	Spirit Level	Very Good Quality	Vials:3 Accuracy:0.5mm/m Length:300mm Product Type: Level	3
89	Goggle	Very Good Quality	Goggle – Industrial Standard Make	5
90	Apron	Very Good Quality	Apron - Standard Make	5
91	Ear Muff	Very Good Quality	Earmuff – Industrial Standard Make	5
92	Mask	Very Good Quality	Mask – Industrial Standard Make	50
93	Fire Extinguisher	Very Good Quality	Fire Extinguisher– Industrial Standard Make	6

94	First Aid Kit	Very Good Quality	First Aid Kit – Industrial Standard Make	2
95	Gloves Pair	Very Good Quality	Gloves – Industrial Standard Make	10
96	Normal Oven	Branded Company Product with at least three years product warranty	Oven Cap: 20L or more Type: Solo Door: Side Swing Child Lock: Yes Completion Beeper: Yes Power Levels: upto 5 Control: Membrane Type Cavity Mat: Anti-Bacterial Dims(mm):455×252×320 PowerOut:700W or less	1
97	Refrigerator	Branded Company Product with at least three years product warranty	Capacity:183L or more AnnualEnergyConsumption:148kWh/Year or less RefrigeratorFreshFoodCapacity:165L or more Freezer Capacity: min 18L BottleCount:5 or more NoiseLevel:40dB or less Installation Type: Freestanding	1
98	Smart Board	Branded Company Product with at least three years product warranty	Display Size: Approx 75Inch (190 cm) Up to Resolution: 4KUHDorHigher Brightness: Min 350 nits; Typ400nitsApprox Contrast Ratio: Typ 1200: 1Upto Response Time: Approx 8ms Viewing Angle: Approx178DegreesWide WorkingFrequency:1.5GHzNominal RAM:4GBOrMore InternalStorage:32GBMin OS: Android Based HDMI: 3Ports USB: 2Ports Sensing Type: Infrared Touch Frame Surface Protection: 4mm Toughened Glass Or Equivalent Infrared Touch Points: 20Approx Voltage:DC+5V±5%Range OPS: Optional	1
99	Projector	Branded Company Product with at least three years product warranty	Projection Tech: RGB liquid crystal shutter projection (3LCD) Up to Connectivity: USB Type B: 1port (FirmwareUpdate/Copy OSD) Approx AnalogInput:D-Sub15pin:1port Digital Input: HDMI:1port Projection Lens: Type: No Optical Zoom/Focus (Manual)Nominal FocalLength:16.70mm Approx	1

			FNumber:1.44 Nominal Zoom:1.44-1.95 Ratio (Wide to Tele) ThrowRatioRange:1.00–1.35(Digital Zoom Approx	
100	Printer	Branded Company Product with at least three years product warranty	Functions: Print, Scan, Copy Printer Type: Laser Nominal Dims(mm):409×398.5×267Approx Weight:9.7KgNominal PrintSpeed:Upto30ppm(A4Size)Approx Warranty:1YearOn-Site PrintResolution:600×600dpi,HQ1200(2400× 600dpi) Quality Approx 2Sided-Duplex- PaperType:Plain,Thin,RecycledApprox 2Sided-Duplex-PaperSize:A4 PaperHandling:Tray#1- PaperType:Plain,Thin,Recycled Tray#1- MaxCapacity:Upto250Sheets(80g/m ²)Approx PaperOutput:Upto100Sheets(80g/m ²)FaceDo wnTray;OneSheetFaceUpTrayApprox Copy- Colour /Mono: Yes/Yes Multiple Copies: Sorts/StacksUpto99PagesApprox Enlarge/Reduce:25%- 400%(In1%Steps)Approx CopyResolution:600×600dpi 2Sided-Duplex- CopyPaperType:Plain,Thin,Recycled 2Sided-Duplex-CopyPaperSize:A4 Scan- ResolutionInterpolated:Upto19200×19200dp iApprox Scan- ResolutionGlass:Upto600×2400dpiApprox Connectivity:Hi-SpeedUSB2.0 DisplayType:16Chars×2Lines MemoryCapacity:32MBAapprox PowerSource:220-240VAC50/60Hz PowerConsumption-Ready:Approx60W PowerConsumption-Sleep:Approx6.6W PowerConsumption-Off:Approx0.08W NoiseLevel:50dB(A)Approx	1
101	Desktop	Branded Company Product with at least three years product warranty	CPU: INTEL CORE I7-12THGEN or Higher RAM:8GB+512GB SSD or more Conn: LAN+WIFI+BLUTOOTH+KEYMOUSE Display:20" DESKTOP MONITOR	5
102	3D printer Filament	Very Good Quality	Weight Kg: 1 Approx Melt Flow Index: 2 (190°C/2.16kg) Nominal FilamentLength:330mApprox Dim Accuracy: +/-0.1mmApprox	10

			Roundness Accuracy: +/-0.5mmApprox SpoolInnerDia:55mmNominal SpoolOuterDia:200mmApprox SpoolWeight:300gNominal SpoolWidth:65mmApprox	
103	Acrylic Sheet 3mm, 4ft x 4ft	Very Good Quality		20
104	Acrylic Sheet 4mm, 4ft x 4ft	Very Good Quality		20
105	Acrylic Sheet 5mm, 4ft x 4ft	Very Good Quality		20
106	Foam Sheet 8mm, 4ft x 4ft	Very Good Quality		2
107	Foam Sheet 10mm, 4ft x 4ft	Very Good Quality		1
108	Foam Sheet 12mm, 4ft x 4ft	Very Good Quality		1
109	Foam Sheet 15mm, 4ft x 4ft	Very Good Quality		1
110	Ply Board 5mm, 2ft x 4ft	Very Good Quality		12
111	Nylon Rod 10mm, 1m	Very Good Quality		5
112	Nuts (3mm,4mm,5mm, 6mm,8mm,10mm, 12mm) Pack of 100	Very Good Quality		1
113	Bolts (3mm,4mm,5mm, 6mm,8mm,10mm, 12mm) dia 1" Inch Pack of 100	Very Good Quality		1
114	Screws (3mm,4mm,5mm) Pack of 100	Very Good Quality		1
115	Washers (3mm,4mm,5mm, 6mm,8mm,10mm, 12mm) Pack of 100	Very Good Quality		1

116	Studs (6mm,8mm) 1 Meter	Very Good Quality		2
117	Nails (1",2",3",1.5",5") Pack of 100	Very Good Quality		1
118	Fevicol 2Kg	Very Good Quality		1
119	2 Way Tape	Very Good Quality		10
120	PVC Pipe .75",10ft	Very Good Quality		10
121	PVC Pipe 1",10ft	Very Good Quality		10
122	PVC Pipe 1.5",10ft	Very Good Quality		10
123	PVC Pipe 2.0",10ft	Very Good Quality		10
124	Aluminium channels (L, C, Box, strip length 12ft)	Very Good Quality		2
125	PCB Drill Bit 0.4mm	Very Good Quality		10
126	PCB Drill Bit 0.8mm	Very Good Quality		10
127	PCB Drill Bit 1mm	Very Good Quality		10
128	Drill Bit 4mm	Very Good Quality		10
129	Drill Bit 5mm	Very Good Quality		10
130	Drill Bit 6mm	Very Good Quality		10
131	Arduino UNO R3	Very Good Quality		5
132	Arduino NANO	Very Good Quality		5

133	Arduino Mega	Very Good Quality		3
134	Raspberry Pi Model 4B, 4GB	Very Good Quality		3
135	ESP8266 NodeMCU	Very Good Quality		2
136	ESP32 Development Board	Very Good Quality		2
137	Beaglebone blu	Very Good Quality		1
138	Beaglebone Black	Very Good Quality		1
139	Voltage Regulator Module	Very Good Quality		2
140	Mini Micro submersible Water Pump	Very Good Quality		2
141	Piezoelectric Plate	Very Good Quality		2
142	8*8 LED Matrix Module	Very Good Quality		2
143	Bluetooth	Very Good Quality		2
144	7 Segment LED Display	Very Good Quality		2
145	GSM/GPRS/GPS Module	Very Good Quality		2
146	Laser Module	Very Good Quality		2
147	LDR Module	Very Good Quality		2
148	4×4 Matrix Keypad	Very Good Quality		2
149	Joy Stick Module	Very Good Quality		2

150	Active Buzzer (BIG)	Very Good Quality		2
151	Active Buzzer (SMALL)	Very Good Quality		2
152	Motor Driver	Very Good Quality		2
153	Sound Playback Module	Very Good Quality		2
154	BO Motors	Very Good Quality		10
155	Vibrating Motor	Very Good Quality		10
156	Capacitive Touch Switch	Very Good Quality		2
157	IR Sensors (Obstacle Sensors)	Very Good Quality		2
158	Triple Axis Magnetometer	Very Good Quality		2
159	Humidity Sensor	Very Good Quality		2
160	MQ-2	Very Good Quality		2
161	MQ-3	Very Good Quality		2
162	MQ-4	Very Good Quality		2
163	MQ-5	Very Good Quality		2
164	MQ-7	Very Good Quality		2
165	Ultrasonic Sensor Module	Very Good Quality		2
166	Triple Axis accelerometer	Very Good Quality		2

167	PIR Motion Detector Module	Very Good Quality		2
168	Pulse Rate Heart Sensor	Very Good Quality		2
169	Relay Module	Very Good Quality		2
170	Soil Moisture Sensor	Very Good Quality		2
171	Touch Sensor	Very Good Quality		2
172	Rain Drop Sensor	Very Good Quality		2
173	Flex Sensor	Very Good Quality		2
174	Temperature Sensor	Very Good Quality		2
175	Force Pressure Sensor	Very Good Quality		2
176	Colour Recognition Sensor	Very Good Quality		2
177	Water Flow Sensor	Very Good Quality		2
178	Sound Sensor	Very Good Quality		2
179	IR Sensor Array for Line Following	Very Good Quality		2
180	RFID Reader-Tags	Very Good Quality		2
181	RF Modules Tx& Rx 315 MHz ASK	Very Good Quality		2
182	Stepper motor with Driver Board	Very Good Quality		2
183	Servo Motor 360 rotation	Very Good Quality		10

184	Servo Motor 180 rotation	Very Good Quality		10
185	Metal Gear Servo Motor (180° Rotation)	Very Good Quality		10
186	Solder Wire 100grm	Very Good Quality		10
187	Solder Flux	Very Good Quality		10
188	830 Points Solderless Breadboard	Very Good Quality		5
189	400 Points Solderless Breadboard	Very Good Quality		5
190	Copper Clad Board single side	Very Good Quality		10
191	Copper clad board double side	Very Good Quality		10
192	Male to Male Breadboard Jumper	Very Good Quality		10
193	Female to Female Breadboard Jumper	Very Good Quality		10
194	Male to Female Breadboard Jumper	Very Good Quality		10

Terms and Conditions

The following Terms and Conditions apply to all bidders participating in the tender for the supply, installation, and commissioning of equipment, tools, and machines for the establishment of an AICTE IDEA Lab. All prospective vendors are required to read and comply with these terms in their entirety.

1. General Information

All equipment and materials must be delivered in the quantities and specifications as mentioned in the purchase order issued by the purchaser. The delivery location will be specified in the purchase order (e.g., XYZ Institute of Technology, [Insert Address]). The entire contract shall remain valid for a period of three (3) months from the date of award.

Quotations submitted by bidders must remain valid for a minimum of 90 days from the final date of submission. Any quotation that does not meet this validity period will be considered non-compliant.

2. Bid Submission Guidelines

Bids may be submitted either via email (digitally signed) or in hard copy form, as specifically mentioned in the tender notice. All quotations must be printed on the bidder's official letterhead and duly signed by an authorized representative.

Each bid must be complete in all respects and must include the following mandatory documents:

- Detailed Profile of the Bidder, highlighting experience and key competencies.
- Copy of the Company/Firm Registration Certificate.
- Copy of valid GST Registration Certificate.
- Copy of submitted GST return (at least up to November 2024).
- Copy of valid PAN Card.
- Chartered Accountant's Certificate for turnover for FY 2021-22, 2022-23, and 2023-24.
- CA-certified and audited Balance Sheets and Financial Statements (Form 3CB/3CA) for the last three financial years.
- Copies of Work Completion or Experience Certificates of similar completed works.
- Valid Shop Establishment License or Factory License.
- Genuine Manufacturer Authorization Form (MAF), which will be subject to verification with the respective OEM.
- Bidder should provide an Escalation Matrix for service and after sales support.
- Valid EPF, ESIC, and Professional Tax Registration Certificates (where applicable).
- Income Tax Return Acknowledgements for FY 2021-22, 2022-23, and 2023-24.
- Declaration/Affidavit (on ₹500/- Stamp Paper) regarding no blacklisting from IITs/NITs/Govt. Offices/PSUs/Autonomous Bodies.
- Complete, signed, and stamped tender document including amendments and deviation sheets, if any (to be uploaded online only).
- Declaration of agreed specifications on company letterhead, duly signed and stamped.
- Any other documents in support of technical eligibility.

All bidders are required to quote for all the items listed in the BoQ. Partial or item-wise quotations will be summarily rejected. Each bidder is allowed to submit only one quotation per package; multiple submissions from a single bidder will lead to disqualification.

3. Technical Documentation and Compliance

The bidder must furnish complete technical documentation for each quoted item. This includes detailed product specifications, installation manuals, operation and maintenance manuals. The

bidder is also required to submit a layout/design proposal aligned with the lab setup requirements, highlighting compliance points against the tender specifications.

Original technical brochures or scanned versions of product catalogs should be submitted with the bid. Wherever available, URLs to the OEM's official product page should also be provided for cross-verification.

Each bidder must clearly mention the make, model, and complete technical specifications for the equipment being offered. A compliance sheet responding to each technical requirement outlined in the tender must be prepared and duly signed.

4. Eligibility and Qualification Criteria

All bidders must be OEMs or authorized partners/distributors with valid authorization for the products they are quoting. Authorization letters must be submitted on the OEM's official letterhead.

Bidders must demonstrate relevant experience by submitting a minimum of three Purchase Orders (executed within the last five years) for similar equipment supplied to academic, R&D, or industrial institutions. A list of at least five institutional clients (with contact information) must be provided as a reference.

It is mandatory that the bidder or OEM has a registered support office in India to provide warranty and after-sales support. In the case of imported equipment, either the OEM or their authorized seller must submit a certificate confirming the presence of such a service support facility in India.

The OEM must also submit a declaration confirming the availability of spare parts for the quoted products for a minimum of one year and authorize the bidder to participate in the tender.

5. Financial Criteria

Each bidder must have an average annual turnover of ₹5 Crores or more over the last three financial years (FY 2022–23, 2023–24, 2024–25). The turnover must be supported by a CA certificate or audited financial statements.

Prices quoted must be inclusive of all taxes (GST, customs, etc.), transportation, packaging, insurance, unloading, installation, commissioning, and training charges. There shall be no extra claim under any circumstances after the finalization of the bid.

The quoted prices must be firm and fixed throughout the duration of the contract. No escalation in price will be allowed under any pretext.

6. Evaluation and Award of Contract

All bids will be evaluated on the basis of compliance with the technical specifications, completeness of submitted documentation, financial eligibility, and price competitiveness. The contract shall be awarded to the bidder whose offer is determined to be technically responsive and lowest in cost.

The purchaser reserves the absolute right to reject any or all bids without assigning any reason. The final decision on selection will be at the sole discretion of the purchaser and shall be binding on all parties.

7. Warranty and After-Sales Service

All equipment must carry a minimum onsite warranty of at least **three years** from the date of successful installation and commissioning. During this warranty period, the bidder shall repair or replace any defective items at no additional cost to the purchaser. All associated transportation, testing, and labor costs shall be borne by the bidder.

In case of any service delay or failure to resolve issues during the warranty period, the purchaser reserves the right to invoke penalties or reject future business from the vendor.

8. Payment Terms

Payment shall be released only after the successful supply, installation, and commissioning of the equipment. Final inspection and acceptance will be carried out by the purchaser's technical committee.

No payment shall be made for equipment that is received in damaged condition, is non-functional, or fails to meet the required specifications. The bidder must submit all necessary documentation (delivery challans, installation report, warranty documents, training certificate, invoice, etc.) to process payment.

9. Other Conditions

No bidder shall be given preference based on category, class, or affiliation. The procurement may be extended to additional phases (e.g., Phase II) depending on availability of funds and institutional requirements.

Delayed delivery or installation may result in cancellation of order or imposition of penalties, as deemed fit by the purchaser. The scope of the supply and service must be entirely as per the BoQ and technical specifications. Bids with partial compliance or deviations shall not be entertained.

10. Submission Deadline and Contact Details

All quotations must be submitted by [Insert Date and Time] to the email ID [Insert Email Address] or sent in hard copy to:

[Insert Institute Name]

[Insert Full Address]

Contact: [Insert Contact Person Name & Number]

Email: [Insert Email Address]