



**ACE**  
Engineering College  
(Approved by AICTE & Affiliated to JNTUH)



**AN AUTONOMOUS INSTITUTION**

**Tender Ref. No: ACEEC/IDEALAB/2025-26/01**

**Date: 06/10/2025**

## Tender Notice

Sealed/Online tenders are invited from reputed and experienced suppliers, manufacturers, or authorized distributors for the **supply, installation, and commissioning of equipment, tools, and machines** for setting up an **AICTE IDEA Lab** at ACE Engineering College, Ankushapur, Hyderabad. The laboratory is to be developed as per the AICTE guidelines for promoting innovation, design thinking, and prototyping skills among students and faculty. The detailed specifications of the required items are enclosed with this document.

## 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 which will be specified in the purchase order is ACE Engineering College, Ankushapur, Hyderabad, Medchal-Malkajgiri District. 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:



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- 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.



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### 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.



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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 on site 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



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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. Note on Equipment/Consumables Specifications**

Minor changes in the list of equipment, consumables, or specifications may be made, if required, based on mutual discussion and agreement with the vendor.

### **11. Submission Deadline and Contact Details**

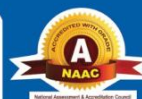
- Tender documents can be obtained from the institute office during working hours or downloaded from our website: <https://www.aceec.ac.in/aicte-idea-lab/>
- All quotations must be submitted by 31-10-2025 to the mail ID: [principal@aceec.ac.in](mailto:principal@aceec.ac.in) or send in hard copy to:

**Dr.M Murali**

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Hyderabad-501301, Telangana,  
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## List of Equipment's

S.No	Equipment's	Preferred brands if any	Specifications	Qty
1	Single Nozzle 3D printer (FDM)	Branded Company Product with at least three years product warranty	3D Printer (FDM Type) – Build Volume: 180×180×180 mm; Max Print Speed: 500 mm/s; Max Nozzle Temp: 300 °C; Max Bed Temp: 80 °C; Supported Filaments: PLA, PETG, TPU, PVA; Calibration: Fully Automatic; Connectivity: Wi-Fi, MicroSD, Mobile App; Dimensions: 347×315×365 mm; Weight: 5.5 kg; Power: 150 W, 100–240 V; Features: AMS Lite multi-color option, quiet operation (<48 dB).	4
2			3D Printer (FDM Type) – Build Volume: 256×256×256 mm (minimum); Max Print Speed: up to 500 mm/s; Max Nozzle Temperature: 300 °C; Max Bed Temperature: 110 °C; Supported Filaments: PLA, PETG, TPU, PVA, ABS, ASA, PC, Nylon, Carbon/Glass Fiber reinforced materials; Extruder: Direct drive with all-metal hotend; Calibration: Fully Automatic (bed leveling, flow calibration, vibration compensation); Connectivity: Wi-Fi, LAN, MicroSD, Mobile App; Dimensions: approx. 389×389×457 mm; Weight: ~14 kg; Power Requirement: ~350 W, 100–240 V; Features: Multi-color printing option (up to 4 spools), enclosed build chamber, camera monitoring, power-loss recovery.	1
3	3D Printer - SLA	Branded Company Product with at least three years product warranty	Resin 3D Printer (MSLA/LCD Type) with Curing and Washing Station – Build Volume: approx. 218×123×220 mm; XY Resolution: 16K (approx. 18–20 microns); Light Source: COB + refractive lens system, high uniformity; Layer Thickness: 0.01–0.15 mm; Printing Speed: up to 150 mm/h; Display: 7–10 inch touch screen; Supported Materials: Standard 405 nm UV resins including ABS-like, water-washable, tough, and high-detail resins; Curing Station: 360° multi-angle UV curing with reflective surface; Washing Station: Sealed container with adjustable agitation modes; Connectivity: USB, LAN, Wi-Fi; Slicer Software: Compatible with standard resin slicers; Dimensions: approx. 305×273×569 mm (printer), curing/washing station compact desktop size; Power Requirement: 100–240 V AC; Features: High-precision 16K printing, fast curing and washing, low odor design, air filtration.	1
4	Hybrid 3D scanner	Branded Company Product with at least three years product warranty	Handheld hybrid 3D scanner – Modes: blue-laser (7-line) & near-infrared structured light; Accuracy: blue-laser up to 0.02 mm @100 mm; NIR up to 0.1 mm; Resolution: 0.02–2 mm (laser), 0.1–2 mm (NIR); Scan Speed: up to 60 fps (laser), 20 fps (NIR); Scan Range: laser min 5×5×5 mm, capture 270×170 mm @300 mm; NIR min 150×150×150 mm, capture 930×580 mm @1000 mm; Working Distances: laser 150–400 mm, NIR 170–1000 mm; Color Capture: 24-bit full-color via LED texture	1



			lights; Alignment: laser—marker; NIR—marker/geometry/texture; Sensor: 1920×1200 imaging camera, IMU stabilization; Outputs: OBJ, STL, PLY; Interface: USB-C/USB 3.0, 12 V 2 A power; Safety: Class I eye-safe laser; Dimensions: ~215×50×74 mm; Weight: ~372 g; Calibration: high-precision glass board; OS: Windows/macOS; Environmental: -10 °C to 40 °C, 0–90 % RH.	
5	PCB Milling Machine	Branded Company Product with at least three years product warranty	Desktop CNC milling machine – Work Area: 300×300×80 mm; Spindle Power: 2.2 kW, up to 24,000 RPM; Drive System: stepper motors with LM-guide rails; Rapid Traverse: 7,000 mm/min; Positional Accuracy: 50 µm; Repeatability: 20 µm; Controller: integrated motion controller with proprietary UI; Included Software: dedicated CAM control software; Warranty: 1 year; Suitable For: prototyping in aerospace, automotive, defense, molds, PCBs; Power Supply: single-phase (100–240 V); Machine Weight: approx. 200 kg.	1
6	CO <sub>2</sub> Laser Cutting & Engraving Machine	Branded Company Product with at least three years product warranty	CO <sub>2</sub> Laser Cutting and Engraving Machine – Working Area: 400×400 mm (minimum); Laser Power: 60–100 W sealed CO <sub>2</sub> glass tube; Laser Wavelength: 10.6 µm; Cutting Speed: up to 500 mm/s; Engraving Speed: up to 1000 mm/s; Positioning Accuracy: ±0.05 mm; Supported Materials: acrylic, wood, MDF, leather, fabric, paper, rubber, plastics, glass (engraving), anodized metals (engraving); Cooling System: water-cooled with protection; Exhaust: air assist and smoke extraction system; Motion System: precision stepper motor with linear guide rails; Control: DSP controller with USB/Wi-Fi connectivity; Software Compatibility: CorelDRAW, AutoCAD, standard vector/bitmap formats; Power Supply: 220 V AC, 50/60 Hz; Dimensions: approx. 1200×1000×1100 mm; Weight: ~250 kg; Features: red-dot pointer, emergency stop, safety interlocks, rotary attachment compatibility.	1
7	CNC Router Machine	Branded Company Product with at least three years product warranty	CNC Router Machine – Working Area: minimum 1300×2500×200 mm; Spindle Power: 3.5–6 kW air-cooled spindle, variable speed up to 24,000 RPM; Drive System: stepper/servo motors with ball screw and linear guide rails; Rapid Travel Speed: up to 25,000 mm/min; Cutting Accuracy: ±0.05 mm; Repeatability: ±0.02 mm; Supported Materials: wood, MDF, acrylic, PVC, plastics, composites, aluminum sheets; Tool Change: manual or optional automatic tool changer; Control System: DSP/NC Studio controller with USB connectivity; Compatible Software: ArtCAM, UG, Type3, JD Paint, standard G-code; Vacuum Table: multi-zone vacuum hold with dust collection system; Power Requirement: 220/380 V AC, 50/60 Hz; Dimensions: approx. 3200×2100×1700 mm; Weight: ~1200 kg; Features: emergency stop, limit switches, lubrication system, high-precision cutting for prototyping and production	1

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website: [www.aceec.ac.in](http://www.aceec.ac.in) | E-Mail: [info@aceec.ac.in](mailto:info@aceec.ac.in).

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		with at least three years product warranty	<p>Cutting Force: Adjustable from at least 10 gf to 500 gf.            Cutting Speed: Up to at least 800 mm/s.            Mechanical Resolution: <math>\leq 0.025</math> mm. Repeatable Precision: <math>\pm 0.1</math> mm or better.            Media Width Support: 50 mm to at least 720 mm.            Interface &amp; Connectivity: USB and/or network connectivity. Software Compatibility: Works with common vector software (CorelDraw, Adobe Illustrator, or equivalent) via plug-ins.            Accessories: Stand with media roller, minimum 3 spare blades, and pen holder for plotting.            Compliance: ISO or CE certified.</p>	
9	Lathe Machine cum milling	Branded Company Product with at least three years product warranty	<p>Lathe Center Height / Distance Between Centers: 100 mm / 400 mm            Swing Over Bed: 200 mm            Spindle Bore / Speed: 20.5 mm / 60–3000 rpm (6 steps, variable)            Tailstock Quill Travel / Taper: 40 mm / MT 2            Thread Cutting: 0.4–3.5 mm (metric), 8–44 TPI (inch)            Motor Power: 550 W DC, variable speed            Bed Construction: Induction-hardened, precision-ground            Mill/Drill Head PF 230: 140 × 150 mm table, 40 mm travel (X/Y), 70 mm (Z)            Drilling Capacity: Up to 13 mm            Milling Capacity: Face milling 30 mm, end milling 16 mm            Machine Voltage: 230 V AC, single-phase            Make &amp; Model (Indicative): Precision lathe PD 400 with Mill/drill head PF 230 or equivalent.</p>	1
10	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
11	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
12	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
13	Bench Top Drill Machine	Branded Company Product with at least three years product warranty	<p>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</p>	1



			supply cord: 1.75 m (5.7 ft) Additional Accessories: Bench Vise: 1 No., Drill Bit Set 10 Pcs: 1 No	
14	Portable Welding Machine	Branded Company Product with at least three years product warranty	Portable TIG Welding Machine – Welding Process: TIG (GTAW) with optional MMA; Output Current Range: 10–200 A (minimum); Input Power: Single Phase 220 V AC, 50/60 Hz; Duty Cycle: ≥60% at rated output; Welding Thickness Capacity: 0.5 mm to 6 mm (mild steel, stainless steel, copper, titanium, etc.); Start Method: High Frequency (HF) or Lift Arc; Cooling: Air cooled with overheat protection; Electrode Size: 1.6–3.2 mm; Power Efficiency: ≥85%; Protection Class: IP21 or higher; Features: lightweight portable design (<10 kg), digital display for current control, hot start and anti-stick functions, suitable for precision welding and fabrication in educational and prototyping labs.	1
15	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
16	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
17	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 Overall Dimensions: min 350×450 mm Machine Weight: upto 25 kg	1
18	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: ±0.5% or ±3 digits, whichever is higher AC Voltage Accuracy: Within ±1% + 3 digits DC Current Measurement: Up to 10 A AC Current Measurement: Maximum 10 A DC Current Accuracy: ±1.5% + 3 digits (approximate) AC Current Accuracy: ±1.5% + 3 digits (typical) Resistance Measurement: Up to 40 MΩ Resistance Accuracy: Estimated at ±1.5% + 3 digits	5



			<p>Capacitance Measurement: Up to 1000 <math>\mu</math>F Capacitance Accuracy: <math>\pm 5\%</math> or <math>\pm 5</math> digits Operating Temperature Range: From <math>0^{\circ}\text{C}</math> up to approximately <math>40^{\circ}\text{C}</math> Storage Temperature Range: Between <math>-30^{\circ}\text{C}</math> and <math>60^{\circ}\text{C}</math> Overall Dimensions (H<math>\times</math>W<math>\times</math>L): Approximately 183<math>\times</math>91<math>\times</math>49.5 mm Unit Weight: Around 455 grams Safety Compliance: As per IEC 61010-1 &amp; IEC 61010-2-030 standards, suitable for CAT III 600V and CAT II 1000V environments with Pollution Degree 2 classification</p>	
19	MSO 100 MHz	Branded Company Product with at least three years product warranty	<p>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 &amp; Fall (slope), Alternate, 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 AWG Sample Rate: 200 MSa/s AWG Vertical Resolution: 14 bits Display: 8-inch WVGA TFT LCD (800 <math>\times</math> 480 pixels) Data Logging Capability: Up to 1000 hours Segmented Memory: Supports up to 29,000 segments for efficient waveform storage and retrieval Connectivity: USB 2.0 (host and device), Ethernet (RJ45), and Go-NoGo BNC Dimensions (W <math>\times</math> H <math>\times</math> D): 380<math>\times</math> 200<math>\times</math> 125 mm or above Weight: 2 Kgs or above 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>	1
20	Digital oscilloscope	Branded Company Product with at least three years product warranty	<p>Number of Channels: Up to 2 independent analog inputs Memory Record Length: Up to 10 Mpts for extended waveform capture Bandwidth Limiting: Selectable 20 MHz bandwidth filter Sampling Rate: Maximum of 1 GSa/s real-time equivalent per channel Rise Time: <math>\leq 3.5</math> ns depending on probe and settings</p>	1



			<p>Display: 7" TFT color LCD with 800×480 resolution  Time Base Range: From 5 ns/div to 100 s/div, user-adjustable  Vertical Resolution: 8-bit digital resolution  Trigger Modes: Automatic, Normal, and Signal-dependent triggering  Maximum Input Voltage: 300 Vrms (within safety limits)  Input Sensitivity: Within the range of 1 mV/div to 10 V/div  Input Coupling Options: Selectable among AC, DC, and Ground  Trigger Coupling Modes: Configurable as AC, DC, High-pass, or Low-pass  Physical Dimensions: Approximately 350 × 200 × 120 mm or above  Unit Weight: 2.5 kg or above  Input Impedance: Nominal 1 MΩ // 16 pF  Measurement Capabilities: Equipped for automatic parameter extraction, background noise filtering, and AUTOSET configuration for display scaling (time base/gain)  Protocol Decoding Support: Capable of analyzing I2C, SPI, UART, CAN, and LIN communication protocols  Standard Accessories: Includes mains power cable, user manual (digital format), and one GTL-16E probe per input channel</p>	
21	Power supply	Branded Company Product with at least three years product warranty	<p>Output Configuration: 4-channel design with independent electrical isolation across all outputs  Channel Output Ranges:</p> <ul style="list-style-type: none"> <li>• CH1 &amp; CH2: Adjustable output voltage from 0 to 32V with a current delivery capacity up to 3A</li> <li>• CH3: Variable range 0 to 5V supporting up to 1A</li> <li>• CH4: Output adjustable from 0 to 15V with a load current of up to 1A</li> </ul> <p>Constant Voltage Operating Mode Line Regulation: <math>\leq 0.01\% + 3 \text{ mV}</math>  (approximate value within rated voltage range)  Load Regulation: <math>\leq 0.01\% + 3 \text{ mV}</math> (across rated load variation)  Ripple &amp; Noise: <math>\leq 1 \text{ mVrms}</math> across full bandwidth</p> <p>Constant Current Operating Mode Line Regulation: <math>\leq 0.2\% + 3 \text{ mA}</math>  Load Regulation: <math>\leq 0.2\% + 3 \text{ mA}</math> Ripple Current: <math>\leq 3 \text{ mArms}</math> (typical)</p> <p>Safety &amp; Operational Features  Output Control: Independent output ON/OFF switching functionality is required  Voltage Resolution: Approximately 100 mV (*1)  Current Resolution: Approximately 10 mA (*1)  Display Parameters</p>	1



			<p>Display Units: Four separate displays required for individual channel status visualization Display Type: 4.3-inch LCD (color or monochrome as applicable)</p> <p>Functional Features Tracking Operation: Supported (required for synchronizing output behavior) Auto Series/Parallel: Supported (automatic internal reconfiguration required) Power Requirements Supply Input: 230V AC <math>\pm 10\%</math>, 50 Hz Mechanical Specifications Maximum Dimensions (W <math>\times</math> H <math>\times</math> D): Within 200 mm <math>\times</math> 100 mm <math>\times</math> 200 mm Maximum Weight: 10 kg or less</p>	
22	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. 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. Frequency Resolution: Frequency resolution shall be maintained within a maximum of 0.1 Hz. Frequency Stability: The frequency stability shall be within <math>\pm 20</math> ppm (parts per million). Frequency Accuracy: The frequency accuracy shall be maintained within <math>\pm 20</math> ppm. Frequency Aging: Frequency aging shall not exceed <math>\pm 5</math> ppm per annum. Amplitude Range: Output amplitude shall be up to 10 V peak-to-peak (Vp-p) into a 50 <math>\Omega</math> load. Amplitude Accuracy: Amplitude accuracy shall be within <math>\pm 20\%</math> at maximum amplitude setting. Output Impedance: Nominal output impedance shall be 50 <math>\Omega</math> with a tolerance of <math>\pm 10\%</math>. Attenuator: A single-step attenuator of -40 dB <math>\pm 1</math> dB shall be provided. Display: A 6-digit LED display shall be incorporated for parameter indication. Output Control: Output shall be controlled via an ON/OFF selector switch. Power Source: The device shall operate on an AC supply of 240 V, 220 V, or 110 V <math>\pm 10\%</math>, with frequency 50/60 Hz. Ambient Operating Temperature: Normal operation shall be ensured within the ambient temperature range of 0 <math>^{\circ}</math>C to 40 <math>^{\circ}</math>C. Dimensions: Maximum dimensions shall not exceed 255 mm (W) <math>\times</math> 95 mm (H) <math>\times</math> 295 mm (D). Weight: Maximum device weight shall be within 2.5 kg.</p>	
23		Branded Company Product	<p>DC Voltage: Range: 500 mV to 1000 V across 5 ranges. Accuracy: <math>\pm(0.03\% \text{ rdg} + 4 \text{ digits})</math>. Input impedance: 10 M<math>\Omega</math>.</p>	



	Bench Top Multimeter	with at least three years product warranty	<p>AC Voltage (True RMS): Range: 500 mV to 1000 V across 5 ranges. Accuracy: <math>\pm(0.5\% - 5\% \text{ rdg} + \text{digits})</math> depending on frequency and range. Input impedance: 10 M<math>\Omega</math>.</p> <p>DC Current: Range: 500 <math>\mu\text{A}</math> to 20 A across 6 ranges. Accuracy: <math>\pm(0.02\% - 0.3\% \text{ rdg} + 2 \text{ digits})</math> depending on range.</p> <p>AC Current (True RMS): Range: 500 <math>\mu\text{A}</math> to 20 A across 6 ranges. Accuracy: <math>\pm(0.5\% - 1\% \text{ rdg} + \text{digits})</math> depending on frequency. Resistance: Range: 500 <math>\Omega</math> to 20 M<math>\Omega</math> across 6 ranges. Accuracy: <math>\pm(0.1\% - 0.3\% \text{ rdg} + \text{digits})</math> 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 <math>\mu\text{F}</math>. Accuracy: <math>\pm(2\% \text{ rdg} + 4 \text{ digits})</math>.</p> <p>Frequency: Input level varies by range; functions include Auto/Manual Range, Max, Min, dBm, Rel, Hold.</p> <p>Continuity Beep: Threshold <math>&lt;5 \Omega</math>.</p> <p>Display: Dual 7-segment LED, 0.4" and 0.5". Power Source: AC 100/120/230 V <math>\pm 10\%</math>, 50/60 Hz.</p> <p>Dimensions &amp; Weight: Approximately 251 <math>\times</math> 91 <math>\times</math> 291 mm; 2.6 kg.</p>	
24	Non-Contact Voltage Tester	Branded Company Product with at least three years product warranty	<p>Function: Non-contact AC voltage detection tester. 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 <math>^{\circ}\text{C}</math> to 40 <math>^{\circ}\text{C}</math>. Power Source: Powered by standard batteries (typically 2 <math>\times</math> 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 <math>\times</math> 30 mm <math>\times</math> 25 mm).</p> <p>Weight: Lightweight, approximately 150 g for ease of portability.</p>	5
25	LCR Meter	Branded Company Product with at least three years product warranty	<p>Display: Approximately 2.8" TFT touch LCD screen. Resolution: 25,000 or above counts resolution on both primary and secondary displays.</p> <p>Basic Accuracy: Within <math>\pm 0.2\%</math> 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 <math>\pm 1 \text{ V}</math>.</p>	1



			<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>	
26	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. Temperature Stability: Within <math>\pm 2</math> °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 <math>\pm 10\%</math>, 50/60 Hz. Safety Features: Thermal cutoff and overload protection within required standards.</p> <p>Dimensions: Compact design with 100 mm <math>\times</math> 100 mm <math>\times</math> 90 mm (W <math>\times</math> H <math>\times</math> D) or above Weight: Approximately 1.5 kg for ease of portability and bench use.</p>	3
27	Digital Microscope	Branded Company Product with at least three years product warranty	<p>Magnification: 1600X Light source: 8 LED lights</p> <p>Resolution: 1920<math>\times</math>1080, 640*480 Pixel: 30W</p> <p>Focal length: 3-40mm manual adjustment Support Android 4.2 or above/win dows/Mac system</p>	1
28	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. Heating Element: Needle bit with MCH heater providing rapid heat-up and stable temperature control within <math>\pm 2</math> °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>	1



			<p>Safety: ESD-safe design compliant with applicable standards.</p> <p>Build: Metallic body with powder coating, approximate dimensions 280 mm × 180 mm × 140 mm (W × H × D).</p> <p>Weight: Approximately 3.5 kg.</p> <p>Power Source: AC 220 V ±10%, 50/60 Hz. 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>	
29	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>	1
30	Cordless drill	Branded Company Product with at least three years product warranty	<p>Torque (soft/hard/max.): Min 21/50/- Nm No-load speed (1st gear / 2nd gear): Min 0 – 500 / 0 – 1,900 rpm, Weight incl. battery: 1.3 kg or less Max. impact rate: 27,000 bpm</p> <p>Battery type: Lithium-Ion or equivalent Chuck capacity, min./max.: 1.5 / 13 mm Weight excl. battery: 0.99 kg</p> <p>Torque settings: 20+2 or better</p>	2
31	Jig Saw	Branded Company Product with at least three years product warranty	<p>Rated Input Power: Approximately 500 W maximum power consumption.</p> <p>Voltage, Electrical: Nominal 230 V AC supply.</p> <p>Saw Stroke Length: Approximately 20 mm stroke length.</p> <p>Stroke Rate at No Load: Adjustable within approximately 800 to 3,100 spm (strokes per minute).</p> <p>Weight: Approximately 2.08 kg total weight. Bevel Angle: Adjustable within approximately -45° to 45° range.</p>	1
32	Miter Saw	Branded Company Product with at least three years product warranty	<p>Rated Input Power: Approximately 1,750 W maximum power consumption.</p> <p>Saw Blade Diameter: Approximately 254 mm nominal diameter.</p> <p>M itre Setting: Adjustable up to approximately 47° left and 52° right.</p> <p>Bevel Setting: Adjustable up to approximately 45° left and 0° right.</p> <p>Saw Blade Bore Diameter: Approximately 25.4 mm standard bore.</p> <p>Cutting Capacity at 0°: Approximately 90 mm × 130 mm maximum cross-section.</p>	1



			<p>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.</p>	
33	Hot air gun	Branded Company Product with at least three years product warranty	<p>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.</p>	2
34	Table saw	Branded Company Product with at least three years product warranty	<p>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</p>	1
35	Bench grinder	Branded Company Product with at least three years product warranty	<p>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</p>	1
36	Angle Grinder	Branded Company Product with at least three years product warranty	<p>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.</p>	1
37	Straight Grinder	Branded Company Product with at least three years product warranty	<p>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.</p>	1
38	Circular Saw	Branded Company Product with at least three years	<p>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.</p>	1



		product warranty	Guide Rail Compatibility: Not compatible with guide rails. No-Load Speed: Typically 5,200 rpm. Weight: Around 4.1 kg	
39	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 $\pm 3$ dB	1
40	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
41	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 <sup>2</sup> 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
42	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
43	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



44	Cordless Vacuum Cleaner with Starter kit	Branded Company Product with at least three years product warranty	<p>Battery Voltage: Rated at approximately 18.0 V nominal voltage.</p> <p>Weight Excluding Battery: Around 1.3 kg without battery attached.</p> <p>Container Volume: Approximately 0.7 liters net capacity.</p> <p>Filter Surface Area: Roughly 55 cm<sup>2</sup> filtration surface.</p> <p>Maximum Airflow Rate (Turbine): Up to 10 liters per second.</p> <p>Maximum Vacuum Pressure (Turbine): Not exceeding 60 mbar under standard conditions.</p> <p>Operating Time (18 V Battery): Typically 7 minutes per Ah of battery capacity.</p>	1
45	Rotary Tool Kit	Branded Company Product with at least three years product warranty	<p>Rated Power Input: Approximately 175 W within nominal voltage range.</p> <p>Voltage: Operates within 220 to 240 V AC supply.</p> <p>Weight: Around 0.66 kg total mass.</p> <p>Length: Approximately 24 cm overall length. Width: About 4.1 cm nominal width.</p> <p>Depth: Roughly 4.3 cm depth dimension.</p> <p>No-Load Speed: Variable speed ranging from 5,000 up to 35,000 rpm.</p> <p>Battery Technology: Not applicable (n.a.). Speed Setting: Fully variable speed control as required.</p> <p>Accessory Quick Change System: Equipped with multi chuck for rapid accessory interchange.</p> <p>Vibration Level: Approximately 18 m/s<sup>2</sup> measured vibration</p>	1
46	Rubber Grip Hacksaw	Very Good Quality	<p>Depth of Throat: Approximately 98 mm (3.85 inches) nominal depth.</p> <p>Blade Length: Around 254 mm (10 inches) standard length.</p>	2
47	Hacksaw Mini	Very Good Quality	<p>Blade Length: Approximately 10 inches nominal length.</p> <p>Handle Material: Constructed from metal as standard.</p> <p>Overall Length: Around 11 inches total length.</p>	2
48	Claw Hammer Steel Shaft	Very Good Quality	<p>Weight: Approximately 8 oz (220 grams) nominal weight.</p> <p>Dimensions: Around 27.8 cm × 12.4 cm × 3.6 cm (L × W × H) overall size</p>	2
49	Ball Pein Hammer	Very Good Quality	<p>Weight: Approximately 110 grams nominal weight.</p> <p>Dimensions: Around 32.6 cm × 10 cm × 2 cm (L × W × H) overall measurements.</p>	2
50	Rubber mallet	Very Good Quality	<p>Weight: Approximately 450 grams nominal weight.</p> <p>Dimensions: Around 33.6 cm × 9.6 cm × 6.2 cm (L × W × H) overall size.</p>	2
51	Ring spanner set 12Pcs	Very Good Quality	<p>Weight: 3.08 Kg nominal weight. Quantity: 12 pcs per set.</p> <p>Size: 6 mm to 32 mm overall range.</p>	1
52	Open end spanner set 12Pcs	Very Good Quality	<p>Weight: Approx 1.74Kg nom.wt. Qty: 12pcs/set.</p> <p>Size: 6mm-32mm overall dims.</p>	1
53	Combination Spanner set 8Pcs	Very Good Quality	<p>Weight: Approx 649g nom.wt. Qty: 8pcs/set.</p>	1
54	Allen key set 10 pcs	Very Good Quality	<p>Hex Key Size: 1.5,2,2.5,3,4,5,5.5,6,8,10mm;</p> <p>Qty:10pcs/set</p>	2



55	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
56	Combination plier	Very Good Quality	Weight: Approx422g nom.wt. Size: 8"/200mm nominal	2
57	Long nose plier	Very Good Quality	Weight: Approx399g nom.wt. Size:180mm/6" nominal	2
58	Circlip straight 5"	Very Good Quality	Weight: Approx399g nom.wt. Size:130mm/5" nominal	2
59	Circlip bent	Very Good Quality	"Weight: Approx399g nom.wt. Size:130mm/5"" nominal"	2
60	Diagonal Cutter	Very Good Quality	"Weight: Approx239g nom.wt. Size:180mm nominal"	2
61	Wire Stripper	Very Good Quality	Weight: Approx281g nom.wt. Size:130mm nominal	2
62	Adjustable spanner	Very Good Quality	Size: Upto 150 mm	2
63	Pipe wrench	Very Good Quality	Size: Max 300 mm	2
64	C – clamp	Very Good Quality	Size: Upto 75 mm	4
65	C – clamp	Very Good Quality	Size: Upto 150 mm	4
66	Snap- off Knife	Very Good Quality	Size:18 mmm	2
67	16pcs screw driver set	Very Good Quality	Pieces Per Set: 16 pcs	1
68	6pcs precision screw driver set	Very Good Quality	Pieces Per Set: 16 pcs	2
69	Max steel snip cutter	Very Good Quality	Length: 250 mm	2
70	PVC Pipe cutter	Very Good Quality	Length: 42 mm	2
71	Hot Glue Gun	Very Good Quality	Power: 40 W	4
72	Small file set	Very Good Quality	Length: 160 mm	2
73	Big file set	Very Good Quality	Length: 200 mm	2
74	Chisel set	Very Good Quality	Weight: 340 gm	2
75	Punch set	Very Good Quality	Weight: 390 gm	2
76	Bench wise	Very Good Quality	Base Type: Fixed Size:2–3½" nominal JawWidth:60mm	2
77	Router Bit Starter Kit	Very Good Quality	Pieces Per Set: 15 pcs	1
78	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
79	Baby wise	Very Good Quality	Vice Type: Bench Size:2" nominal JawWidth:50mm	2
80	Ratchet Set	Very Good Quality	Vice Type: Bench Sz:2" nominal; Jaw:50mm	2



81	Pegboard	Very Good Quality		5
82	Digital Vernier Caliper	Very Good Quality	Product Type: Digital Calliper Meas.Range:0–150mm / 0–6" Resolution:0.01mm	2
83	Micrometer	Very Good Quality	Resolution:0.001mm/0.00005" Meas.Range:0–25mm/0–1"	1
84	Steel Rule 300mm	Very Good Quality	Product Type: Steel Rule ScaleSize:12"/300mm Material: Stainless Steel	5
85	Steel Rule 600mm	Very Good Quality	Product Type: Steel Rule ScaleSize:24"/600mm Material: Stainless Steel	5
86	Engineering Square	Very Good Quality	Size:150×80mm nominal Material: Carbon Steel	2
87	Meter Tape 30m	Very Good Quality	Length: 30 m	1
88	Measuring Tape 3M	Very Good Quality	Length: 3 m	3
89	Measuring Tape 5M	Very Good Quality	Length: 5 m	3
90	Spirit Level	Very Good Quality	Vials:3 Accuracy:0.5mm/m Length:300mm Product Type: Level	3
91	Goggle	Very Good Quality	Goggle – Industrial Standard Make	5
92	Apron	Very Good Quality	Apron - Standard Make	5
93	Ear Muff	Very Good Quality	Earmuff – Industrial Standard Make	5
94	Mask	Very Good Quality	Mask – Industrial Standard Make	50
95	Fire Extinguisher	Very Good Quality	Fire Extinguisher– Industrial Standard Make	6
96	First Aid Kit	Very Good Quality	First Aid Kit – Industrial Standard Make	2
97	Gloves Pair	Branded Company Product with at least three years product warranty	Gloves – Industrial Standard Make	10
98	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
99	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



100	Smart Board	Branded Company Product with at least three years product warranty	<p>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</p>	1
101	Projector	Branded Company Product with at least three years product warranty	<p>Projection Tech: RGB liquid crystal shutter projection (3LCD) Up to          Connectivity: USB Type B: 1port          (FirmwareUpdate/Copy OSD) Approx AnalogInput:D-Sub 15pin:1port Digital Input: HDMI:1port          Projection Lens: Type: No Optical Zoom/Focus (Manual)Nominal FocalLength:16.70mm Approx          FNumber:1.44 Nominal          Zoom:1.44-1.95 Ratio (Wide to Tele)          ThrowRatioRange:1.00–1.35(Digital Zoom Approx</p>	1
102	Printer	Branded Company Product with at least three years product warranty	<p>Functions: Print, Scan, Copy Printer Type: Laser Nominal          Dims(mm):409×398.5×267Approx          Weight:9.7KgNominal          Print Speed: Upto 30ppm (A4 Size) Approx          Warranty:1YearOn-Site          Print Resolution: 600×600 dpi, HQ1200 (2400× 600dpi) Quality Approx          2 Sided-Duplex-          Paper Type: Plain, Thin, Recycled Approx 2Sided-Duplex-Paper Size: A4          Paper Handling: Tray#1-          Paper Type: Plain, Thin, Recycled Tray#1-          Max Capacity: Upto 250 Sheets (80g/m<sup>2</sup>) Approx Paper Output: Upto100Sheets (80g/m<sup>2</sup>) Face Do wn Tray; One Sheet Face Up Tray Approx          Copy- Colour /Mono: Yes/Yes Multiple Copies: Sorts/StacksUpto99PagesApprox Enlarge/Reduce:25%-400%(In1%Steps) Approx Copy Resolution: 600×600dpi 2Sided-Duplex-          Copy Paper Type: Plain, Thin, Recycled 2Sided-Duplex-          Copy Paper Size: A4 Scan-          Resolution Interpolated: Upto19200×19200dpi Approx Scan-          Resolution Glass: Upto 600×2400 dpi Approx          Connectivity: Hi-Speed USB2.0          DisplayType:16Chars×2Lines          MemoryCapacity:32MBAapprox          PowerSource:220-240VAC50/60Hz Power          Consumption-Ready: Approx 60W Power Consumption-</p>	1



			Sleep: Approx 6.6W Power Consumption- Off: Approx 0.08W NoiseLevel:50dB(A) Approx	
103	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
104	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 Roundness Accuracy: +/-0.5mmApprox SpoolInnerDia:55mmNominal SpoolOuterDia:200mmApprox SpoolWeight:300gNominal SpoolWidth:65mmApprox	10
105	Acrylic Sheet 3mm, 4ft x 4ft	Very Good Quality		20
106	Acrylic Sheet 4mm, 4ft x 4ft	Very Good Quality		20
107	Acrylic Sheet 5mm, 4ft x 4ft	Very Good Quality		20
108	Foam Sheet 8mm, 4ft x 4ft	Very Good Quality		2
109	Foam Sheet 10mm, 4ft x 4ft	Very Good Quality		1
110	Foam Sheet 12mm, 4ft x 4ft	Very Good Quality		1
111	Foam Sheet 15mm, 4ft x 4ft	Very Good Quality		1
112	Ply Board 5mm, 2ft x 4ft	Very Good Quality		12
113	Nylon Rod 10mm, 1m	Very Good Quality		5
114	Nuts (3mm,4mm,5mm, 6mm,8mm,10mm, 12mm) Pack of 100	Very Good Quality		1
115	Bolts (3mm,4mm,5mm, 6mm,8mm,10mm, 12mm) dia 1" Inch Pack of 100	Very Good Quality		1
116	Screws (3mm,4mm,5mm) Pack of 100	Very Good Quality		1
117	Washers (3mm,4mm,5mm, 6mm,8mm,10mm, 12mm) Pack of 100	Very Good Quality		1
118	Studs (6mm,8mm), 1	Very Good Quality		2



	Meter		
119	Nails (1",2",3",1.5",5") Pack of 100	Very Good Quality	1
120	Fevicol 2Kg	Very Good Quality	1
121	2 Way Tape	Very Good Quality	10
122	PVC Pipe 75",10ft	Very Good Quality	10
123	PVC Pipe 1",10ft	Very Good Quality	10
124	PVC Pipe 1.5", 10ft	Very Good Quality	10
125	PVC Pipe 2.0", 10ft	Very Good Quality	10
126	Aluminium channels (L, C, Box, strip length 12ft)	Very Good Quality	2
127	PCB Drill Bit 0.4mm	Very Good Quality	10
128	PCB Drill Bit 0.8mm	Very Good Quality	10
129	PCB Drill Bit 1mm	Very Good Quality	10
130	Drill Bit 4mm	Very Good Quality	10
131	Drill Bit 5mm	Very Good Quality	10
132	Drill Bit 6mm	Very Good Quality	10
133	Arduino UNO R3	Very Good Quality	5
134	Arduino NANO	Very Good Quality	5
135	Arduino Mega	Very Good Quality	3
136	Raspberry Pi Model 4B, 4GB	Very Good Quality	3
137	ESP8266 Node MCU	Very Good Quality	2
138	ESP32 Development Board	Very Good Quality	2
139	Beaglebone blu	Very Good Quality	1
140	Beaglebone Black	Very Good Quality	1
141	Voltage Regulator Module	Very Good Quality	2
142	Mini Micro submersible Water Pump	Very Good Quality	2



143	Piezoelectric Plate	Very Good Quality		2
144	8*8 LED Matrix Module	Very Good Quality		2
145	Bluetooth	Very Good Quality		2
146	7 Segment LED Display	Very Good Quality		2
147	GSM/GPRS/GPS Module	Very Good Quality		2
148	Laser Module	Very Good Quality		2
149	LDR Module	Very Good Quality		2
150	4×4 Matrix Keypad	Very Good Quality		2
151	Joy Stick Module	Very Good Quality		2
152	Active Buzzer (BIG)	Very Good Quality		2
153	Active Buzzer (SMALL)	Very Good Quality		2
154	Motor Driver	Very Good Quality		2
155	Sound Playback Module	Very Good Quality		2
156	BO Motors	Very Good Quality		10
157	Vibrating Motor	Very Good Quality		10
158	Capacitive Touch Switch	Very Good Quality		2
159	IR Sensors (Obstacle Sensors)	Very Good Quality		2
160	Triple Axis Magnetometer	Very Good Quality		2
161	Humidity Sensor	Very Good Quality		2
162	MQ-2	Very Good Quality		2
163	MQ-3	Very Good Quality		2
164	MQ-4	Very Good Quality		2
165	MQ-5	Very Good Quality		2
166	MQ-7	Very Good Quality		2
167	Ultrasonic Sensor Module	Very Good Quality		2
168	Triple Axis accelerometer	Very Good Quality		2



169	PIR Motion Detector Module	Very Good Quality		2
170	Pulse Rate Heart Sensor	Very Good Quality		2
171	Relay Module	Very Good Quality		2
172	Soil Moisture Sensor	Very Good Quality		2
173	Touch Sensor	Very Good Quality		2
174	Rain Drop Sensor	Very Good Quality		2
175	Flex Sensor	Very Good Quality		2
176	Temperature Sensor	Very Good Quality		2
177	Force Pressure Sensor	Very Good Quality		2
178	Colour Recognition Sensor	Very Good Quality		2
179	Water Flow Sensor	Very Good Quality		2
180	Sound Sensor	Very Good Quality		2
181	IR Sensor Array for Line Following	Very Good Quality		2
182	RFID Reader-Tags	Very Good Quality		2
183	RF Modules Tx& Rx 315 MHz ASK	Very Good Quality		2
184	Stepper motor with Driver Board	Very Good Quality		2
185	Servo Motor 360 rotation	Very Good Quality		10
186	Servo Motor 180 rotation	Very Good Quality		10
187	Metal Gear Servo Motor (180° Rotation)	Very Good Quality		10
188	Solder Wire 100gm	Very Good Quality		10
189	Solder Flux	Very Good Quality		10
190	830 Points Solderless Breadboard	Very Good Quality		5
191	400 Points Solderless Breadboard	Very Good Quality		5
192	Copper Clad Board single side	Very Good Quality		10
193	Copper clad board double side	Very Good Quality		10



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194	Male to Male Breadboard Jumper	Very Good Quality		10
195	Female to Female Breadboard Jumper	Very Good Quality		10
196	Male to Female Breadboard Jumper	Very Good Quality		10

The AICTE-IDEA Lab Coordinator may be contacted for any Queries.

**Prof. Y. V. Gopala Krishna Murthy**

AICTE-IDEA Lab Coordinator, ACEEC

Regards

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